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THE FLORA OF THE "DRIFTLESS AREA"

THOMAS G. HARTLEY

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G. W. Martin, *Editor*

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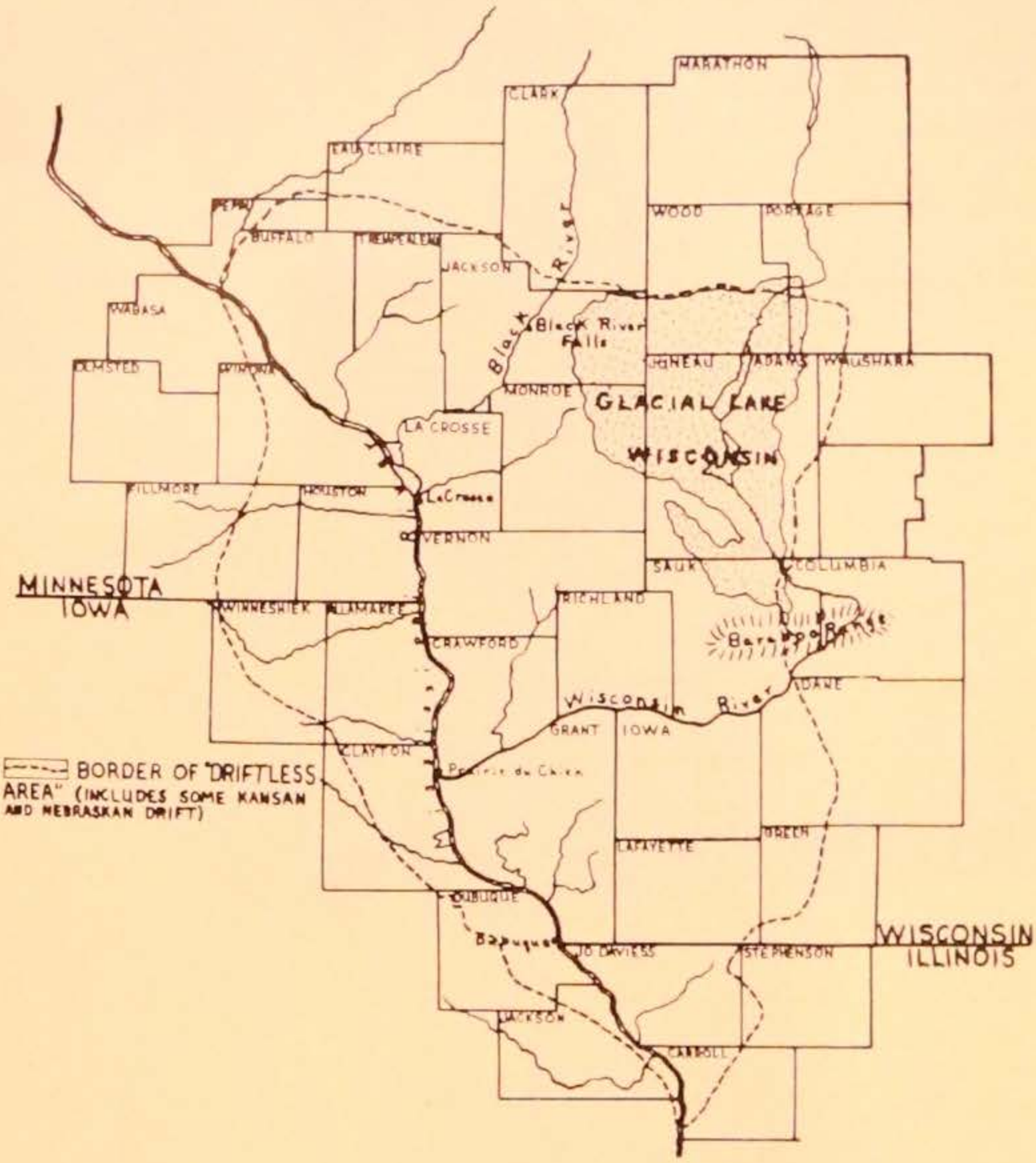
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BORDER OF "DRIFTLESS AREA" (INCLUDES SOME KANSAN AND NEBRASKAN DRIFT)

Plate I

INTRODUCTION

In 1823, W. H. Keating, a geologist from the University of Pennsylvania, traveled overland from Chicago to Prairie du Chien, Wisconsin, and then continued his journey up the Mississippi River to northern Minnesota. When crossing from northern Illinois into southwestern Wisconsin he noted the absence of the granite boulders that we now know were brought to glaciated areas by continental ice sheets. In a narrative of this trip, published in 1824, he commented upon this and upon his observation of the resumption of erratics as he passed the Lake St. Croix region in Minnesota. Thus, Keating was the first geologist to visit the "Driftless Area" and clearly recognize its contrast with the glaciated surrounding area.

Today the "Driftless Area" is known the world over because it is completely surrounded by glaciated territory and apparently was not covered by continental glaciation during the Pleistocene epoch. Within the belts covered by continental ice sheets of northeastern North America and northwestern Europe there is no similar region of substantial size which was left bare of glacial ice. It is important to point out, however, that this area, which today is an island in the glacial drift, was never an island in the ice during Pleistocene glaciation. The various glacial lobes advanced southward at different times and speeds, thus never completely isolating the "Driftless Area" from the non-glaciated areas of central and southern United States.

As delimited here (see Plate I) the "Driftless Area" covers approximately 15,000 square miles of southwestern Wisconsin and adjacent Minnesota, Iowa, and Illinois. It is about 190 miles north and south by 125 miles east and west. The inclusion of northeastern Iowa and southeastern Minnesota requires figurative usage of the name since older ice sheets, generally believed to have been Kansan and Nebraskan, are thought to have covered these areas. The resulting drift has mostly been eroded away, however, and the area today is essentially like the Driftless Area, *sensu stricto*, of adjacent Illinois and Wisconsin.

Botanically, as well as geologically, this is one of the most interesting parts of the Upper Midwest. It has a wide variety of habitats, thousands of acres of relatively undisturbed land, and apparently served as a refuge for plants during glacial times of the Pleistocene. Although a number of botanists have collected in the area and sev-

eral have speculated on its phytogeography, nothing has been done in the way of a systematic survey of its flora. This is not to say that botanical collecting has been meager. In fact, the major herbaria involved (University of Wisconsin, Milwaukee Public Museum, The University of Iowa, Iowa State University, University of Minnesota, and University of Illinois) house an estimated 35,000 sheets from the area. The largest collection is that at the University of Wisconsin.

The names of several collectors are prominent in this area. General collectors in the Wisconsin portion of the "Driftless Area" have been T. J. Hale, L. S. Cheney, J. J. Davis, N. C. Fassett, H. C. Greene, and H. H. Iltis. L. H. Pammel did considerable work in the vicinity of LaCrosse, as has Alvin M. Peterson in more recent years. J. H. Zimmerman has collected intensively in and around Devil's Lake State Park in Sauk County. In southeastern Minnesota, W. A. Wheeler and C. O. Rosendahl did considerable collecting in Houston County; T. J. Fitzpatrick, B. Shimek, W. L. Tolstead, R. F. Thorne, and T. S. Cooperrider have done the majority of the previous collecting in northeastern Iowa; and in northwestern Illinois, H. S. Pepoon and H. A. Gleason have been notable collectors.

A considerable amount of literature has resulted from the work of these botanists. Floras have been written for part of Houston County, Minnesota, (Wheeler, **1900**), Winneshiek County (Shimek, **1905**), northeastern Iowa (Tolstead, **1938**) and Jackson County, Iowa (Cooperrider, **1962**). L. H. Pammel wrote a number of short papers on the flora and vegetation of the LaCrosse Area (**1887** to **1915**); Fitzpatrick (**1899**) listed several species from northeastern Iowa; Gleason (**1910**) discussed the interesting sand flora of Jo Daviess County; Fuller (**1945**) published a checklist for Jo Daviess County from Pepoon's notes, and Fassett (**1929b**, **1931**, **1943b**) was interested in the phytogeography of the area. Thorne (**1953**, **1956**) listed several rare plants and their associates from northeastern Iowa and has recently (**1964**) published a paper on the relic nature of the flora of White Pine Hollow Forest Reserve, Dubuque County. Zimmerman has prepared a checklist for Devil's Lake State Park, Sauk County, and Alvin Peterson has a recent paper on the flora of a relic prairie in LaCrosse County. The author's M.S. and Ph.D. theses (**1957b** and **1962**) and papers (**1957a**, **1959**, and **1960**) may be added to this list. A large number of families have been treated in the "Preliminary Reports on the Flora of Wisconsin" beginning in 1929 and continuing to the present. Usually with distribution maps for all species, these studies have contributed considerably to our knowledge of the "Driftless Area."

This study of the "Driftless Area" was begun early in 1956. As work progressed, the following objectives became clear: a) to determine the species of vascular plants that grow or have grown spontaneously in the area, b) to determine the frequency and geographic distribution of these species within the area, c) to determine the ecological preferences of these species, and d) to investigate the relationship between the flora and the Pleistocene history of the area.

Field exploration was started in May, 1956, and continued over a period of five years. The growing seasons of 1956, 1958, and 1959 were spent afield and intermittent collecting was done during the summers of 1957, 1960, and 1961. More than 9,500 numbered collections were made in the course of this field work. These, since many were made in duplicate or larger sets, represent approximately 25,000 herbarium sheets. The entire first set of these vouchers is deposited at the herbarium of The University of Iowa. Other sets are being distributed to various herbaria.

An attempt was made to study all the habitat types of the area, and the collecting stations were chosen accordingly. Very little attempt was made toward regular geographic spacing or randomness in the selection of these stations. Areas in need of study were worked more intensively than those relatively well known; predominantly agricultural areas received far less attention than sparsely-populated regions of marginal land; and certain habitats, being more variable and productive than others, received special emphasis. Each of the various habitats was visited periodically during the growing season but, except in the case of rare habitats, no attempt was made to visit each collecting station periodically. Discovering new stations of a given habitat type was found to be more profitable than revisiting the old ones.

With the exception of one genus (*Viola*), all of the determinations of the collections were made by the author. Regional manuals, local floras, recent monographs and revisions, and herbarium specimens were used in making the identifications. Concurrently, the "Driftless Area" collections in the herbaria at the University of Wisconsin and The University of Iowa were studied and from many of those collection data were recorded. The other major herbaria involved (see above) were not visited as time and funds became short.

The author wishes to thank Professor Robert F. Thorne, who suggested this problem, for his guidance and encouragement during the course of this study.

Thanks are also extended to all those persons who, on occasion, accompanied the author on collecting trips; especially R. F. Thorne,

Alvin Peterson, R. T. Hartley, Thomas Morrissey, Paul Sorensen, R. L. Hulbary, and M. J. Fay.

The following specialists are thanked for their assistance: J. H. Zimmerman, who checked many of the author's determinations in the genus *Carex*; N. H. Russell, who identified all of the author's collections of the genus *Viola*; and R. M. Tryon, Jr., who checked the author's determination of *Thelypteris simulata*.

R. F. Thorne, curator of the herbarium of The University of Iowa, and H. H. Iltis, curator of the herbarium of the University of Wisconsin, are thanked for permission granted to examine pertinent herbarium specimens.

The curators of the herbaria at Harvard University, Smithsonian Institution, Cornell University, University of Illinois, University of Minnesota, and University of Wyoming are thanked for their loans of specimens and data for the distributional studies presented herein.

