A survey of the vascular flora of Black Hawk County, Iowa

Karen E. Van Norman
University of Northern Iowa

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A SURVEY OF THE VASCULAR FLORA OF BLACK HAWK COUNTY, IOWA

An Abstract of a Thesis Submitted In Partial Fulfillment of the Requirements for the Degree Master of Arts

LIBRARY UNIVERSITY OF NORTHERN IOWA CEDAR FALLS, IOWA

Karen E. Van Norman
University of Northern Iowa
July 1987
ABSTRACT

Black Hawk County, located in the east-central part of the state of Iowa, is a political subdivision of 570 square miles. The topography of the county is the result of glaciation, erosion and deposition, causing gently rolling plains. The Cedar and the Wapsipinicon rivers transect the county from the northeast to the southwest. With their tributaries, these rivers comprise a natural drainage network which has enhanced agricultural practices throughout the county.

The vascular flora of the county was surveyed in the field during the growing seasons of 1982 and 1983. Over 1500 voucher specimens were collected. Data were also compiled from over 2500 herbarium specimens of collections made in Black Hawk County. The documented flora of native or naturalized plant species known to grow or to have grown independent of cultivation consists of 826 species representing 399 genera and 98 families. Eighteen species are included on the Iowa list of threatened and endangered species, including two species unique to the state: Carex leptalea Wahl. (Cyperaceae) and Dalea villosa (Nutt.) Sprengel (Fabaceae). Another rare species, Rubus hispidus L. (Rosaceae) is also found only in Black Hawk County in the state. An annotated catalog of the species has been compiled and includes nomenclature, common names, frequency of occurrence, habitat, and specimens examined.

Pre-settlement vegetation was examined in relation to the soils, and percentage of vegetation in the county was calculated in a general segregation of forest, prairie, and marsh. Calculations of 13.5%,
91.0%, and less than 0.1%, respectively, were derived from distributions of soil types. Forested areas were found mainly along water courses. Upland forests arose adjacent to the floodplains and prairie areas were generally associated with the uplands. Wet prairies and marshes were found in poorly drained lowland areas. Agriculture has played a major role in diminishing the natural areas in the county. Native vegetation has been confined largely to sandy areas, riparian areas, wetlands, marshes, and railroad right-of-ways.

The vegetation of Black Hawk County has been categorized within six major divisions: forest, savannah, prairie, wetland, pond, and cultural. Subdivisions of floodplain forest, upland forest, sand forest, prairie, sand prairie, limestone prairie, sedge meadow, and marsh have been recognized within the major divisions. Research sites representing each of these areas were visited, and species lists were compiled for each.

A checklist of rare species not collected since 1970 was compiled. Additional field reconnaissance may relocate these species and provide information on their frequency in the county. Sandy areas, formed by eolian (windblown) or alluvial deposition, in the county have provided some interesting habitats for some species not commonly found in the state. These sandy areas could be studied extensively and a sand flora compiled for the county.
A SURVEY OF THE VASCULAR FLORA
OF BLACK HAWK COUNTY, IOWA

A Thesis
Submitted
In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

Karen E. Van Norman
University of Northern Iowa
July 1987
This Study by: Karen E. Van Norman

Entitled: A Survey of the Vascular Flora of Black Hawk County, Iowa

has been approved as meeting the thesis requirement for the
Degree of Master of Arts

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Date 7/1/87
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Daryl D. Smith
Date 7/1/87
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Member, Thesis Committee

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ACKNOWLEDGEMENTS

I would like to thank the members of my Thesis Committee, Dr. Lawrence J. Eilers (chairperson), Dr. David V. McCalley, and Dr. Daryl D. Smith for their guidance throughout this study. I especially thank Dr. Eilers for his moral support and aid in identification of specimens. Thanks to Dr. Eilers for allowing me to examine the herbarium at the University of Northern Iowa and to use his data from the University of Iowa herbarium. Thanks to Dr. Dean Roosa and Dr. Eilers for compiling the checklist of the flora of Iowa, an invaluable resource.

Acknowledgement is extended to the Iowa Natural Areas Inventory for financial assistance. Thanks to the many land owners who allowed access to their property. Thanks to Dr. Richard W. Pohl for allowing me to work in the Iowa State University herbarium and for his verification of some Poaceae collections, and to Dr. Almut G. Jones for verification of some Aster collections. Thanks to William Pusateri and Bill Watson for botanical support.

Many people have been supportive at one time or another throughout this project. I thank each of you, including Philip Nusbaum, David and Barb Bangert, Sharon Anway, Rosanna Giordano, John and Martha Deines of the Lutheran Center, and Jeanne and Connie Sorenson of Ingham-Okoboji Camping Ministries.

Finally, I would like to express my special appreciation to my parents, Verl and Martha Van Norman, my sister Joan Van Norman, and my family.
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CHAPTER 1

INTRODUCTION

Iowa Native Habitats

Black Hawk County and most of Iowa has a landscape of gently rolling plains. Prior to the introduction of agriculture by Euro-American settlers, over 80% of Iowa's land was blanketed with prairies. Today, less than 0.02% of Iowa's native prairie remains as scattered remnants among a patchwork of cultivated fields (Smith 1981).

Not only prairies, but also forests and wetlands have been subjected to destruction by agricultural practices. Before settlement, 19% of Iowa's land was forested; today, little more than 4% of the land remains as forest. Estimated forest acreage for Black Hawk County in the early 1800's was 49,280 acres, or 13.5 percent. In 1974, the acreage was estimated at 12,900 acres (3.5%), a 74% reduction (Thompson and Hertel 1981). Before settlement, more than 1.1 million acres of Iowa wetlands existed (Bishop 1981). Today, only 21,470 acres of natural marshland remain; 95% of our natural wetlands have been drained to accommodate the cultivation of more land.

Study Aims

The chances of survival of native plant species are increasingly diminished as native habitats are continually destroyed. Through the efforts of natural area inventories and floristic surveys such as this one, the state's remaining native flora can be documented.
This report presents the results of a floristic survey of Black Hawk County, Iowa. Specific aims of the study include the following:

1) compilation of an annotated and indexed vascular plant list of native and naturalized plant species known to grow or to have grown independent of cultivation in Black Hawk County, Iowa,

2) compilation of a list of threatened and endangered species in the county,

3) compilation of a list of rare plants not collected since 1970 in Black Hawk County,

4) discussion of the relationships between the vegetation and the soil types, and

5) discussion of vegetation types and plant communities within the county, including a list of associated species for each community.

Study Area

Location

Black Hawk County, Iowa (Figure 1), located in the east-central part of the state, is the fourth county south of the Minnesota border and the fourth county west of the Mississippi River. This political subdivision of 570 square miles (363,520 acres) (147,115 hectares) is bordered on the north by Bremer County, on the east by Buchanan County, on the south by Benton and Tama counties, and on the west by Grundy and Butler counties (Hartman 1915).

Settlement

Black Hawk County is contained within land acquired by the United States in the Louisiana Purchase of 1803 (Fouts and Highland 1978). The county was created in 1843 by territorial legislation, and in 1845
Figure 1. Map of Black Hawk County, Iowa (General Highway and Transportation Map, Black Hawk County, Iowa. Iowa Department of Transportation, Ames, Iowa 1984).
settlement began in Cedar Falls (Melendy 1893). Today, the metropolitan community of Cedar Falls and Waterloo has a combined population of 112,307. The county population in 1980 was 137,961 (Iowa Development Commission 1984).

Geology

The underlying limestone bedrock of Black Hawk County is mainly of the Devonian period, but some bedrock of the Ordovician and the Silurian periods is present. Exposures of bedrock are visible only along the margins of the valleys of the Cedar River, or along the banks of its tributaries near their entrance point to the Cedar. Significant plant communities do not occur on these large rock exposures. In areas where soils are shallow (4 to 20 inches) over bedrock, excessive drainage occurs (Fouts and Highland 1978) limiting species representation to those which can survive droughty conditions.

Climate

Black Hawk County has a continental climate with cold dry winters and warm humid summers. The mean January temperature is 17.2°F (-8.2°C), and the mean July temperature is 73.8°F (23.2°C). Extreme temperatures of -34°F (-37°C) and 112°F (44°C) have been recorded (Gale Research Company 1981). The annual mean precipitation is 31.7 inches (80.5 cm) with 71% of this falling from April to September (Fouts and Highland 1978). The growing season consists of 159 frost-free days.

Topography

The topography of Black Hawk County is the result of glaciation, erosion and deposition, causing gently rolling plains. The major interruptions in this landscape are the valleys cut by the Cedar and
Wapsipinicon Rivers and their tributaries. The Cedar River transects the county from the northwest corner to the southeast corner for approximately 45 miles (Metropolitan Planning Commission of Black Hawk County 1969). The Wapsipinicon River intersects the northeast corner of the county. Both rivers flow in a southeasterly direction. These two rivers and their tributaries comprise a natural drainage network which has enhanced agricultural practices throughout the county.

Soils

Black Hawk County's most important natural resource is its soil. The majority of the land is utilized for agricultural purposes: the cultivation of row crops and pasturage of livestock. The soil survey (Fouts and Highland 1978) is the source of information on the soils of the county unless otherwise stated.

Parent materials. The county's fertile soils are formed primarily from the following parent materials: glacial drift, alluvium, loess, and eolian (wind-deposited sand). Glacial drift, the most important parent material, is formed from deposits of rock materials left behind after the retreat of glacial ice sheets. Nebraskan and Kansan glaciations deposited several layers of glacial drift or glacial till. Erosion and deposition during the Wisconsin glaciation to the west modified these layers and formed a landscape now called the Iowa Erosional Surface, or simply the Iowan Surface (Prior 1976) (Figure 2).

Alluvium, sediment transported and laid down by water, is the second most extensive parent material in Black Hawk County. Alluvium can be found as lenses and layers of sand, gravel, silt and clay. As
streams overflowed their channels the materials carried with the water were deposited on the floodplain, with coarse textured material deposited first. The finest clay particles may be transported some distance from the main channel before settling from the water. Some of the sandy areas found in Black Hawk County are attributable to alluvial deposition.

Figure 2. Location of Black Hawk County on the Iowan Surface (Prior, A Regional Guide to Iowa Landforms. Iowa Geological Survey Educational Series, 3, 1976).
Loess is accumulated particles of silt and clay that have been deposited by the wind. Loess deposits are found in the southwest corner of the county and in a wedge-shaped area cutting across the northeast corner of the county. Eolian sand can be found in the uplands and on benches above the floodplains. Sand is found as low mounds or dunes in the glacial till uplands.

Soil association units. The soils of Black Hawk county have been divided into seven major soil association units characterized by parent material and landscape. Figure 3 illustrates the location of these units in the county.

The Kenyon-Clyde-Floyd soil association unit, formed in loamy materials and glacial till, covers 35% of the county. This unit is characterized by nearly-level to strongly-sloping natural upland landscapes, and is almost entirely under cultivation except in wet, rocky, sandy, or steep areas.

Other soils of the level uplands were formed from: 1) loess more than 40 inches thick (Tama-Muscatine-Garwin association type), 2) loess 24 to 40 inches thick and the underlying glacial till (Dinsdale-Klinger-Maxfield association type), and 3) loamy materials and glacial till (Readlyn-Tripoli association type). Almost all of the land of these soil association types is presently cultivated.

The remaining soils on uplands and terraces were formed in eolian sands or a combination of eolian sands and the underlying glacial till (Sparta-Olin-Dickinson association type). Nearly-level or gently-sloping portions of this type are cultivated. Steep, wet, seepy areas are used for permanent pasture, woodland or wildlife habitat.
Figure 3. Major soil association units of Black Hawk County, Iowa (Fouts and Highland, Soil Survey of Black Hawk County, Iowa. United States Department of Agriculture, Soil Conservation Service 1978).
Bottomland and terrace soils were formed in 1) loamy alluvial sediments (channeled-Saude-Flagler soil association), or in 2) silty and loamy alluvial sediments (Marshan-Sawmill-Bremer soil association). The land is used for pasture and cultivation.

**Vegetation and soil formation.** There are 51 different soil series (Fouts and Highland 1978) found in Black Hawk County. Soils that are almost alike make a soil series and are classified according to properties such as soil temperature and moisture which, for the most part, can be differentiated in the field. The United States Comprehensive Soil Classification System (Buol et al. 1973) is used to differentiate soils with the "order" as the broadest division and the "soil series" as the most specific subdivision.

The amount of organic matter in a soil and the color of the surface layer give clues as to under what types of vegetation soils were formed. Buol et al. (1973) discuss the association between vegetation and soil formation: "Nearly all soils with deep dark, relatively fertile topsoil are formed under grassland vegetation" (p. 240). They also stated, "Melanization, the process of darkening of the soil by addition of organic matter, is the dominant process in Mollisols" (p. 243). Of the 51 soil series in Black Hawk County, 37 of them are from the Mollisol order. Eleven soil series are from the Alfisol order. Buol et al. (1973) stated, "Vast acerages of present or former deciduous forest lands and even prairie lands on glacial drift, loess, and in deserts on old alluvial fans are occupied by Alfisols" (p. 263).

Fouts and Highland (1978) have provided descriptions of each of the soil series in Black Hawk County including information on native
vegetation. Thirteen different native vegetation descriptions were used. These have been combined into three broader categories of forest, prairie, and wetland. From the acreage and percentage of each soil series, an estimated percentage of native vegetation has been derived: 8.3% forest, 91% prairie, and less than 0.1% wetland (Table 1). Duritsa (1983) constructed a similar table from the soil survey and categorized the native vegetation under six broader categories of forest, floodplain forest, grasses and trees, prairie, wet prairie, and marsh.

Pre-historic Vegetation

Black Hawk County is considered part of a grassland formation that "extends over the vast central part of North America" (Vankat 1979, p. 158). The history of grassland formation dates back 10,500 years to the beginning of the Holocene Epoch and the retreat of the Wisconsin glacier. The glacial retreat left nearly barren land and a climate suitable for the northward migration of coniferous forests consisting mainly of Picea (Hallberg cited in Anderson 1983, p. 229) followed by various species of Pinus (Daubenmire 1978).

A warming period of several thousand years called the Hypsithermal Interval, raised temperatures 2–3°C above present average temperatures. Very strong winds, the Westerlies, caused an eastward displacement of the dry air from the west and provided environmental conditions that favored grasses over forests. Thus, grasslands extended eastward forming a "prairie peninsula" (Transeau 1935) across Iowa to the foothills of the Appalachian mountains. These grasslands were
Table 1. Native vegetation associated with soil series in Black Hawk County, Iowa (Fouts and Highland, Soil Survey of Black Hawk County, Iowa. United States Dept. of Agriculture, Soil Conservation Service 1978).

<table>
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<th>VEGETATION</th>
<th>SOIL SERIES</th>
<th>ACERAGE</th>
<th>% OF COUNTY</th>
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<td><strong>FOREST</strong></td>
<td></td>
<td></td>
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<tr>
<td>Trees</td>
<td>Chelsea</td>
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<tr>
<td></td>
<td>Donnnon</td>
<td>1,165</td>
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<tr>
<td></td>
<td>Lamont</td>
<td>650</td>
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<td></td>
<td><strong>Total</strong></td>
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<td>Mixed grasses, brush and generally low quality timber</td>
<td>Loamy alluvial land, channeled</td>
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<td>Mixed prairie grasses and trees</td>
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<td>1,700</td>
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<td></td>
<td>Dells</td>
<td>560</td>
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<tr>
<td></td>
<td>Hayfield</td>
<td>2,445</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td>Oran</td>
<td>950</td>
<td>0.3</td>
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<tr>
<td></td>
<td>Wapsi</td>
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<td></td>
<td><strong>Total</strong></td>
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<td>Trees and prairie grasses</td>
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<td><strong>PRAIRIE</strong></td>
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<td></td>
<td>Dickinson</td>
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<td></td>
<td>Dinsdale</td>
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<td>Clyde-Floyd complex</td>
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<td><strong>Total</strong></td>
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<td>Klinger</td>
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<td></td>
<td>Lawler</td>
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<td></td>
<td>Protivin</td>
<td>845</td>
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<tr>
<td></td>
<td>Readlyn</td>
<td>20,805</td>
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<tr>
<td></td>
<td>Rockton</td>
<td>610</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>Sogn</td>
<td>200</td>
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<td></td>
<td></td>
<td>46,145*</td>
<td>12.6*</td>
</tr>
<tr>
<td>Drought-tolerant grass vegetation</td>
<td>Finchford</td>
<td>9,175*</td>
<td>2.5*</td>
</tr>
<tr>
<td>Tall prairie grasses</td>
<td>Bremer</td>
<td>5,285*</td>
<td>1.5*</td>
</tr>
<tr>
<td>Prairie grasses and sedges</td>
<td>Bremer variant</td>
<td>180</td>
<td>less than 0.1%</td>
</tr>
<tr>
<td></td>
<td>Clyde</td>
<td>17,180</td>
<td>4.7</td>
</tr>
<tr>
<td></td>
<td>Garwin</td>
<td>2,280</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td>Maxfield</td>
<td>7,080</td>
<td>1.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>26,720*</td>
<td>7.2*</td>
</tr>
<tr>
<td>Undetermined</td>
<td>Loamy escarpments</td>
<td>250*</td>
<td>0.1*</td>
</tr>
<tr>
<td>Water-tolerant prairie grasses and</td>
<td>Colo</td>
<td>3,180</td>
<td>0.9</td>
</tr>
<tr>
<td>sedges</td>
<td>Colo-Ely complex</td>
<td>3,625</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>Sawmill</td>
<td>6,145</td>
<td>1.7</td>
</tr>
<tr>
<td></td>
<td>Zook</td>
<td>680</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6,825*</td>
<td>1.9*</td>
</tr>
<tr>
<td>Prairie grasses, sedges and other</td>
<td>Coland</td>
<td>1,730</td>
<td>0.5</td>
</tr>
<tr>
<td>water-tolerant plants</td>
<td>Marshan</td>
<td>9,050</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>Palms muck</td>
<td>185</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10,965*</td>
<td>3.1*</td>
</tr>
<tr>
<td>Mixed prairie grasses and water-tolerant plants</td>
<td>Tripoli</td>
<td>9,695*</td>
<td>2.7*</td>
</tr>
</tbody>
</table>

WETLAND

| Cattails, rushes, sedges and other water-tolerant plants | Marsh | 175* less than 0.1% |

UNDETERMINED

| Borrow areas, limestone quarries, made-land, sand and gravel pits | 2,800* | 0.7* |

* Subtotals of acerage and % of county
surrounded by established temperate mesophytic forests (Daubenmire 1978).

A forest climate again prevailed following the Hypsithermal Interval (Daubenmire 1978). Fire became an important factor in maintaining Iowa's grasslands. Natural fire barriers such as rivers, marshes and ponds served as refuges for the forest. Savannas composed of grasses and trees were established where fire tolerant trees such as Quercus macrocarpa, the bur oak, were present.

Pre-settlement Vegetation

The distribution of pre-settlement vegetation was influenced by the topography and drainage capabilities of the soil. Forested areas were located along the valleys of the major rivers and streams and were comprised mainly of flood-tolerant forest species. Figure 4 (Andreas 1875) illustrates the early vegetation of Black Hawk County as a general segregation of forest and prairie, and delineates the establishment of forests along water courses. Upland forests and savannas arose adjacent to the floodplains on moderately rolling and moderately well-drained soils. Prairie vegetation was generally associated with uplands which varied greatly in slope and in drainage capacities. Thompson and Hertel (1981) noted that pre-settlement forests covered 13.5% of the county. Table 1 indicated that forest and prairie covered 8.3% and 91.0% of the county, respectively.

Marshes and wet prairies were found in poorly drained lowland areas. Few marshes were found in Black Hawk County due to well
Figure 4. Early vegetation of Black Hawk County, Iowa (Andreas, Illustrated Historical Atlas of the State of Iowa. Andreas Atlas Co., 1875).
developed drainage patterns. The 1875 map in Figure 4 delineated only one marsh in the center of the county. Table 1 indicated that less than 0.1% of the land was marsh.

**Post-settlement Vegetation**

One of the effects of early settlement upon vegetation distribution was the protection of grasslands from fire. This practice permitted the grasslands to be invaded by trees from the floodplain and upland forests.

Prairies, savannahs, forests, and wetlands have all succumbed to agricultural practices. In 1982 there were 1370 farms in Black Hawk County covering 289,000 acres or 79.6% of the county (Iowa Crop and Livestock Reporting Service 1983). Native vegetation has been confined largely to sandy areas, riparian areas, wetlands, marshes, and railroad right-of-ways.

**Previous Studies**

There are over 2400 specimens of plants found in Black Hawk County in herbaria throughout the state. Some of these collections date back to 1898. The earliest floristic study of Black Hawk County was conducted in 1929 (Burk 1931) and a list of 653 species was compiled from that survey. Shimek made many collections in the county, mainly along the Cedar River in the 1920's and early 1930's. In the late 1930's Grant made many collections in the county but never published his findings. Thorne (1954) cited 674 plant species from Black Hawk County. Eilers (1971) conducted a floristic survey of the Iowan Area which includes Black Hawk County. Duritsa (1983) conducted a natural areas
inventory of the county and compiled a species list for the natural areas studied. Lammers (1980) collected extensively throughout the county in 1980 and 1981 for the Duritsa inventory.
CHAPTER 2

METHODS

Herbarium Study

The herbarium at the University of Northern Iowa, Cedar Falls, was examined to substantiate previously collected specimens from Black Hawk County which may or may not have been reported in the literature. In the late 1930's, Grant made many collections in the county but never published his findings. The majority of his specimens are deposited in the University of Northern Iowa herbarium. Also, plant taxonomy students have made collections of spring and fall flora of Black Hawk County in fulfillment of course requirements. Some of these collections are in the University of Northern Iowa herbarium. Information on specimens from Black Hawk County contained in other Iowa herbaria was obtained from the Iowa Natural Areas Inventory (personal communication 1982) and from a University of Iowa herbarium study conducted by Eilers (1971) in his research on the vascular flora of the Iowan Area. Each herbarium is listed below with abbreviations that will be used in this paper (Lanjouw and Stafleu 1959).

ISC--Iowa State University, Ames
IA--University of Iowa, Iowa City
ISTC--University of Northern Iowa, Cedar Falls

Field Study and Research Sites

Field study was conducted throughout the growing seasons of 1982 and 1983. Research sites were selected from information received from
preliminary studies for the Natural Areas Inventory of Black Hawk County (Duritsa 1983), county soil survey (Fouts and Highland 1978), literature references, herbarium specimens, personal interviews, and field reconnaissance. In his flora of Dubuque county, Lehmann (1983) noted that the floristic reconnaissance for relatively undisturbed natural areas is a more appropriate method for a floristic survey than random sampling. With this concept in mind, survey sites were chosen to provide representative samples of native prairie, wetland, and forest vegetation.

Research sites where at least 50 collections were made are listed in Table 2 with their major vegetation types and locations. Location coordinates are given using the section-township-range method. All townships are north of the national baseline, and all ranges are west of the fifth principal meridian (Dodds 1943). A location such as: the north half of the southwest quarter of Section 20, Township 90 north, Range 14 west, or N SW 20 T-90 N R-14 W, is abbreviated as N SW 20 90-14 (Rockford Map Publishers 1981). These sites are plotted on the map in Figure 5.

Several natural areas in the county have been studied by other authors (Duritsa 1983; Lammers 1980; Crum 1972; Chumbley 1973; Anderson et al. 1975), and plant lists were compiled for each. Therefore, these areas were not intensively studied in the field as a part of this floristic survey. They are designated in Table 3 with major vegetation types and locations. Figure 6 illustrates the locations of these sites.
Other areas not listed in Tables 2 or 3, but at which fewer than 50
collections were made, are listed in Table 4. The map in Figure 7
depicts the locations of all the areas listed in Tables 2, 3, and 4.

Data Collection

The major study sites were visited in two to three week intervals
during at least one of the field study summers. Over 1500 voucher
specimens were collected, information recorded, pressed, and dried
according to standard procedures (Lawrence 1951; Klein and Klein 1970;
Radford et al. 1974). Information on locality, habitat and vegetation
was recorded in field notebooks. This information was transferred to
permanent research notebooks in duplicate.

Identification of Specimens

The several texts and regional keys consulted for identification
included: Gilly (1946), Gleason (1952), Gleason and Cronquist (1963),
Fassett (1976), Voss (1972), Pohl (1954), Pohl (1966), Correll and
Correll (1972), Mason (1969), Spence (1959), Mohlenbrock (1975), and
Mackenzie (1940). Specimens were also compared with those in the
University of Northern Iowa herbarium. The majority of the specimens
were identified by the author. Pohl of Iowa State University identified
and verified identification of some of the grasses. A few Aster
specimens were identified by Jones (1986) of the University of Illinois.
A few taxa which were difficult to identify were verified by Eilers of
the University of Northern Iowa.

Disposition of Specimens

All specimens are at the University of Northern Iowa herbarium for
processing and inclusion therein.
Table 2. Major research sites in Black Hawk County, Iowa.