During the final summer of study (1961) the author was the recipient of a National Science Foundation Summer Fellowship for Graduate Teaching Assistants. This aid is gratefully acknowledged here. The author is also grateful for funds supplied from R. F. Thorne's National Science Foundation Grant G 542F which alleviated much of the expense of the field work.

C.S.I.R.O. Phytochemical Survey
Lae, New Guinea
November, 1964

DESCRIPTION OF THE AREA

Stratigraphy

The underlying rocks of the "Driftless Area" are, for the most part, nearly horizontal beds of sedimentary rocks that dip gently to the southwest from the old Wisconsin Arch. They take the form, over most of the area, of a series of cuestas (four in all) whose trends are northwest-southeast and whose escarpments face generally northeast.

The youngest bedrock is a cherty dolomite of Silurian age known as the "Niagara" formation. With the exception of occasional outliers to the north (such as Blue Mound on the Dane-Iowa County line) it is found only in the extreme southern part of the "Driftless Area" where it is at the surface in Clayton, Dubuque, Jo Daviess, and Carroll counties.

Beneath this Silurian rock is a shale of Ordovician age that is known by various names: "Cincinnati," "Richmond," or "Maquoketa."

Dolomitic, and a blue-gray color, this rock outcrops along the western margin of the "Driftless Area" in northeastern Iowa, throughout Carroll and Jo Daviess counties in Illinois, and in upland regions of southern Grant and Lafayette counties in Wisconsin.

Next in the sequence is a group of dolomites of Ordovician age. These comprise three formations, "Galena," "Decorah," and "Platteville," that are so similar that they are lumped together in the classification. This "Galena-Platteville" formation, as it is known, is the predominating dolomite in northeastern Iowa, the upland regions of Jo Daviess County, and the area south of the Wisconsin River in Wisconsin. It also extends north of the Wisconsin River a short distance above Prairie du Chien.

Under the Galena-Platteville dolomite is the "St. Peter" sandstone. Also of Ordovician age, the St. Peter varies considerably in thickness (from 0 to 330 feet) and is quite friable. In general, it follows along the edge of the Galena-Platteville formation. In southeastern Minnesota and the northern parts of Winneshiek and Allamakee counties in Iowa this rock outcrops in upland regions (a notable example is the region northeast of Hesper, Winneshiek County). Farther south in northeast Iowa it outcrops along stream valleys, especially Paint Creek, the Yellow River, and south along the Mississippi River, locally, to Dubuque. In Jo Daviess County it outcrops locally along the Mississippi River bluffs, whereas in Wisconsin south of the Wisconsin River, it outcrops along many of the stream valleys. To the north of the Wisconsin River St. Peter sandstone is found mainly in upland regions of central Crawford and Vernon counties.

Beneath the St. Peter sandstone lies another Ordovician dolomite known variously as "Lower Magnesian," "Oneota Shakopee," and "Prairie du Chien." The latter name is in current use. It outcrops in upland regions and along a few stream valleys in southeastern Minnesota and northeastern Iowa, and along the larger streams in Wisconsin south of the Wisconsin River. To the north of the Wisconsin River it caps most of the ridges southwest of a line extending from northern Buffalo County to Dane County.

Beneath this dolomite lies the "Potsdam," "Upper Cambrian," or "St. Croixan" sandstone. It is divided into a number of formations including the "Jordan," "Madison," "Trempealeau," "Franconia," "Dresbach," "Eau Claire," and "Mt. Simon" (Thwaites, **1960**). Some of these are more resistant than others and they vary somewhat in composition. A notable strong formation is the Franconia, which is important in the formation of some of the unique buttes and mesas of the "Driftless Area" (see below). The St. Croixan sandstone (as it is

currently called) predominates over the entire northeastern section of the "Driftless Area" and is found in practically all the stream valleys south to the Wisconsin River. In southeastern Minnesota it outcrops in the valleys of all of the larger streams while in northeastern Iowa it is found along the lower stretches of the major streams of Allamakee County.

An isolated inlier of Precambrian quartzite juts up through the St. Croixan sandstone to form the Baraboo Range in Sauk County and part of Columbia County, Wisconsin. Devil's Lake State Park lies within these hills, and there the quartzite is most evident in the form of spectacular cliffs and talus slopes that rise 500 feet above the surface of the lake. Other inliers of this rock occur as isolated mounds or bluffs at Necedah in Juneau County, in northern Adams County, and at a few scattered localities east of Black River Falls in Jackson County.

An older Precambrian formation outcrops only along the Black River in Jackson County to the north of Black River Falls. It is composed of igneous rocks that appear to be granite.

Data for the above discussion were obtained largely from the following sources: Illinois State Geological Survey (**1945**), Martin (**1932**), Schwartz (**1954**), Fenneman (**1938**), and Iowa Geological Survey (**1937**).

Physiography

Physiographically the "Driftless Area" can be divided into two general regions: a relatively flat glacial lake bed and a rugged upland region.

a. *Bed of Glacial Lake Wisconsin*

The old bed of Glacial Lake Wisconsin (See Plate I) covers approximately 1,825 square miles in the northeastern section of the "Driftless Area." This lake is believed to have been formed about 15,000 years ago when glacial ice of the Cary substage of the Wisconsin stage of the Pleistocene dammed up the Wisconsin River in the region of the Baraboo Range. The lake is estimated to have been from 70 to 150 feet deep and is believed to have persisted a relatively short time after the retreat of the Cary ice (Hansen, **1937**). The old lake bed is quite flat and, for the most part, poorly drained due to impervious lake deposits. Elevations range from 1,005 feet above sea level at Wisconsin Rapids in the north to 880 feet at Reedsburg in the south. Tomah, on the west, is 958 feet while Friendship, on the east, is 956 feet. The only notable relief is provided by a number of

isolated sandstone and quartzite bluffs. Composed of more resistant rock than the weak sandstone surrounding them, these bluffs rise abruptly above the otherwise flat plain to heights of 200 to almost 400 feet. In many cases they are flat-topped, angular, and "castellated" by the former wave action and wind erosion. Often referred to as "buttes" or "mesas," they are, according to Fenneman (**1938**), unique landscape features for eastern United States. The sandstone bluffs (mostly Franconia) are considered outliers of the upland region to the west, while those of quartzite are, as pointed out above, inliers of a Precambrian formation.

A large portion of this old lake bed is bog country. Martin (**1932**) points out that the extent of this bog area (known as the Great Swamp of Central Wisconsin) is about 300,000 acres. Surprisingly, since this is not a glaciated area, this is the largest single bog area in Wisconsin (Martin, **1932**).

The lake bed is very sparsely populated. Much of it, in fact, is state- or government-owned and comprises the Central Wisconsin Conservation Area and Necedah National Wildlife Refuge. Other than a few cranberry farms and the harvesting of sphagnum for florist use, it receives little agricultural exploitation. Deer and ruffed grouse abound here, and occasionally a sandhill crane or black bear may be seen. In many places the water has been impounded by dikes, and the resulting "flowages" provide nesting sites and summer feeding grounds for ducks. Many of the streams are still clean and cold enough to support native brook trout.

Botanically this area is extremely interesting. There are vast black spruce bogs with surrounding meadows of ericads and open sphagnum; low sandy woods of white birch, white pine, and red maple; cold, softwater streams and flowages; moist sandy meadows; dry, sandy jack pine-scrub oak woods; and open sandy plains, prairies, and blowouts. The flora is composed mainly of "boreal" and Atlantic Coastal Plain elements, many of which are disjuncts from considerable distances. A remarkable instance of this is the Massachusetts fern (*Thelypteris simulata*), disjunct here from West Virginia.

b. *The upland region*

The remainder of the "Driftless Area" is markedly different from the flat, poorly-drained lake bed described above. It is a much-dissected upland region, likened, by some writers, to the rugged Allegheny Plateau region of the eastern United States. There are four cuestas, three dolomitic and one sandstone, which comprise this region. These correspond with the bedrock outcrops discussed above:

the Niagara lies in the extreme south; next is the Platteville, the escarpment of which cuts diagonally across northeastern Iowa to Prairie du Chien, Wisconsin, then trends east across the southern part of the "Driftless Area"; next is the Prairie du Chien, whose escarpment extends from Pepin County in the northwest to Dane County in the southeast; and last is the Franconia, of St. Croixan sandstone, whose escarpment extends from northwestern Jackson County to the Baraboo Range.

Two great rivers, the Mississippi and the Wisconsin, cut deep gorges across this region and produce the most prominent surface features. The valley of the Mississippi ranges from two to almost seven miles in width and is bordered by steep, rugged bluffs. These bluffs reach their greatest development near Trempealeau, in the northern part of the region, where they rise 611 feet above the river floodplain and are exceedingly steep, descending more than 500 feet in a horizontal distance of 800 feet (Martin, 1932). Where facing south or west, these bluffs are generally treeless and are known locally as "goat prairies." More sheltered slopes, facing east and north, are forested, usually with hard maple and basswood. Limestone (dolomite) and sandstone outcrops are common features here and form picturesque crags, pinnacles, and cliffs.

The floor of the Mississippi valley consists of a floodplain and, in many places, a series of bench-like terraces. The floodplain has a braided pattern of channels with numerous islands, marshes, and alluvial forests. It is most extensive where the larger tributaries enter. The McGilvray Bottoms near the confluence of the Black and Mississippi rivers, for example, has excellent lowland forests and marshes covering about eighteen square miles. The higher terraces, being situated above the present floodplain, are generally quite dry. Originally they were covered by prairie (hence the names "Prairie LaCrosse" and "Prairie du Chien") but today, for the most part, they are either cultivated or the sites of cities and towns. It is only where they are very dry (often with shifting sand dunes) that very large areas have remained undisturbed. Fountain City (Buffalo County), LaCrosse, Prairie du Chien, and the southern parts of Jo Daviess and Carroll counties are sites of extensive terraces.

The Wisconsin River in the upland region is similar to the Mississippi in many respects. It too is bordered by steep bluffs and has a broad valley with several channels, sand terraces, alluvial woods, and marshes. Sand terraces extend almost continuously from Arena, Iowa County, to Muscoda, Grant County. These have extensive dune areas and forests of jack pine and scrub oak. In the region of the Wisconsin

Dells this river has cut a narrow gorge through the St. Croixan sandstone. Places such as Witch's Gulch, Coldwater Canyon, Mirror Lake Gorge and Fat Man's Misery are particularly descriptive of the erosional features here. The sheltered cliffs are covered by eastern hemlock (*Tsuga canadensis*) and white cedar (*Thuja occidentalis*), and harbor such rarities as the Lapland rosebay (*Rhododendron lapponicum*), bird's-eye primula (*Primula mistassinica*), and fragrant fern (*Dryopteris fragrans*).