<table>
<thead>
<tr>
<th>SITE</th>
<th>VEGETATION TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ackerson's Marsh @</td>
<td>marsh, wet prairie, dry prairie</td>
<td>NW SE 18 90-14</td>
</tr>
<tr>
<td>2. Bailey's Lake @</td>
<td>wet prairie, mesic prairie, prairie pothole</td>
<td>NE SE 19 90-14</td>
</tr>
<tr>
<td>3. Brustkern's Woods @</td>
<td>oak-hickory sand forest</td>
<td>NW SW 25 88-12</td>
</tr>
<tr>
<td>4. Bunchflower Meadow @</td>
<td>sedge meadow</td>
<td>SW 1 88-14</td>
</tr>
<tr>
<td>5. Cedar Township RR Prairie</td>
<td>sandy alluvial terrace</td>
<td>NW SW 8 88-12</td>
</tr>
<tr>
<td>6. Cooper's Woods @</td>
<td>sand forest</td>
<td>NW 1 89-14</td>
</tr>
<tr>
<td>7. Dorothy's Prairie @</td>
<td>mesic prairie</td>
<td>NW SE 8 90-14</td>
</tr>
<tr>
<td>8. Fall's Access</td>
<td>floodplain forest</td>
<td>W 27 90-14</td>
</tr>
<tr>
<td>9. George Wyth State Park @</td>
<td>floodplain forest, savannah</td>
<td>E 7 89-13</td>
</tr>
<tr>
<td>10. Goose Lake @</td>
<td>prairie pothole, marsh, wet prairie, mesic prairie</td>
<td>N SW 20 90-14</td>
</tr>
<tr>
<td>11. Martinson's Dunes @</td>
<td>dry sand prairie, blowout community jack-pine community</td>
<td>E NW 19 90-14</td>
</tr>
<tr>
<td>12. Newgard's Pasture @</td>
<td>wet prairie</td>
<td>S SW 19 90-14</td>
</tr>
</tbody>
</table>

@ Cited in Duritsa 1983
* Cited in Lammers 1980
Figure 5. Map of major research sites in Black Hawk County, Iowa.
### Table 3. Previously studied natural areas in Black Hawk County.

<table>
<thead>
<tr>
<th>SITE</th>
<th>VEGETATION TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Bennington Township Cemetery (Chumbley 1973)</td>
<td>upland prairie</td>
<td>NW NW 27 90-12</td>
</tr>
<tr>
<td>14. Cedar City Sand Prairie</td>
<td>dry sand prairie</td>
<td>SE SE 6 89-13</td>
</tr>
<tr>
<td>15. Cedar Hills Sand Prairie (Crum 1970)</td>
<td>dry to wet sand prairie, marsh</td>
<td>SW SW 19 90-14</td>
</tr>
<tr>
<td>16. Dunkerton Prairie</td>
<td>wet-mesic prairie</td>
<td>NE NW 32 90-11</td>
</tr>
<tr>
<td>17. Fischels' Prairie</td>
<td>dry limestone prairie</td>
<td>SW NW 11 88-12</td>
</tr>
<tr>
<td>18. Frost Prairie</td>
<td>wet-mesic prairie</td>
<td>NW NE 13 90-11</td>
</tr>
<tr>
<td>19. Hartman Reserve Nature Center (Anderson et al. 1975)</td>
<td>floodplain forest, upland forest</td>
<td>W 17 89-13 SE NE 18 89-13</td>
</tr>
<tr>
<td>20. Illinois Central &amp; Gulf RR Prairie</td>
<td>dry, dry-mesic sand prairie</td>
<td>SE 13 90-14 W 31 90-13</td>
</tr>
<tr>
<td>21. Leavitt Prairie</td>
<td>mesic prairie</td>
<td>SE 18 90-13</td>
</tr>
<tr>
<td>22. Lester Township RR Prairie</td>
<td>mesic and wet-mesic prairie</td>
<td>SE SE 21 90-11 SW NE 22 90-11 NW NE 28 90-11</td>
</tr>
<tr>
<td>23. Myszka Prairie</td>
<td>dry sand prairie dry sand savannah</td>
<td>NW NW 18 90-14</td>
</tr>
<tr>
<td>24. Raymond Prairie</td>
<td>dry limestone prairie</td>
<td>SE SE 36 89-12</td>
</tr>
<tr>
<td>25. Steimel's Prairie</td>
<td>sedge meadow</td>
<td>NW SE 15 87-13</td>
</tr>
<tr>
<td>26. Stensland's Dunes</td>
<td>red cedar sand savannah</td>
<td>NW SE 19 90-13</td>
</tr>
</tbody>
</table>

* Cited in Duritsa 1983
* Cited in Lammers 1980.
Figure 6. Map of previously studied natural areas in Black Hawk County, Iowa.
Table 4. Minor research areas.

<table>
<thead>
<tr>
<th>SITE</th>
<th>VEGETATION TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>27. Barnes Ferry Road Cemetary @</td>
<td>dry prairie</td>
<td>NE 20 87-11</td>
</tr>
<tr>
<td>28. Bruggeman Park</td>
<td>floodplain forest</td>
<td>W SW 14 90-11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>W NW 23 90-11</td>
</tr>
<tr>
<td>29. Dargon's Marsh</td>
<td>marsh, wet prairie</td>
<td>W SE 21 90-14</td>
</tr>
<tr>
<td>30. Highway 175 RR Prairie</td>
<td>wet-mesic prairie remnant</td>
<td>W NW 27 87-14</td>
</tr>
<tr>
<td>31. Hussmann Access</td>
<td>floodplain forest</td>
<td>S NW 28 87-11</td>
</tr>
<tr>
<td>32. River Birch Bottoms</td>
<td>floodplain forest</td>
<td>SE SW 26 90-11</td>
</tr>
<tr>
<td>33. V-37 Prairie</td>
<td>wet prairie</td>
<td>NW SW 7 87-12</td>
</tr>
<tr>
<td>34. East Waterloo Prairie</td>
<td>dry prairie</td>
<td>W NW NE NE 24 89-13</td>
</tr>
</tbody>
</table>

@ Cited in Duritsa 1983
Figure 7. Map of research areas in Black Hawk County, Iowa.
CHAPTER 3

RESULTS

The documented vascular flora of Black Hawk County, Iowa consists of 826 species representing 399 genera and 98 families. It includes eighteen species of endangered or threatened status in Iowa (Roosa et al. 1986).

During this survey 485 plant species were collected. The remaining 341 were verified by herbarium vouchers. Over 1500 specimens were collected. Data from over 2250 herbarium specimens were recorded. The vascular plant species from Black Hawk County are cataloged systematically in Appendix A. Appendix B lists species excluded from the annotated catalog because their occurrences in the county could not be verified by correctly identified herbarium vouchers. Appendix C is a list of rare species not collected since 1970.

Threatened and Endangered Species

Endangered Species

Twelve Iowa endangered species are known from Black Hawk County (Table 5). Betula pumila var. glandulifera was found in Black Hawk County in 1981. It is presently found in Bremer, Howard and Black Hawk counties. Botrychium simplex was first sighted in 1986 and identified by Farrar in the field. The species is not included in the annotated catalog because voucher specimens have not been collected. Brassenia shreberi was first sighted in 1980 by Lammers. Carex conoidea was sighted by Crum in 1970 and recollected by Lammers in 1980. Carex
Leptalea was first located by Crum in 1970. In 1983, a new location was discovered during this survey. The plant was recollected in 1985 at this second location. Black Hawk County is the only known site of C. leptalea in the state. Dalea villosa is another species known only from Black Hawk County in Iowa. It is found at two locations and was first collected in 1976 at one site and at the second site in 1981. Dichanthelium linearifolium was collected by Lammers in 1980. Eriophorum angustifolium has been found at two locations, at one in 1970, and at the other in 1982 during this survey. Juncus greeni was found at two locations, first in 1970, relocated in 1980, and sighted at a new location in 1980. Lechea intermedia was found in 1979. It has not been collected in the county since then, but the site where it was found is a protected area. In addition to Black Hawk County, this species has been found in Allamakee, Dubuque, and Winneshiek counties. Napaea dioica is known only from Allamakee, Black Hawk, Butler, Howard, and Winneshiek counties. Eilers collected the plant in 1980. Ophioglossum vulgatum var. pseudopodum was found in 1986. It is also found in Bremer, Chickasaw, Johnson, and Linn counties in Iowa. No collections of O. vulgatum var. pseudopodum have been deposited in Iowa herbaria. Therefore this species is not included in the annotated catalog. Salix candida has been found at three locations in the county. One of these locations was found in 1982 during this survey.

Threatened Species

Five species of threatened status are known from Black Hawk County (Table 5). Astragalus distortus was found in Black Hawk County in 1981. Two additional locations of this species were found during this survey.
Table 5. Black Hawk County endangered and threatened plant species (Roosa et al. 1986).

<table>
<thead>
<tr>
<th>STATUS</th>
<th>SPECIES (FAMILY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* Betula pumila var. glandulifera (Betulaceae)</td>
</tr>
<tr>
<td></td>
<td>Botrychium simplex (Ophioglossaceae) *</td>
</tr>
<tr>
<td></td>
<td>Brassenia shreberi (Nymphaeaceae)</td>
</tr>
<tr>
<td></td>
<td>Carex conoidea (Cyperaceae)</td>
</tr>
<tr>
<td></td>
<td>Carex leptalea (Cyperaceae)</td>
</tr>
<tr>
<td></td>
<td>Dalea villosa (Fabaceae)</td>
</tr>
<tr>
<td></td>
<td>Eriophorum angustifolium (Cyperaceae)</td>
</tr>
<tr>
<td></td>
<td>Juncus greenii (Juncaceae)</td>
</tr>
<tr>
<td></td>
<td>Lechea intermedia (Cistaceae)</td>
</tr>
<tr>
<td></td>
<td>Napaea dioica (Malvaceae)</td>
</tr>
<tr>
<td></td>
<td>Ophioglossum vulgatum var. pseudopodum (Ophioglossaceae) *</td>
</tr>
<tr>
<td></td>
<td>Salix candida (Salicaceae)</td>
</tr>
<tr>
<td>Threatened</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* Astragalus distortus (Fabaceae)</td>
</tr>
<tr>
<td></td>
<td>Besseya bullii (Scrophulariaceae)</td>
</tr>
<tr>
<td></td>
<td>* Betula pumila var. glandulifera (Betulaceae)</td>
</tr>
<tr>
<td></td>
<td>Gentianopsis crinata (Gentianaceae)</td>
</tr>
<tr>
<td></td>
<td>* Valeriana edulis (Valerianaceae)</td>
</tr>
<tr>
<td></td>
<td>Zizania aquatica (Poaceae)</td>
</tr>
</tbody>
</table>

* Field identified, no herbarium vouchers
Besseya bullii was first located during this survey in 1982.

Gentianopsis crinata was first located in Black Hawk County in 1981.

Valeriana edulis was sighted in the field in 1987 by Zager but no collection was made. Zizania aquatica has been found at one location in the county; it was located by Roosa in 1975.

Species of Interest

Table 6 lists species of interest in Black Hawk County. Although not of threatened or endangered status, they are of interest due to their uncommon occurrences in Black Hawk County and, in some cases, in Iowa.

Vegetation Classification

The vegetation of Black Hawk County can be categorized within six major divisions: forest, savannah, prairie, wetland, pond, and cultural. The definitions of these communities have been adapted from the Illinois Natural Areas Inventory (White 1978) unless otherwise stated. The classifications follow that of Duritsa (1983) in A Natural Areas Inventory of Black Hawk County, Iowa.

Several subdivisions are recognized within each major division. The natural communities of sedge meadow, and marsh are subdivisions of the wetlands division. These communities are differentiated according to their natural features. The titles should be recognized as depicting more than plant communities. White (1978) stated that "a plant community name is based on vegetation and a natural community is based on all the natural features, including vegetation" (p. 321). Each natural community is briefly described below. Sites where
Table 6. Species of interest in Black Hawk County, Iowa.

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulbostylis capillaris</td>
<td>found at one location in 1983 during this survey</td>
</tr>
<tr>
<td>Coeloglossum viride var. virescens</td>
<td></td>
</tr>
<tr>
<td>Cypripedium calceolus var. pubescens</td>
<td></td>
</tr>
<tr>
<td>Cypripedium candidum</td>
<td>found in 1987 by Zaeger at one location; no collection made</td>
</tr>
<tr>
<td>Equisetum fluviatile</td>
<td>on Roosa et al. (1986) list of &quot;special concern&quot;</td>
</tr>
<tr>
<td>Juncus vaseyi</td>
<td>found in 1970 at one location; in Iowa, found only in Black Hawk County</td>
</tr>
<tr>
<td>Melanthium virginicum</td>
<td>formerly considered for the threatened species list; found at four locations in the county</td>
</tr>
<tr>
<td>Opuntia humifusa</td>
<td>found at one location in 1981; had been physically removed from the site by someone in 1983</td>
</tr>
<tr>
<td>Phlox bifida</td>
<td>listed as an endangered species in Iowa prior to 1986; no longer on the endangered or threatened species list. found at four locations in the county</td>
</tr>
<tr>
<td>Rubus hispidus</td>
<td>found at one location and only in Black Hawk County in Iowa</td>
</tr>
<tr>
<td>Rubus pubescens</td>
<td>found at only one location in the county</td>
</tr>
<tr>
<td>Trichostema brachiatum</td>
<td>on Roosa et al. (1986) list of &quot;special concern&quot;</td>
</tr>
<tr>
<td>Viola macloskeyi</td>
<td>found at one location in the county</td>
</tr>
</tbody>
</table>
collecting was accomplished in Black Hawk County and a list of characteristic species are given for each.

Forest

The forest community is dominated by trees with an average canopy cover of 80% or greater. The floodplain forest, upland forest and sand forest are three subdivisions of the forest community.

Floodplain forest. These communities are found on the floodplains of rivers and streams where periodic flooding may occur. The floodplain of the Cedar River includes the following sites: Falls Access, George Wyth State Park, Hartman Reserve lowland, and Hussman Access. Bruggeman Park and River Birch Bottoms are located on the Wapsipinicon River floodplain. The following is a list of some characteristic floodplain forest plant species.

Acer negundo
Acer saccharinum
Botrychium virginianum
Campanula americana
Carex stricta
Celtis occidentalis
Cornus drummondii
Elymus virginicus
Fraxinus pennsylvanica
Gleditsia triacanthos
Isopyrum biternatum
Juglans nigra

Laportea canadensis
Lysimachia nummularia
Mimulus ringens
Morus alba
Parthenocissus quinquefolia
Parthenocissus vitaceae
Pastinaca sativa
Ranunculus abortivus
Rudbeckia laciniata
Rumex altissimus
Salix nigra
Salix rigida
Silphium perfoliatum
Stachys tenuifolia
Teucrium canadense var. occidentale
Toxicodendron radicans
Ulmus americana
Urtica dioica
Vitis riparia

Upland forest. Soil moisture, ranging from zeric to wet-mesic, is a significant characteristic in defining upland forest communities. Hartman Reserve is an example of an upland forest, and the following list represents characteristic species found there.

Acer saccharum
Anemone quinquefolia
Aquilegia canadensis
Arisaema triz dummy
Asarum canadense
Botrychium virginianum
Carex pennsylvanica
Carya cordiformis
Carya ovata
Claytonia virginica
Cornus alternifolia
Cornus foemina ssp racemosa
Fraxinus americana
Geranium maculatum
Mitella diphylia
Moehringia laterflora
Osmorhiza claytoni
Ostrya virginiana
Phlox divaricata
Podophyllum peltatum
Polygonatum biflorum
Prunus serotina
Quercus alba
Quercus borealis
Quercus macrocarpa
Sanicula gregaria
Smilax ecirrhata
Thalictrum thalictroides
Tilia americana
Trillium flexipes
Ulmus rubra
Veronicastrum virginicum
Viburnum rafinesquanum
Viola sororia
Sand forest. Sandy soils differentiate sand forests as a special type of upland forest. Brustkern's Woods and Cooper's Woods are representative of this forest community. A list of associated species follows.

Amphicarpa bracteata  
Aquilegia canadensis  
Arisaema triphyllum  
Botrychium virginianum  
Carex blanda  
Carya cordiformis  
Carya ovata  
Cornus drummondii  
Cornus foemina ssp. racemosa  
Cryptotaenia canadensis  
Eupatorium rugosum  
Festuca obtusa  
Fraxinus americana  
Galearis spectabilis  
Geranium maculatum  
Geum canadense  
Hydrophyllum virginianum  
Isopyrum biternatum  
Mertensia virginica  
Moehringia lateriflora  
Osmorhiza claytoni  
Osmorhiza longistylis  
Parthenocissus quinquefolia  
Phlox divaricata  
Podophyllum peltatum  
Polygonatum biflorum  
Prunus serotina  
Quercus velutina  
Sorophularia lanceolata  
Silene stellata  
Smilacina racemosa  
Smilacina stellata  
Smilax herbacea  
Smilax hispida  
Tilia americana  
Trillium cernuum  
Verbena simplex  
Viola papilionacea  
Zanthoxylem americanum
Savannah

Savannas are areas which support grassy ground cover and an average tree canopy between 10% and 80%. The soils are transitional between forest and prairie. However, Duritsa (1983) pointed out that the soil data alone cannot clearly define a savannah. Sites in Black Hawk County described as savannah communities include Stensland's Dunes, a red cedar savannah. Myszka Prairie has characteristics of a dry sand savannah. The following lists represents plant species found on savannas.

- **Achillea millefolium**
- **Ambrosia psilostachya**
- **Amorpha canescens**
- **Andropogon gerardi**
- **Brickellia eupatoriodes**
- **Carex gravigida**
- **Delphinium virescens**
- **Dichanthelium oligosanthes**
  - var. **scribnerianum**
- **Equisetum laevigatum**
- **Euphorbia corollata**
- **Froelichia floridana** var. **campestris**
- **Hedioma hispida**
- **Helianthemum bicknellii**
- **Juniperus virginiana**
- **Lespedeza capitata**
- **Lithospermum canescens**
- **Lithospermum carolinense**
- **Oenothera rhombipetala**
- **Panicum virgatum**
- **Physalis virginiana**
- **Plantago patagonica**
- **Populus tremuloides**
- **Prunus americana**
- **Quercus ellipsoidalis**
- **Quercus macrocarpa**
- **Rubus allegheniensis**
- **Schizachyrium scoparium**
- **Solidago missouriensis**
- **Stipa spartea**
- **Verbena stricta**
- **Viola pedatifida**
Prairie

The prairie community is dominated by grasses. Subclasses are based upon soil characteristics.

Prairie. This subclass is recognized simply as prairie and includes "black-soil" prairies. Soil moisture may vary from dry to wet. Sites included in this subclass include: Ackerson's Marsh (wet prairie), Dorothy's Prairie (mesic prairie), Newgard's Pasture (wet prairie), Bennington Township Cemetery (mesic prairie), Dunkerton Prairie (wet-mesic prairie), Leavitt Prairie (mesic prairie, wet-mesic prairie), Lester Township RR Prairie (mesic and wet-mesic prairie), V-37 Prairie (wet prairie), and East Waterloo Prairie (dry prairie). The following list represents plant species found on prairies.

- Andropogon gerardii
- Antennaria neglecta
- Artemisia ludoviciana
- Aster ericoides
- Calamagrostis canadensis
- Carex gravida
- Carex lanuginosa
- Carex normalis
- Commandra umbellata
- Coreopsis palmata
- Dodecatheon meadia
- Elymus canadensis
- Erigeron strigosus
- Eryngium yuccifolium
- Euphorbia corollata
- Fragaria virginiana
- Galium boreal
- Gentiana andrewsii
- Heliopsis helianthoides
- Heuchera richardsonii
- Hypoxis hirsuta
- Liatris aspera
- Liatris pycnostachya
- Lilium michiganense
- Lithospermum canescens
Sand prairie. Sand, or loamy-sand, soils characterize a sand prairie. Soil moisture can vary from dry to wet. Sites representative of sand prairies include: Bailey's Lake, Goose Lake, Cedar Township RR Prairie, IC&G RR Prairie, Cedar Hills Sand Prairie, Myszka Prairie, Stensland's Dunes, Cedar City Sand Prairie, Martinson's Dunes, and Barnes Ferry Road Cemetary. The following is a list of species found on sand prairies.

- Amorpha canescens
- Bouteloua curtipendula
- Cassia fasciculata
- Cyperus strigosus
- Dalea candida
- Dalea purpurea
- Delphinium virescens
- Dichanthelium acuminatum
- Dichanthelium oligosanthes
  var. scribnerianum
- Echinacea pallida
- Equisetum laevigatum
Froelichia floridana
Hediena hispidum
Helianthemum bicknellii
Helianthus grosseserratus
Heliopsis helianthoides
Lespedeza capitata
Lithospermum caroliniense
Lithospermum incisum
Lobelia siphilitica
Monarda fistulosa
Oenothera rhombipetala
Oxalis violacea
Panicum virgatum
Paspalum setaceum var. ciliatifolium
Phlox bifida
Poa compressa
Pycnanthemum virginianum
Rosa carolina
Schizachyrium scoparium
Solidago missouriensis
Spiranthes cernua
Stipa spartea
Verbena simplex
Viola pedatifida

Limestone prairie. This subclass is located on soil over bedrock (Duritsa 1983). Two sites represent this classification: Raymond Prairie, and Fischel's Prairie. The following list represents species found on limestone prairies.

Amelanchier humilis
Amorpha canescens
Aquilegia canadensis
Aster azureus
Aster laevis
Aster oblongifolius
Aster pilosus
Aster sericeus
Astragalus crassicarpus
Baptisia bracteata
Bouteloua curtipendula
Brickellia eupatoriodes
Calylophus serrulatus
Carex meadii
Dalea purpurea
Delphinium virescens
Descurainia pinnata
Desmodium illinoense
Dichanthelium linearifolium
Dichanthelium oligosanthes var. scribnerianum
Echinacea pallida
Euphorbia glyptosperma
Helianthus rigidus
Heuchera richardsonii
Liatris cylindracea
Linum sulcatum
Lithospermum canescens
Lithospermum incisum
Onosmodium molle
Parthenium integrifolium
Phlox bifida
Prenanthes aspera
Pulsatilla patens
Ranunculus rhomboideus
Rhus aromatica
Scutellaria parvula
Silphium laciniatum
Sisyrinchium campestre
Solidago ptarmicoides
Solidago rigida
Stipa spartea
Trichostema brachiatum
Viola pedata
Viola pedatifida

Wetlands

Wetlands are recognized as vegetated areas that are flooded or have hydric soils. The subclasses are differentiated by different vegetation types.

Sedge meadow. This area is dominated by sedges on peat, muck or wet sand. Sites include Bunchflower Meadow and Steimel's Prairie. The following is a list of sedge meadow species.
Acalypha rhomboidea
Agalinis tenuifolia
Asclepias incarnata
Aster novae-angliae
Aster puniceus
Aster umbellatus
Carex annectens
Carex bebbii
Carex brevior
Carex hystericina
Carex interior
Carex stipata
Carex suberecta
Cicuta maculata
Desmodium paniculatum
Euthamia graminifolia
Gentiana andrewsii
Geum laciniatum
Helenium autumnale
Juncus dudleyi
Lathyrus palustris
Lilium michiganense
Melanthium virginicum
Phlox maculata
Pycnanthemum tenuifolium
Pycnanthemum virginianum
Rudbeckia subtomentosa
Salix discolor
Scirpus atrovirens
Senecio aureus
Verbena hastata

Marsh. Marshes are dominated by tall graminoid plants growing in areas "which have water near or above the surface for most of the year" (White 1978, p. 340). Sites which include marsh communities are Ackerson's Marsh, Goose Lake, Bailey's Lake, Martinson's Pond, Dargon's Marsh, and the Cedar Hills Sand Prairie marsh. A list of characteristic species follows.
Alisma plantago-aquatica var. parviflorum
Asclepias incarnata
Athyrium filix-femina
Bidens cernua
Bidens coronata
Calamagrostis canadensis
Caltha palustris
Cardamine bulbosa
Carex lanuginosa
Carex stricta
Cyperus strigosus
Epilobium coloratum
Erigeron philadelphicus
Eupatorium maculatum
Eupatorium perfolium
Glyceria grandis
Iris shrevei
Juncus dudleyi
Lycopus americanus
Lysimachia ciliata
Lysimachia hybrida
Onoclea sensibilis
Penthorum sedoides
Phalaris arundinacea
Phlox maculata
Polygonum pensylvanicum
Polygonum punctatum
Polygonum sagittatum
Ribes americanum
Rorippa palustris ssp. fernaldiana
Sagittaria latifolia
Salix discolor
Scirpus atrovirens
Scutellaria lateriflora
Sium suave
Spartina pectinata
Stachys palustris
Stachys tenuifolia
Teucrium canadense
Thelypteris palustris var. pubescens
Typha latifolia
Verbena hastata
Pond

A pond is a permanent, or semi-permanent, small, still body of water. In White (1978) "lakes and ponds are separated from wetlands by the general lack of emergent woody or graminoid vegetation" (p. 347). Characteristic vegetation includes plants which root in the substrate or ones which float on the surface. They may have floating or submerged leaves. Pond communities in Black Hawk County include Bailey's Lake, Goose Lake, and Martinson's pond. The following is a list of pond species.

- **Brassenia schreberi**
- **Ceratophyllum demersum**
- **Elodea nuttallii**
- **Lemna minor**
- **Lemna trisulca**
- **Ludwigia polycarpa**
- **Nelumbo lutea**
- **Nuphar luteum**
- **Nymphaea tuberosa**
- **Polygonum pensylvanicum**

- **Pontederia cordata**
- **Potamogeton foliosus**
- **Potamogeton natans**
- **Potamogeton nodosus**
- **Rorippa palustris ssp. fernaldiana**
- **Sagittaria latifolia**
- **Spirodela polyrhiza**
- **Urticularia vulgaris**

Cultural

This class represents communities created by human disturbance. It includes crop land, pasture land, successional fields, tree plantations, and developed land. Every area in the county has been disturbed to some
degree or is surrounded by cultural land. The following is a list of cultural species.

- Abutilon theophrasti
- Achillea millifolium
- Agropyron repens
- Agrostis gigantea
- Amaranthus retroflexus
- Ambrosia trifida
- Apocynum sibiricum
- Arctium minus
- Asclepias syriaca
- Asparagus officinalis
- Barbarea vulgaris
- Bromus inermis
- Cannabis sativa
- Capsella bursa-pastoria
- Cenchrus longispinus
- Cerastium vulgatum
- Chenopodium album
- Cirsium arvense
- Clematis virginiana
- Convolvulus arvensis
- Conyza canadensis
- Dactylis glomerata
- Daucus carota
- Digitaria ischaemum
- Echinochloa crus-galli
- Erigeron annuus
- Eragrostis pectinacea
- Hemerocallis fulva
- Hordeum jubatum
- Lactuca canadensis
- Leonurus cardiaca
- Matricaria matricariodes
- Melilotus alba
- Mollugo verticillata
- Morus alba
- Nepeta cataria
- Oxalis stricta
- Panicum capillare
- Pastinaca sativa
- Phleum pratense
- Plantago rugelii
- Poa pratensis
- Portulaca oleracea
- Potentilla norvegica
- Prunella vulgaris
- Prunus americana
<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosa multiflora</td>
<td><em>Rosa multiflora</em></td>
</tr>
<tr>
<td>Rumex acetosella</td>
<td><em>Rumex acetosella</em></td>
</tr>
<tr>
<td>Setaria viridis</td>
<td><em>Setaria viridis</em></td>
</tr>
<tr>
<td>Silene alba</td>
<td><em>Silene alba</em></td>
</tr>
<tr>
<td>Solanum americanum</td>
<td><em>Solanum americanum</em></td>
</tr>
<tr>
<td>Solidago canadensis</td>
<td><em>Solidago canadensis</em></td>
</tr>
<tr>
<td>Taraxacum officinale</td>
<td><em>Taraxacum officinale</em></td>
</tr>
<tr>
<td>Thlaspi arvense</td>
<td><em>Thlaspi arvense</em></td>
</tr>
<tr>
<td>Trifolium pratense</td>
<td><em>Trifolium pratense</em></td>
</tr>
<tr>
<td>Ulmus pumila</td>
<td><em>Ulmus pumila</em></td>
</tr>
<tr>
<td>Verbascum thapsus</td>
<td><em>Verbascum thapsus</em></td>
</tr>
<tr>
<td>Viola papilionacea</td>
<td><em>Viola papilionacea</em></td>
</tr>
</tbody>
</table>
CHAPTER 4

CONCLUSION

The vascular flora of Black Hawk County, Iowa was surveyed during 1981-1983. A total of 826 species, representing 98 families and 399 genera (Table 7) were found through field and herbarium studies. An annotated plant list of native and naturalized plant species known to grow or to have grown independent of cultivation is given in Appendix A. The families with the largest number of species are the Asteraceae and the Poaceae. Aster is the largest genus (Table 8). Fourteen endangered plant species and four threatened plant species (Roosa et al. 1986) can be found in Black Hawk County. These species are listed in Table 5.

The flora of Black Hawk County, Iowa is, for the most part, typical of the flora of Iowa as a whole. However, the sandy areas of the county have provided some interesting habitats for some plant species not commonly found throughout the state. Sandy areas have been formed by either the wind or by water.

Shimek (1917) compiled a list of the sand flora of Iowa and stated that the Cedar River provides the finest examples of sandy areas comprised of fluvial sands. The Black Hawk County Conservation Board (Duritsa 1983) mapped the locations of eolian (windblown) sands in the county. Duritsa noted that eolian sand deposits are superimposed over other landscapes and are generally found parallel to the Cedar River on the east. Duritsa suggested that "a proposed source of the
Table 7. Statistical summary of the vascular flora of Black Hawk County, Iowa.

<table>
<thead>
<tr>
<th>HIGHER TAXA</th>
<th>FAMILIES</th>
<th>GENERA</th>
<th>NATIVE</th>
<th>NATURALIZED</th>
</tr>
</thead>
<tbody>
<tr>
<td>EQUISETOPHYTA</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>LYCOPODIOPHYTA</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>POLYPODIOPHYTA</td>
<td>4</td>
<td>8</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>PINOPHYTA</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>MAGNOLIOPHYTA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAGNOLIOPSIDA</td>
<td>75</td>
<td>296</td>
<td>505</td>
<td>95</td>
</tr>
<tr>
<td>LILIOPSIDA</td>
<td>16</td>
<td>92</td>
<td>191</td>
<td>19*</td>
</tr>
<tr>
<td></td>
<td>98*</td>
<td>399*</td>
<td>712*</td>
<td>114*</td>
</tr>
</tbody>
</table>

* Totals

eolian debris is the ancient Cedar River floodplain during periglacial times. This wind blown material is generally identified as dunes consisting of fine particles of sand on a northwest to southeast axis (p. 195). Eolian sands are also found in Washington-Union Township, west of the Cedar River and are probably from the West Fork of the Cedar River. In Lester Township, eolian sands are transected by the Wapsipinicon River. A few characteristic species found in sand habitats in Black Hawk County are:

- *Bulbostylis capillaris*
- *Astragalus crassicarpus*
- *Dalea villosus*
- *Euphorbia dentata*
- *Froelichia floridana*
- *Euphorbia glyptosperma*
- *Spiranthes cernua*
Table 8. Statistical summary of the families and genera containing the largest number of species found in Black Hawk County, Iowa.

<table>
<thead>
<tr>
<th>FAMILY</th>
<th>NUMBER OF SPECIES</th>
<th>GENERA</th>
<th>NUMBER OF SPECIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asteraceae</td>
<td>105</td>
<td>Carex</td>
<td>39</td>
</tr>
<tr>
<td>Poaceae</td>
<td>84</td>
<td>Aster</td>
<td>18</td>
</tr>
<tr>
<td>Cyperaceae</td>
<td>63</td>
<td>Polygonum</td>
<td>14</td>
</tr>
<tr>
<td>Fabaceae</td>
<td>46</td>
<td>Viola</td>
<td>10</td>
</tr>
<tr>
<td>Rosaceae</td>
<td>38</td>
<td>Salix</td>
<td>10</td>
</tr>
<tr>
<td>Brassicaceae</td>
<td>29</td>
<td>Solidago</td>
<td>9</td>
</tr>
<tr>
<td>Ranunculaceae</td>
<td>24</td>
<td>Euphorbia</td>
<td>9</td>
</tr>
<tr>
<td>Scrophulariaceae</td>
<td>22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lamiaceae</td>
<td>22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polygonaceae</td>
<td>22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liliaceae</td>
<td>21</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The relationships between the vegetation and the soils were examined as a means to estimate pre-settlement vegetation. In a general segregation of forest, prairie and marsh, native vegetation was calculated as 8.3% forest, 91% prairie, and less than 0.1% marsh. This estimation of forest land was less than Thompson and Hertel (1981) figures of 13.5%, which had been obtained from early surveyor's notes from the 1820's. The percentage of forest land was probably less than 8.3% with savannahs (grasses growing under trees) occupying some of the land. Duritsa (1983) discussed the difficulty in determining if some
soils "may have supported stable savanna communities, or they may be representative of a successional stage in the transition of prairie to forest" (p. 24).

For this survey, the vegetation of Black Hawk County was categorized within six major divisions: forest, savannah, prairie, wetlands, pond, and cultural. Under forest the subdivisions of floodplain forest, upland forest and sand forest were recognized. Prairie subdivisions included prairie, sand prairie, and limestone prairie. Sedge meadow and marsh were subdivisions of the wetland category. Sights which represented each of these divisions and subdivisions were visited, collections were made, and lists of characteristic species were compiled.

**Recommendations for Further Study**

A list has been compiled of rare species which have no herbarium vouchers for Black Hawk County since 1970 (Appendix C). Further field surveys of natural areas may relocate these species and provide information on their frequency in the county. Some natural areas, such as Dorothy's Prairie and the eastern portion of the Goose Lake area, were discovered in the last season of this survey and could be more extensively surveyed. Further studies in the county may locate previously undiscovered high-quality natural areas which may add some species to the county flora. Sandy areas could be studied extensively and a sand flora compiled for the county.
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APPENDIX A

ANNOTATED CATALOG

Explanation of Annotated Catalog

The annotated catalog of the vascular plants of Black Hawk County has been compiled from data collected from over 2,250 herbarium specimens and over 1,500 specimens collected in the field. The catalog is alphabetized by family, genus and species names. The Pteridophyte divisions follow Crabbe et al. (1975). The angiosperms are divided into classes according to Cronquist (1968).

Information provided for each species includes the following: 1) scientific binomial, 2) synonyms, 3) a common name, 4) frequency of occurrence, 5) habitat, 6) specimens examined, and 7) remarks.

Scientific Binomial

Nomenclature of species follows the Computerized Annotated Checklist of the Vascular Plants of Iowa prepared by Eilers and Roosa [1987]. Non-indigenous species are preceded by an asterisk (*).

Synonyms

Synonyms listed in the annotated catalog are those noted by Eilers and Roosa [1987].

Common Name

Common names cited by Eilers and Roosa [1987], or by Gleason and Cronquist (1963) are given for convenience. Names are listed which may be commonly used in Black Hawk County, Iowa.
Frequency of Occurrence

The relative frequency of occurrence of a species in the county is a subjective determination based on personal observation, collection of species in the field, and upon examination of previously collected herbarium specimens. The following arbitrary scale of relative frequency is used:

1-2 occurrences = rare
3-6 occurrences = infrequent
7-12 occurrences = frequent
13 or more occurrences = common

Habitat

Short phrases are given to provide a general description of areas in which a species can be found (dry, sandy soil, roadsides). These descriptions are based on personal observations, information on herbarium labels, and descriptions given in Eilers and Roosa [1987].

Specimens Examined

Entries for specimens examined in Iowa herbaria include collection location, collection year, the surname of the collector, the collector's specimen number (if given), and the herbarium of deposition. The Iowa herbaria are coded as follows: ISC--Iowa State University, ISTC--University of Northern Iowa, and IA--University of Iowa (Lanjouw and Stafleu 1959).

Many older collections, especially those of Burk (1931) did not cite collection locations. The abbreviation NLC, for No Location Cited, has been used for these collections. Similarly, NDC, for No Date Cited, has been used when no collection date was given for a specimen. Eilers
noted that most of Burk's collections were made north of the Cedar River.

Some location names written on herbarium labels can not be determined to exact section-township-range locations. These locations are listed in Table 9 with approximate section-township-range locations.

Table 9. Approximate locations of sites listed by a title on herbarium specimens.

<table>
<thead>
<tr>
<th>LOCATION TITLE</th>
<th>SEC-T-R</th>
<th>HABITAT DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beaver Creek</td>
<td>S 30 90-14</td>
<td>floodplain forest</td>
</tr>
<tr>
<td></td>
<td>S 29 90-14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SW 28 90-14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NE 33 90-14</td>
<td></td>
</tr>
<tr>
<td>Casebeer Heights</td>
<td>S S 5 88-12</td>
<td>floodplain forest</td>
</tr>
<tr>
<td></td>
<td>N N 8 88-12</td>
<td></td>
</tr>
<tr>
<td>Cedar Heights</td>
<td>18 89-13</td>
<td>upland forest</td>
</tr>
<tr>
<td></td>
<td>W 17 89-13</td>
<td></td>
</tr>
<tr>
<td>ISTC Golf Course</td>
<td>NE 24 89-14</td>
<td>prairie, RR right of way</td>
</tr>
<tr>
<td>Josh Higgins Park</td>
<td>E 7 89-13</td>
<td>George Wyth State Park;</td>
</tr>
<tr>
<td></td>
<td>S 8 89-13</td>
<td>floodplain forest</td>
</tr>
<tr>
<td></td>
<td>N 18 89-13</td>
<td></td>
</tr>
<tr>
<td>Leland Pasture</td>
<td>19 89-11 or</td>
<td>prairie</td>
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<tr>
<td></td>
<td>20 89-11</td>
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<tr>
<td>Lookout Park</td>
<td>N N 18 89-13</td>
<td>upland forest</td>
</tr>
<tr>
<td>Snag Creek (Woods)</td>
<td>N 2 89-14</td>
<td>floodplain forest</td>
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<tr>
<td></td>
<td>SW 1 89-14</td>
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<tr>
<td>Washington-Union Township Bridge</td>
<td>NE 16 90-14</td>
<td>floodplain forest</td>
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<tr>
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<td>NW 15 90-14</td>
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Personal collections have been listed by study sites (Tables 2, 3, and 4) or by the section-township-range system. The location is followed by a ten digit collection number (Table 10).

Remarks

Remarks may include information on the occurrence of species in the state, infraspecific information, or information on species observed but without herbarium vouchers.

Table 10. Interpretation of collection numbers.

<table>
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<th>POSITION OF NUMBERS</th>
<th>MEANING</th>
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<td>First four</td>
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<tr>
<td>Second two</td>
<td>Month of collection</td>
<td>06, June</td>
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<td>Third two</td>
<td>Day of collection</td>
<td>18, 18th</td>
</tr>
<tr>
<td>Last two</td>
<td>Field collection number</td>
<td>42</td>
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</table>
DIVISION EQUISETOPHYTA

EQUISETACEAE (Horsetail Family)

**Equisetum arvense** L. Common horsetail. Common; disturbed, moist, open areas.


**Equisetum x ferrissii** Clute [E. hyemale x E. laevigatum] Ferriss' hybrid scouring rush. Rare; moist prairies and roadsides.

George Wyth State Park, 1947, Schmidt 4, ISTC.

**Equisetum fluviatile** L. Swamp horsetail. Rare; marshes.

SE NE 23 90-12, 1981, Lammers 4316, ISC, ISTC.

**Equisetum hyemale** L. var. affine (Engelm.) A. A. Eaton Scouring rush. Frequent; lowland woods.


DIVISION LYCOPODIOPHYTA

SELAGINELLACEAE (Spikemoss Family)

*Selaginella rupestris* (L.) Spring Spikemoss. Rare; exposed limestone ridges, open rocky outcrops.

Casebeer Heights, 1937, Grant 8010, ISTC.

DIVISION POLYPODIOPHYTA

ADIANTACEAE (Maidenhair Fern Family)

*Adiantum pedatum* L. Northern maidenhair fern. Rare; moist woods.

Cedar Falls, 1884, Buckingham, ISTC. Hartman Reserve Nature Center, 1956, Cooper 26, ISTC.

APLENIACEAE (Common Fern Family)

*Athyrium filix-femina* (L.) Roth [*A. angustum* (Willd.) Presl] Northern lady-fern. Frequent; moist woods, marsh margins.


*Cystopteris protrusa* (Weath.) Blasdell [*C. fragilis* (L.) Bernh. var. protrusa Weath.] Creeping fragile fern. Rare; wooded slopes.

Cedar Heights, 1938, Grant 8195, ISTC.

*Dryopteris cristata* (L.) Gray Crested fern. Rare; marshes.


Also found at Newgard's Pasture.
**Onoclea sensibilis** L. Sensitive fern. Common; marshes, moist sandy areas.


Sighted at Newgard's Pasture and Dorothy's Prairie.

**Thelypteris palustris** Schott var. pubescens (Lawson) Fern.


Also sighted at Goose Lake.

**OPHIOGLOSSACEAE** (Adder's-tongue Fern Family)

**Botrychium dissectum** Sprengel f. obliquum (Muhl.) Fern. [B. dissectum Sprengel var. obliquum (Muhl.) Clute] Oblique grape fern. Rare; upland oak-hickory forest, acid soils, sandy shores, edge of swale.


**Botrychium virginianum** (L.) Sw. Rattlesnake fern. Infrequent; moist wooded slopes and uplands.


**OSMUNDACEAE** (Flowering Fern Family)

**Osmunda claytoniana** L. Interrupted fern. Infrequent; mesic upland forest.

Brustkern's Woods, 1980, Lammers 3890, ISTC.
DIVISION PINOPHYTA

CUPRESSACEAE (Cypress Family)

Juniperus virginiana L. Red cedar. Common; dry open woods, pastures.

DIVISION MAGNOLIOPHYTA
CLASS MAGNOLIOPSIDA
ACERACEAE (Maple Family)

Acer negundo L.  Box elder.  Common; alluvial woods, moist disturbed habitats.

2 89-14, 1970, Crum 013, 024, ISTC.

Acer nigrum Michx.  f.  Black maple.  Rare; alluvial woods.

NLC, 1929, Burk 688, ISTC.  Black Hawk County Park, W NE NE 34 90-14, 1980, Lammers 3591, ISTC.

This species was also observed in the lowland woods of Hartman Reserve Nature Center.

Acer saccharinum L.  Silver maple.  Common; alluvial woods.

Fall's Access, 1985092601, 1985092602.  Black Hawk County Park, 34 90-14, 1985092603.

Acer saccharum Marsh.  Sugar maple.  Common; moist woods, wooded slopes

Cedar Falls, 1901, Lambert, IA.  Black Hawk County Park, 34 90-14, 1963, Eilers 4260, IA.

AIZOACEAE (Carpetweed Family)

* Mollugo verticillata L.  Carpetweed.  Frequent; dry open sand, waste areas and roadsides.

Waterloo, 1899, Newton, ISTC.  NLC, 1929, Burk 824, ISCT.  Cedar Falls, 1929, Burk, ISTC.  NLC, 1949, Classick, ISTC.  Martinson's Dunes, 1983080912.
AMARANTHACEAE (Amaranth Family)

*Amaranthus albus* L. Pigweed. Frequent; disturbed areas.

Waterloo, 1899, Newton, ISTC. George Wyth State Park, 1963, Eilers 4299, IA.

*Amaranthus arenicola* I. M. Johnston [A. *torreyi* (Gray) Bentham, misappl.] Pigweed. Rare; dry often sandy areas.

Cedar River, NDC, Cooper 23, ISTC. NLC, 1929, Burk 581, ISTC. 6 90-12, 1960, Barnett, ISTC.

* Amaranthus graecizans* L. [A. *blitoides* S. Watson] Pigweed. Infrequent; disturbed areas, sandy roadside ditches.

NLC, 1929, Burk 539, 950, ISTC. 27 88-14, 1963, Eilers 4372, IA. 3 88-14, 1963, Eilers 4385, IA.

* Amaranthus retroflexus* L. Pigweed. Frequent; roadside ditches, disturbed areas.


*Amaranthus rudis* Sauert [A. *tamariscinus* Nutt.] Pigweed. Rare; roadside ditches, low moist areas.

Goose Lake, 1937, Grant 8106, ISTC. 6 90-12, 1960, Barnett, ISTC.

*Amaranthus tuberculatus* (Moq.) Sauer [Acnida altissima (Riddell) Moq.] Water hemp. Rare; wet grounds.

NLC, 1929, Burk 892, ISTC. 6 90-12, 1960, Barnett, ISTC.
**Froelichia floridana** (Nutt.) Moq. (check var.) Cottonweed. Frequent; open sandy soil.


**ANACARDIACEAE** (Cashew Family)

**Rhus aromatica** Aiton {incl. var. *serotina* (Greene) Rehder; var. *illinoensis* (Greene) Rehder; var. *arenaria* (Greene) Fern.} [R.*trilobata* Nutt. var *arenaria* (Greene) Barkley] Fragrant sumac. Infrequent; sandy areas.

Fischels' Prairie, 1980, Lammers 3690, ISTC. Fischels' Prairie, 1982051414. Cedar Township RR Prairie, 1982060723, 1982072450.


Cedar Falls, 1919, Ries, ISTC. Island Park, 1938, Grant 8160, ISTC. S 33 90-14, 1970, Crum 026, ISTC.

**APIACEAE** (Parsley Family)

* **Carum carvi** L. Caraway. Rare; roadsides, waste places.

NLC, 1929, Burk 312, ISTC.
Chaerophyllum procumbens (L.) Crantz Chervil. Rare; alluvial woods.

Black Hawk County Park, W W 34 90-14, 1982051502.

Cicuta maculata L. Water henlook. Rare; marshes, prairie swales, sedge meadows.


Cryptotaenia canadensis (L.) DC. Honewort. Common; moist woods.


*Daucus carota* L. Queen Anne's lace. Common; roadsides, disturbed areas.

NLC, 1929, Burk 603, ISTC. Highway 175 RR Prairie, 1982072475. George Wyth State Park, 1983081010.

Eryngium yuccifolium Michx. Rattlesnake master. Frequent; moist, mesic prairie remnants.


Heracleum lanatum Michx. [H. maximum Bartram] [H. spondylium L. ssp. montanum (Schl.) Briq.] Cow parsnip. Infrequent; alluvial woods, woodland edges.

NLC, 1929, Burk 799, ISTC. Hartman Reserve Nature Center, 1963, Eilers 4391, IA.

Osmorhiza claytonii (Michx.) C. B. Clarke Sweet cicely. Frequent; upland woods.

NLC, 1929, Burk 245, ISTC.

Sighted at Cooper's Woods.
Osmorhiza longistylis (Torrey) DC. {incl. var. villicaulis Fern.; var. brachycoma Blake} Anise root. Common; moist woods.


Oxypolis rigidior (L.) C. & R. Cowbane. Rare; moist prairie remnants.


Pastinaca sativa L. Wild parsnip. Common; roadsides, along railroads.

NLC, 1929, Burk 308, ISTC.

Sighted at Bunchflower Meadow.

Polytaenia nuttallii DC. Prairie parsley. Rare; prairies.

NLC, 1929, Burk 347, ISTC.

Sanicula canadensis L. Black snakeroot. Frequent; moist woods.

George Wyth State Park, 1963, Eilers 4341, IA.


Sanicula marilandica L. Black snakeroot. Rare; open woods.

NLC, 1929, Burk 348, ISTC.
Sium suave Walter  Water parsnip.  Frequent; marshes.

Waterloo, 1894, Newton, ISTC.  NLC, 1929, Burk 659, ISTC.

Also found at Dorothy's Prairie.

Thaspium barbinode (Michx.) Nutt.  Meadow parsnip.  Infrequent; moist prairies, open woods.

Cooper's Woods, 1983052605.

Thaspium trifoliatum (L.) Gray  name.  Rare; moist prairies, open wooded slopes.

NW 6 90-12, 1960, Barnett, ISTC.  Hartman Reserve Nature Center, 1974, Van Ersvelde, ISTC.

Zizia aptera (Gray) Fern.  Heart-leaved meadow parsnip.  Rare; upland prairie remnants.


Zizia aurea (L.) W. Koch  Golden alexanders.  Common; prairie remnants, alluvial woods.


Sighted at Fall's Access.

APOCYNACEAE  (Dogbane Family)

Apocynum androsaemifolium L.  Spreading dogbane.  Rare; woodland borders.

NLC, 1929, Burk 791, ISTC.
Apocynum cannabinum L. {incl. var. pubescens (Mitchell) A. DC.}
Indian hemp. Frequent; disturbed areas, along railroads.

North of Washburn, 1921, Shimek, IA. NLC, 1929, Burk 717, ISTC.
S SW SW 12 89-12, 1982060406. Highway 175 RR Prairie,
1983070322.

Apocynum sibiricum Jacq. {incl. var. cordigerum (Greene) Fern.} [A.
cannabinum L. var hypericifolium Gray] Dogbane. Infrequent;
marsh edges, sandy flats, disturbed areas.

NLC, 1929, Burk 754, ISTC. North of Cedar Falls, 1932, Shimek,
IA. Cedar Hills Sand Prairie, 1970, Crum 186, ISTC. Cedar
Township RR Prairie, 1982062906. Bunchflower Meadow,
1982063004. Dorothy's Prairie, 1983070120.

ARALIACEAE (Ginseng Family)

Aralia racemosa L. Spikenard. Rare; moist woods.

NLC, 1929, Burk 505, ISTC.

Panax quinquefolius L. Ginseng. Infrequent; moist woods.

Cedar Heights, 1953, Grant 12064, ISTC. Hartman's Reserve
Nature Center, 1963, Eilers 4398, IA.

ARISTOLOCHIACEAE (Birthwort Family)

Asarum canadense L. {incl. var. acuminatum Ashe; var. reflexum
(Bickn.) B. L. Robinson} Wild ginger. Common; moist wooded
slopes.

Cedar Falls, 1919, Hilton, ISTC. Cedar Falls, 1920, Ries, ISTC.
NLC, 1929, Burk 229, 232, ISTC. Hartman Reserve Nature Center,
1941, McIlrath 25, ISTC.
ASCLEPIADACEAE (Milkweed Family)

Asclepias amplexicaulis Smith  Sand milkweed. Rare; dry, open sandy soil.


Asclepias hirtella (Pennell) Woodson  Tall green milkweed. Rare; dry, sandy prairie remnants.


Asclepias incarnata L.  Swamp milkweed. Common; marsh edges, prairie swales.


Asclepias sullivantii Engelm. ex Gray  Prairie milkweed. Infrequent; roadside ditches.

NLC, 1929, Burk 818, ISTC. SW SW SW 32 89-14, 1983062902. NW NW 21 90-11, 1983070402.

Asclepias syriaca L.  Common milkweed. Common; disturbed, open prairie.


Also seen at Dorothy's Prairie.
Asclepias verticillata L. Whorled milkweed. Common; open dry soil.


Asclepias viridiflora Raf. Green milkweed. Rare; dry open sandy prairies.


ASTERACEAE (Aster Family) (Composite Family)

Achillea millefolium L. ssp. lanulosa (Nutt.) Piper [A. lanulosa Nutt.] Western yarrow. Common; disturbed ground, prairie remnants, dry open sandy areas.