A lesser degree of dissection has been effected by the dozens of smaller streams of the upland region. Depending upon their location in relation to bedrock they may have narrow, V-shaped valleys (where confined to limestone) or broader, U-shaped valleys (in areas of sandstone). In the region north of the Wisconsin River and in much of southeastern Minnesota and northeastern Iowa the stream erosion has progressed to a point where most of the valleys are very deep and the intervening ridges are narrow. Most of the sheltered slopes are covered by maple-basswood forests, and fern-covered cliffs and ledges are common. Interesting talus slopes with "boreal" plant communities are found in northeastern Iowa. Occasionally forested with balsam fir, these slopes harbor a number of Canadian species including the golden saxifrage (*Chrysosplenium ioense*), tall lungwort (*Mertensia paniculata*), and the northern oak fern (*Gymnocarpium robertianum*). The region south of the Wsiconsin River in Wisconsin and northwestern Illinois is gently rolling by comparison. Although steep slopes are found along some of the streams (especially the Apple River in Jo Daviess County) the intervening areas here are quite broad and relatively flat. Much of this area was once covered by prairie and is today of considerable agricultural value. Unfortunately only a little of the original prairie remains.

The Baraboo Range is another strong topographic feature of this area. This group of quartzite hills lies in Sauk and Columbia counties, is about twenty-five miles long, east to west, and ranges from five to ten miles in width. It rises 400 to 800 feet above the surrounding St. Croixan sandstone and, in places, has massive talus slopes. Devil's Lake, in the center of this range, is the only known station in the "Driftless Area" for two species of quillwort (*Isoetes macrospora* and *I. muricata*). In the deep, cool canyons of the hills such interesting species as *Viola selkirkii*, *Carex prasina*, and *Aconitum noveboracense* (monkshood) are found.

Some specific altitudes in the upland region are as follows:

Niagara Cuesta outlier at Blue Mounds	1,716'
Highest point in Baraboo Range	1,620'

Wadels Hill, LaCrosse County	1,403'
Scales Mound, Jo Daviess County	1,241'
Prairie du Chien Cuesta, Buffalo County	1,200'
Military Ridge near Mt. Horeb, Dane County	1,200'
West of New Glarus, Green County	1,150'
Wisconsin River near Boscobel, Grant County	675'
Mississippi River in Pepin County	677'
Mississippi River at LaCrosse	640'
Mississippi River at Dubuque	592'

Drainage

Except for the old bed of Glacial Lake Wisconsin, the "Driftless Area" can be described as a "well-drained" area. The entire region is within the Mississippi River system and the Wisconsin River is the largest secondary stream. Other secondary streams of noteworthy size are the Chippewa, Buffalo, Trempealeau, Black, LaCrosse, Grant, and Platte rivers in Wisconsin; the Apple River in northwestern Illinois; the Turkey, Yellow, and Upper Iowa rivers in northeastern Iowa; and the Root River in southeastern Minnesota. The larger tributaries of the Wisconsin River are the Kickapoo, Pine, Baraboo, and Yellow rivers.

There are very few natural lakes and the majority of them are small and of the ox-bow type along rivers. Devil's Lake in Sauk County is an exception. It has formed where the terminal moraine of the Cary ice (see later) formed a dam across an old water gap in the Baraboo Range. The lake is about a mile and a half long, a half-mile wide and fifty-three feet deep.

Artificial lakes are quite common. The dams along the Mississippi River have impounded large areas of water, locally called "pools," which are essentially lakes. The Onalaska Pool, the impoundment of the Mississippi and Black rivers backed up behind U.S. Dam and Lock Number 7, covers sixteen square miles, is shallow, sandy, dotted with islands, and rich in aquatic vegetation. Other artificial lakes are found in the Glacial Lake Wisconsin region. These are locally called "flowages" and are quite common in that area. Castle Rock and Petenwell flowages are the largest, each being over twelve miles long and one to six miles wide.

As mentioned above, extensive bogs are located in poorly-drained areas of the old bed of Glacial Lake Wisconsin. Smaller bogs are found along some of the streams of the upland region, especially the LaCrosse, Pine, and Baraboo rivers. Hansen (**1933, 1937, 1939**) studied the present vegetation and pollen profiles of many of these and,

among other things, determined that they were probably of post-glacial origin. They are located in the depressions of old ox-bow lakes or near the headwaters of streams where lakes were once formed as a result of the Mississippi and Wisconsin rivers filling with glacial debris and flooding during glacial periods.

Climate

Because of its position, about 1,000 miles from both the Atlantic Ocean and the Gulf of Mexico, the "Driftless Area" has a continental climate expressed by very cold winters and rather hot summers.

Average January temperatures range from 11.8° F. at Mondovi (Buffalo County) to 19.9° at Dubuque, while the July average ranges from 69.6° at Hillsboro (Vernon County) to 74.6° at Dubuque. The recorded temperature extremes are 114° recorded at Wisconsin Dells (Columbia County), and -51° recorded at Hatfield (Jackson County, Wisconsin). Growing seasons (consecutive days free from killing frost) range from 182 days at Dubuque to 125 days at Mather (Juneau County). Average annual precipitation ranges from 30.78 inches at Wisconsin Dells to 36.78 inches at Valley Junction (Juneau County).

The Mississippi River has a noticeable warming effect locally. The average January temperature along this river at LaCrosse is 16.1° and the July average is 72.8.° Approximately fifty miles to the east at Hillsboro the corresponding averages are 14° and 69.6°. The average length of growing season is 163 days at LaCrosse and 129 days at Hillsboro. Similar comparisons can be made elsewhere along the Mississippi. The average January temperature at Prairie du Chien, for example, is 17.6°, 1.4° higher than Postville, about thirty miles west in Allamakee County. Likewise, the July average, 73.7°, is 1.9° higher. The growing season at Prairie du Chien is 166 days compared to 151 days at Postville.

In contrast to the Mississippi River valley, the old bed of Glacial Lake Wisconsin is generally the coldest part of the "Driftless Area." This is apparently due to the local drainage of cool air into this lowland region. Data from the two weather stations (Mather and Valley Junction, both in Juneau County) indicate an average January temperature of 13.4°, a July average of 69.4°, and a growing season of 126 days.

The average annual precipitation shows no particular geographic pattern. All of the weather stations recorded above 30 inches and the average of seventeen representative stations, scattered throughout the area, is 32.48 inches. About 22 inches of this total comes during

the warm season (April through September) and the remainder is mostly in the form of winter snow. This over-all annual precipitation is sufficient to supply most of the streams of the area with water throughout the year.

Data for the above discussion are from the United States Department of Agriculture 1941 Yearbook, *Climate and Man*.

The effect of climate on the local distribution of plants in the "Driftless Area" has not been thoroughly studied. There does seem to be some correlation, however, since a few southern species are restricted to the relatively warm Mississippi River valley and some northern species are restricted to the relatively cool bed of Glacial Lake Wisconsin. The southern species that are restricted to the Mississippi River valley are *Gymnocladus dioica*, *Gleditsia triacanthos*, *Sagittaria montevidensis*, *Echinodorus rostratus*, and *Callitriche deflexa*. Species restricted to the old bed of Glacial Lake Wisconsin include *Lycopodium annotinum*, *Picea mariana*, *Carex paupercula*, *Smilacina trifolia*, *Andromeda glaucophylla*, *Gaultheria hispidula*, *Kalmia polifolia*, *Vaccinium oxycoccus*, and *Salix pyrifolia*. One will note that nearly all the northern species listed are bog plants. While edaphic factors may have an important role in limiting their distribution, it seems noteworthy that they do not occur in the tamarack bogs to the south where many of their associates do.

Soils

Although pedologists recognize a great many soil types in this area (see Hole and Lee, **1955**), their classification is unavoidably arbitrary and their "taxa" are generally imperceptible to the untrained eye. Thus, a discussion of the nature and distribution of these types is not considered necessary here. Rather, the general soil and parent soil types are discussed briefly as they apply to the general vegetation pattern of the area.

A very abundant windblown material in the "Driftless Area" is a sediment known as "loess." It is composed of silt-size particles and covers most of the upland regions in the southern and western parts of the area. Most glacial geologists believe that this material was distributed over the region during the Wisconsin period of the Pleistocene and that its source was the finer portions of the fluvioglacial deposits of the Mississippi River. Its deposition is thickest (sixteen feet in places) on the bluffs bordering or near the Mississippi River and gradually thins out away from the river. Locally this material seems to have behaved much like drifting snow. The heaviest deposits are on the leeward sides of obstructions, while windward sides are

often swept clear. Also, it is generally absent from slopes too steep to retain it. Various soil types have developed on the loess. Much of the upland region was originally covered by mesic prairie. This has resulted in the formation of a rich loam that is of considerable agricultural value. The original prairie soil, with its characteristic deep sod, remains only along a few railroads in southwestern Wisconsin. Besides prairie, deciduous forests are found over much of the loess-covered upland. These vary from extremely dry oak-hickory forests with a somewhat leached soil to more mesic upland forests (with more red oak, black walnut, and even hard maple) with very rich, deep loam. Undisturbed forests of the latter type are rare since they are of high commercial value for lumber. The best examples are in northern Winneshiek County.

As mentioned above, extensive areas of stream-transported sand are found along the Mississippi and Wisconsin rivers. In many places these terraces are virtual deserts with shifting dunes and xerophytes. This barren sand is extremely sterile. On the other hand, some of the terraces, notably in LaCrosse, Crawford, and Carroll counties, have a sandy-loam type of soil where rather mesic prairies once existed. These are good agricultural lands and very little of the original prairie remains. One example is the Midway Prairie (a State Scientific Area) near Onalaska, LaCrosse County. Another extensive deposit of sand lies in the old bed of Glacial Lake Wisconsin. This was carried in with the outwash from glaciers in adjacent areas. In many places it is very dry and sterile with jack pine-scrub oak forests and open sandy plains. In other areas it is quite moist due to the impervious lake deposits beneath. In these moist areas more of a definite soil profile has developed. The moist meadows often have a sod, while the low woods (predominantly white pine, red maple, and white birch) have accumulated a thin layer of humus. Judging from the vegetation, these soils are quite acid.

Large areas of residual sandy soils are found where the rapid-weathering sandstone is at the surface. Depending upon topography and/or vegetational cover, these soils may be extremely sterile (as in the upland sand barrens immediately to the west of Glacial Lake Wisconsin) or may be rather rich, sandy loam (as on the moist, north- and east-facing maple basswood slopes of Vernon County). Sandstone outcrops and sandy talus slopes are of particular interest in the southern half of the "Driftless Area" since they provide suitable habitats for a number of species generally more northern in distribution. Some southern outliers that are found in such sites in north-

eastern Iowa are *Potentilla tridentata, Pyrus melanocarpa, Chimaphila umbellata, Vaccinium myrtilloides,* and *Oryzopsis pungens.*

Since loess covers much of the upland regions to the south and west, soil formed from weathering limestone is, by and large, restricted to slopes too steep to have retained the loess. Where facing north or east these are generally forested with maple and basswood and have a rich loamy soil. The south and west slopes, on the other hand, are generally "goat prairies" or cedar glades. Here the soil is a clay loam that is very thin due to extreme slope and runoff.

Soils classed as peat are quite common in the "Driftless Area." Consisting of plant materials (apparently mostly sphagnum) in various stages of decomposition, this type of soil prevails over much of the old bed of Glacial Lake Wisconsin and occurs locally in tamarack bogs in Trempealeau, LaCrosse, Richland, and Sauk counties. The depth of the peat in a relatively small tamarack bog in Trempealeau County was found to be thirty feet by Hansen (1937). Peat soil is generally quite acid and here supports a distinctive flora including the insectiverous sundews and pitcher plant and a large number of ericads.