Ambrosia artemisiifolia L. {incl. var. elatior (L.) Descourt.} Common ragweed. Common; dry disturbed open ground.

Ambrosia psilostachya DC. {incl. var. coronopifolia (T. & G.) Farw.}
Western ragweed. Rare; roadsides, dry sandy prairies.


Ambrosia trifida L. Giant ragweed. Common; disturbed soil.

Antennaria neglecta Greene Pussytoes. Frequent; dry prairies.

Antennaria plantaginifolia (L.) Richardson Ladies'-tobacco. Rare; prairies, dry open woods.
Cedar Falls, 1920, Ries, ISTC. North of Cedar Falls, 1932, Shimek, IA.

* Anthemis cotula L. Dog fennel. Infrequent; disturbed areas.

NLC, 1912, NCC, ISTC. NLC, 1929, Burk 719, ISTC.

Artemisia campestris L. ssp caudata (Michx.) Hall & Clem. [A. caudata Michx.] Beach wormwood. Infrequent; moist disturbed soil.
Myszka Prairie, 1980, Lammers 3806, ISTC.
Artemisia dracunculus L. [A. dracuncyloides Pursh] [A. glauca Pallas] False tarragon. Rare; sandy plains and dry soils.


Artemisia ludoviciana Nutt. {incl. var. gnaphalodes (Nutt.) T. & G.} [A. gnaphalodes Nutt.] White sage. Common; prairie remnants, sandy soil.


Artemisia serrata Nutt. Sage. Rare; wet prairies.

Waterloo, 1893, Newton, ISTC. NLC, 1928, Burk 844, ISTC. Frost Prairie, 1981, Lammers 4370, ISTC, ISC.

Aster azureus Lindley Sky-blue aster. Infrequent; dry open woods, dry prairies, roadsides.


Aster cordifolius L. Blue wood aster. Infrequent; dry upland woods.

Hartman Reserve Nature Center, 1956, Cooper 27, ISTC.

Aster drummondii Lindley [A. sagittifolius Wedem. var. drummondii (Lindley) Shinners] Drummond's aster. Rare; moist woods.

Hartman Reserve Nature Center, 1982090705, 1982090709. Dorothy's Prairie, 1983100715.
**Aster ericoides** L. Heath aster or frost weed. Common; prairie remnants, roadsides.


**Aster laevis** L. Smooth aster. Infrequent; roadsides, prairies, dry soil.


**Aster lanceolatus** Willd. ssp. interior (Wieg.) A. G. Jones [A. interior Wiegand] Rare; low prairies.

NLC, 1912, NCC, ISTC. 6-90-12, 1960, Barnett, ISTC.

**Aster lanceolatus** Willd. ssp. simplex (Willd.) A. G. Jones [A. simplex Willd.] Panicled aster. Rare; low prairies.

NLC, 1929, Burk 915, ISTC.

**Aster novae-angliae** L. New England aster. Common; prairie swales, along railroads, moist habitats.


**Aster oblongifolius** Nutt. Aromatic aster. Infrequent; dry sandy, rocky prairies.

Aster ontarionis Wiegand  Ontario aster. Infrequent; low, moist woods.

NLC, 1929, Burk 933, ISTC.

Aster parviceps (Burgess) Mack. & Bush  [A. pilosus Willd. ssp. parviceps (Burgess) A. G. Jones] Rare; prairie remnants, dry sandy soil, roadsides.

NLC, 1929, Burk 947, ISTC.

Aster pilosus Willd.  Hairy aster. Rare; upland prairie.


Aster praealtus Poiret  Willow aster. Rare; moist open soil.

Waterloo, 1893, Newton, ISTC. NLC, 1912, NCC, ISTC. NLC, 1929, Burk 972, ISTC. Highway 175 RR Prairie, 1983100418.

Also located at Dorothy's Prairie.

Aster puniceus L.  [incl. var. lucidulus Gray]  [A. lucidulus (Gray) Wiegand] Swamp aster. Infrequent; moist prairies.


The two personal collections are variety lucidulus.

Aster sagittifolius Willd.  [A. x sagittifolius Willd.] Arrow-leaved aster. Rare; dry upland woods.

NLC, 1929, Burk 946, ISTC. Brustkern's Woods, 1982091003.

Aster sericeus Vent  Silky aster. Infrequent; dry sandy, rocky prairies.

Aster umbellatus Miller  White aster. Infrequent; marshes, moist prairies, swales.


Aster X amethystinus Nutt.  [A. ericoides X A. novae-angliae] Rare.

NLC, 1912, NCC, ISTC.

Bidens cernua L.  Nodding bur marigold. Frequent; lake margins, marshes.


Bidens coronata (L.) Britton  [B. trichosperma (Michx.) Fern.]  Tickseed sunflower. Frequent; marshes, prairie swales.


Bidens frondosa L.  Beggar-ticks. Rare; marshes, moist prairies.

Waterloo, 1893, Newton, ISTC. 6 90-12, 1960, Barnett, ISTC. Steimel's Prairie, 1980, Lammers 3998, ISTC.

Bidens tripartita L.  [B. comosa (Gray) Wieg.] Rare; moist soil.

NLC, 1949, Walder, ISTC.

Bidens vulgata Greene  Tall beggar-ticks. Rare; moist soil, lake shores.

NLC, 1929, Burk 893, ISTC.
**Boltonia asteroides** (L.) L'her. {incl. var. recognita (Fern. & Grisc.) Cronq.; var. latisquama (Gray) Cronq.} False aster. Rare; marshes.

NLC, 1929, Burk 881, ISTC. Ackerson's Marsh, 1982080748.

The Ackerson's Marsh collection is variety recognita.

**Brickellia eupatoriodes** (L.) Shinners {incl. var. corymbulosa (T. & G.) Shinners} [Kuhnia eupatoriodes L. {incl. var. corymbulosa T. & G.}] False boneset. Frequent; dry prairies, roadsides, railroad ballasts.


**Cacalia plantaginea** (Raf.) Shinners [C. tuberosa Nutt.] [Arnoglossum plantagineum Raf.] Prairie Indian plantain. Rare; prairie remnants.

NLC, 1929, Burk 644, ISTC. Dorothy's Prairie, 1983070121.

* **Cichorium intybus** L. Chicory. Infrequent; roadsides.

Highway 175 RR Prairie, 1983070315.

* **Cirsium arvense** (L.) Scop. Canada thistle. Frequent; cultivated fields, pastures, roadsides, waste places.


**Cirsium discolor** (Muhl. ex Willd.) Sprengel Field thistle. Frequent; open woods, roadsides, moist prairie remnants, disturbed ground.

Cirsium hillii (Canby) Fern. [C. pumilum (Nutt.) Sprengel] Thistle. Rare; sandy prairies, roadsides.


* Cirsium vulgare (Savi) Tenore [C. lanceolatum Hill, misapl.] Bull thistle. Frequent; pastures, disturbed ground, roadsides.

Cedar Falls, 1919, Hilton, ISTC. Cedar Falls, 1926, Burk, ISTC. NLC, 1929, Burk 861, ISTC.


Coreopsis palmata Nutt. Tickseed, prairie coreopsis. Common; prairie remnants, open woods.


Crepis runcinata (James) T. & G. Hawksbeard Rare; waste ground.

Elk Run, 1921, Shimek, ISC.

Echinacea pallida Nutt. Pale coneflower. Frequent; dry prairies, roadsides.

Erechtites hieracifolia (L.) Raf. ex DC. Fireweed. Rare; marshes, prairie swales, moist ditches.
Waterloo, 1893, Newton, ISTC. Cedar Hills Sand Prairie, 1981, Pelton 111, ISTC.


Erigeron philadelphicus L. Fleebane. Frequent; moist woods and shores, moist sandy areas.


Eupatorium altissimum L. [Ageratina altissima (L.) King & H. Robins.] Tall thoroughwort. Rare; dry open woods, alluvial woods.
**Eupatorium maculatum** L. {incl. var. bruneri (Gray) Breitung} [Eupatoriadelphus maculatus (L.) King & H. Robins.] Spotted Joe-pye-weed. Frequent; open marshy places.


**Eupatorium perfoliatum** L. Boneset. Frequent; edges of marshes, prairie swales.


Also sighted at Brustkern's Woods.


**Euthamia graminifolia** (L.) Nutt. ex Cass. [E. gymnospermoides Greene] [Solidago graminifolia (L.) Salisb. {incl. var. gymnospermoides (Greene) Croat; var. major (Michx.) Fern.; var. media (Greene) Hard] Grass-leaved goldenrod. Infrequent; prairie remnants, sedge meadows.

Gnaphalium obtusifolium L. Everlasting. Rare; sandy field; disturbed prairies.

NW 19 90-14, 1970, Eilers 6582, ISTC.

Helenium autumnale L. Sneezeweed. Infrequent; marshes, moist prairies, wet ground.


Helianthus decapetalus L. Pale sunflower. Rare; upland woods, wooded slopes.


Helianthus divaricatus L. Woodland sunflower. Rare; dry open woods.

NLC, 1929, Burk 726, ISTC.

Helianthus grosseserratus Martens Saw-tooth sunflower. Frequent; sandy remnant prairies, moist ground, roadsides.


Also sighted at Dorothy's Prairie.

Helianthus maximilianii Schrader Maximilian's sunflower. Rare; prairie remnants, roadsides, disturbed soil.

Highway 175 RR Prairie, 1983081318.

Helianthus petiolaris Nutt. Petioled sunflower. Rare; sandy prairies.

NLC, 1929, Burk 682, ISTC. NW SE 90-14 19, 1983063011.
Helianthus rigidus (Cass.) Desf. [H. laetiflorus Pers.] Prairie sunflower. Infrequent; sandy or dry upland prairies.


Helianthus strumosus L. [H. trachelifolius Miller] Pale-leaved sunflower. Rare; open woods.

NLC, 1929, Burk 871, ISTC. Cedar Township RR Prairie, 1982072441.

Helianthus tuberosus L. Jerusalem artichoke. Infrequent; moist prairies.

Waterloo, 1893, Newton, ISTC. NLC, 1929, Burk 856, 887, ISTC. Cedar Township RR Prairie, 1982082803.

Also sighted at Bunchflower Meadow and Goose Lake.

Heliopsis helianthoides (L.) Sweet {incl. var. scabra (Dunal) Fern.} Ox-eye. Common; prairies, roadsides.


Krigia biflora (Walter) Blake False dandelion. Infrequent; prairie remnants.

**Lactuca canadensis** L. {incl. var. obovata Weigand; var. latifolia Kuntze} Wild lettuce. Common; roadides, along railroads, open sandy areas.


* Lactuca serriola* L. [L. scariola L.] Prickly lettuce. Rare; weed of waste ground and disturbed places.

Cedar Falls, 1920, Sherwood, ISTC. Cedar Falls, 1926, NCC, ISTC. 27 88-14, 1963, Eilers 4367, IA.

**Liatris aspera** Michx. Blazing star. Common; prairie remnants.


**Liatris cylindracea** Michx. Blazing star. Rare; dry rocky or sandy prairies.

Raymond Prairie, 1980, Lammers 3822, ISTC.

**Liatris pycnostachya** Michx. Prairie blazing star. Frequent; moist prairies, roadides, along railroads.


**Liatris squarrosa** (L.) Michx. {incl. var. hirsuta (Rydb.) Gaiser; var. glabrata (Rydb.) Gaiser} Blazing star. Rare; prairies and woodland openings.

Cedar Falls, 1919, Palmer, ISTC.
*Matricaria matricarioides* (Less.) Porter Pineapple weed. Frequent; roadsides, paths, pastures, disturbed habitats.

George Wyth State Park, 1982060739.

*Parthenium integrifolium* L. Feverfew, wild quinine. Rare; prairies.


*Prenanthes aspera* Michx. Rough white lettuce. Rare; prairies.

Waterloo, 1899, Newton, ISTC. NLC, 1929, Burk 917, ISTC. Fischels' Prairie, 1980, Lammers 3900, ISTC.

*Prenanthes racemosa* Michx. [incl. *ssp. multiflora* Cronq.] Glaucous white lettuce. Rare; prairies.


Rudbeckia laciniata L. Tall coneflower. Infrequent; alluvial woods.


Rudbeckia subtomentosa Pursh Fragrant coneflower. Frequent; moist prairies, open grasslands.


Senecio aureus L. Golden ragwort. Rare; moist prairies.


Senecio pauperculus Michx. Prairie ragwort. Rare; mesic prairies, moist prairies.


Silphium integrifolium Michx. Rosinweed. Rare; prairie remnants, open sandy soil.

NLC, 1912, NCC, ISTC. NLC, 1929, Burk 685, ISTC. Dorothy's Prairie, 1983080124.
Silphium laciniatum L. Compass plant. Infrequent; prairie remnants, roadsides, along railroads.


Silphium perfoliatum L. Cup plant. Frequent; moist alluvial woods, prairie swales, roadsides.


Also sighted at V-37 Prairie.

Solidago canadensis L. {incl. var. gilvocanescens Rydb.; var. hargeri Fern.; var. scabra (Muhl.) T. & G.} [S. altissima L.] Tall goldenrod. Common; roadsides, disturbed prairies, open woods.


Also sighted at Goose Lake and Dorothy's Prairie.

Solidago gigantea Aiton {incl. var. serotina (Aiton) Cronq.} Smooth goldenrod. Common; woodland borders, roadsides, moist open habitats.

**Solidago missouriensis** Nutt. {incl. var. fasciculata Holz.}
Missouri goldenrod. Common; upland prairie remnants.


Collection 1983080301 is variety fasciculata.


**Solidago ptarmicoides** (Nees) Boivin [Aster ptarmicoides (Nees) Boivin] Goldenrod. Rare; dry upland prairies.

Waterloo, 1893, Newton, ISTC. Raymond Prairie, 1980, Lammers 3758, ISTC.

**Solidago riddellii** Frank ex Riddell Riddell's goldenrod. Rare; marshes, moist prairies.

NLC, 1929, Burk 929, ISTC. SE 35 89-13, 1986, Zager, ISTC.

**Solidago rigida** L. {incl. var. humilis Porter} Stiff goldenrod. Frequent; prairies.


Collection 1982082808 is variety rigida. Collections 1983092109 and 1983092110 are variety humilis. Also sighted at Dorothy's Prairie and Lester Township RR Prairie.
**Solidago speciosa** Nutt. {incl. var. *jejunifolia* (Steele) Cronq.; var. *rigidiuscula* T. & G.} Showy goldenrod. Rare; prairies.

Cedar Hills Sand Prairie, 1979, Lammers 3088, ISTC.

**Solidago ulmifolia** Muhl. ex Willd. Elm-leaved goldenrod. Infrequent; open, upland woods.


*Sonchus asper* (L.) Hill Spiny-leaved sow thistle. Rare; waste places, roadsides, fields, disturbed soil.

NW NW 20 90-14, 1983080926.

*Tanacetum vulgare* L. Tansy. Rare; roadsides, pastures, waste places.

NLC, 1929, Burk 728, ISTC.


Cedar Hills Sand Prairie, 1970, Crum 052, ISTC.


*Tragopogon dubius* Scop. {incl. ssp. major (Jacq.) Voll.} [T. major Jacq.] Goat's-beard. Infrequent; roadsides, disturbed prairies.

**Vernonia fasciculata** Michx. {incl. ssp. corymbosa (Schwein. ex Keating) S. B. Jones} Ironweed. Frequent; moist prairies, roadsides, open moist habitats.


**Xanthium strumarium** Greene [X. echinatum Murray] Cocklebur. Rare; sandy prairies.

NLC, 1929, Burk 948, ISTC.

**BALSAMINACEAE** (Touch-me-not Family)

**Impatiens capensis** Meerb. [I. biflora Walter] Spotted touch-me-not. Infrequent; alluvial woods, moist wooded slopes, marsh edges.

NLC, 1929, Burk 896, ISTC. Cedar Heights, 1953, Grant 12091, 12094, ISTC. George Wyth State Park, 1963, Eilers 4344, IA.

**Impatiens pallida** Nutt. Pale touch-me-not, jewel weed. Infrequent; alluvial woods, moist wooded slopes.

Cedar Heights, 1953, Grant 12027, ISTC. Hartman Reserve Nature Center, 1963, Eilers 4421, IA.

**BERBERIDACEAE** (Barberry Family)

**Berberis thunbergii** DC. Japanese barberry. Rare; woods.

Hartman Reserve Nature Center, 1983051605.

**Caulophyllum thalictroides** (L.) Michx. Blue cohosh. Frequent; moist woods.

Podophyllum peltatum L. Mayapple. Common; open woods, woodland edges, moist upland woods.

Cedar Falls, 1885, NCC, ISTC. NLC, 1929, Burk 249, ISTC. Brustkern's Woods, 1982051436.

BETULACEAE (Birch Family)

Betula nigra L. River birch. Infrequent; alluvial woods.


Also sighted at River Birch Bottoms

Betula pumila L. var. glandulifera Regel [B. glandulosa Michx. var. glandulifera (Regel) Gl.] Swamp birch. Rare; boggy habitats, marshes.


Corylus americana Walter Hazelnut. Frequent; woodland openings, woodland borders.


Ostrya virginiana (P. Miller) K. Koch Ironwood, hop hornbeam. Frequent; upland woods, wooded slopes.


BORAGINACEAE (Borage Family)

Hackelia virginiana (L.) I. M. Johnston [Lappula virginiana (L.) Greene] Stickseed. Infrequent; open woods and alluvium.

Lappula redowskii (Hornem.) Greene [incl. var. texana (Scheele Brand.) [L. texana (Scheele) Britton] Beggar's-lice. Rare; open dry places, railroad ballasts, disturbed areas.

South of Washburn, 1932, Shimek, IA, ISTC. Fall's Access, 1965, Gilbert 8, ISTC.

Lithospermum canescens (Michx.) Lehm. Hoary puccoon. Common; prairie remnants, sandy open ground, along railroads.


Lithospermum caroliniense (Walter) Macm. [L. croceum Fern.] Hairy puccoon. Frequent; dry sandy soil.


Lithospermum incisum Lehm. Yellow puccoon. Frequent; sandy prairies, sandy alluvium.

**Mertensia virginica** (L.) Pers. ex Link. Bluebell. Infrequent; moist woods, bottomlands.

Cedar Falls, 1893, Briggs, ISTC. NLC, 1898, Page 7, ISTC.
Cedar Falls, 1920, Ries, ISTC. NLC, 1929, Burk 220, ISTC.

**Myosotis verna** Nutt. [M. virginica (L.) ESP., misappl.] Forget-me-not. Rare; open sandy alluvial woods.


**Onosmodium molle** Michx. var. **occidentale** (Mack.) I. M. Johnston [O. occidentale Mack.] False gromwell. Infrequent; lowland sandy prairies, upland prairies, roadsides.


**BRASSICACEAE** (Mustard Family)

**Arabis canadensis** L. Rock cress. Rare; moist, open woods.

NLC, 1929, Burk 525, ISTC.

**Arabis drummondii** Gray Rock cress. Rare; prairies, openings in woods.

Cedar Falls, 1885, Johnson 365, Grinnel. Beaver Creek, 1938, Grant 8122, ISTC.

**Arabis hirsuta** (L.) Scop. [incl. var. **pycnocarpa** (M. Hopk.) Roll.; var. **adpressipilis** (M. Hopk.) Roll] Rock cress. Rare;

George Wyth State Park, 1983060304.
Arabis shortii (Fern.) Gl. [A. perstellata E. L. Br. var. shortii Fern.] Rock cress. Rare; floodplain forest.

Brustkern's Woods, 1981, Lammers 4058, ISTC.

*Barbarea vulgaris* R. Br. [incl. var. arcuata (Opiz) Fries] Yellow rocket. Frequent; roadsides, waste places.


Berteroa incana (L.) DC. Hoary alyssum. Infrequent; roadsides, disturbed soil, sandy open areas.

NLC, 1929, Burk 329, ISTC. Black Hawk Park, NW 27 90-14, 1980, Lammers 3489, ISTC. Ackerson's Marsh, 1982070112, 1982080736. 5 89-14, 1983061115.

*Brassica campestris* L. [B. rapa L. ssp olifera DC.] Field mustard. Rare; fields, waste places.

Dargon's Marsh, 1982062218.

Capsella bursa-pastoris (L.) Medicus Shepherd's purse. Common; lawns, disturbed soil, along roads.

NLC, 1929, Burk 243, ISTC. Cedar Falls, 1965, Gilbert 56, ISTC. Fischels' Prairie, 1982051410. SE SW 12 90-14, 1982060103.

Cardamine bulbosa (Schreb.) BSP. Spring cress. Frequent; shallow water, marshes, seeps.


Cardamine parviflora L. var. arenicola (Britton) O. E. Schultz Small-flowered bitter cress. Rare; open sandy soil.

Ackerson's Marsh, 1983052402. Dorothy's Prairie, 1983060115.
Cardamine pensylvanica Muhl. ex Willd. Bitter cress. Rare; wet ground.

NLC, 1929, Burk 757, ISTC.


Descurainia pinnata (Walter) Britton var. brachycarpa (Richardson) Fern. Tansy mustard. Frequent; dry usually sandy habitats.


Also sighted at Lester Township RR Prairie.

Draba reptans (Lam.) Fern. {incl. var. micrantha (Nutt.) Fern.} Whitlow grass. Frequent; open sandy soil.


Also sighted at Barnes Ferry Road Cemetery.

* Erysimum cheiranthoides L. Wormseed mustard. Infrequent; pastures, roadsides, waste places.


* Hesperis matronalis L. Dame's violet. Rare; roadsides, alleys, waste ground near human habitation.

NE NW NW 13 89-14, 1982060121. SE NE 15 90-13, 1982060419.
**Iodanthus pinnatifidus** (Michx.) Steudel Purple rocket. Rare; moist sandy alluvial woods.

Waterloo, 1894, Newton, ISTC. NLC, 1929, Burk 792, ISTC. SW NE 3 87-12, 1980, Lammers 3620, ISTC. Fall's Access, 1982061905.

* Lepidium campestre (L.) R. Br. Field cress. Rare; roadsides, disturbed ground.

NLC, 1929, Burk 386, ISTC. East Waterloo Prairie, 1982052403.

* Lepidium densiflorum Schrader Peppergrass. Infrequent; roadsides, pastures, waste places, along railroads.

Beaver Creek, 1938, Grant 8126, ISTC. Union Township Bridge, 1966, Grant 14975, ISTC. Cedar Hills Sand Prairie, 1970, Crum 087, ISTC. Bunchflower Meadow, 1982060806.

Lepidium virginicum L. Poor-man's pepper. Rare; waste ground, fields, roadsides.

Cedar Falls, 1920, Thorp, ISTC. Cedar Falls, 1926, NCC, ISTC. NLC, 1929, Bruk 387, ISTC. Cedar Falls, 1965, Grant 14968, ISTC.

* Lesquerella ludoviciana (Nutt.) S. Watson Silvery bladder-pod. Rare; sandy soil.

Waterloo, 1921, Newton, ISTC.

Nasturtium officinale R. Br. Watercress. Rare; cold streams, springs, river banks.

Cedar Falls, 1894, Newton, ISTC. Beaver Creek, 1938, Grant 8123, ISTC. NLC, 1949, Walder, ISTC. NLC, 1949, Classick, ISTC. Two miles east of Cedar Falls, 1956, Cooper 24, ISTC.

* Raphanus raphanistrum L. Wild radish. Rare; in sandy dune; roadsides, old fields.

Martinson's Dunes, 1982060111.
Rorippa islandica (Oeder) Borbas. Yellow cress. Shallow water, muddy shores, marshes.

NLC, 1929, Burk 762, ISTC. Black Hawk County Park, 34 90-14, 1963, Eilers 4293, IA. 9 89-13, 1963, Eilers 4474, IA. Varieties of these specimens could not be determined.


Also sighted at Newgard's Pasture.

* Rorippa sylvestris (L.) Besser Creeping yellow cress. Rare; wet, often sandy bottomlands, pond margins.

Black Hawk County Park, 34 90-14, 1963, Eilers 4289, IA. Black Hawk County Park, 34 90-14, 1980, Lammers 3594, ISTC.

* Sinapis arvensis L. [Brassica kaber (DC.) L. C. Wheeler] Charlock. Rare; roadsides, fields, disturbed places.

NLC, 1929, Burk 320, ISTC. South of Highway 218, 1965, Gilbert 37, ISTC. ISTC Campus, 1965, Gilbert 55, ISTC.

* Sisymbrium altissimum L. Tumble mustard. Rare; fields, roadsides, waste places.

Cedar Falls, 1920, Godfrey, ISTC. NLC, 1929, Burk 333, ISTC. Cedar Township RR Prairie, 1982062909, 1983060701.

* Thlaspi arvense L. Penny cress. Frequent; roadsides, fields, disturbed ground.

**CACTACEAE (Cactus Family)**

*Opuntia humifusa* (Raf.) Raf.  [O. compressa (Salisb.) J. P. Macbr.]

Prickly pear. Rare; dry sandy soil.

Cedar Township RR Prairie, 1981, Van Norman 01, ISTC.

This plant was no longer at this site in June, 1983. It had been physically removed.

**CAMPANULACEAE (Bellflower Family)**

*Campanula americana* L. Tall bellflower. Common; moist or open alluvial woods.


*Campanula arpinoides* Pursh [C. uliginosa Rydb.] Marsh bellflower. Rare; moist prairies, swales, marshes.


*Campanula rapunculoides* L. Bell flower. Rare; roadsides, waste ground.

Cedar Falls, 1965, Gilbert 14, ISTC.

*Lobelia cardinalis* L. Cardinal flower. Rare; moist alluvial woods, moist open areas.