Pleistocene geology

The Pleistocene epoch included four general stages of glaciation with three interglacial intervals. From oldest to youngest these were the Nebraskan glacial stage, followed by an interglacial known as the Aftonian; the Kansan stage, followed by the Yarmouth interglacial; the Illinoian, followed by the Sangamon; and the Wisconsin. With regard to the "Driftless Area" comparatively little is known of the first three of these glacial stages. It is probable that during each of them ice moved south on both sides of the area. How close these lobes were to the present boundaries, however, has not been well established due to the difficulties in working with drift so old, especially where it is covered by younger drift. Nevertheless, numerous small patches of drift in northeastern Iowa have been identified as Nebraskan by Kay and Apfel (1928). This area of drift extends east to the Mississippi River from a line extending from northcentral Winneshiek County southeast to northeastern Jackson County. While the general belief seems to be that southeastern Minnesota was likewise glaciated during the Nebraskan, no definite statement could be found to that effect. Just to the west of the Nebraskan drift in northeastern Iowa is a narrow band believed to be Kansan in age. It is only about ten miles wide in most places and most of the drift has been lost through erosion. Some authors have considered the thin drift found in

Pierce, Dunn, and Eau Claire counties to the north of the "Driftless Area" in Wisconsin to be of Nebraskan age. There seems to be no agreement on this, however; others believe it to be Kansan, Illinoian, or even younger.

Because the Wisconsin stage is relatively recent, evidence regarding that stage is much stronger. It began between 25,000 and 30,000 years ago following an ice-free period (the Sangamon) that had lasted from 50,000 to 100,000 years. Therefore it seems most likely that whatever influence the Pleistocene had on the present flora of the "Driftless Area" must have been effected during Wisconsin time. This glacial stage is now believed to have been a series of advances and retreats of a single ice sheet. According to Wright (**1957**) and Leighton (**1957**) six advances, or "substages," occurred in the Great Lakes Region. These are, from oldest to most recent: the Farmdale, Iowan, Tazewell, Cary, Mankato, and Valders.

Ice of the Farmdale substage apparently advanced southwestward along the eastern side of the "Driftless Area." Shaffer (**1956**) has shown that drift of this age forms the southeastern boundary of the "Driftless Area" in Carroll and Jo Daviess counties and that it covers about 2,000 square miles in that part of Illinois. On this basis it seems safe to assume that the drift forming the border of the "Driftless Area" in Green County, Wisconsin (previously thought to be Illinoian), is likewise Farmdale. In this region the ice dammed up the Pecatonica and Sugar rivers forming a small glacial lake that inundated the valleys and tributaries of these streams in Lafayette, Green, Dane, and Iowa counties. The Iowan substage advanced from the northwest into Iowa about 22,000 years ago. The resulting drift is found bordering the Kansan on the west in northeastern Iowa and there is some possibility it occurs north of the "Driftless Area" in Pepin, Pierce, and Dunn counties, Wisconsin. The Tazewell substage advanced from the northeast about 19,000 years ago. Judging from present drift at the surface, this ice did not advance closer to the "Driftless Area" than Walworth County, Wisconsin. The Cary substage is believed to have advanced into this region about 15,000 years ago. The massive end moraine of the Green Bay Lobe of this substage forms most of the eastern boundary of the "Driftless Area" in Wisconsin. Extending from Portage to southern Dane County, this moraine is the only clear-cut boundary of the area. According to Hole (**1943**), Cary drift may also be present to the north of the "Driftless Area" in Marathon, Portage, Wood, and Clark counties. It is so thin, however, that those counties were once thought to be part of the "Driftless Area." The Mankato substage advanced southward some distance to the west in

Iowa and southern Minnesota and to the north in northwestern Wisconsin. It is dated at about 12,000 or 13,000 years ago. The Valders ice advanced only into northeastern Wisconsin where it dammed up the Fox-Wolf River system, creating Glacial Lake Oshkosh. This was about 11,000 years ago. Another readvance of the Wisconsin glacier, called the Cochrane, occurred in Canada a little less than 6,000 years ago but failed to reach the Great Lakes Region.

Many explanations have been offered for the "Driftless Area" since the time of its discovery in 1823. Around the mid-1800's some geologists believed it to have been a high island in the sea, thus escaping the ice-rafted erratics (this was a time when the marine theory of glaciation was still recognized by some). A few believed the "Driftless Area" stood up above the ice like a nunatak while others believed it was an old lake bed (because of the loess deposits which were then believed to be lacustrine). Since these times a number of sounder proposals have been made. Martin (1932) and Musolf (1958) discuss these to some length and point out that probably not one but four phenomena are responsible. These are presented below in summary form.

1. The bedrock lowlands and valleys to either side of the "Driftless Area" diverted the flow of ice; on the west were the valleys of the James, Red, Minnesota, and Iowa rivers while on the north and east lay the basins of Lake Superior and Lake Michigan.

2. Extent of lobation of the ice was, at any given time, greater on one side of the "Driftless Area" than the other. According to Musolf this was due to ". . . changes in the relative strengths of the different glacial centers."

3. The Northern Highlands of Wisconsin and the Lake Superior Highlands of Minnesota apparently afforded some protection to the "Driftless Area" on the south.

4. Many of the glacial lobes apparently retreated before they reached the "Driftless Area." But for this time element, glaciation of the "Driftless Area" would have been inevitable.

More recently, R. F. Black, a geologist at the University of Wisconsin, has proposed that much of the "Driftless Area" actually was glaciated during the early part of the Pleistocene but "not in the last 30,000 years." Substantiation of this is dependent on further field work.

RELATIONSHIP BETWEEN PLEISTOCENE HISTORY AND PRESENT FLORA

Hundreds of vascular plants must have survived Pleistocene glaciation (at least Wisconsin) in the "Driftless Area." In his 1939 pollen studies Hansen pointed out that at the time of the retreat of the Wisconsin ice, or soon thereafter, spruce, fir, and pine forests existed in the "Driftless Area." Also, we can infer from the Two Creeks Interstadial (between the Mankato and Valders substages of the Wisconsin stage) that forests could have existed in the "Driftless Area." The study by Wilson (1932) indicates that the Two Creeks Forest in Manitowoc County, Wisconsin, was literally knocked down by the advancing Valders ice.

The majority of the survivors, however, have since migrated out of the "Driftless Area" as suitable habitats developed in adjacent regions. Only those species that are absent from surrounding regions, or, in other words, disjunct from distant places, can be singled out as possible relics of Pleistocene times. Whether they actually are or are not is subject to considerable speculation since, depending upon the species, recent long distance dispersal may be a more logical explanation. No endemic species are recognized by this writer, although three have been described from this area. These are: *Penstemon wisconsinensis* (here considered the same as *P. gracilis*), *Gnaphalium saxicola* (here considered the same as *G. obtusifolium*), and *Chrysopsis wisconsinensis* (here considered the same as *C. villosa*). Endemic varieties have been described of *Aconitum noveboracense*, *Commelina erecta*, and *Napaea dioica*. A few species are *nearly* endemics; that is, their ranges are not large and center on the "Driftless Area." Two of these are *Talinum rugospermum* and *Sullivantia renifolia*.

Probably the most significant part of the "Driftless Area" with regard to its Pleistocene history is northeastern Iowa and adjacent southeastern Minnesota. Here several of the streams are bordered by steep limestone talus slopes. Where these face directly to the north they are generally covered by a thick carpet of moss and, being sheltered from the direct sun, are cool throughout the summer. Ice often persists throughout the year in the rock crevices and there is usually seepage of cold spring water near the surface. The phenomenon of cold air drainage occurs where ice-filled or otherwise cold crevices are found on the slope. The resulting cold microclimates generally have "communities" of plants with "boreal" distributions, some notable components being *Ribes hudsonianum*, *Mertensia paniculata*, *Gymnocarpium robertianum*, *Chrysosplenium ioense*, *Abies*

balsamea, *Carex media*, *Linnaea borealis*, *Cornus canadensis*, *Pyrola secunda*, *Rosa acicularis*, and *Viola renifolia*. Several of these species are disjunct here from several hundred miles to the north in the Lake Superior region. As Gleason (1923) points out, isolated colonies of several species can scarcely be attributed to long-distance dispersal. Thus it seems that these "boreal communities" are relics of Pleistocene times; that they migrated south with the glacial advances and, either during the advance or retreat, moved into suitable habitats in the "Driftless Area." Since then, the rest of the population has recolonized suitable habitats to the north while colonies of these plants have persisted in the "Driftless Area" in the cold microclimate of the talus slopes.

Rhododendron lapponicum, *Dodecatheon radicatum*, and *Montia chamissoi* also have noteworthy distributions. The rhododendron, a Canadian species, is known in the "Driftless Area" only from a sandstone cliff at the Wisconsin Dells in Columbia County. It is disjunct from the Adirondack Mountains of New York. The dodecatheon grows on moist sandstone and limestone cliffs along most of the length of the Mississippi River in the "Driftless Area," with one isolated station near Hannibal, Missouri, and two others in southeastern Pennsylvania. Its major distribution, however, is in the Rocky Mountains. *Montia chamissoi*, with a similar disjunct distribution from the Rocky Mountains, grows on moist sandstone cliffs near Winona, Minnesota (Winona County), in the "Driftless Area." These three species are not found in colonies with other species of similar geographic affinities as are those of the talus slopes discussed above. Also, the rhododendron and montia are only known from one station each in the "Driftless Area." For these reasons, plus the fact that cliffs and ledges are relatively "open" habitats with regard to competition and thus places where the right disseminules can become established, long-distance dispersal is not so strongly ruled out. It does seem improbable, however, since in these cases extreme distances are involved. The alternate explanation is that the present widely-disjunct populations of these species are the remnants of much more extensive Pleistocene or pre-Pleistocene distributions.

Species of the "Driftless Area" whose ranges center along the Atlantic Coastal Plain are also significant here. *Scleria reticularis* is disjunct from northwestern Indiana, its only other known station west of the Coastal Plain. *Thelypteris simulata* is disjunct from West Virginia and *Carex folliculata* from the eastern and southern shores of Lake Michigan. Other species demonstrating this general distribution pattern include *Carex longii*, *Carex straminea*, *Muhlenbergia uni-*

flora, *Aletris farnisoa*, and *Linum medium*. In marked contrast to those species with Canadian or Rocky Mountain ranges (which are all plants of cool, shaded cliffs and talus slopes in the "Driftless Area"), these are plants of low, poorly-drained, sandy places. Accordingly, they are restricted, in the "Driftless Area," to the old bed of Glacial Lake Wisconsin. As was pointed out above, this lake was formed about 15,000 years ago, during the Cary substage of the Wisconsin stage, and apparently lasted only a short time following the recession of the Cary ice. Thus, these plants are most likely late- or post-Pleistocene immigrants into this area. Considerable fluctuation in size of the Great Lakes occurred during late Wisconsin times. This apparently provided, at least at times, a more or less continuous habitat along which many of the coastal plain species could migrate inland. When subsequent changes destroyed intervening habitats, disjunct patterns of distribution resulted. (This topic is discussed at some length by Peattie, **1922**, and McLaughlin, **1932**.) This explanation seems to be applicable to the coastal plain species of Glacial Lake Wisconsin; especially since Glacial Lake Oshkosh, of about the same age, linked it almost directly with the area that is now Lake Michigan. The possibility of long-distance dispersal must not be ruled out, however. Although *Carex folliculata* and *Thelypteris simulata* grow in low sandy woods, a somewhat "closed" habitat with regard to competition, *Scleria reticularis* and the others listed above are species of "open" habitats such as moist, open sand or sphagnum. As in the case of cliffs and ledges, these are places where the right disseminules could quite easily become established.