**Lobelia siphilitica** L. Great lobelia. Frequent; moist open places, sandy soil.


**Lobelia spicata** Lam. {incl. var. hirtella Gray; var. campanulata Mvauagh; var. leptostachya (A. DC.) Mack. & Bush.} Spiked lobelia. Common; moist prairies.


Also sighted at Cedar Township RR Prairie.

**CAPPARIDACEAE** (Caper Family)

**Polanisia dodecandra** (L.) DC. [P. graveolens Raf.] Clammy weed. Infrequent; dry, open sandy or gravelly soil.

CAPRIFOLIACEAE (Honeysuckle Family)

**Diervilla lonicera** Miller  Bush honeysuckle. Rare; woods.

Cedar Falls, 1901, Lambert, IA.

**Lonicera dioica** L. var. *glaucescens* (Rydb.) Butters  Wild honeysuckle. Rare; open wooded slopes.

Cedar Falls, 1897, Newton, IA, ISTC. 2 89-14, 1970, Crum 007, ISTC. Cooper's Woods, 1983052606, 1983052607

* **Lonicera tatarica** L.  Cultivated honeysuckle. Infrequent; dry woods, sandy uplands and savannahs.


**Sambucus canadensis** L.  Elderberry, common elder. Common; edges of moist woods, shorelines, fence rows.


**Symphoricarpos occidentalis** Hooker  Wolfberry, buck brush. Rare; dry prairies.

Cedar Falls, 1896, Conner, ISC. Highway 175 RR Prairie, 1982072481, 1983070309.

**Symphoricarpos orbiculatus** Moench  Corallberry, buck brush. Rare; dry sandy prairies.

George Wyth State Park, 1963, Eilers 4320, IA.

**Triosteum perfoliatum** L.  Horse gentian, feverwort. Infrequent; upland woods, woodland openings.

**Viburnum lentago** L. Nannyberry. Rare; upland woods, moist uplands.


**Viburnum rafinesquianum** Schultes {incl. var. affine (Bush) House} Downy arrowwood. Rare; upland woods.

Cedar Falls, 1897, Newton, ISTC. Hartman Reserve Nature Center, 1982090712.

**CARYOPHYLLACEAE** (Pink Family)

**Cerastium brachypodum** (Engelm. ex Gray) B. L. Robinson [C. nutans Raf. var. brachypodum Engelm. ex Gray] Mouse-ear chickweed. Rare; prairie.

Casebeer Heights, 1937, Grant 8011, ISTC.

* **Cerastium vulgatum** L. [C. fontanum Baumg.] Common mouse-ear chickweed. Frequent; open, moist disturbed habitats.


* **Dianthus armeria** L. Deptford pink. Infrequent; disturbed prairies, waste areas.


**Moehringia lateriflora** (L.) Fenzl [Arenaria lateriflora L.] Sandwort. Frequent; moist upland woods, open areas.


* **Saponaria officinalis** L. Bouncing bet, soapwort. Infrequent; roadsides, waste places.

La Porte City, 1921, Shimek, ISC. NLC, 1929, Burk 634, ISTC. SW SE SW 10 87-12, 1982072452. N NW 3 90-13, 1983080307.
**Silene alba** (P. Miller) Krause [Lychnis alba P. Miller] [S. pratensis (Rafn) Gren. & Godr.] White campion. Frequent; disturbed open places, prairies.


**Silene antirrhina** L. Sleepy catchfly. Infrequent; sandy soil, waste ground.


**Silene cserei** Baumg. Catchfly. Rare; along railroads.

SW 22 90-11, 1981, Lammers 4310, ISTC, ISC.

**Silene nivea** (Nutt.) Otth Catchfly. Rare; open, grassy places, low ground, along railroads.

Cedar Falls, 1897, Newton, ISTC. North of Washburn, 1921, Shimek, ISC. Dargon's Marsh, 1982062211.

**Silene noctiflora** L. Night-flowering catchfly. Rare; disturbed soil, roadsides, waste ground.

Cedar Falls, 1920, Thorp, ISTC.

**Silene stellata** (L.) Aiton f. Starry campion. Rare; upland woods.


**Silene vulgaris** (Moench) Garcke [S. latifolia (Mill.) Britten & Randle] Bladder campion. Rare; disturbed soil and waste ground.

NLC, 1929, Burk 541, ISTC.
**Stellaria graminea** L. Common stitchwort. Rare; moist disturbed soil.

Cedar Falls, NE NE NE 23 89-14, 1983060501.

**Stellaria longifolia** Muhl. ex Willd. Stitchwort. Rare; marsh edges, sedge meadows.


CELASTRACEAE (Bittersweet Family)

**Celastrus scandens** L. Bittersweet. Frequent; woodland edges, woodland openings, fence rows.

Waterloo, 1893, Newton, ISTC.

**Euonymus atropurpureus** Jacq. Wahoo, burning bush. Infrequent; moist woods.

NLC, 1929, Burk 337, ISTC. Cooper's Woods, 1982060310.

CERATOPHYLLACEAE (Hornwort Family)

**Ceratophyllum demersum** L. Coontail, hornwort. Infrequent; shallow water of lakes and ponds.


CHENOPODIACEAE (Goosefoot Family)

**Chenopodium album** L. {incl. var. lanceolatum (Muhl.) Cosson & Germ.} Lamb's quarters. Frequent; disturbed soil, fields, waste ground.


Chenopodium hybridum L. [incl. var. gigantospermum (Aellen) Rouleau] [C. gigantospermum Aellen] Maple-leaved goosefoot. Rare; disturbed woods, waste places.

NLC, 1929, Burk 620, ISTC.

Chenopodium standleyanum Aellen [C. boscianum Moq. misappl.] Goosefoot. Rare; moist woods, moist open sandy soil.

NLC, 1929, Burk 702, ISTC.

Cycloloma atriplicifolium (Sprengel) Coulter Winged pigweed. Rare.

open dry sandy soil.

NLC, 1929, Burk 590, ISTC. Myszka Prairie, 1976, Eilers 7009, ISTC.


NLC, 1912, NCC, ISTC. NLC, 1929, Burk, ISTC. Cedar City Sand Prairie, 1982051601. Cedar Township RR Prairie, 1982060710, 1982072451, 1982082811.

CISTACEAE (Rockrose Family)

Helianthemum bicknellii Fern. Frost weed. Frequent; sandy upland prairies.

Lechea intermedia Leggett. Pinweed. Rare; dry sandy prairie.

Cedar Hills Sand Prairie, 1979, Lammers 3046, ISTC.

Known only from Allamakee, Black Hawk, Dubuque, and Winneshiek counties.

CONVOLVULACEAE (Morning-glory Family)

Calystegia sepium (L.) R. Br. ssp. americana (Sims) Brummitt

[Convolvulus sepium L.] [Convolvulus americanus (Sims) Greene]


* Convolvulus arvensis L. Creeping Jenny. Frequent; fields, roadsides, railroad ballasts.


Cuscuta cuspidata Engelm. Dodder. Rare; sandy prairie, moist habitats.

NLC, 1929, Burk 905, ISTC. George Wyth State Park, 1953, Grant 12098, ISTC.

Cuscuta indecora Choisy Dodder. Rare; cultivated fields.

Waterloo, 1893, Newton, ISTC.

Cuscuta polygonorum Engelm. Dodder. Rare; moist habitats.

NLC, 1929, Burk 878, ISTC. One mile west of Waterloo, 1956, Cooper 9, ISTC. Fall’s Access, 1982090913.
CORNACEAE (Dogwood Family)

**Cornus alternifolia** L. f. Alternate-leaved dogwood. Infrequent; moist upland woods.


**Cornus drummondii** C. A. Meyer [C. asperifolia Michx., misappl.] Rough-leaved dogwood. Common; moist woods, along wooded streams, woodland borders.


Also sighted at Cedar Township RR Prairie, Rusman Access, and Brustkern's Woods.

**Cornus foemina** Mill. ssp. racemosa (Lam.) J. S. Wilson [C. racemosa Lam.] Gray dogwood. Common; upland woods.


Also sighted at Hartman Reserve Nature Center and Brustkern's Woods.

**Cornus stolonifera** Michx. [C. sericea L.] Red-osier dogwood. Rare; escape from cultivation.

Waterloo, NDC, Newton, ISTC. Cedar Falls, 1986, Eilers, ISTC.
CUCURBITACEAE (Gourd Family)

Echinocystis lobata (Michx.) T. & G. Wild balsam apple, wild cucumber. Rare; low moist woods.

NLC, 1929, Burk 689, ISTC. Black Hawk County Park, 34 90-14, 1963, Eilers 4245, IA. Fall’s Access, 1977, Bradner, ISTC. Fall’s Access, 1982082611.

Sicyos angulatus L. Bur-cucumber. Infrequent; alluvial woods.

George Wyth State Park, 1983090807.

ELAEAGNACEAE (Russian Olive Family)

* Elaeagnus angustifolia L. Russian olive. Infrequent escape; disturbed woods.

Black Hawk County Park, 34 90-14, 1963, Eilers 4253, IA.

ERICACEAE (Heath Family)

Monotropa uniflora L. Indian pipe. Rare; moist woods.

Hartman Reserve Nature Center, 1981, Lammers 4444, ISTC.

Pyrola elliptica Nutt. Shinleaf. Rare; moist wooded slopes.

NLC, 1929, Burk 391, ISTC.

EUPHORBIACEAE (Spurge Family)

Acalypha gracilens Gray {incl. var. monococca Engelm.} [A. monococca (Engelm. ex Gray) Miller] Three-seeded mercury. Rare; dry sandy pastures.

Goose Lake, 1982081835.
Acalypha rhomboidea Raf. Three-seeded mercury. Infrequent; edges of ponds, marshes, lowland prairies.

Goose Lake, 1937, Grant 8107, ISTC. 6 90-12, 1960, Barnett, ISTC. Steimel's Prairie, 1980, Lammers 3999, ISTC.

Acalypha virginica L. Three-seeded mercury. Rare; disturbed soil.

NLC, 1929, Burk 585, ISTC.

Croton glandulosus L. var. septentrionalis Mueller-Arg. Croton. Rare; dry, sandy blowouts, sandy pond margins.

Martinson's Dunes, 1981, Lammers 4408, ISTC.

Euphorbia corollata L. Flowering spurge. Common; prairie remnants, roadsides.


Euphorbia cyathophora Murray [E. heterophylla L.] [Poinsettia cyathophora (Murray) Klotzch & Garcke] Wild poinsettia. Rare; dry sandy savannah.

Myszka Prairie, 1980, Lammers 3835, ISTC.

* Euphorbia cyparissias L. Cypress spurge. Rare; prairies, waste places.

NLC, 1929, Burk 294, ISTC.
**Euphorbia dentata** Michx. [Poinsettia dentata (Michx.) Klotzch & Garcke] Spurge. Infrequent; roadsides, along railroads, dry sandy prairies, often disturbed.


**Euphorbia esula** L. [E. podperea Croizat] Leafy spurge. Infrequent; along railroads, along roadsides, waste places.


**Euphorbia geyeri** Engelm. [Chamaesyce geyeri (Engelm.) Small] Spurge. Rare; sandy savannahs, roadsides.


**Euphorbia glyptosperma** Engelm. [Chamaesyce glyptosperma (Engelm.) Small] Spurge. Infrequent; open sandy soil, dry sandy prairies.


**Euphorbia hexagona** Nutt. ex Sprengel Spurge. Rare; sandy alluvium.

Cedar Falls, 1930, Shimek, IA.

**Euphorbia maculata** L. [Chamaesyce maculata (L.) Small] [E. supina Raf.] Nodding spurge. Rare; low, sandy prairie remnants, alluvial woods, yards.

FABACEAE (Bean Family)

**Amorpha canescens** Pursh  Lead plant.  Common; prairie remnants, dry sandy open habitats.


**Amorpha fruticosa** L.  Indigo bush, false indigo.  Rare; along railroads.

NLC, 1929, Burk 375, ISTC.

**Amphicarpa bracteata** (L.) Fern.  Hog peanut.  Frequent; woods, woodland edges, low prairies.


**Astragalus canadensis** L.  Milk vetch.  Infrequent; roadsides, prairies.

NLC, 1929, Burk 586, ISTC. NW 16 90-14, 1980, Lammers 3739, ISTC.

**Astragalus crassicarpus** Nutt.  [A. caryocarpus Ker]  Ground plum.  Infrequent; dry upland or sandy prairies.

Astragalus distortus T. & G. Bent milk vetch. Infrequent; sandy prairies, alluvium, open sandy soil.


Baptisia bracteata Muhl. ex Elliott var. glabrescens (Larisey) Isely [B. leucophaea Nutt.] False indigo. Infrequent; upland prairies.


NLC, 1929, Burk 797, ISTC.

Cassia fasciculata Michx. [Chamaecrista fasciculata (Michx.) Greene] Partridge pea. Frequent; prairie remnants, dry open habitats.


Cassia marilandica L. Wild senna. Rare; sandy floodplain.

SE 33 87-11, 1981, Lammers 4476, ISTC.

* Coronilla varia L. Crown vetch. Used as plantings along roadsides.

Crotalaria sagittalis L. Rattle box. Rare; prairie remnants, dry sandy soil.

Cedar Falls, 1898, Newton, ISTC. Cedar Hills Sand Prairie, 1985090901.

Dalea candida Willd. [Petalostemon candidum (Willd.) Michx.] White prairie clover. Frequent; prairies.


Dalea purpurea Vent. [Petalostemon purpureum (Vent.) Rydb.] Purple prairie clover. Frequent; prairies.


Dalea villosa (Nutt.) Sprengel [Petalostemon villosum Nutt.] Silky prairie clover. Rare; sandy prairies.


Known only in Iowa from Black Hawk County.
Desmodium canadense (L.) DC. Tick clover. Common; open alluvial woods, roadsides, prairies.


Desmodium cuspidatum (Muhl. ex Willd.) Loudon (incl. var. longifolium (T. & G.) Schub.) Tick trefoil. Rare; sandy or rocky woods and alluvium.

17 89-13, 1963, Eilers 4389, 4426, IA.

Desmodium glutinosum (Muhl. ex Willd.) Wood Pointed tick trefoil. Infrequent; moist woods.


Desmodium illinoense Gray Illinois tick trefoil. Infrequent; dry prairie remnants.


Desmodium sessilifolium (Torrey) T. & G. Sessile-leaved tick trefoil. Rare; dry upland woods and alluvial sand flats.

Waterloo, 1893, Newton, ISTC.

Gleditsia triacanthos L. Honey locust. Common; alluvial woods, old pastures, sandy prairies.

Cedar Falls, 1901, Lambert, IA. Cedar Falls, 1920, Pammel, ISC. Cedar Falls, 1925, Pammel, ISC. Black Hawk County Park, 1983092115.
Gymnocladus dioica (L.) K. Koch Kentucky coffee tree. Infrequent; sandy alluvium, moist alluvial woods.


Lathyrus palustris L. Marsh vetchling. Infrequent; moist prairie remnants, marshy shores.


Lathyrus venosus Muhl. ex Willd. Veiny pea. Rare; dry upland prairies.

NLC, 1929, Burk 283, ISTC.


Lespedeza leptostachya Engelm. Prairie bush clover. Rare; prairie remnants.

Waterloo, 1893, Newton, ISTC.

Lotus corniculatus L. Birdsfoot trefoil. Infrequent; roadsides, waste places.

George Wyth State Park, 1982070307.

Medicago falcata L. Yellow alfalfa. Rare; waste places, field edges, roadsides.

Dargon's Marsh, 1982062213.
*Medicago lupulina* L. · Black medic. Infrequent; roadsides, along railroads, waste places.


*Medicago sativa* L. · Alfalfa. Common escape from cultivation; fields, roadsides, disturbed soil.


*Melilotus alba* Medicus · White sweet clover. Common; roadsides, disturbed soil, fields.


*Melilotus officinalis* (L.) Lam. · Yellow sweet clover. Common; roadsides, disturbed soil, fields.

NLC, 1929, Burk 319, ISTC. George Wyth State Park, 1982072411.

P*соралия argophylla* Pursh · Scurf-pea. Rare; dry prairies, roadside.

Cedar Falls, 1920, Sherwood, ISTC. NLC, 1929, Burk 805, ISTC.

*Robinia pseudoacacia* L. · Black locust. Rare; roadsides, disturbed woodlands, open hillsides.

NLC, 1929, Burk 477, ISTC.

*Sterophostyles helvola* (L.) Ell. · Wild bean. Rare; open sandy, gravelly soil.

South of Cedar Falls, 1965, Gilbert 48, ISTC.

*Sterophostyles leiosperma* (T. & G.) Piper · Wild bean. Rare; dry sandy soils, upland prairies, successional fields.

Tephrosia virginiana (L.) Pers. Goat's-rue. Rare; dry sandy savannah.

Waterloo, 1893, Newton, ISTC. Myszka Prairie, 1976, Eilers 7013, ISTC. Myszka Prairie, 1980, Lammers 3625, ISTC.

* Trifolium arvense L. Rabbit-foot clover. Rare; disturbed soil, pasture, sandy soil.

Martinson's Dunes, 1982072502, 1983080901.

* Trifolium aureum Pollich [T. agrarium L.] Hop-clover. Rare; disturbed prairie.

Dorothy's Prairie, 1983070118.

* Trifolium campestre Schreber [T. procumbens L., misappl.] Low hop-clover. Rare; disturbed open habitats.

Cedar Falls, 1927, Pammel, ISC.

* Trifolium hybridum L. Alsike clover. Infrequent; disturbed soil.

North of Cedar Falls, 1926, Shimek, IA. NLC, 1929, Burk 808, ISTC.


* Trifolium repens L. White clover. Common; lawns, roadsides, pastures.

ISTC Campus, 1884, Buckingham, ISTC. NLC, 1887, Sweatt, ISTC. NLC, 1887, Irons, ISTC. NLC, 1929, Burk 279, ISTC. Cedar Hills Sand Prairie, 1970, Crum 123, ISTC.
**Vicia americana** Muhl. ex Willd. Vetch. Infrequent; prairie remnants, roadsides, along railroads.

North of Cedar Falls, 1939, Shimek, IA. SE SW 12 90-14, 1982052722. Dorothy's Prairie, 1983061401.

* Vicia sativa L. var. nigra L. [V. angustifolia Reichard] Narrow-leaved vetch. Rare; along railroads, roadsides, pastures.

NLC, 1929, Burk 377, ISTC. Cedar Falls, 1953, Sturtevant 130, ISTC.

* Vicia villosa Roth Vetch. Rare; roadsides.

Cedar Falls, 1908, Pammel, ISC. NLC, 1929, Burk 297, ISTC. George Wyth State Park, 1982070308.

**FAGACEAE** (Beech Family)

**Quercus alba** L. White oak. Frequent; upland woods.

Hartman Reserve Nature Center, 1958, Grant 13817, ISTC.

**Quercus bicolor** Willd. Swamp white oak. Rare; alluvial woods.

Wapsipinicon River, 1929, Burk 952, ISTC. Bruggeman Park, 1980, Lammers 3981, ISTC.

**Quercus borealis** Michx. f. var. maxima (Marsh.) Ashe [Q. rubra L. nom. ambig.] Northern red oak. Frequent; moist upland woods.

Cedar Falls, 1925, Lantz, ISTC.

**Quercus ellipsoidalis** E. J. Hill Jack oak. Frequent; open upland woods.

Quercus macrocarpa Michx. Bur oak. Frequent; dry uplands and slopes.


Quercus velutina Lam. Black oak. Infrequent; upland woods, sandy alluvial flats.


GENTIANACEAE (Gentian Family)

Gentiana alba Muhl. [G. flavida Gray] Pale gentian, yellow gentian. Rare; open upland woods.


Gentiana andrewsii Griseb. Bottle gentian, closed gentian. Frequent; moist prairie remnants.


Observed at Dorothy's Prairie.

Gentiana x billingtonii Farw. [G. andrewsii x G. puberulenta] [G. saponaria L., misappl.] Soapwort gentian. Rare; moist prairie remnants.

Cedar Hills Sand Prairie, 1981, Lammers 4475, ISTC.


Gentianella quinquefolia (L.) Sm. [Gentiana quinquefolia L. var. occidentalis (Gray) Hitchc.] Stiff gentian. Infrequent; prairie openings, wooded slopes.


Gentianopsis crinita (Froel.) Ma [Gentiana crinita Froel.] Fringed gentian. Rare; marshes, sandy lowlands, hillside seeps.

Newgard's Pasture, 1981, Lammers 4401, 4470, ISTC.

GERANIACEAE (Geranium Family)

Geranium carolinianum L. {incl. var. confertifolium Fern.} [G. sphaerospermum Fern. in part] Cranebill. Infrequent; sandy prairies, sandy alluvial flats.


Geranium maculatum L. Wild geranium. Common; moist wooded slopes, sandy prairies.

HALORAGIDACEAE (Water-milfoil Family)

Myriophyllum verticillatum L. Water milfoil. Rare; shallow pond.

River Birch Bottoms, 1981, Lammers 4373, ISTC.

This species has only been found in Black Hawk and Emmet counties.

HYDROPHYLLACEAE (Waterleaf Family)

Ellisia nyctelea L. Wild tomato. Frequent; wooded alluvial flats.


Hydrophyllum virginianum L. Virginia waterleaf. Frequent; moist wooded slopes and alluvium.

Brustkern's Woods, 1982051441. SE SE 9 90-14, 1982060315.

HYPERICACEAE (St. John's-wort Family)

Hypericum majus (Gray) Britton St. John's-wort. Infrequent; marsh margins, prairie swales.


Hypericum mutilum L. St. John's-wort. Rare; marsh margins, sandy prairie.

NLC, 1929, Burk 608, 675, ISTC.

Hypericum perforatum L. St. John's-wort. Rare; dry roadsides, disturbed prairies.

6 90-12, 1960, Barnett, ISTC.
Hypericum pyramidatum Aiton [H. ascyron L.] St. John's-wort. Rare; prairies, alluvium.

NLC, 1929, Burk 839, ISTC.

Hypericum sphaerocephalum Michx. [H. cistifolium; misapplied] St. John's-wort. Rare; prairie remnants, moist, usually sandy ground.

Washburn, 1921, Shimek, IA. NLC, 1929, Burk 559, 578, ISTC. George Wyth State Park, 1963, Eilers 4327, IA.

Triadenum fraseri (Spach) Gl. [Hypericum virginicum L. var. fraseri (Spach) Fern.] Marsh St. John's wort. Infrequent; marshes, prairie swales, sandy shores.


JUGLANDACEAE (Walnut Family)

Carya cordiformis (Wang.) K. Koch Bitternut hickory. Frequent; upland woods, wooded slopes.

Brustkern's Woods, 1983061306, 1983081306.

Carya ovata (P. Miller) K. Koch Shagbark hickory. Frequent; dry upland woods.

Bruggeman Park, 1980, Lammers 3980, ISTC. Hartman Reserve Nature Center, 1981, Fish, ISTC.


17 89-13, 1963, Eilers 4415, IA.


33 90-14, 1970, Crum 028, ISTC.
LAMIACEAE (Mint Family)

Agastache nepetoides (L.) Kuntze  Yellow giant-hyssop. Rare; open upland woods, alluvium, woodland edges.

NLC, 1929, Burk 721, ISTC. Cedar River, 1937, Grant 8118, ISTC.

Agastache scrophulariifolia (Willd.) Kuntze  Giant-hyssop. Rare; open upland woods, woodland edges.

NLC, 1929, Burk 955, ISTC. Brustkern's Woods, 1982091005, 1983092120.

*Glechoma hederacea L.  Ground ivy. Frequent; moist woods, shaded alluvium, roadsides, yards.

Cedar Falls, 1885, NCC, ISTC.

Hedeoma hispidum Pursh  Rough pennyroyal. Common; dry soil, rocky woods, prairies.


*Leonurus cardiaca L.  Motherwort. Frequent; disturbed woods, shaded disturbed areas.


Observed at Cedar Township RR Prairie.


Lycopus uniflorus Michx. Northern bugleweed. Infrequent; wet ground of lake edges, marshes.


Lycopus virginicus L. Water horehound. Rare; open wet ground, alluvium, stream margins.

Waterloo, 1893, Newton, ISTC. NLC, 1929, Burk 846, ISTC. Goose Lake, 1937, Grant 8100, ISTC.

Mentha arvensis L. {incl. var. villosa (Bentham) Stewart} Wild mint. Rare; marshes, prairie swales.

NLC, 1929, Burk 660, ISTC.

Monarda fistulosa L. {incl. var. mollis (L.) Bentham} Wild bergamot. Common; prairies, roadsides, dry open habitats.


Nepeta cataria L. Catnip. Frequent; disturbed, dry open ground.


NLC, 1929, Burk 708, ISTC. Black Hawk County Park, 34 90-14, 1963, Eilers 4281, IA.

Physostegia virginiana (L.) Bentham [P. speciosa Sweet] False dragonhead. Infrequent; moist to mesic woods and prairies.


Prunella vulgaris L. {incl. var. lanceolata (Bartram) Fern.} Self heal. Common; disturbed open woods and moist open habitats.


Pycnanthemum virginianum (L.) Durand & Jackson Mountain mint. Common; prairies, along railroads and roadsides.


Scutellaria lateriflora L. Mad-dog skullcap. Infrequent; marshes, shores, alluvial bottoms.

NLC, 1929, Burk 840, ISTC. 17 89-13, 1963, Eilers 4437, IA.
Scutellaria parvula Michx. Skullcap. Infrequent; dry sandy prairies, rocky soil.


Stachys palustris L. {incl. var. pilosa (Nutt.) Fern.; var. homotricha Fern.; var. phaneropoda Weath.} Woundwort. Frequent; marshes, moist ground.


Stachys tenuifolia Willd. {incl. var. hispida (Pursh) Fern.} [S. hispida Pursh] Hedge nettle. Frequent; alluvial woods, marshes, moist prairies.


Teucrium canadense L. var. occidentale (Gray) Mool. & Epling Wood sage, germander. Common; alluvial woods, marshes, moist prairies.


Trichostema brachiatum L. [Isanthus brachiatus (L.) BSP]
Bluecurls. Rare; dry prairies.

NLC, 1929, Burk 906, ISTC. Raymond Prairie, 1980, Lammers 3985, ISTC.
LENTIBULARIACEAE (Bladderwort Family)

Utricularia vulgaris L. Common bladderwort. Infrequent; shallow water of ponds and marshes.


LINACEAE (Flax Family)

Linum sulcatum Riddell Wild flax. Rare; dry prairies, sandy soil.


LYTHRACEAE (Loosestrife Family)

Ammannia coccinea Rottb. Toothcup. Rare; moist, often sandy, habitats, marsh edges.

Waterloo, 1893, NCC, ISTC.

Lythrum alatum Pursh [L. dacotanum Nieuwl.] Purple loosestrife. Infrequent; prairie swales, marsh edges, seepage areas.

MALVACEAE (Mallow Family)


*Hybiscus trionum* L. Flower-of-an-hour. Rare; roadsides, field edges.

NLC, 1892, Page 18, ISTC. Cedar Falls, 1919, Ries, ISTC. 6 90-12, 1960, Barnett, ISTC. ISTC Campus, 1970, Eilers 5586, ISTC. 14 89-14, 1977, Bradner, ISTC.

*Malva neglecta* Wallr. Cheeses. Rare; waste ground.

ISTC Campus, 1912, NCC, ISTC. NLC, 1929, Burk, ISTC.

*MORACEAE (Hulberry Family)

*Cannabis sativa* L. Hemp, marijuana. Common; disturbed habitats, waste ground.

Cedar Falls, 1919, Ries, ISTC. Cedar Falls, 1929, Burk, ISTC. George Wyth State Park, 1953, Grant 12099, ISTC. George Wyth State Park, 1963, Eilers 4304, IA.
**Humulus lupulus** L. Hops. Rare; on trees and shrubs, floodplains and low open woods.

NLC, 1929, Burk 718, ISTC.

* Morus alba L. Chinese mulberry, white mulberry. Common escape from cultivation; woods, roadsides, riverbanks.

Fall's Access, 1982051708. S SW SW 12 89-12, 1982060404.

**NYCTAGINACEAE (Four-O'Clock Family)**

**Mirabilis nyctaginea** (Michx.) Maem. [*Oxybaphus nyctagineus* (Michx.) Sweet] Wild four-o'clock, umbrella wort. Frequent; dry, sandy or gravelly soil, roadsides, along railroads.


**NYMPHAEACEAE (Water-lily Family)**

**Brasenia schreberi** Gmelin Watershield. Rare; shallow standing water.


Presently known only in Black Hawk County. Several colonies of 100-200 plants.

**Nelumbo lutea** (Willd.) Pers. American lotus. Rare; shallow water.

Goose Lake, 1983082609.

**Nuphar luteum** (L.) Sibth. & Smith ssp. variegatum (Engelm. ex Dur.) E. O. Beal [*N. advena* (Aiton) Aiton f.] [*N. variegatum* Engelm. ex Dur.] Yellow water lily. Rare; shallow water of ponds and marshes.

Cedar Falls, 1897, Newton, ISTC. NLC, 1929, Burk 796, ISTC.
Nymphaea tuberosa Paine [N. odorata Aiton] White water lily. Rare; shallow standing water of marshes and ponds.


OLEACEAE (Olive Family)

Fraxinus americana L. White ash. Frequent; upland woods.


Fraxinus pennsylvanica Marsh. Red ash. Frequent; alluvial or low moist woods.


ONAGRACEAE (Evening-Primrose Family)

Calylophus serrulatus (Nutt.) Raven [Oenothera serrulata Nutt.] Toothed evening primrose. Infrequent; sandy prairies and dry uplands.


Circaea lutetiana (L.) Ascherson & Magnus ssp. canadensis (L.) Ascherson & Magnus [C. quadrisucata (Maxim.) Franch. & Sav. var. canadensis (L.) Hara] Small enchanter's nightshade. Frequent; moist woods.

**Epilobium coloratum** Biehler  Cinnamon willowherb. Frequent; marshes and moist woods.


**Gaura biennis** L. {incl. var. *pitcheri* T. & G.} [G. *longiflora* Spach] Rare; prairie remnants, open sandy areas and roadsides.

Waterloo, 1899, Newton, ISTC. NLC, 1929, Burk 546, ISTC. SW NW 19 90-12, 1949, Grant 11303, ISTC.

**Ludwigia palustris** (L.) Ell. Water purslane. Rare; shallow water of ponds, marshes and wet sand.

Bailey’s Lake, 1980, Lammers 3866, ISTC.

**Ludwigia polycarpa** Short & Peter False loosestrife. Rare; marshes and shallow standing water.


Common; sandy roadsides and disturbed prairie remnants.

Oenothera laciniata Hill  Ragged evening primrose. Rare; sandy soil, prairie remnants, along railroads.

Cedar City Sand Prairie, 1980, Lammers 3637, ISTC.

Oenothera rhombipetala Nutt. ex T. & G. Sand primrose. Frequent; dry sandy soil.


OXALIDACEAE (Wood-sorrel Family)

Oxalis dillenii Jacq. Yellow-wood sorrel. Rare; sandy fields and prairies.

Cedar Falls, 1891, Boal, ISTC.


**Oxalis violacea** L. Violet wood sorrel. Frequent; prairie remnants, dry sparsely wooded ridges.


**PAPAVERACEAE (Poppy Family)**

*Chelidonium majus* L. Swallow-wort, celandine. Escape from cultivation; moist woods, open alluvium.

3 90-11, 1978, Roosa 1694, ISTC.

*Corydalis micrantha* (Engelm.) Gray Slender fumewort. Infrequent; dry sandy soil.


*Dicentra canadensis* (Goldie) Walp. Squirrel corn. Infrequent; moist north and east facing wooded slopes.

Cedar Falls, 1897, Newton, ISTC. NLC, 1929, Burk 235, ISTC.


*Sanguinaria canadensis* L. Bloodroot. Infrequent; disturbed woods.

PHRYMACEAE (Lopseed Family)

*Phryma leptostachya* L. Lopseed. Frequent; moist woods.


PLANTAGINACEAE (Plantain Family)

**Plantago aristata** Michx. Bracted plantain. Rare; dry open habitats.

Cedar Hills Sand Prairie, 1970, Crum 185, ISTC.

* *Plantago lanceolata* L. Buckthorn plantain. Rare; dry disturbed areas.

Cedar Falls, NDC, Thorp, ISTC. ISTC Campus, 1929, Burk 16, ISTC. East Waterloo Prairie, 1982062302.

**Plantago patagonica** Jacq. [*P. purshii* R. & S.] Plantain. Frequent; road sides, dry sandy soil, waste ground.


**Plantago rugelii** Dene. Common plantain, Rugel's plantain. Common; yards, open woods, disturbed soil, waste ground.

POLEMONIACEAE (Polemonium Family)

**Collomia linearis** Nutt. Rare; dry or sandy prairies, along railroads.

Washburn, 1921, Shimek, IA.

**Phlox bifida** Beck Cleft phlox. Infrequent; dry open sand.


**Phlox divaricata** L. [incl. ssp. laphamii (Wood) Wherry] Sweet William, blue phlox. Frequent; moist woods.


**Phlox maculata** L. Phlox. Frequent; prairie swales, moist roadides.


**Phlox paniculata** L. Garden phlox. Rare escape; roadsides, disturbed soil near dwellings.

Cooper's Woods, 1982082704.
Phlox pilosa L. {incl. ssp. fulgida (Wherry) Wherry} Prairie phlox. Frequent; prairie remnants.


Polemonium reptans L. Jacob's ladder. Common; moist to dry open woods, woodland edges.


POLYGALACEAE (Milkwort Family)


Polygala verticillata L. {incl. var. isocycla Fern.; var. sphenostachya Pennell; var. ambigua (Nutt.) Wood} Whorled milkwort. Rare; prairie remnants.

SW NW 19 90-12, 1949, Grant 11299, ISTC.
POLYGONACEAE (Buckwheat Family)

**Polygonum achoreum** Blake [P. erectum L.] Smartweed. Infrequent; open disturbed areas.

NLC, 1929, Burk 521, ISTC. Black Hawk County Park, 34 90-14, 1963, Eilers 4261, IA. NE 27 88-14, 1980, Lammers 3608, ISTC.

**Polygonum amphibium** L. var. emersum Michx. [P. cocineum Muhl.] Water smartweed. Infrequent; muddy shores and in standing water of marshes.

NLC, 1929, Burk 768, 786, ISTC. 6 90-12, 1960, Barnett, ISTC. Goose Lake, 1982081803.

Unable to determine variety of Burk collections.

* **Polygonum aviculare** L. Knotweed. Infrequent; yards, dry disturbed areas.

ISTC Campus, 1912, NCC, ISTC. Cedar Falls, 1920, Charlston, ISTC. NLC, 1929, Burk 815, ISTC. Black Hawk County Park, 34 90-14, 1963, Eilers 4262, IA.

* **Polygonum convolvulus** L. Black bindweed. Infrequent; roadsides, alluvial woods, waste places.


University Avenue Preserve, Cedar Falls, 1980, Smith, ISTC. SE 2 89-13, 1981, Lammers 4428, ISTC.

**Polygonum hydropiper** L. Smartweed. Rare; shallow water, marshes, stream margins.

ISTC Campus, 1912, NCC, ISTC. Ackerson's Marsh, 1982080715.
Polygonum lapathifolium L.  Smartweed.  Infrequent; alluvial woods, shores, waste ground.


* Polygonum persicaria L. Lady's thumb.  Rare; open wet habitats.
ISTC Campus, 1912, NCC, ISTC.

Polygonum punctatum Ell.  [incl. var. confertiflorum (Meisner) Fassett]  [P. acre HBK] Water smartweed.  Frequent; open wet ground, marsh edges, prairie swales.

Polygonum ramosissimum Michx. Bushy knotweed.  Infrequent; moist, usually sandy soil.

Polygonum sagittatum L. Tearthumb.  Frequent; open, marshy ground.
Polygonum scandens L. (incl. var. cristatum (Engelm. & Gray) Gl.; var. dumetorum (L.) Gl.) Climbing false buckwheat. Infrequent; roadsides, fence rows, alluvial woods.


Rumex acutus L. Red sorrel. Common; dry sandy soil or waste ground.


Rumex altissimus L. Wood Dock. Infrequent; prairie remnants, open alluvial woods.


* Rumex crispus L. Curly dock. Frequent; open, moist, often disturbed habitats.


* Rumex maritimus L. var. fueginus (Phil.) Dusen [R. persicarioides L., misappl.] Dock. Rare; shores, marshes, wet sand.

Goose Lake, 1981, Lammers 4257, ISTC.
* Rumex obtusifolius L. Bitter dock. Rare; roadsides, sandy marshes, moist lowlands.

9 89-13, 1963, Eilers 4442, IA.

Rumex orbiculatus Gray Dock. Rare; pond margins, marshes, prairie swales.

NLC, 1929, Burk 936, ISTC. 9 89-13, 1963, Eilers 4447, IA.

* Rumex patientia L. Dock. Rare; moist roadsides, alluvium, sandy soil.

NLC, 1929, Burk 323, ISTC.

Rumex verticillatus L. Infrequent; lake margins, marshes, low, moist ground.

NLC, 1929, Burk 360, ISTC. Cedar River, 1937, Grant 8115, ISTC, IA. George Wyth State Park, 1983061608.

PORTULACACEAE (Purslane Family)

Claytonia virginica L. Spring beauty. Frequent; moist wooded slopes.


Portulaca oleracea L. Common purslane. Common; waste ground, yards, disturbed habitats.

George Wyth State Park, 1963, Eilers 4302, IA.
PRIMULACEAE (Primrose Family)

Androsace occidentalis Pursh Infrequent; dry, often sandy, open habitats.

Dodecatheon meadia L. {incl. var. brachycarpum (Small) Fassett} Shooting star. Infrequent; prairie remnants.
   ISTC Campus, 1884, Buckingham, ISTC. Cedar Falls, 1891, Richardson, ISTC. NLC, 1898, Page 22, ISTC. Between Jesup and Waterloo, 1928, Shimek, IA. NLC, 1929, Burk 480, ISTC. Goose Lake, 1938, Grant 8141, ISTC. Goose Lake, 1941, Phelps 6, ISTC. Bennington Township Cemetery, 1974, Chumbley, ISTC. Raymond Prairie, 1980, Lammers 3319, ISTC. Dorothy's Prairie, 1982071003.

Lysimachia ciliata L. Fringed loosestrife. Frequent; moist lowland woods, low prairies, marsh edges.

Lysimachia hybrida Michx. [L. lanceolata Walter var. hybrida (Michx.) Gray] Loosestrife. Frequent; alluvial woods, shores, marshy ground.
*Lysimachia nummularia* L. Moneywort. Infrequent; alluvial woods, open moist habitats, moist disturbed soil.


*Lysimachia quadriflora* Sims Loosestrife. Infrequent; low moist ground, alluvium, marsh edges.


*Lysimachia terrestris* (L.) BSP. Swamp loosestrife, swamp candle. Infrequent; marshes, low prairies, wet, sandy ground.


**RANUNCULACEAE** (Crowfoot Family)

*Actaea pachypoda* Ell. *[A. alba* (L.) Miller*] White baneberry. Rare; upland woods, wooded slopes.*

Cedar Falls, 1884, Buckingham, ISTC. Cedar Falls, 1885, NCC, ISTC. NLC, 1898, Page 10, ISTC. NLC, 1929, Burk 487, ISTC. Cedar Heights, 1953, Grant 12032, ISTC.

*Anemone canadensis* L. Canada anemone. Common; moist prairies, roadsides, alluvium.


*Anemone caroliniana* Walter Carolina anemone. Rare; dry, open, usually sandy places.

Along Cedar River, 1939, Grant 8390, ISTC.
Anemone cylindrica Gray Windflower, thimbleweed. Infrequent; prairie remnants, dry sandy soil.


Anemone quinquefolia L. {incl. var. interior Fern.} Wood anemone. Frequent; open upland woods, wooded slopes.


Anemone virginiana L. Tall anemone. Infrequent; wooded slopes, woodland openings, woodland edges, prairie remnants.

Snag Creek Woods, 1929, Burk 340, ISTC. Hartman Reserve Nature Center, 1963, Eilers 4394, IA.

Aquilegia canadensis L. {incl. var. coccinea (Small) Munz} Columbine. Common; moist wooded slopes, often sandy or rocky soil, limestone outcrops.


Caltha palustris L. Marsh marigold. Frequent; marshes, springs, seeps.

**Clematis pitcheri** T. & G. Leather flower. Infrequent; openings in woods, sandy alluvium, occasionally on prairies.


**Clematis virginiana** L. Virgin's bower. Frequent; disturbed open alluvial woods.


**Delphinium virens** Nutt. (incl. var. *penardii* (Huth.) Perry) Prairie larkspur. Frequent; dry upland prairies.


**Hepatica nobilis** P. Miller var. *acuta* (Pursh) Steyerm. [R. *acutiloba DC.*] Liverleaf. Rare; wooded, rocky hillsides.


**Isopyrum biternatum** (Raf.) T. & G. [*Enemion biternatum* Raf.] False rue anemone. Frequent; moist, wooded slopes, low woods, alluvial flats.

Pulsatilla patens (L.) P. Miller var. multifida Pritz. [Anemone patens L. var. wolfgangiana (Besser) E. Koch] [Anemone patens L.] Pasque flower. Infrequent; dry, sandy or gravelly prairie knolls and hillsides.


Ranunculus abortivus L. Small-flowered crowfoot. Common; moist woods, moist open places.


Ranunculus fascicularis Muhl. [incl. var. apricus (Greene) Fern.] Buttercup. Infrequent; prairie openings, open sandy places.


Ranunculus flabellaris Raf. Yellow water crowfoot. Rare; muddy shores, shallow water of marshes.

Cedar Falls, 1897, Newton, ISTC. NLC, 1929, Burk 838, ISTC. Goose Lake, 1938, Grant 8128, ISTC. Goose Lake, 1941, McIlrath 30, ISTC. Goose Lake, 1941, Phelps 7, ISTC.

Ranunculus pensylvanicus L. f. Bristly crowfoot. Infrequent; marshes, lake margins.


Ranunculus rhomboideus Goldie Buttercup. Rare; dry open soil.

ISTC Campus, 1885, NCC, ISTC. NLC, 1898, Page 8, ISTC. Raymond Prairie, 1976, Eilers, ISTC. Raymond Prairie, 1982051406.
Ranunculus sceleratus L. Cursed crowfoot. Rare; sandy lowlands, pond margins.

Black Hawk County Park, 34 90-14, 1980, Lammers 3595, ISTC.

Ranunculus septentrionalis Poiret Swamp buttercup. Frequent; low moist woods.


Thalictrum dasycarpum Fischer & Lall. Meadow-rue. Common; moist prairie remnants, roadside ditches, open woods, moist alluvium.


Thalictrum dioicum L. Early meadow-rue. Rare; moist woods.

6 90-12, 1960, Barnett, ISTC.

Thalictrum thalictroides (L.) Eames & Boivin [Anemonella thalictroides (L.) Spach] Rue anemone; Common; moist wooded slopes.

Rhamnaceae (Buckthorn Family)

Ceanothus americanus L. var. pitcheri T. & G. New Jersey tea. Infrequent; prairie remnants, woodland edges, openings in dry woods.


ROSACEAE (Rose Family)

Agrimonia gryposepala Wallr. Agrimony. Infrequent; dry woods, woodland borders, moist low areas.


Also sighted at Goose Lake.

Agrimonia pubescens Wallr. Agrimony. Rare; upland woods, moist wooded slopes.


Agrimonia striata Michx. Agrimony. Rare; dry upland woods; occasionally in low, moist woods.

Waterloo, 1893, Newton, ISTC.

Amelanchier humilis Wieg. [A. spicata (Lam.) K. Koch, in part] [A. stolonifera Wieg., in part] Service-berry. Rare; dry sandy prairies, limestone outcrops.

Raymond Prairie, 1980, Lammers 3611, ISTC.

Crataegus cocinea L. [C. chrysocarpa Ashe of authors] [C. pedicellata Sarg.] Hawthorn. Rare; moist open alluvium.

Cedar Falls, 1884, Buckingham, ISTC. Along Cedar River, 1929, Burk 513, ISTC.


Black Hawk County Park, 34 90-14, 1963, Eilers 4284, IA. Along Black Hawk Creek, Waterloo, 1980, Lammers 3554, ISTC. SW NE 3 87-12, 1980, Lammers 3622, ISTC.

Fragaria vesca L. var. americana Porter [F. americana (Porter) Britton] Woodland strawberry. Rare; upland woods.

NLC, 1929, Burk 228, ISTC. Goose Lake, 1941, Phelps 5, ISTC. 6 90-12, 1960, Barnett, ISTC.

Fragaria virginiana Duchesne {incl. var. illinoense (Prince) Gray; var. glauca S. Watson} Wild strawberry. Common; prairie remnants, open woods.


Geum alleppicum Jacq. var. strictum (Aiton) Fern. [G. strictum Aiton] Yellow avens. Rare; prairie swales, wet meadows, marshes.

Cedar Hills Sand Prairie, 1979, Lammers 2881, ISTC.

Geum canadense Jacq. {incl. var. camporum (Rydb.) Fern. & Weath.} White avens. Frequent; moist woods, prairies, alluvial woods.

Geum laciniatum Murray {incl. var. trichocarpum Fern.} Rough avens. Infrequent; marshes, lakeshores, wet disturbed sites.


Geum triflorum Pursh [G. ciliatum Pursh] [Sieversia triflorum (Pursh) R. Br.] Prairie smoke, purple avens. Infrequent; prairie remnants, roadsides.


   Brustkern's Woods, 1982051443. Fall's Access, 1982051706.

Physocarpus opulifolius (L.) Maxim. Ninebark. Rare; wooded rocky hillsides, rocky ledges.

   Cedar Falls, 1901, Lambert, IA. 18 89-13, 1978, Eilers 7929-B, ISTC.

* Potentilla argentea L. Cinquefoil. Infrequent; open sandy soil, sandy alluvium.


Potentilla arguta Pursh Cinquefoil. Infrequent; dry prairies, sandy soil.

*Potentilla intermedia* L. Cinquefoil. Rare; occasional weed in dry soil and waste places.

George Wyth State Park, 1982060721.

**Potentilla norvegica** L. [*P. monospeliensis* L. in part] Cinquefoil. Common; roadsides, pastures, shores, alluvium, waste places.


**Potentilla palustris** (L.) Scop. Cinquefoil. Rare; marshes.

Newgard's Pasture, 1982070111.

*Potentilla recta* L. Cinquefoil. Infrequent; dry roadsides, along railroads, in pastures, waste ground.


**Potentilla rivalis** Nutt. [*incl. var. millegrana* (Engelm.) S. Watson; var. pentandra (Engelm.) S. Watson] Cinquefoil. Rare; lake margins, sandy marshes.

9 89-13, 1963, Eilers 4458, IA.

Also sighted at Newgard's Pasture.

**Potentilla simplex** Michx. [*incl. var. calveascens* Fern.] Cinquefoil. Common; woodland openings, sandy prairie remnants, woodland edges.

**Prunus americana** Marsh. Wild plum. Common; fencerows, along railroads, woodland edges, open woods.


**Prunus pensylvanica** L. f. Pin cherry. Rare; woods, clearings.

2 89-14, Crum 009, ISTC. Ackerson’s Marsh, 1982070118.

**Prunus serotina** Ehrh. Wild black cherry. Frequent; moist wooded slopes, upland woods.


**Prunus virginiana** L. Choke cherry. Common; open woods, woodland borders, fencerows.

Cedar Falls, 1884, Buckingham, ISTC. Cedar River, 1941, McIrath 17, ISTC. 2 89-14, 1970, Crum 008, ISTC. Raymond Prairie, 1982051403. Barnes Ferry Road Cemetery, 1983052002. George Wyth State Park, 1983061623.

**Rosa arkansana** Porter var. suffulta (Greene) Cockerell [R. suffulta Greene] Prairie rose. Infrequent; dry prairies.


**Rosa blanda** Aiton Meadow rose. Infrequent; prairie remnants, roadides.

Rosa carolina L. (incl. var. grandiflora (Baker) Rehder; var. villosa (Best) Rehder) Wild rose. Frequent; prairie remnants, open sandy places.


* Rosa eglanteria L. [R. rubiginosa L.] Sweetbrier. Rare; roadsides.

Cedar Falls, 1885, NCC, ISTC.

* Rosa multiflora Thunb. ex Murray Multiflora rose. Frequent; escape to waste ground, pastures, successional fields, fencerows.


Rubus allegheniensis Porter ex Bailey Blackberry. Common; moist to dry woods, woodland edges, roadsides.


Rubus hispidus L. Dewberry. Rare; edge of moist sandy prairie swale.


Found only in Black Hawk County in Iowa.

* Rubus idaeus L. Cultivated red raspberry. Rare escape from cultivation; waste ground, fencerows, woodland edges.

Cedar Falls, 1920, NCC, ISTC.

Rubus occidentalis L. Black raspberry. Common; upland woods, woodland edges, roadsides.

Highway 175 RR Prairie, 1983070306.
Rubus pubescens Raf. Dwarf blackberry. Rare; in slough, under Betula pumila var. glandulifera.

Ackerson's Marsh, 1983052411.

In Iowa, known only from Allamakee, Black Hawk, Clayton, Dubuque, and Winneshiek counties.

Spiraea alba Du Roi Meadow sweet. Common; low prairies, marshy ground.


Sighted also at Goose Lake.

RUBIACEAE (Madder Family)

Cephalanthus occidentalis L. Buttonbush. Rare; marshes, lakeshores, moist alluvium.

NLC, 1929, Burk 506, ISTC. Cedar Falls, NDC, Seerley, ISTC. George Wyth State Park, 1947, Schmidt 10, ISTC. George Wyth State Park, 1953, Hardin 1, ISTC.

Sighted also at Goose Lake.

Galium boreale L. {incl. var. intermedium DC.; var. hyssopifolium (Hoffm.) DC.} Northern bedstraw. Common; prairie remnants.

Galium concinnum T. & G. Shining bedstraw. Rare; upland woods, moist wooded slopes.

NLC, 1929, Burk 784, 794, ISTC. 17 89-13, 1963, Eilers 4409, IA.

Galium obtusum Bigelow Bedstraw. Infrequent; moist prairie remnants, open alluvial woods and shores.


Galium triflorum Michx. Sweet-scented bedstraw. Infrequent; open woods, moist wooded slopes, alluvial woods.


Houstonia minima Beck [Hedyotis crassifolia Raf.] Bluets. Rare; sandy or rocky lowland prairies.

NLC, 1929, Burk 238, ISTC. Beaver Creek, 1937, Grant 8007, ISTC. George Wyth State Park, 1941, McIlrath 14, ISTC. George Wyth State Park, 1974, Eilers, ISTC.
RUTACEAE (Rue Family)


SALICACEAE (Willow Family)


Cedar Falls, 1920, Jenson, ISTC. 33 90-14, 1970, Crum 27, ISTC. Black Hawk County Park, 34 90-14, 1980, Lammers 3593, ISTC.