A number of plants that occur in recently-glaciated adjacent areas are more or less absent from the "Driftless area." Many of these, including *Potentilla anserina*, *Rumex maritimus*, *Juncus balticus*, *Scirpus acutus*, *Carex sychnocephala*, *Cladium mariscoides*, *Potamogeton illinoensis*, *Lobelia kalmii*, and *Megalodonta beckii*, are strand or aquatic species. Their exclusion from the "Driftless Area" seems to be due to the lack of strongly-calcareous waters and marly shores which are common features of the Cary drift on the east and the Mankato drift on the west. Several species of low, calcareous prairies, a common habitat of the till plains of recently-glaciated areas in the upper Midwest, likewise show this type of distribution. Good examples are *Lysimachia quadriflora*, *Habenaria leucophaea*, *Cypripedium candidum*, *Carex praegracilis*, *Carex sartwellii*, and *Phlox maculata*. The distributions of these species in the north central states reflect the rarity of this habitat in the "Driftless Area."

(Maps showing the North American distributions of *Ribes hudson-*

ianum, Mertensia paniculata, Gymnocarpium robertianum, Rhododendron lapponicum, Dodecatheon radicatum, Montia chamissoi, Scleria reticularis, Carex folliculata, and *Thelypteris simulata* and the north central states distributions of *Potentilla anserina, Rumex maritimus, Juncus balticus,* and *Lysimachia quadriflora* are presented in the author's Ph.D. dissertation, 1962.)

A few general conclusions may be drawn from the above:

1. Several plants of the "Driftless Area" have disjunct distributions; their main ranges being Rocky Mountain, Canadian, and Atlantic Coastal Plain.

2. These disjunct distributions correspond, generally, with similar distributions of the habitats involved.

3. Although some of these disjunct distributions may be the result of recent long-distance dispersal, a few are almost certainly remnants of Pleistocene distributions.

4. Inasmuch as no endemic species are known, evidence is not strong that any of the "Driftless Area" plants are relics of pre-Pleistocene times.

5. Recent glaciation of areas of the north central states has produced a few habitats that are rare or absent in the "Driftless Area." Accordingly, some plants that occur in these adjacent areas are more or less excluded from the "Driftless Area."

ANNOTATED CATALOGUE OF VASCULAR PLANTS

The major content of the catalogue is derived from the author's collections and field observations. Collections of other botanists are cited only for those species not collected by the author. Those from the herbarium of The University of Iowa are indicated by the letters IA and those from the University of Wisconsin are indicated by the letters WIS.

Scientific binomials are used in accordance with the International Code. When several species within one genus have the same common name, it is listed only after the first species. Species not native to the area are indicated by an asterisk (°).

A brief description of habitat, distribution within the area, and an indication of the frequency of occurrence is given for each species. In most cases these statements reflect only the author's field experience. In general, the following scale is used to measure frequency:

Common	26 or more stations
Frequent	16-25 stations
Infrequent	6-15 stations
Rare	1-5 stations

The term station, as used here, indicates a locality where a collection or an observation was made.

Complete collection data and maps showing the "Driftless Area" distribution of each species are presented in the author's Ph.D. dissertation (**1962**).

ARTICULATAE

Equisetaceae (Horsetail Family)

Equisetum arvense L. Common Horsetail.

Wet margins and a variety of weedy places; common throughout.

Equisetum fluviatile L. Water-Horsetail.

Tamarack bogs, marshy shores, and springy places in the northern two-thirds of the area; infrequent.

Equisetum hyemale L. Scouring-rush.

Mesic woods and along streams; common throughout.

Equisetum laevigatum A. Br. (incl. *E. kansanum* Schaffner)
Prairie Scouring-rush.

Sandy and loamy upland prairies and along railroads and roadsides; frequent except in northeastern counties.

Equisetum palustre L. Marsh Horsetail.

Tamarack bogs in LaCrosse and Trempealeau counties; rare and disjunct from northern and eastern Wisconsin.

Equisetum pratense Ehrh. Meadow Horsetail.

Steep, moist, north- and east-facing wooded slopes throughout the area; frequent. Two Jo Daviess County collections appear to be the first on record for Illinois.

Equisetum scirpoides Michx. Dwarf Scouring-rush.

Steep, moist, north-facing wooded slopes; in northeastern Iowa and LaCrosse and Vernon counties in Wisconsin; infrequent. Iowa collections from Allamakee, Clayton, and Winneshiek counties represent new records for the state.

Equisetum sylvaticum L. Wood Horsetail.

Low sandy woods, seepage bogs, tamarack bogs, and open sphagnous meadows in the northeastern third of the area; infrequent.

Equisetum x *litorale* Kuhlewein

Wet places in Allamakee and Richland counties; rare. An apparent hybrid involving *E. arvense* and *E. fluviatile*.

LYCOPODIINAE

Lycopodiaceae (Club-moss Family)

Lycopodium annotinum L. Stiff, Bristly, or Interrupted Club-moss.

Moist red maple-aspen woods near Rudd's Hills, Jackson County, Wisconsin; rare.

Lycopodium clavatum L. Running Club-moss.

Rather moist sandy woods in the northeastern third of the area; infrequent.

Lycopodium complanatum L. Creeping Jenny.

Low sandy woods in the northeastern third of the area; collected once to the south in Allamakee County; frequent.

Lycopodium inundatum L. Bog Club-moss.

Moist open sand; mainly in the old bed of Glacial Lake Wisconsin; infrequent.

Lycopodium lucidulum Michx. Shining Club-moss.

Rather moist wooded slopes; frequent in the northern half of the area; rare southward to Clayton and Dubuque counties.

Lycopodium obscurum L. Ground-pine.

Frequent in northern counties in moist to dry sandy woods; rare and restricted to steep, north-facing wooded slopes in northeastern Iowa.

Lycopodium selago L. var. *patens* (Beauv.) Desv. Mountain Club-moss.

Moist sandstone cliffs and ledges from Sauk County to northeastern Iowa; infrequent.

Lycopodium tristachyum Pursh, Ground-pine, Ground-cedar.

Sandy jack pine woods in northeastern counties; frequent. In drier habitats than the closely-related *Lycopodium complanatum*.

SELAGINELLACEAE (Spikemoss Family)

Selaginella rupestris (L.) Spring, Spike-moss.

Dry sandy plains, sandy upland woods, and sandstone ledges; common in the northern half of the area; infrequent southward to Carroll County.

ISOETINAE

ISOETACEAE (Quillwort Family)

Isoetes macrospora Dur. Quillwort.

Shallow water of Devil's Lake, Sauk County; rare.

Isoetes muricata Dur. (*I. braunii* Dur. and *I. echinospora* Dur. var. *braunii* (Dur.) Engelm. of Wisconsin and Minnesota authors.)

With *Isoetes macrospora* at Devil's Lake, Sauk County; rare.

FILICINAE

OPHIOGLOSSACEAE (Adder's-tongue Family)

Botrychium dissectum Spreng. (incl. *B. obliquum* Muhl.) Grape Fern.

Scattered throughout in rather dry upland woods and thickets; frequent. Variety *obliquum* (Muhl.) Clute was collected about as often as typical *B. dissectum*.

Botrychium multifidum (Gmel.) Rupr. (incl. *B. ternatum* (Thunb.) Sw.) Leather Grape Fern.

Dry, sandy, or loamy upland woods and thickets in the northern half of the area; infrequent. Of the collections made, about half were var. *intermedium* (D. C. Eaton) Farw. and the rest were var. *multifidum*.

Botrychium virginianum (L.) Sw. Rattlesnake Fern.

Rich upland woods and rather moist wooded slopes; common except in northeastern counties.

Ophioglossum vulgatum L. Adder's-tongue.

Moist sandy meadows in Juneau, Adams and Dane counties; rare.

ASPIDIACEAE (Shield Fern Family)

Athyrium filix-femina (L.) Roth (*A. angustum* (Willd.) Presl of Wisconsin authors.) Lady Fern.

Moist wooded slopes, low woods, and tamarack bogs; common throughout.

Athyrium pycnocarpon (Spreng.) Tidestr. Glade Fern, Narrow-leaved Spleenwort.

Steep north- and east-facing maple-basswood slopes in northeastern Iowa and adjacent southwestern Wisconsin; infrequent. Generally associated with *Dryopteris goldiana* and *Athyrium thelypterioides*.

Athyrium thelypterioides (Michx.) Desv. Silvery Spleenwort.

Steep north- and east-facing wooded slopes north to LaCrosse and Adams counties; frequent.

Cystopteris bulbifera (L.) Bernh. Bulblet Fern.

Moist, shaded, sandstone and limestone cliffs and talus; common except in northeastern counties.

Cystopteris fragilis (L.) Bernh. Fragile Fern.

Shaded sandstone and limestone ledges and talus and on moist wooded slopes; common throughout.

Dryopteris cristata (L.) Gray, Crested Shield Fern.

Common in counties to the north in low sandy woods and bogs; rare southward on moist, sandy wooded slopes to Clayton and Jo Daviess counties.

Dryopteris fragrans (L.) Schott var. *remotiuscula* Komarov, Fragrant Fern.

Dry sandstone ledges and cliffs at the Dells of the Wisconsin River in Adams (N. C. Fassett *et al*, 1929, WIS) and Sauk (R. M. Tryon Jr., 1936, WIS) counties; rare.

Dryopteris goldiana (Hook.) Gray, Goldie's Fern.

Steep north- and east-facing maple-basswood slopes in northeastern Iowa and adjacent southwestern Wisconsin; infrequent.

Dryopteris marginalis (L.) Gray, Marginal Shield Fern.

Sandstone and quartzite outcrops from Adams County south to Green County; infrequent but locally abundant. An Iowa station (White Pine Hollow in Dubuque County) has not been rediscovered in recent years.

Dryopteris spinulosa (O. F. Muell.) Watt. (and *D. intermedia* (Muhl.) A. Gray) Spinulose Shield Fern.

Steep, moist, north- and east-facing wooded slopes in southern counties; low sandy woods and boggy thickets in counties to the north; common throughout.

Gymnocarpium dryopteris (L.) Newm. (*Dryopteris disjuncta* (Ledeb.) Morton) Oak Fern.

Frequent in the northern half of the area on shaded sandstone ledges and cliffs; rare southward to Dubuque County on cold, mossy talus slopes.

Gymnocarpium robertianum (Hoffm.) Newm. (*Dryopteris robertiana* (Hoffm.) C. Chr.)

Steep, cool, north-facing talus slopes in northeastern Iowa and adjacent southeastern Minnesota; rare. Disjunct here from the Lake Superior region. Usually associated with *Rhamnus alnifolia*, *Rubus pubescens*, *Circaea alpina*, *Mertensia paniculata*, *Streptopus roseus*, and *Maianthemum canadense*.

Matteuccia struthiopteris (L.) Todaro (*Pteretis pensylvanica* (Willd.) Fern.) Ostrich Fern.

Mesic wooded slopes; common in areas of maple-basswood forests and otherwise scattered throughout the area.

Onoclea sensibilis L. Sensitive Fern.

Moist woods, bogs, meadows, and marshy shores; common throughout.

Polystichum acrostichoides (Michx.) Schott. Christmas Fern.

Moist, usually rather sandy, wooded slopes in Allamakee, Jo Daviess, and Sauk counties; rare.

Thelypteris hexagonoptera (Michx.) Weatherby (*Dryopteris hexagonoptera* (Michx.) Christens.) Broad Beech Fern.

Steep maple-basswood slopes from Jo Daviess County north to Houston County; infrequent.

Thelypteris palustris Schott. (*Dryopteris thelypteris* (L.) Gray)

Marshy and boggy places; common throughout.

Thelypteris phegopteris (L.) Slosson (*Dryopteris phegopteris* (L.) Christens.) Northern Beech Fern.

Moist, shaded sandstone ledges south to Vernon and Sauk counties; infrequent.

Thelypteris simulata (Davenp.) Nieuwl. (*Dryopteris simulata* Davenp.) Massachusetts Fern.

Locally abundant in low sphagnous woods (with red maple, white pine, and white oak) in the old bed of Glacial Lake Wisconsin in Jackson County. Apparently the first record of this species west of West Virginia. The distribution of this fern is discussed in a recent paper (Hartley, **1965**).

Woodsia ilvensis (L.) R. Br. Rusty Woodsia.

Scattered throughout on dry sandstone and quartzite ledges and cliffs; infrequent.

Woodsia obtusa (Spreng.) Torr. Large Woodsia.

Scattered throughout on sandstone and quartzite ledges; frequent.

Woodsia oregana D. C. Eat. Oregon Woodsia.

Moist to dry sandstone, and occasionally limestone, ledges in

Allamakee, Clayton, Houston, Vernon, and Winneshiek counties; infrequent.

Aspleniaceae (Spleenwort Family)

Asplenium pinnatifidum Nutt. Pinnatifid Spleenwort.

Shaded sandstone ledges in Brigham Twp., Iowa County; rare. Collected by H. H. Iltis in 1958. Specimen not seen. Disjunct from southern Indiana.

Asplenium platyneuron (L.) Oakes, Ebony Spleenwort.

Rather dry, shaded sandstone outcrops and talus in LaCrosse, Allamakee, and Jo Daviess counties; rare.

Asplenium rhizophyllum L. (*Camptosorus rhizophyllus* (L.) Link) Walking Fern.

Moist, shaded sandstone and limestone ledges and talus in the southern half of the area; common.

Asplenium trichomanes L. Maidenhair Spleenwort.

Moist, shaded sandstone ledges at the Dells of the Wisconsin River in Juneau County; rare.

Osmundaceae (Flowering Fern Family)

Osmunda cinnamomea L. Cinnamon Fern.

Common in northeastern counties in low sandy woods and bogs; rare southward to Jackson County, Iowa.

Osmunda claytoniana L. Interrupted Fern.

Mesic woodlands in southern counties; low sandy woods and thickets to the northeast; common throughout.

Osmunda regalis L. Royal Fern.

Common in northern counties in low sandy woods, thickets, bogs, and meadows; rare southward to Allamakee County.

Polypodiaceae (Polypody Family)

Polypodium vulgare L. (incl. *P. virginianum* L.) Polypody.

Sandstone and quartzite ledges and cliffs; common throughout.

Pteridaceae (Bracken Family)

Adiantum pedatum L. Maidenhair Fern.

Mesic woods; common throughout.

Cheilanthes feei Moore, Slender Lip Fern.

Exposed limestone (and occasionally sandstone) cliffs and ledges north to Winneshiek, Vernon, and Sauk counties; mainly along the Mississippi River; infrequent.

Cryptogramma stelleri (Gmel.) Prantl, Slender Cliff-brake.

Shaded sandstone and limestone cliffs and ledges north to Richland, LaCrosse, and Fillmore counties; frequent.

Pellaea atropurpurea (L.) Link, Purple Cliff-brake.

Dry, crumbling sandstone ledges in Houston, Vernon, Allamakee, Grant, and Sauk counties; infrequent.

Pellaea glabella Rydb. Smooth Cliff-brake.

Dry limestone and sandstone cliffs and ledges; common except in northeastern counties.

Pteridium aquilinum (L.) Kuhn, Bracken Fern.

Dry upland woods and borders in southern and western counties; dry, or more often, moist sandy woods to the northeast; common throughout.

Salviniaceae (Water Fern Family)

Azolla mexicana Presl. (*A. caroliniana* Willd. of Wisconsin authors) Mosquito Fern.

Scattered throughout in quiet sloughs and backwaters; infrequent.

CONIFERAE

Cupressaceae (Cypress Family)

Juniperus communis L. Common Juniper.

Sandstone and limestone ledges, rocky hill prairies, sparsely-wooded ridges, and tamarack bogs; scattered throughout; common.

Juniperus horizontalis Moench, Creeping Juniper.

Forms extensive cushion-like cover on exposed sandstone bluffs and ridges in Adams, Dane, Green, Houston, and Pepin counties; infrequent. Reputed to hybridize in this area with *Juniperus virginiana*.

Juniperus virginiana L. Red-cedar.

Dry slopes and ridges and on limestone and sandstone ledges; common, especially in southern and western counties. Gnarled and twisted cedars are picturesque features of the limestone rimrock on most Mississippi River bluffs in the "Driftless Area."

Thuja occidentalis L. Arbor Vitae, White-cedar.

Sheltered sandstone ledges at the Dells of the Wisconsin River in Juneau and Sauk counties; rare.

Pinaceae (Pine Family)

Abies balsamea (L.) Mill. Balsam Fir.

Cool, mossy, north-facing talus slopes in Allamakee, Winneshiek,

Fillmore, and Vernon counties; in a tamarack bog in Trempealeau County; rare.

Larix laricina (DuRoi) K. Koch. Tamarack.

Bogs south to LaCrosse, Richland, and Sauk counties; frequent.

Picea glauca (Moench) Voss. White or Cat Spruce.

Sandy wooded slope bordering Nepco Lake, Wood County; rare.

Picea mariana (Mill.) BSP. Black or Bog Spruce.

Bogs in the old bed of Glacial Lake Wisconsin; infrequent.

Pinus banksiana Lamb. Jack Pine.

Dry, open sandy places, low acid woods and bogs; common in northeastern counties; infrequent southward on sand terraces of the Wisconsin River to Grant County.

Pinus resinosa Ait. Red or Norway Pine.

Dry sandy situations; common in northeastern counties; infrequent southward to Vernon, Iowa, and Dane counties.

Pinus strobus L. White Pine.

Sheltered sides of sandstone bluffs and low sandy woods and bogs in northern counties; steep, usually sandy, wooded slopes and ledges south to Dubuque and Jo Daviess counties; common.

Tsuga canadensis (L.) Carr. Eastern Hemlock.

Moist north- and east-facing sandstone ledges and cliffs in Vernon, Richland, Sauk, Juneau, and Adams counties; rare. Often forming dense stands.

Taxaceae (Yew Family)

Taxus canadensis Marsh. American Yew.

North-facing wooded slopes and occasionally in tamarack bogs from Trempealeau County south to Dubuque and Jo Daviess counties; frequent. Generally abundant on north-facing talus slopes in northeastern Iowa.

MONOCOTYLEDONEAE

Alismataceae (Water-plantain Family)

Alisma gramineum K. C. Gmel. Water-plantain.

On wet sand at the town of Alma, Buffalo County (N. C. Fassett, 1926, WIS); rare.

Alisma subcordatum Raf. (*A. plantago-aquatica* of authors, not L., and *A. trivale* Pursh)

Open marshes and wet margins; common throughout.

Echinodorus rostratus (Nutt.) Engelm. (*E. cordifolius* of authors, not (L.) Griseb.) Burhead.

Abundant in shallow water of a pond at Guttenberg, Clayton County; rare.

Sagittaria cuneata Sheldon, Arrowhead.

Marshes and shores in Allamakee, Juneau, and LaCrosse counties; apparently rare.

Sagittaria engelmanniana J. G. Smith (incl. S. *brevirostra* Mack. & Bush)

Shorelines and other marshy or boggy places; frequent along the Mississippi River; rare elsewhere.

Sagittaria graminea Michx. (incl. S. *cristata* Engelm.)

Sandy shores and shallow water in Sauk and Wood counties; rare.

Sagittaria latifolia Willd.

Marshes, shores, and shallow water; common throughout.

Sagittaria montevidensis Cham. & Schlecht

Shallow water of the Mississippi River near Stoddard, Vernon County; rare.

Sagittaria rigida Pursh

Marshy places, open shores, and in shallow water in the northern half of the area; apparently infrequent.

Amaryllidaceae (Amaryllis Family)

Allium canadense L. Wild-garlic.

Sedge meadows, alluvial thickets, and grassy roadsides; scattered throughout the area; infrequent.

Allium cernuum Roth, Wild Onion.

Steep, north-facing, wooded talus slopes in Winneshiek, Allamakee, and Lafayette counties; rare.

Allium tricoccum Ait. Wild-leek, Ramp.

Moist mesic woodlands north to Adams and LaCrosse counties; common. Characteristic of maple-basswood forests.

Araceae (Arum Family)

Acorus calamus L. Sweetflag.

Marshy places in the northern half of the area; infrequent.

Arisaema dracontium (L.) Schott, Green-dragon.

Alluvial woods and low thickets; frequent in counties along the Mississippi River; rare elsewhere.

Arisaema triphyllum (L.) Schott (incl. A. *atrorubens* (Ait.) Blume) Jack-in-the-pulpit.

Mesic wooded slopes, alluvial woods, tamarack bogs, and low sandy woods; common throughout.

Calla palustris L. Wild Calla.

Bogs in Jackson (Wisconsin), LaCrosse, Juneau, and Trempealeau counties; rare.

Symplocarpus foetidus (L.) Nutt. Skunk-cabbage.

Low woods and boggy thickets in the northern half of the area; common.

Commelinaceae (Spiderwort Family)

°*Commelina communis* L. Dayflower.

Weed of alleys, roadsides, and waste places; infrequent.

Commelina erecta L.

Locally abundant in dry, open sandy places in Carroll and Sauk counties; rare. Fassett (**1943**) described var. *greenei* as a "Driftless Area" endemic.

Tradescantia bracteata Small, Spiderwort.

Dry, generally rather weedy, sand in Winneshiek, Allamakee, Iowa, and Dane counties; rare.

Tradescantia ohiensis Raf.

Dry open places; common throughout.

Cyperaceae (Sedge Family)

Bulbostylis capillaris (L.) C. B. Clarke

Dry open sand in the northern half of the area; infrequent.

Carex abdita Bickn. Sedge.

Dry sandy plains and rocky hill prairies in Allamakee, Jackson (Wisconsin), Jo Daviess, and LaCrosse counties; infrequent.

Carex adusta Boott

Dry sand bordering Little Bear Flowage in Jackson County, Wisconsin; rare. Disjunct from northern Wisconsin.

Carex aenea Fern.

Moist, sandy wooded slopes in Adams (F. J. Hermann, **1937**, WIS), Jackson (Wisconsin) (D. F. Grether, **1947**, WIS), and Sauk (J. H. Zimmerman, **1946**, WIS) counties; rare.

Carex aggregata Mackenz.

Moist open ground in Union Twp., Allamakee County (R. F. Thorne, **1956**, IA); rare. Possibly not distinct from *Carex cephaloidea* Dew.

Carex albursina Sheldon

Mesic wooded slopes north to LaCrosse and Houston counties; common.

Carex alopecoidea Tuckerm.