*Populus grandidentata* Michx. Big-tooth aspen. Rare; moist to dry, usually upland woods.

Cedar Falls, 1901, Lambert, IA.


*Salix amygdaloidea* Andersson Peach-leaved willow. Frequent; along streams.

*Salix babylonica* L. Weeping willow. Cultivated; moist or sandy habitats near dwellings.

9 89-13, 1963, Eilers 4462, IA.

*Salix bebbiana* Sarg. Beaked willow. Rare; moist ground.


*Salix candida* Fluegge ex Willd. Sage-leaved willow. Rare; edges of prairie swales, wet marshy areas around springs.


*Salix discolor* Muhl. Pussy willow. Frequent; stream banks, low prairies, marsh edges.


*Salix humilis* Marsh. [incl. var. hyporhysa Fern.; var. microphylla (Andersson) Fern.] [S. *tristis* Aiton] Prairie willow. Rare; prairie remnants.

Cedar Falls, 1897, Newton, ISTC. North of Washburn, 1921, Shimek, IA. NLC, 1929, Burk 677, ISTC. Goose Lake, 1937, Grant 8006, ISTC. Goose Lake, 1938, Grant 8143, ISTC.
Salix nigra Marsh. Black willow. Infrequent; streambanks, lake margins, alluvial woods.

NLC, 1929, Burk 272, ISTC. Black Hawk County Park, 34 90-14, 1963, Eilers 4294, IA.

Salix petiolaris Smith [S. gracilis Andersson var. textoria Fern.] Willow. Common; moist prairie remnants, marsh edges.


Salix rigida Muhl. {incl. var. angustata (Pursh) Fern.; var. watsonii (Bebb) Cronq.; var. vestita Andersson} [S. cordata Michx. var. angustata (Pursh) Gray] [S. cordata Michx. var. rigida (Muhl.) Carey] [S. eriocephala Michx.] Willow. Frequent; streambanks, wet lowlands, ditches.


SANTALACEAE (Sandalwood Family)

Commandra umbellata (L.) Nutt. [C. richardsiana Fern.] Bastard toadflax. Common; prairie remnants, upland woodland openings.

SAXIFRAGACEAE (Saxifrage Family)

Heuchera richardsonii R. Br. {incl. var. hispidior Rosend., Butters & Lak.} [H. x hirsuticaulis (Wheelock) Rydb.] Alum root. Common; prairies, open rocky woods, limestone outcrops.


Mitella diphylla L. Bishop's cap, Mitrewort. Frequent; wooded, rocky slopes.

Cedar Heights, 1953, Reynolds, ISTC.

Penthorum sedoides L. Ditch stonecrop. Common; marshes, shores, moist prairies and alluvium.


Ribes americanum P. Miller Wild black currant. Frequent; moist, open woods, lake and marsh edges.


Saxifraga pensylvanica L. Swamp saxifrage. Frequent; low prairies.


SCROPHULARIACEAE (Figwort Family)

Agalinis aspera (Bentham) Britton [Gerardia aspera Douglas] Infrequent; dry prairie remnants.

18 90-14, 1975, Roosa 715, ISTC.

Agalinis purpurea (L.) Pennell [Gerardia purpurea L.] Infrequent; moist open sand.


Agalinis tenuifolia (Vahl) Raf. [incl. var. macrophylla (Bentham) Blake; var. parviflora (Nutt.) Pennell] [Gerardia tenuifolia Vahl] Infrequent; moist prairies, marshy ground.


Bacopa rotundifolia (Michx.) Wettst. Water hyssop. Rare; shallow standing water and muddy shores.

Bailey's Lake, 1980, Lammers 3865, ISTC.

Besseya bullii (Eaton) Rydb. [Synthris bullii (Eaton) Heller] [Wulfenia bullii (Eaton) Barnh.] Kittentails. Rare; dry prairie ridges.

North of Cedar Falls, 1927, Lantz, ISC. NLC, 1929, Burk 260, ISTC. North of Cedar Falls, 1931, Shimek, IA. Barnes Ferry Road Cemetery, 1982062016, 1983052012.
**Castilleja coccinea (L.) Sprengel** Indian paint brush. Rare; rocky prairies, prairie openings.

Cedar Falls, 1897, Newton, ISTC. NLC, 1929, Burk 488, 497, ISTC. Goose Lake, 1938, Grant 8135, ISTC.

* Chaenorrhinum minus (L.) Lange [Linaria minor (L.) Desf.] Dwarf snapdragon. Rare; dry sandy gravel, often along railroads.

Highway 175 RR Prairie, 1983081328.

**Gratiola neglecta** Torrey Hedge hyssop. Rare; moist prairie remnants.

Waterloo, 1893, Newton, ISTC. NLC, 1929, Burk 756, ISTC.

* Linaria vulgaris* Hill Butter and eggs. Rare; roadsides, field and woodland edges, disturbed soil.


**Lindernia anagallidea (Michx.) Pennell** [L. dubia (L.) Pennell var. anagallidea (Michx.) Cooperrider] False pimpernel. Rare; marshes, sandy alluvium.

Newgard's Pasture, 1983080521.

**Lindernia dubia (L.) Pennell** False pimpernel. Rare; clear shallow pools, wet soil, streambanks.

Waterloo, NDC, Newton, ISTC.
Mimulus ringens L. {incl. var. minthodes (Greene) A. L. Grant}
Monkey flower. Common; muddy lakeshores, moist alluvial woods.


Also sighted at Fall's Access and Newgard's Pasture.

Pedicularis canadensis L. {incl. var. dobbsii Fern.} Lousewort.
Frequent; prairie remnants, woodland openings.


Also sighted at Dorothy's Prairie.

Pedicularis lanceolata Michx. Swamp lousewort. Frequent; marshes, seeps, wet sand.


Penstemon grandiflorus Nutt. [P. bradburii Pursh] Large-flowered beard tongue. Rare; sandy soil.

Scrophularia lanceolata Pursh Figwort. Frequent; dry prairie remnants, openings in upland woods.


Also sighted at Cooper's Woods.

Scrophularia marilandica L. Figwort. Frequent; open woods, sandy roadsides.


Tomanthera auriculata (Michx) Raf. [Gerardia auriculata Michx.] Rare; moist prairie remnants.

Dunkerton, 1896, Newton, ISTC. 19 90-12, 1949, Grant 11301, ISTC, IA.

Verbascum thapsus L. Common mullein. Common; pastures, roadsides, waste places.

NLC, 1929, Burk 783, ISTC. Newgard's Pasture, 1982070105.


NLC, 1929, Burk 491, ISTC. George Wyth State Park, 1982060204. Dorothy's Prairie, 1983060120.

Veronica scutellata L. Marsh speedwell. Rare; marsh edges, prairie swales.

Goose Lake, 1938, Grant 8156, ISTC. Cedar Hills Sand Prairie, 1970, Crum 148, ISTC.


Also sighted at Frost Prairie and Dorothy's Prairie.

SOLANACEAE (Nightshade Family)

Physalis heterophylla Nees Ground cherry. Frequent; disturbed prairies, roadsides, sandy open habitats.


Cedar Falls, 1920, Thorp, ISTC. NLC, 1929, Burk 829, ISTC. ISTC Campus, 1965, Gilbert 12, ISTC. Cedar Falls, 1965, Grant 14967, ISTC.
Solanum carolinense L. Horse nettle. Infrequent; fields, roadsides, along railroads, waste ground.


* Solanum rostratum Dunal [S. cornutum Lam.] Buffalo bur. Rare; farmyards, roadsides, disturbed soil.

NLC, 1929, Burk 951, ISTC.

Native of the western United States.

TILIACEAE (Linden Family)

Tilia americana L. {incl. var. neglecta (Spach) Fosberg} Basswood, American linden. Common; moist upland woods and slopes.

NLC, 1898, Page 12, ISTC. Along Cedar River, 1929, Burk 507, ISTC. North of Cedar Falls, 1932, Shimek, IA. 3 87-12, 1980, Lammers 3621, ISTC. Fall's Access, 1982061901.

ULMACEAE (Elm Family)

Celtis occidentalis L. {incl. var. pumila (Pursh) Gray; var. canina (Raf.) Sarg.} Hackberry. Common; moist woods, open disturbed soil.

Cedar River, 1939, Grant 8388, ISTC. 6 90-12, 1960, Barnett, ISTC.

Sighted at Brustkern's Woods.

Ulmus americana L. American elm. Common; woods, especially alluvial flats.

*Ulmus pumila* L. Siberian elm. Frequent; fencerows, successional fields.


Ulmus rubra Muhl. [U. fulva Michx.] Red elm, slippery elm. Frequent; wooded slopes and bluffs.


URTICACEAE (Nettle Family)

*Boehmeria cylindrica* (L.) Sw. Bog hemp. Rare; marshes, alluvium, low woods, shorelines.


*Pilea pumila* (L.) Gray {incl. var. deamii (Lunell) Fern.} Clearweed. Infrequent; moist woods, streambanks, alluvium.


Ackerson's Marsh, 1982060749.

**VALERIANACEAE (Valerian Family)**


Cedar Falls, 1897, Newton, ISTC. NLC, 1929, Burk 274, ISTC.

**VERBENACEAE (Vervain Family)**

*Phyla lanceolata* (Michx.) Greene [*Lippia lanceolata* Michx.] Frogfruit. Infrequent; marshes, pond and stream margins, alluvial woods.

NLC, 1929, Burk 582, ISTC. Goose Lake, 1937, Grant 8105, ISTC. Black Hawk County Park, 34 90-14, Eilers 4250, IA. Fall's Access, 1982082603, 1982090906.

*Verbena bracteata* Lag. & Rodr. Vervain. Rare; farmyards, along railroads, roadsides.


*Verbena hastata* L. Blue vervain. Common; marshes, moist prairies, streambanks.

Verbena simplex Lehm. [V. angustifolia Michx.] Vervain. Frequent; dry, often sandy soil.


Verbena urticifolia L. White vervain. Rare; openings in woods, streambanks, low woods.


Verbena x blanchardii Moldenke [V. hastata x V. simplex] Vervain. Rare;

George Wyth State Park, 1953, Grant 12008a, ISTC.

Verbena x Moechina Moldenke [V. simplex x V. stricta] Vervain. Rare; prairie openings, dry pasture.

Verbena x Rydbergii Moldenke [V. hastata x V. stricta] Vervain. Rare; moist or sandy areas, dry sandy prairie.


VIOLACEAE (Violet Family)

Viola lanceolata L. Lance-leaved violet. Rare; moist sandy areas.


Viola macloskeyi Lloyd ssp. pallens (Banks ex DC.) M. S. Baker [V. pallens (Banks ex DC.) Brainerd] Wild white violet. Rare; wet sandy areas.

Ackerson's Marsh, 1983052403.

Viola missouriensis Greene Violet; Infrequent; moist, often sandy, alluvial woods.


Sighted at Raymond Prairie.

Viola nephrophylla Greene Bog violet. Rare; low prairies, marshes.


Viola papilionacea Pursh [incl. var. priceana (Pollard) Alex.] [V. pratinclolica Greene] [V. priceana Pollard of authors] Common blue violet. Common; moist woods, roadsides, waste places.

**Viola pedata** L. {incl. var. *lineariloba* DC.} Bird's-foot violet. Infrequent; prairie remnants.


**Viola pedatifida** G. Don Prairie violet. Frequent; prairie remnants, dry, rocky ridges.


**Viola sagittata** Aiton Arrow-leaved violet. Rare; moist low sandy areas and moist prairie remnants.

**Viola sororia Willd.** Hairy blue violet. Frequent; alluvial woods, moist upland woods, woodland edges.


**VITACEAE (Grape Family)**

**Parthenocissus quinquefolia** (L.) Planchon Virginia creeper. Common; moist to dry woods and alluvial woods.


**Parthenocissus vitacea** (Knerr) Hitchc. [**P. inserta** (Kerner) K. Fritsch] Woodbine. Frequent; wooded slopes, sandy areas and wooded borders.


**Vitis riparia** Michx. Riverbank grape. Common; woodland edges, along streams.


**Vitis vulpina** L. Frost grape. Rare; wooded bluffs.

NLC, 1929, Burk 275, ISTC. Cedar Hills Sand Prairie, 1970, Crum 029, 117, ISTC.
DIVISION MAGNOLIOPHYTA
CLASS LILIOPSIDA
ALISMACEAE (Water Plantain Family)


**Sagittaria brevirostra** Mack. & Bush \[S. engelmanniana* J. G. Smith ssp. brevirostra* (Mack. & Bush) Bogin \] Arrowhead. Rare; muddy shores and shallow water, marshes.

NLC, 1929, Burk 535, 859, ISTC. George Wyth State Park, 1963, Eilers 4335, IA.

**Sagittaria cuneata** Sheldon Arrowhead. Rare; muddy shores and shallow water, marshes.

NLC, 1929, Burk 654, ISTC. Cedar Hills Sand Prairie, 1970, Crum 201, ISTC.

**Sagittaria graminea** Michx. Arrowhead. Rare; muddy shores and shallow water.


**Sagittaria latifolia** Willd. Arrowhead. Frequent; muddy shores and shallow water, marshes.

Sagittaria rigida Pursh. Arrowhead. Infrequent; muddy shores and shallow water, marshes.

Along Cedar River, 1929, Burk 615, ISTC. Cedar Hills Sand Prairie, 1970, Crum 220, ISTC. Crane Creek, SE NW 23 90-12, 1981, Lammers 4315, ISTC.

ARACEAE (Arum Family)

Acorus calamus L. [A. americanus (Raf.) Raf.] Sweetflag. Infrequent; marshes and shallow standing water, lake margins.

Goose Lake, 1938, Grant 8150, ISTC. Goose Lake, 1980, Lammers 3881, ISTC. Crane Creek, SE NW 29 90-12, 1981, Lammers 4314, ISTC.


Cedar Falls, 1885, NCC, ISTC. NLC, 1898, Page, ISTC. Cedar Heights, 1920, Ries, ISTC.

COMMELINACEAE (Spiderwort Family)

Tradescantia bracteata Small. Spiderwort. Rare; low, sandy open areas.

Cedar Falls, 1885, NCC, ISTC. NLC, 1929, Burk 382, ISTC. Beaver Creek, 1938, Grant 8127, ISTC. Cedar Hills Sand Prairie, 1970, Crum 101, ISTC. Fall's Access, 1982051711.

Tradescantia ohiensis Raf. Spiderwort. Common; sandy open places, roadsides and prairie remnants.

Bulbostylis capillaris (L.) C. B. Clarke [Stenophyllum capillaris (L.) Britton] Slender bulbostylis. Rare; dry, open sandy soil.

Martinson's Dunes, 1983080908.

Carex amphibia Steudel var. turgida Fern. [C. grisea Wahl.] Turgid sedge. Rare; sandy soil.


Carex annectens (Bickn.) Bickn. var. xanthocarpa (Bickn.) Wiegand [C. brachyglossa Mack.] Yellow-fruited sedge. Infrequent; moist areas, marsh edges, sandy areas.


Carex atherodes Sprengel Awned sedge. Rare; marsh edges.

NLC, 1929, Burk 368, 492, ISTC. Cedar Hills Sand Prairie, 1970, Crum 154, ISTC.

Carex bicknellii Britton Bicknell's sedge. Rare; prairies, sandy alluvial floodplain.


Carex blandia Dewey [C. laxiflora Lam. var. blandia (Dewey) Boott] Woodland sedge. Frequent; sandy woodland areas.


Carex brevior (Dewey) Mack. ex Lunnell Few-headed straw sedge. Infrequent; sandy prairies, wet prairies.

**Carex buxbaumii** Wahl. Buxbaum's sedge. Infrequent; mesic prairies, marsh edges.


**Carex conjuncta** Boott Soft fox sedge. Rare; sedge meadow, prairie swale.


**Carex conoidea** Willd. Field sedge. Rare; moist prairie, prairie swale.


**Carex davisii** Schw. & Torrey Davis' sedge. Infrequent; alluvial woods.


**Carex gravida** Bailey [C. lunelliana Mack.] Heavy sedge. Frequent; mesic to dry prairies, sandy areas, roadsides.


**Carex grayi** Carey Grays sedge. Infrequent; alluvial woods, lakeshores.


**Carex haydenii** Dewey Hayden's sedge. Rare; marsh edges.

Cedar Hills Sand Prairie, 1970, Crum 119, ISTC.
Carex hystericina Muhl. ex Willd. [C. hystericina Muhl. ex Willd. of authors] Porcupine sedge. Rare; marshy areas.


Carex interior Bailey Inland sedge. Infrequent; marshes, wet prairies, swales.


Carex interior Bailey Inland sedge. Infrequent; marshes, wet prairies, swales.


Carex interior Bailey Inland sedge. Infrequent; marshes, wet prairies, swales.


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Carex interior Bailey Inland sedge. Infrequent; marshes, wet prairies, swales.

*Carex leavenworthii* Dewey. Leavenworth's sedge. Rare; sandy alluvial floodplains.

Elk Run, 1921, Shimek, IA. Cedar Township RR Prairie, 1982060720. George Wyth State Park, 1983060307.

*Carex leptalea* Wahl. Sedge. Rare; swale in sand prairie, marsh edge.


In Iowa, found only in Black Hawk County.

*Carex lupulina* Muhl. ex Willd. Hop sedge. Rare; low moist areas.

NLC, 1912, NCC, ISTC. NLC, 1929, Burk 580, ISTC.


*Carex muhlenbergii* Willd. {incl. var. inervis Boott} Muhlenberg's sedge. Infrequent; dry sandy prairies.


*Carex normalis* Mack. Larger straw sedge. Frequent; mesic to moist prairies, sandy areas.

Carex pensylvanica Lam. Pennsylvania sedge. Frequent; upland woods and wooded slopes.

Carex projecta Mack. Necklace sedge. Rare; alluvial woods.
Between Waterloo and Cedar Falls, 1930, Shimek, IA.

Carex rosea Willd. [C. flaccidula Steud. in part] Stellate sedge. Rare; alluvial woods.
NLC, 1929, Burk 516, ISTC.

Carex sartwellii Dewey Sartwell's sedge. Rare; marsh edges.
Cedar Hills Sand Prairie, 1970, Crum 182, ISTC.

Carex scoparia Schkuhr ex Willd. Pointed broom sedge. Rare; marsh margins and alluvial woods.

Carex sparganioides Muhl. ex Willd. Bur-reed sedge. Rare; moist alluvial woods.
George Wyth State Park, 1982070808.

Carex sprengelii Dewey ex Sprengel Sprengel's sedge. Infrequent; upland woods and thickets, alluvial woods.
Fall's Access, 1974, Eilers, ISTC. Brustkern's Woods, 1982051427, 1983052304. SE SE 9 90-14, 1982060326.

Carex stipata Muhl. ex Willd. [C. X stipata Muhl. ex Willd. of authors] Awl-fruited sedge. Rare; marshes.
NLC, 1929, Burk 358, ISTC. Steimel's Prairie, 1981, Lammers 4159, ISTC.
Carex stricta Lam. [C. strictior Dewey] Tussock sedge. Frequent; sedge meadows, swales, moist prairies, alluvial woodlands.


Carex suberecta (Olney) Britton Prairie straw sedge. Infrequent; sandy prairies and alluvial terraces.


Carex tribuloides Wahl. Blunt broom sedge. Rare; marshes and wet sandy areas.


Carex trichocarpa Schkuhr Hairy-fruited sedge. Rare; wet sands or marshes.


Carex vesicaria L. Inflated sedge. Rare; sandy marshes and alluvial floodplains.


Carex vulpinoidea Michx. Fox sedge. Infrequent; low moist ground and sandy alluvial floodplains, lake margins.

Cyperus aristatus Rottb. [C. inflexus Muhl.] Nut grass, umbrella sedge. Rare; river bank, sandy pond margins.

NLC, Burk 823, ISTC. Hartman's Reserve Nature Center, 1980, Lammers 3889, ISTC.

Cyperus esculentus L. Yellow nut grass. Rare; moist disturbed soil, alluvial woods.

NLC, 1929, Burk 611, ISTC. 6 90-12, Barnett, ISTC. Black Hawk County Park, 34 90-14, 1963, Eilers 4266, IA.


Cyperus odoratus L. var. squarrosus (Britton) Gilly [C. ferruginesens Boeckl.] [C. speciosus Vahl] Coarse cyperus. Rare; moist or wet soil, sandy pond margin.

6 90-12, 1960, Barnett, ISTC. 17 89-13, 1963, Eilers 4431, IA.

Cyperus rivularis Kunth Brook flatsedge. Infrequent; moist, open sand, pond margins, marsh edges.


Cyperus schweinitzii Torrey Schweinitz's cyperus. Infrequent; sandy areas, dry prairies, roadsides.

Cyperus strigosus L. Straw-colored cyperus. Frequent; moist, sandy shores, marshy places, and wet prairies.


Dulichium arundinaceum (L.) Britton Three-way sedge. Rare; marshes.


Eleocharis acicularis (L.) R. & S. Needle spike-rush. Rare; shallow water and margins of ponds and lakes.

NLC, 1929, Burk 374, ISTC. Hartman Reserve Nature Center, 1963, Eilers 4438, IA, ISTC.

Eleocharis compressa Sulliv. [E. elliptica Kunth] Spike-rush. Rare; moist, sandy areas.


Eleocharis macrostachya Britton [E. palustris (L.) R. & S. var. australis Nees] Spike-rush. Rare; shallow water and marsh edges.

Eleocharis obtusa (Willd.) Schultes Spike-rush. Rare; marshes at lake margins.

Bailey's Lake, 1980, Lammers 3864, ISTC.

Eleocharis tenuis (Willd.) Schultes [incl. var. verrucosa (Svenson) Svenson] [E. verrucosa (Svenson) Harmes] Spike-rush. Rare; prairies.

NLC, 1929, Burk 316, ISTC.

Eriophorum angustifolium Honok. [E. polystachyon L. in part] Tall cotton-grass. Rare; prairie swale.


Hemicarpha micrantha (Vahl) Pax [Scirpus micranthus Vahl] Bulrush. Rare; stream banks and lakeshores.

Waterloo, 1893, Newton, ISTC.

Scirpus atrovirens Willd. Dark green bulrush. Common; wet prairies, lake margins, marshes.


Scirpus cyperinus (L.) Kunth [incl. var. brachypodus (Fern.) Gilly; var. rubricosus (Fern.) Gilly; var. laxus (Gray) Beetle] Wool-grass. Infrequent; sandy wetlands, prairie swales, and marshes.


Scirpus fluviatilis (Torrey) Gray River bulrush. Rare; marshes.

NLC, 1929, Burk 309, ISTC. NE NW 7 90-13, 1981, Lammers 4261, ISTC.
Scirpus heterochaetus Chase. Pale great bulrush. Rare; marshes.


Scirpus pendulus Muhl. [S. lineatus Michx., misappl.] Bulrush. Rare; wet prairie.

NLC, 1929, Burk 336, ISTC.


Scleria triglomerata Michx. Nut-rush. Rare; wet prairies and wet alluvium.

Elk Run, 1921, Shimek, IA. Cedar Hills Sand Prairie, 1970, Crum 089, ISTC.

DIOSCOREACEAE (Yam Family)

Dioscorea villosa L. Wild yam. Infrequent; upland forest.


HYDROCHARITACEAE (Frog's-bit Family)

Elodea nuttallii (Planchon) St. John [Anacharis nuttallii Planchon] Water-weed. Rare; shallow standing water.

Black Hawk County Park, 34 90-14, 1963, Eilers 4287, IA. Black Hawk County Park, W NE NE 34 90-14, 1980, Lammers 3597, ISTC. River Birch Bottoms, 1981, Lammers 4372, ISTC.
IRIDACEAE (Iris Family)

*Iris shrevei* Small [I. *virginica* L. var. *shrevei* (Small) E. Anderson] Blue flag. Frequent; shallow water of marshes, prairie swales.


*Sisyrinchium campestre* Bickn. [incl. var. *kansanum* Bickn.] Blue-eyed grass. Common; moist to dry prairies.


JUNCACEAE (Rush Family)

*Juncus canadensis* J. Gay ex Laharpe Rush. Rare; moist sandy prairie.

NLC, 1929, Burk 742, ISTC. Bailey's Lake, 1980, Lammers 3872, ISTC.

Burk's collection had no mature fruit for positive identification, but it is most likely *J. canadensis*.


**Juncus greenii** Oakes & Tuckerman Rush. Rare; moist sandy prairies.


**Juncus interior** Wieg. Rush. Rare; moist prairies, sandy soil.


**Juncus nodosus** L. Rush. Rare; wet prairies.


**Juncus tenuis** Willd. Path rush. Infrequent; moist prairies, along woodland paths.


**Juncus torreyi** Cov. Rush. Rare; roadside ditches.

SW SW SW 10 87-12, 1982072463.

**Juncus vaseyi** Engelm. Rush. Rare; moist to mesic prairies.


**LEMNACEAE (Duckweed Family)**

**Lemna minor** L. Duckweed. Common; ponds, stagnant water.

**Lemna trisulca** L. Star duckweed. Rare; lake margin, stagnant water.

NLC, 1929, Burk 616, ISTC. Goose Lake, 1938, Grant 8153, ISTC.

**Spirodela polyrhiza** (L.) Schleiden Greater duckweed. Frequent; stagnant water.

Goose Lake, 1938, Grant 8154, ISTC. Black Hawk County Park, 34 90-14, 1963, Eilers 4272, IA. Goose Lake, 1983082611.

**Wolffia columbiana** Karsten Watermeal. Rare; stagnant water.

Black Hawk County Park, 34 90-14, 1963, Eilers 4290, IA.

**Wolffia punctata** Griseb. Watermeal. Rare; stagnant water.

Black Hawk County Park, 34 90-14, 1963, Eilers 4272, IA.

**LILIACEAE** (Lily Family)

**Allium canadense** L. Wild onion. Frequent; prairie remnants, open woods.

Cedar Falls, 1892, Ries, ISTC. NLC, 1929, Burk 349, ISTC. Cooper's Woods, 1982060301.

**Allium tricoccum** Aiton Wild leek. Infrequent; moist wooded slopes, upland woods.


**Asparagus officinalis** L. Garden asparagus. Common; roadsides, disturbed ground.

Cedar Falls, 1919, Hilton, ISTC. NLC, 1929, Burk 335, ISTC. Bunchflower Meadow, 1982063012.
Erythronium albidum Nutt. {incl. var. mesochoreum (Knerr) Rickett}
NLC, 1898, Page, ISTC. NLC, 1929, Burk 214, ISTC. Hartman Reserve Nature Center, 1969, Eilers 6559, ISTC.

Hemerocallis fulva (L.) L. Day lily. Common; roadsides.
NW NW NW 36 90-12, 1982070717.

Hypoxis hirsuta (L.) Cov. Yellow stargrass. Frequent; prairie remnants, woodland openings.

NLC, 1898, Page 2, ISTC. NLC, 1929, Burk 552, ISTC.

Lilium philadelphicum L. var. andinum (Nutt.) Ker-Gawl. [L. umbellatum Pursh] Wood lily. Rare; moist prairies.
NLC, 1898, Page 3, ISTC. NLC, 1929, Burk 770, ISTC.

Melanthium virginicum L. [Veratrum virginicum (L.) Aiton f.] Bunchflower. Infrequent; moist prairies, prairie roadsides.
*Ornithogalum umbellatum* L. Star of Bethlehem. Rare; disturbed habitats, grassy roadides.

N SW 12 87-11, 1983060714.


Snag Creek Woods, 1929, Burk 343, ISTC. Cooper's Woods, 1983061311.

*Smilacina racemosa* (L.) Desf. False Solomon's seal. Frequent; moist woodlands.

Brustkern's Woods, 1983070203.

*Smilacina stellata* (L.) Desf. False Solomon's seal. Common; moist woodlands, moist shaded areas in prairies.


*Smilax ecirrhata* (Engelm. ex Kunth) S. Watson Carrion flower. Infrequent; moist woods.


*Smilax herbacea* L. {incl. var. lasioneuron (Hooker) A. DC.} [*S. lasioneuron* Hooker] Carrion flower. Frequent; roadides, woodlands, woodland borders.


Cedar Heights, 1953, Grant 12076, ISTC. Cooper's Woods, 1982060305.

Trillium cernuum L. Nodding trillium. Infrequent; moist wooded slopes.


Trillium flexipes Raf. [T. declinatum (Gray) Gl.] [T. gleasoni Fern.] Nodding trillium. Rare; moist wooded slopes.


Uvularia grandiflora Small [U. perfoliata L., misappl.] Bellwort. Infrequent; moist upland woods, wooded slopes.


Uvularia sessilifolia L. Sessile-leaved bellwort. Rare; moist upland woods.


NLC, 1929, Burk 384, ISTC.
ORCHIDACEAE (Orchid Family)

Coeloglossum viride (L.) Hartman var. virens (Muhl. ex Willd.) Luer [Habenaria bracteata (Muhl. ex Willd.) R. Br.] [Habenaria viridis (L.) R. Br. var. bracteata (Muhl. ex Willd.) Gray]
Bracted orchid. Rare; upland woods.

Cooper's Woods, 1982, Watson, ISTC.

Cypripedium calceolus L. var. pubescens (Willd.) Correll [C. pubescens Willd.] Yellow lady's-slipper orchid. Rare; moist upland woods.

Cedar Falls, NDC, Webber, ISC. Cooper's Woods, 1982060501.

The Cooper's Woods collection is a photograph of the only plant found; photo taken by D. D. Smith. Sighted at Hartman Reserve Nature Center.

Cypripedium candidum Muhl. ex Willd. Small white lady's-slipper orchid. Rare; moist prairies, prairie swales.

Waterloo, NDC, Chamberlin, ISTC. Cedar Falls, 1897, Newton, ISTC. NLC, NDC, Webber, ISC.

Field identified by Zager in 1987 at one location.


Liparis loeselii (L.) L. C. Rich. Bog twayblade. Rare; wet habitats.

Raymond, NDS, Hitchcock, ISC.
Platanthera praeclara Sheviak & Bowles [P. leucophaea (Nutt.) Lindley in part] [Habenaria leucophaea (Nutt.) Gray] Western prairie fringed orchid. Rare; wet prairies and prairie swales.

Cedar Falls, 1894, Carver, ISC. Mt. Vernon Township, 1929, Burk, ILL.

The Burk collection is at the University of Illinois, Urbana.


POACEAE (Grass Family)


Dry Run Creek, west of Hudson, 1955, Pierson, ISTC. Waterloo, 1965, Gilber 10, ISTC. Raymond Prairie, 1982062312, 1982062314.

Agropyron smithii Rydb. Wheatgrass. Frequent; prairie remnants, open sandy areas.


Agropyron trachycaulum (Link) Malte {incl. var. unilaterale (Vasey) Malte} [A caninum (L.) Beauv.] [A. subsecundum (Link) Hitchco.] Slender wheatgrass. Rare; openings in woods, prairies, along railroads.

Agrostis gigantea Roth [A. alba L., misappl.] [A. stolonifera L. var. major (Gaudin) Farw.] Redtop. Common; roadsides, prairies, marsh edges, disturbed areas.


Agrostis hyemalis (Walter) BSP. Ticklegrass. Rare; sandy open areas.

Elk Run, 1921, Shimek, IA. Cedar Falls, 1929, Burk 285, ISTC. NLC, 1929, Burk 758, ISTC. Between Waterloo and Cedar Falls, 1930, Shimek, IA.

Agrostis perennans (Walter) Tuckerman [A. schweinitzii Trin.] Upland bent. Rare; open woods.

Cedar Heights, 1929, Burk 652, ISTC. 1/2 mile west of U.S. Highway 63 and junction of IA Highway 57, 1955, Pierson, ISTC.

Alopecurus aequalis Sobol. Foxtail. Rare; edge of spring.

Cedar Hills Sand Prairie, 1970, Crum 135, ISTC.

Andropogon gerardii Vitman [A. furcatus Muhl.] Big bluestem. Common; prairie remnants, roadides.


Aristida oligantha Michx. Three-awned grass. Rare; dry prairie remnants.

Raymond Prairie, 1980, Lammers 3983, ISTC.

* Avena sativa L. Cultivated oats. Rare; field edges, disturbed ground.

NLC, 1912, NCC, ISTC. Cedar Falls, 1947, Schmidt 2, ISTC.
**Bouteloua curtipendula** (Michx.) Torrey Side-oats grama. Frequent; dry sandy prairies.

North of Washburn, 1921, Shimek, IA. Island Park, 1929, Burk 592, ISTC. Raymond Prairie, 1980, Lammers 3745, ISTC.

**Bouteloua hirsuta** Lag. Hairy grama. Infrequent; sand dunes, sandy prairies.


**Bromus inermis** Leysser Smooth brome. Common; roadsides, disturbed areas.


**Bromus japonicus** Thunb. ex Murray Japanese brome. Frequent; roadsides, disturbed areas.


**Bromus latiglumis** (Shear) A. S. Hitchc. [B. altissimus Pursh] [B. purgans L., misappl.] Brome grass. Rare; low prairies.

Mt. Vernon Township, 1929, Burk 722, ISTC.

**Bromus pubescens** Muhl. ex Willd. [B. purgans L., misappl.] Canada brome. Rare; upland woods.

Cedar Heights, 1929, Burk 630, ISTC. Hartman Reserve Nature Center, 1963, Eilers 4399, IA.
**Bromus tectorum** L. Downy chess. Frequent; roadsides, waste places, along railroad tracks.


**Calamagrostis canadensis** (Michx.) Beauv. Bluejoint. Frequent; wet prairies and shallow marshes.


**Calamovilfa longifolia** (Hooker) Scribner Sand reed-grass. Rare; dry, sandy prairie.


**Cenchrus longispinus** (Hackel) Fern. [C. pauciflorus Bentham, misappl.] Sandbur. Frequent; roadsides, disturbed sandy soil.


**Cinna arundinacea** L. Wood reed. Rare; upland woods.

Hartman Reserve Nature Center, 1963, Eilers 4390, IA.

**Dactylis glomerata** L. Orchard grass. Common; fields, lawns, roadsides, waste places.

**Diarrhena americana** Beauv. var. *obovata* Gl. Rare; moist woods.

Cedar Heights, 1929, Burk 629, ISTC. Cooper's Woods, 1983081108.


**Dichanthelium acuminatum** (Sw.) Gould & Clark var. *villosum* (Gray) Gould & Clark [Panicum *praecocius* A. S. Hitchc. & Chase] Panic grass. Rare; upland prairies.

Bunchflower Meadow, 1982063014.

**Dichanthelium boreale** (Nash) Freckm. [Panicum *boreale* Nash] Panic grass. Rare; edge of prairie swale.

Cedar Hills Sand Prairie, 1981, Lammers 4249, ISTC.

**Dichanthelium depauperatum** (Muhl.) Gould [Panicum *depauperatum* Muhl.] Panic grass. Rare; sandy prairies.


**Dichanthelium linearifolium** (Scribner) Gould [Panicum *perlongum* Nash] [Panicum *linearifolium* Scribner] Slim-leaved panic grass. Rare; upland prairie on limestone outcrop.

Raymond Prairie, 1980, Lammers 3522, ISTC.

**Dichanthelium oligosanthes** (Schultes) Gould [Panicum *oligosanthes* Schultes] Panic grass. Rare; sandy alluvial flat.

North of Cedar Falls, 1932, Shimek, IA.


* Digitaria ischaemum (Schreb. ex Schweig.) Schreber ex Muhi. [D. humifusa Pers.] Smooth crabgrass. Frequent; lawns, yards, disturbed soil.

Waterloo, 1965, Gilbert 59, ISTC.


Echinochloa muricata (Beauv.) Fern. [incl. var. microstachya Wieg.] [E. pungens (Poiret) Rydb., misappl.] Barnyard grass. Frequent; moist disturbed soil.

Elymus canadensis L. Canada wild rye. Common; prairies and roadsides.


Elymus villosus Muhl. ex Willd. Slender wild rye. Rare; moist woods.

Cedar Heights, 1929, Burk 653, ISTC.

Elymus virginicus L. Virginia wild rye. Frequent; roadsides, prairies, alluvial woods.


Eragrostis ciliaris (All.) E. Mosher [E. megastachya (Koeler) Link] Stinkgrass. Common; roadsides, waste grounds, lawns.


Eragrostis hypnoides (Lam.) BSP. Pony grass. Frequent; wet soil along streams.

Fall's Access, 1982082609.


Eragrostis pilosa (L.) Beauv. Love grass. Rare; fields and disturbed soil.

North of Cedar Falls, 1955, Pierson, ISTC.
_Eragrostis spectabilis_ (Pursh) Steudel. Purple love grass. Infrequent; sandy areas, prairies, roadides.


_Festuca obtusa_ Biehler Nodding fescue. Frequent; moist woods.


_Festuca octoflora_ Walter var. _tenella_ (Willd.) Fern. [Vulpia octoflora (Walter) Rydb.] Six-weeks fescue. Rare; along railroads, sandy alluvial areas.

Elk Run, 1921, Shimek, IA. South of Washburn, 1932, Shimek, IA.

_Festuca paradoxa_ Desv. Fescue grass. Rare; prairies.

Steimel's Prairie, 1980, Lammers 3791, ISTC.


_Glyceria septentrionalis_ A. S. Hitchc. Eastern manna grass. Rare; marsh.

Cedar Hills Sand Prairie, 1970, Crum 146, ISTC.

_Glyceria striata_ (Lam.) A. S. Hitchc. Fowl manna grass. Infrequent; marshes, prairie swales, damp woods.

Hierochloe odorata (L.) Beauv. Holy grass. Rare; moist prairie.

Cedar Hills Sand Prairie, 1970, Crum 046, ISTC.

Hordeum jubatum L. Squirrel-tail barley. Common; disturbed ground.

Washburn, 1921, Shimek, IA. Cedar Hills Sand Prairie, 1970, Crum 158, ISTC.

Hordeum pusillum Nutt. Little barley. Rare; dry, open sandy areas.


Cedar Falls, 1929, Burk 508, ISTC.

Koeleria macrantha (Ledeb.) Schultes [K. cristata (L.) Pers., illeg. name] [K. pyramidata (Lam.) Beauv.] June grass. Infrequent; dry prairies, sandy plains.


Leersia oryzoides (L.) Sw. Rice cut-grass. Infrequent; marshes, muddy lake margins.

NLC, 1929, Burk 739, ISTC. 33 88-14, 1963, Eilers 4351, IA. Goose Lake, 1982081815.

Leersia virginica Willd. Whitegrass. Infrequent; moist alluvial woods, moist wooded slopes.

Leptoloma cognatum (Schultes) Chase [Digitaria cognatum (Schultes) Pilger] Fall witch grass. Rare; sandy prairies.


*Lolium perenne L.* Perennial rye grass. Rare; roadsides, along railroads, waste grounds.

3 88-14, 1963, Eilers 4386, IA.

*Muhlenbergia frondosa* (Poiret) Fern. [M. mexicana (L.) Trin., misappl.] Muhly. Rare; moist alluvial woods, moist prairies.

Waterloo, 1955, Pierson, ISTC. 6 90-12, 1960, Barnett, ISTC. Black Hawk County Park, 3 90-14, 1963, Eilers 4265, IA.

*Panicum capillare* L. Witchgrass. Common; fields, roadsides, waste places, prairies.

Washington-Union Bridge, 1929, Burk 698, ISTC. NLC, 1949, Classick, ISTC. 6 90-12, 1960, Barnett, ISTC.


Waterloo, 1929, Burk 901, ISTC. NLC, 1929, Burk 975, ISTC. 23 89-13, 1960, Barnett, ISTC.

*Panicum virgatum* L. Switchgrass. Common; prairie remnants.

**Paspalum setaceum** Michx. var. *ciliatifolium* (Michx.) Vasey [*P. ciliatifolium* Michx.] Bead grass. Frequent; prairies, dry sandy soil.


**Phalaris arundinacea** L. Reed canary grass. Frequent; marshes, lake shores.


*Phleum pratense* L. Timothy. Common; fields, open disturbed habitats.


**Phragmites australis** (Cav.) Trin. ex Steudel [*P. communis* Trin.] Reed. Rare; marshes, moist roadsides.


*Poa compressa* L. Canadian bluegrass. Common; dry prairies, roadsides.


**Poa palustris** L. Fowl meadow grass. Rare; moist prairie remnants, prairie swales, marshes.

* * Poa pratensis L. Kentucky bluegrass. Common; disturbed habitats, roadsides, along railroads.


Schizachyrium scoparium (Michx.) Nash [Andropogon scoparius Michx.] Little bluestem. Common; upland prairies.


* * Secale cereale L. Cultivated rye. Infrequent; roadsides, waste ground.

NLC, 1929, Burk 374, ISTC.

* * Setaria faberi Herrm. Giant foxtail. Infrequent; fields, roadsides, waste grounds.


* * Setaria viridis (L.) Beauv. Green foxtail. Common; roadsides, fields, disturbed ground.


Spartina pectinata Link Slough grass, cord grass. Frequent; prairie swales, wet roadsides, marsh edges.


Sphenopholis obtusata (Michx.) Scribner var. obtusata Wedge grass. Rare; prairies.

Bennington Township, 1929, Burk 751, ISTC.

Sphenopholis obtusata (Michx.) Scribner var. major (Torrey) K. S. Erdman [S. intermedia Rydb.] Wedge grass. Infrequent; prairie swales, low moist grounds.

Cedar Hills Sand Prairie, 1970, Crum 130, ISTC.

Sporobolus asper (Michx.) Kunth Dropseed. Rare; dry prairie slopes, pasture.

Cedar Falls, 1929, Burk 939, ISTC. West of La Porte City, 1955, Pierson, ISTC. Cedar Falls, 1952, Grant 11775, ISTC, IA.

Sporobolus cryptandrus (Torrey) Gray Sand dropseed. Rare; sandy prairies.


Sporobolus heterolepis (Gray) Gray Prairie dropseed. Rare; dry prairies.

6 90-12, 1960, Barnett, ISTC.
Sporobolus vaginiflorus (Torrey ex Gray) Wood (incl. var. inaequalis Fern.) Poverty grass. Rare; dry sandy soil.

Cedar Falls, 1929, Burk 897, ISTC.

Stipa spartea Trin. Porcupine grass. Frequent; prairie remnants, sandy open soil.


Triplasis purpurata (Walter) Chapman Sand grass. Rare; dry sandy soil.

Myszka Prairie, 1980, Lammers 3950, ISTC.

Zizania aquatica L. var. interior Fassett Wild rice. Rare; shallow marshes.


PONTEDERIACEAE (Pickerel-weed Family)

Heteranthera dubia (Jacq) Macm. [Zosterella dubia (Jacq.) Small] Water star-grass. Rare; muddy shore of pond.

NE 28 90-14, 1980, Lammers 3831, ISTC.

Pontederia cordata L. Pickerel-weed. Rare; marshy shores and shallow water.

POTAMOGETONACEAE (Pondweed Family)

Potamogeton foliosus Raf. Pondweed. Infrequent; shallow marshes, ponds, lakes.

Black Hawk County Park, 34 90-14, 1963, Eilers 4288, IA.

Potamogeton natans L. Pondweed. Rare; shallow water at edges of lakes and marshes.


Potamogeton nodosus Poiret [P. americanus C. & S.] Pondweed. Rare; shallow water at edges of lakes and marshes.

Waterloo, 1894, Newton, ISTC. Bailey's Lake, 1980, Lammers 3867, ISTC.

SPARGANIACEAE (Bur-reed Family)

Sparganium androcladum (Engelm.) Morong Bur-reed. Rare; shallow water of marshes.


Sparganium eurycarpum Engelm. Bur-reed. Rare; shallow water of marshes.


TYPHACEAE (Cattail Family)

Typha latifolia L. Common cattail. Frequent; marshes, shallow standing water, wet roadsides.

APPENDIX B

EXCLUDED SPECIES

The following are species excluded from the annotated catalog because their occurrence in the county could not be verified by correctly identified herbarium vouchers. Misidentified species have been listed under their correct names in the annotated catalog. The list follows the sequence of the annotated catalog and includes the source of the report and the reason for exclusion.

OPHIOGLOSSACEAE

*Botrychium simplex* E. Hitchc. Field identified by Farrar in 1986 but no voucher herbarium specimens are currently available.

*Ophioglossum vulgatum* L. var. *pseudopodium* (Blake) Farw. Field identified by Farrar and Fusateri in 1986 but no voucher specimens have been placed in any herbaria.

ASTERACEAE

*Aster commutatus* (J. & G.) A. Gray 1929, Burk: specimen is *A. ontariouis* Wiegand.

*Aster dumosus* L. 1929, Burk: specimen is *A. parviceps* (Burgess) Mack. & Bush.

*Aster vimineus* Lam. 1912, NCC: specimen is *A. pilosus* Willd.

*Aster tradescanti* L. 1929, Burk: specimen is *A. lanceolatus* Willd. ssp. *simplex* (Willd.) A. G. Jones

*Circium altissimum* (L.) Spreng. 1960, Barnett: incomplete specimen; unable to identify.
Circium flodmani (Rydb.) Arthur 1960, Barnett: incomplete specimen; unable to identify.

Helianthus x doronicoides Lam. 1929, Burk: incorrect identification of H. tuberosus L.

Lactuca ludoviciana (Nutt.) DC. 1929, Burk: unable to identify.

Rudbeckia triloba L. 1929, Burk: fragmented specimen; impossible to identify.

Solidago juncea Ait. 1929, Burk: incorrectly identified specimen; correct identification uncertain.

Solidago mollis Bartl. 1929, Burk: incorrectly identified; correct identification uncertain.


Tragopogon pratensis L. 1929, Burk: incorrectly identified; probably is T. dubius Scop.

BRASSICACEAE

Barbarea integrifolia 1912, NCC: incomplete specimen; unable to identify.

Brassica nigra (L.) Koch 1929, Burk: specimen in poor condition; unable to identify.

Radicula sinuata (Nutt.) Greene 1929, Burk: specimen not identifiable.

CARYOPHYLLACEAE

Silene virginica L. 1949, Dailey: identified by Grant in 1949, but identification is questionable.

CONVOLVULACEAE

Cuscuta arvensis Beyrich. 1893, Newton: incorrectly identified specimen of C. indecora Choisy.
Cuscuta gronovii Willd. 1929, Burk: incomplete specimen; uncertain of identification.

Hypericum canadense L. 1929, Burk: incorrect identification; possibly is H. mutilum.


Corydalis flavula (Raf.) DC. 1897, Newton: incorrect identification of C. micrantha (Engelm.) Gray.


Ranunculus delphinifolius Torr. NDC, NCC: incorrect identification; correct identification uncertain.

Ranunculus recurvatus Poir. 1884, Buckingham: incomplete specimen; unable to identify.

Ranunculus repens L. 1898, Page: incomplete specimen; unable to identify.


Crataegus pertomontosa Ashe. 1929, Burk: unable to identify.
Rosa prairia 1887, Ebert: incorrect identification of R. blanda Ait.


**JUNCACEAE**

Juncus brachycarpus Engelm. 1929, Burk: incomplete specimen, but most likely is J. canaensis.

**POACEAE**

Bromus commutatus Schrad. 1939, Grant: specimen is possibly B. japonicus Thunb.

Bromus kalmii Gray 1929, Burk: specimen is B. pubescens Muhl. ex Willd.
APPENDIX C

RARE PLANTS NOT COLLECTED SINCE 1970

The following list was compiled as a checklist of rare native plants which have not been collected since 1970. Further reconnaissance in the field may relocate these plants and provide additional information on their frequency of occurrence. The list is in the same sequence as the annotated catalog.

**SELAGINELLACEAE**
- *Selaginella rupestris*

**ASPLENIACEAE**
- *Cystopteris prostrusa*

**AMARANTHACEAE**
- *Amaranthus arenicola*
- *A. rudis*
- *A. tuberculatus*

**APIACEAE**
- *Polytaenia nuttallii*
- *Sanicula marilandica*

**APOCYNACEAE**
- *Apocynum androsaemifolium*

**ASTERACEAE**
- *Aster ontariois*
- *A. lanceolatus ssp. simplex*
- *A. x amethystinus*
- *Bidens tripartita*
- *B. vulgata*
- *Crepis runcinata*
- *Eupatorium altissimum*
- *Helianthus divaricatus*
- *Liatris squarrosa*

**BRASSICACEAE**
- *Arabia canadensis*
- *A. drummondii*
- *Cardamine pensylvanica*
- *Lesquerella ludoviciana*
- *Nasturtium officinale*

**CAPRIFOLIACEAE**
- *Diervilla lonicera*
- *Symphoricarpos orbiculatus*

**CARYOPHYLLACEAE**
- *Cerastium brachypodum*

**CHENOPODIACEAE**
- *Chenopodium hybridum*
- *C. standleyanum*

**CONVOLVULACEAE**
- *Cuscuta cuspidata*
- *C. indecora*

**ERICACEAE**
- *Pyrola elliptica*
EUPHORBIACEAE

Acalypha virginica
Euphorbia hexagona
E. maculata

FABACEAE

Baptisia lactea
Desmodium sessilifolium
Lathyrus venosus
Lespedeza leptostachya
Paoralea argophylla
Strophostyles helvola

HYPERICACEAE

Hypericum mutilum
H. perforatum
H. pyramidatum

LAMIACEAE

Agastache nepetoides
Mentha arvensis

LYTHRACEAE

Ammannia coccinea

MORACEAE

Humulus lupulus

NYMPHAEACEAE

Nuphar luteum

ONAGRACEAE

Gaura biennis

PAPAVERACEAE

Dicentra canadensis

POLYGALACEAE

Polygala verticillata

POLYGONACEAE

R. orbiculatus

RANUNCULACEAE

Anemone caroliniana
Ranunculus flabellaris

ROSACEAE

Agrimonia striata
Crataegus coccinea

SCROPHULARIACEAE

Gratiola neglecta
Lindernia dubia
Tomanthera auriculata

VALERIANACEAE

Valeriana edulis ssp. ciliata

VERBENACEAE

Verbena x blanchardi

DIVISION MAGNOLIOPHYTA

CLASS: LILIOPSIDA

ALISMACEAE

Sagittaria brevirostra

CYPERACEAE

Carex laxiculmis
Carex lupulina
Carex projecta
Carex rosea
Cyperus esculentus
C. odoratus var. squarrosus
Eleocharis acicularis
E. tenuis
Hemicarpha micrantha
Scirpus pendulus

LEMNACEAE

Lemna trisulca
Wolffia columbiana
W. punctata
LILIACEAE

Lilium philadelphicum var. andinum
Zigadenus elegans

ORCHIDACEAE

Cypripedium candidum
Liparis loeselii
Platanthera praerclara

POACEAE

Agrostis perennans
Festuca octoflora

POTAMOGETONACEAE

Potamogeton foliosus

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