Alluvial woods in Allamakee (R. F. Thorne, **1953**, IA), Iowa

(J. H. Zimmerman, **1950**, WIS), and Sauk (J. H. Zimmerman, **1950**, WIS) counties; rare.

Carex amphibola Steud. var. *turgida* Fern. (*C. grisea* of authors, but possibly not Wahlenb.)

Rich maple-basswood forests and alluvial woods; frequent except in northeastern counties.

Carex angustior Mackenz.

Cold seepage bog along Perry Creek in Jackson County, Wisconsin; rare.

Carex annectens Bickn. var. *xanthocarpa* (Bickn.) Wieg.

Sandy prairie at Camp Decorah in LaCrosse County; rare.

Carex arcta Boott

Low sphagnous woods bordering Lake Arbutus in Jackson County, Wisconsin; rare. Disjunct from northern Wisconsin.

Carex arctata Boott

Moist, sandy wooded slopes in Richland and Juneau counties; rare and disjunct from northern Wisconsin.

Carex artitecta Mackenz.

Known in Wisconsin only from the wooded, quartzite talus slopes in Devil's Lake State Park, Sauk County (J. H. Zimmerman, **1949**, WIS).

Carex atherodes Spreng.

Sandy beaches of Devil's Lake State Park, Sauk County (J. H. Zimmerman, **1947**, WIS); rare.

Carex aurea Nutt.

Low sandy woods bordering Carter Creek, Roche a Cri State Roadside Park, Adams County; rare. Disjunct from near Lake Michigan.

Carex backii Boott

Rather dry, upland wooded slopes in Dubuque, Allamakee, LaCrosse, Juneau, and Sauk counties; infrequent. Not previously known from Iowa.

Carex bebbii Olney

Marshy places and tamarack bogs in LaCrosse, Adams, Trempealeau, and Vernon counties; infrequent.

Carex bicknellii Britt.

Dry sandy plains and mesic prairies; scattered throughout; frequent.

Carex blanda Dew.

Rich upland woods, moist wooded slopes, and alluvial woods; common except in sandy northeastern counties. Collections from

Green, Lafayette, and Jo Daviess counties approach *C. gracilescens* Steud.

Carex brevior (Dew.) Mackenz.

Dry sandy plains and prairies in the northern two-thirds of the area; frequent.

Carex bromoides Schk.

Shaded seepage bogs, low mossy woods, and tamarack bogs south to Vernon and Sauk counties; infrequent.

Carex brunnescens (Pers.) Poir.

Low woods, tamarack bogs, and spruce bogs in northeastern counties; frequent.

Carex buxbaumii Wahl.

Boggy marshes in Jackson (Wisconsin) and Iowa counties; rare.

Carex canescens L.

Low sandy woods and bogs in Jackson (Wisconsin), Juneau, and Richland counties; infrequent.

Carex careyana Torr.

Moist maple-basswood slopes in LaCrosse, Winneshiek, Allamakee, Clayton, Dubuque, and Jo Daviess counties; infrequent.

Carex cephalantha (Bailey) Bickn.

Open boggy places and sandy meadows in LaCrosse, Jackson (Wisconsin), and Adams counties; infrequent.

Carex cephaloidea Dew.

Rich upland woods, moist maple-basswood slopes, and alluvial woods in southern and western counties; infrequent.

Carex cephalophora Muhl.

Moist wooded slopes and dry upland woods north to Trempealeau and Sauk counties; frequent.

Carex chordorrhiza Ehrh.

Bogs in the old bed of Glacial Lake Wisconsin; rare.

Carex communis Bailey

Moist north- and east-facing wooded slopes (usually maple-basswood) north to LaCrosse and Sauk counties; infrequent.

Carex comosa Boott

Boggy and marshy places south to Sauk and Crawford counties; infrequent.

Carex conoidea Schk.

Moist sandy meadows in Adams and Dane counties; rare.

Carex convoluta Mackenz.

Rich upland woods and moist wooded slopes; common except in the extreme north. Similar to, and possibly not always distinct from, *C. rosea* Schk. The usual differences are given in the following key:

Stigmas long, slender and straight or only slightly coiled; perigynium ellipsoidal and comparatively narrow; basal 1/3 of perigynium white and puffy; lower 2/3 of perigynium without a definite margin.

..... *C. rosea*

Stigmas much shorter, thicker, definitely coiled; perigynium ovate-lanceolate, broader by comparison, rather abruptly contracted to a beak; basal 1/3 of perigynium not white or conspicuously puffy; lower 2/3 of perigynium usually with a definite margin.

..... *C. convoluta*

Carex crawfordii Fern.

Moist open sand bordering Silver Lake in Adams County; rare. Disjunct from northern Wisconsin.

Carex crinita Lam.

Low, often boggy, woods; frequent in northern counties; rarer south along the Wisconsin River to Iowa County.

Carex cristatella Britt.

Meadows, alluvial woods, and marshy margins; scattered throughout the area; frequent.

Carex cumulata (Bailey) Mackenz.

Moist open sand and sphagnous meadows at Little Bear Flowage and Ketchum Creek in Jackson County, Wisconsin; rare. Disjunct from northwestern Indiana and Kankakee County, Illinois.

Carex davisii Schwein. & Torr.

Alluvial woods in Green, Sauk, LaCrosse, Trempealeau, and Jackson (Wisconsin) counties; rare.

Carex debilis Michx.

Low sandy woods south to LaCrosse and Sauk counties; frequent.

Carex deflexa Hornem.

Low sandy woods at Perry Creek and Lake Arbutus in Jackson County, Wisconsin; rare. Disjunct from northern Wisconsin.

Carex deweyana Schwein.

Low sandy woods and moist wooded slopes; in eastern counties and in northeastern Iowa and adjacent southeastern Minnesota; infrequent.

Carex diandra Schrank

Boggy marsh north of Onalaska, LaCrosse County (A. M. Peterson, 1958, personal herbarium); rare.

Carex digitalis Willd.

Maple-basswood forests in northeastern Iowa and adjacent southwestern Wisconsin; frequent.

Carex disperma Dew.

Tamarack bogs in LaCrosse and Richland counties; rare.

Carex eburnea Boott

Rocky wooded ridges and sandstone and limestone ledges and blocks; north to Trempealeau and Sauk counties; common.

Carex emmonsii Dew.

Low sandy woods in the old bed of Glacial Lake Wisconsin in Jackson (Wisconsin) and Wood counties; infrequent. Disjunct from northern Indiana.

Carex emoryi Dew.

Sedge meadows and marshy places in LaCrosse, Winneshiek, and Carroll counties; rare.

Carex foenea Willd. (*C. siccata* Dew.)

Dry sandy prairies and sandy jack pine woods in the northern third of the area; infrequent.

Carex folliculata L.

Low sandy woods in the old bed of Glacial Lake Wisconsin; infrequent. Disjunct from the eastern side of Lake Michigan.

Carex gracillima Schwein.

Moist wooded slopes, low sandy woods, and tamarack bogs in the northern two-thirds of the area; frequent.

Carex granularis Muhl.

Moist, rather open places in the southern half of the area; infrequent.

Carex gravida Bailey

Weedy, upland wooded slopes in LaCrosse, Winneshiek, and Allamakee counties; rare.

Carex grayii Carey

Alluvial woods; mainly along the Mississippi and Wisconsin Rivers; infrequent.

Carex haydenii Dew.

Scattered throughout in moist meadows and alluvial woods; infrequent.

Carex hirtifolia Mackenz.

Maple-basswood forests north to LaCrosse and Sauk counties; common.

Carex hitchcockiana Dew.

Maple-basswood forests in northeastern Iowa and adjacent southwestern Wisconsin; infrequent.

Carex hystricina Muhl.

Scattered throughout in marshy places and boggy thickets; frequent.

Carex interior Bailey

Tamarack bogs and marshy places in the northern half of the area; infrequent.

Carex intumescens Rudge.

Sandy alluvial woods and boggy woods south to Sauk and Vernon counties; frequent.

Carex jamesii Schwein.

Moist, north- and east-facing maple-basswood slopes from La-Crosse and Winneshiek counties south to Jo Daviess County; infrequent.

Carex lacustris Willd.

Boggy marshes in Trempealeau, LaCrosse, Richland, and Sauk counties; infrequent.

Carex laeviconica Dew.

Alluvial marshes and shores along the Mississippi River north to Trempealeau County; infrequent.

Carex laevivaginata (Kuekenth.) Mackenz.

Moist open places in Iowa (M. A. Clikeman *et al*, **1932**, WIS) and Winneshiek (R. F. Thorne, **1953**, IA) counties; rare.

Carex lanuginosa Michx.

Scattered throughout in sedge meadows, marshes, and boggy thickets; frequent.

Carex lasiocarpa Ehrh. var. *americana* Fern.

Bogs in the old bed of Glacial Lake Wisconsin; rare. Similar to *C. lanuginosa* but differs in having very narrow, elongated, wire-like leaves.

Carex leptalea Wahl.

Tamarack bogs and low sandy woods south to LaCrosse and Richland counties; frequent.

Carex leptonervia Fern.

Moist, sandy wooded slopes in Adams and Jackson (Wisconsin) counties; rare.

Carex limosa L.

Black spruce bogs in the old bed of Glacial Lake Wisconsin; rare.

Carex longii Mackenz.

Sandy sphagnous meadow in northeastern LaCrosse County; rare. Not previously known from Wisconsin and disjunct from northwestern Indiana.

Carex lupulina Muhl.

Alluvial woods along the larger rivers of the area; frequent.

Carex lurida Wahlenb.

Sandy alluvial woods, boggy woods, acid meadows, and marshy shores; mainly in the northern half of the area; infrequent.

Carex meadii Dew.

Dry prairies in the northern two-thirds of the area; infrequent.

Carex media R. Br.

Mossy, north-facing, wooded talus slopes bordering Buck Creek in Clayton County and at Glenhaven, Grant County; rare. Disjunct from northern Minnesota. Not previously known from Iowa.

Carex molesta Mackenz.

Dry open pastures, roadsides, prairies, and upland woods in the southern half of the area; infrequent.

Carex muhlenbergii Schk.

Dry sandy plains and prairies; mainly in the northern two-thirds of the area; frequent.

Carex muskingumensis Schwein.

Alluvial woods along the Mississippi and Wisconsin Rivers; frequent.

Carex normalis Mackenz.

Scattered throughout in moist woods; frequent.

Carex oligocarpa Schk.

Maple-basswood forests in the southern half of the area; frequent.

Carex oligosperma Michx.

Bogs in the old bed of Glacial Lake Wisconsin; infrequent.

Carex paupercula Michx.

Bogs in the old bed of Glacial Lake Wisconsin; rare.

Carex pedunculata Muhl.

Scattered throughout on moist wooded slopes; usually with maple-basswood association; frequent.

Carex peckii E. C. Howe

Moist wooded slopes from Dubuque County north to Trempealeau and Adams counties; frequent.

Carex pensylvanica Lam.

Upland woods, wooded slopes, ravines, sandy plains, and prairies; common throughout.

Carex plantaginea Lam.

Moist north- and east-facing maple-basswood slopes in LaCrosse, Vernon, and Clayton counties; rare.

Carex prairea Dew.

Sedge meadow along the LaCrosse River, LaCrosse County; rare.

Carex prasina Wahl.

Low springy woods at Devil's Lake, Sauk County; rare. Disjunct from Indiana and Michigan.

Carex projecta Mackenz.

Alluvial woods and low sandy woods in the northern two-thirds of the area; frequent. Some collections approach *Carex normalis* while others, with larger, more crowded spikes, approach *C. tribuloides.*

Carex pseudo-cyperus L.

Tamarack bog below Rattlesnake Mound in Adams County; rare.

Carex retrorsa Schwein.

Alluvial woods and seepage bogs in the northern two-thirds of the area; infrequent.

Carex richardsonii R. Br.

Dry sandy prairies in Adams and Dane counties; rare.

Carex rosea Schk.

Alluvial woods, bogs, and low sandy woods in northern and eastern counties; infrequent. See note with *Carex convoluta.*

Carex rostrata Stokes

Bogs, sphagnous meadows, and marshy places in the northern half of the area; infrequent.

Carex scabrata Schwein.

Moist, sandy wooded slopes in Jackson (Wisconsin) and La-Crosse counties; rare. Disjunct from extreme northern Wisconsin.

Carex scoparia Schk.

Sedge meadows, moist open sand, alluvial woods, and marshy margins; scattered throughout; frequent.

Carex sparganioides Muhl.

Moist wooded slopes; frequent except in northeastern counties.

°*Carex spicata* Huds.

Weedy clearing on a Mississippi River bluff near LaCrosse, La-Crosse County; rare.

Carex sprengelii Dew.

Moist wooded slopes, rich upland woods, and rocky wooded ridges; common except in northeastern counties.

Carex sterilis Willd.

Boggy woods and moist sandy meadows in LaCrosse, Jackson (Wisconsin), and Adams counties; rare.

Carex stipata Muhl.

Low sandy woods, alluvial woods, and sandy meadows in the northern half of the area; infrequent.

Carex straminea Willd. (*C. richii* Mackenz.)

Boggy meadows in LaCrosse and Jackson (Wisconsin) counties; rare. Disjunct from southwestern Michigan and north-central Indiana.

Carex stricta Lam.

Scattered throughout in meadows, alluvial woods, and open bogs; frequent.

Carex tenera Dew.

Moist to dry woods in the northern two-thirds of the area; infrequent.

Carex tetanica Schk.

Bog bordering Tamarack Creek, Trempealeau County; rare.

Carex tonsa (Fern.) Bickn.

Scattered throughout on dry, open sandy plains and blowouts; frequent. Possibly not distinct from *Carex umbellata*.

Carex tribuloides Wahlenb.

Alluvial woods and meadows; mainly along the Mississippi and Black rivers; infrequent.

Carex trichocarpa Muhl.

Marshy stream margins in Crawford, Dubuque, Green, Lafayette, and Monroe counties; rare.

Carex trisperma Dew.

Bogs and low woods in the old bed of Glacial Lake Wisconsin; infrequent.

Carex tuckermani Boott

Moist sandy woods south to Crawford and Iowa counties; infrequent.

Carex typhina Michx.

Scattered throughout in alluvial woods, meadows and marshy margins; frequent.

Carex umbellata Schk.

Dry sandstone and quartzite ledges and talus in northeastern counties; apparently rare. Very similar to *Carex tonsa*.

Carex vesicaria L.

Alluvial woods, marshy shores, and meadows; mainly in northern counties; infrequent.

Carex viridula Michx.

Moist open sand near Lyndon Station, Juneau County; rare.

Carex vulpinoidea Michx.

Alluvial woods, marshy margins, moist open sand, and occasionally on dry, rather weedy ridges; common throughout.

Carex woodii Dew.

Moist north- and east-facing maple-basswood slopes from La-Crosse County south to Dubuque and Jo Daviess counties; infrequent.

Cyperus diandrus Torr. Galingale.

Moist open sand at Devil's Lake and along the Wisconsin River in eastern counties; rare.

Cyperus engelmanni Steud.

Moist sandy margins in Allamakee and Buffalo counties; rare.

Cyperus erythrorhizos Muhl.

Sandy or muddy margins of streams and ponds; scattered throughout; infrequent.

Cyperus esculentus L. Yellow Nut-grass.

Shores, marshes, and moist disturbed soil in western and southern counties; infrequent.

Cyperus ferruginescens Boeckl.

Wet margins along the Mississippi River in Clayton and Grant counties; rare.

Cyperus filiculmis Vahl

Dry open sand; common throughout.

Cyperus houghtonii Torr.

Dry open sand; mainly in northeastern counties; infrequent. A Carroll County collection (from a sand terrace near Thomson) represents one of the few records of this species for Illinois. Flowers a month or so later than the closely-related *Cyperus schweinitzii*.

Cyperus inflexus Muhl. (*C. aristatus* Rottb.)

Moist sandy margins in the northern half of the area; infrequent.

Cyperus rivularis Kunth

Scattered throughout on moist open sand; frequent.

Cyperus schweinitzii Torr.

Dry open sand; common throughout.

Cyperus strigosus L.

Moist sandy shores and marshy places in the northern two-thirds of the area; frequent.

Dulichium arundinaceum (L.) Britt. Three-way Sedge.

Marshes, shores, and open bogs in the northern two-thirds of the area; frequent.

Eleocharis acicularis (L.) R. & S. Spike-rush.

Wet shores and marshes; frequent throughout.

Eleocharis calva Torr.

Marshy margins, muddy shores, and moist open sand; scattered throughout; frequent.

Eleocharis compressa Sulliv.

Moist to rather dry, open sandy places in Jo Daviess and Trempealeau counties; rare.

Eleocharis elliptica Kunth

Moist open sand in the old bed of Glacial Lake Wisconsin; rare.

Eleocharis engelmanni Steud.

Moist open sand in Crawford, Iowa, Juneau and Monroe counties; rare.

Eleocharis intermedia (Muhl.) Schultes

Moist sandy creek margins in Adams County; rare.

Eleocharis obtusa (Willd.) Schultes

Sandy or muddy shores and marshy places; common in the northern third of the area; infrequent southward to Jo Daviess County.

Eleocharis ovata (Roth) R. & S.

Rare. Similar to *E. obtusa* but in more acid habitats. Collected on moist open sand in Juneau County (with *Xyris torta*, *Drosera rotundifolia* and *Eleocharis elliptica*) and on a floating sphagnum mat in Jackson County, Wisconsin.

Eleocharis palustris (L.) R. & S. (incl. *E. smallii* Britt. and *E. macrostachya* Britt.)

Marshes, wet meadows, shallow water and shores; mainly in northern counties; frequent.

Eleocharis wolfi Gray

Wet open sand near Lyndon Station, Juneau County (J. H. Zimmerman, **1950**, WIS); rare.

Eriophorum angustifolium Honck. Cotton-grass.

Boggy places in Jackson (Wisconsin), Monroe, and Iowa counties; infrequent.

Eriophorum gracile W. D. J. Koch

Open bogs in the old bed of Glacial Lake Wisconsin; rare.

Eriophorum spissum Fern. Hare's-tail.

Bogs in the old bed of Glacial Lake Wisconsin; infrequent. Locally abundant and very conspicuous early in the season.

Eriophorum tenellum Nutt.

Bogs in the old bed of Glacial Lake Wisconsin; infrequent.

Eriophorum virginicum L. Tawny Cotton-grass.

Bogs and sphagnous meadows; especially in the old bed of Glacial Lake Wisconsin; infrequent.

Fimbristylis autumnalis (L.) R. & S.

Moist open sand in Adams and Juneau counties; rare.

Hemicarpha drummondii Nees

Moist open sand near Lyndon Station, Juneau County; rare. Possibly not distinct from the next.

Hemicarpha micrantha (Vahl) Britt.

Moist sand bars and beaches along the Black and Wisconsin rivers and at Devil's Lake, Sauk County; rare.

Rhynchospora alba (L.) Vahl, Beak-rush.

Bogs and sphagnous meadows in the old bed of Glacial Lake Wisconsin; infrequent.

Rhynchospora capillacea Torr.

Moist open sand bordering Silver Lake, Adams County; rare.

Rhynchospora glomerata (L.) Vahl var. *minor* Britt. (*R. capitellata* (Michx.) Vahl.)

Moist open sand in northeastern counties; infrequent.

Scirpus americanus Pers. Three-square, Sword-grass.

Moist sandy shores in Adams, Juneau, and Sauk counties; rare.

Scirpus atrocinctus Fern.

Open boggy places in LaCrosse, Jackson (Wisconsin), and Juneau counties; rare. Similar to *Scirpus cyperinus* but differs in having bright green leaves and black involucels and scales. *Scirpus cyperinus* occasionally has blackish involucels but lacks the black scales of this species.

Scirpus atrovirens Willd.

Wet woods, tamarack bogs, shores, meadows, and marshes; common throughout.

Scirpus clintonii Gray

Rather dry sandy woods near LaValle in Sauk County and in a moist sandy meadow bordering Duck Creek in Adams County; rare. With *Ophioglossum vulgatum* at the latter station.

Scirpus cyperinus (L.) Kunth (incl. *S. pedicellatus* Fern.)

Marshes, meadows, tamarack bogs, and shores; common throughout.

Scirpus fluviatilis (Torr.) Gray, River Bulrush.

Marshes, shores, and shallow water; mainly along the Mississippi River; frequent.

Scirpus heterochaetus Chase, Slender Bulrush.

Sandy marsh near Fountain City, Buffalo County; rare.

Scirpus lineatus Michx.

Alluvial sedge meadow bordering the Mississippi River in Carroll County; rare.

Scirpus purshianus Fern. (*S. debilis* Pursh)

Moist sandy shores in Adams, Monroe, and Sauk counties; rare but locally abundant.

Scirpus rubrotinctus Fern.

Boggy woods and acid meadows in Eau Claire, Jackson (Wisconsin), Juneau, and Monroe counties; rare.

Scirpus torreyi Olney

Wet sandy shore of Meadow Valley Flowage, Juneau County; rare.

Scirpus validus Vahl, Great Bulrush.

Marshes and wet shores; common throughout. The closely-related *Scirpus acutus* Muhl. is apparently absent from the "Driftless Area" although very common in adjacent recently-glaciated regions.

Scleria reticularis Michx. Nut-rush.

Moist open sand bordering Silver Lake in Adams County; rare. With *Rhexia virginica, Scirpus purshianus* and *Carex crawfordii*. Disjunct from northwestern Indiana.

Scleria triglomerata Michx.

Moist sandy meadows in Iowa, Jackson (Wisconsin), and La-Crosse counties; rare.

Dioscoreaceae (Yam Family)

Dioscorea villosa L. Yam.

Woods and thickets; common throughout.

Gramineae (Grass Family)

°*Agropyron desertorum* (Fisch.) Schult

Weed of dry soil in Allamakee and LaCrosse counties; rare.

°*Agropyron repens* (L.) Beauv. Witch Grass.

Common weed of dry soil throughout the area.

Agropyron smithii Rydb.

Throughout in dry, often weedy, situations; infrequent.

Agropyron trachycaulum (Link) Steud. (incl. *A. pauciflorum* Schwein. and *A. subsecundum* (Link) Hitchc.)

Dry, sandy jack pine woods and openings to the north; prairie openings on bluffs to the south; infrequent.

°*Agrostis gigantea* Roth (*A. alba* L. of authors) Redtop.

Moist to dry woods and open places; common throughout. Often appearing native.

Agrostis hyemalis (Walt.) BSP. Tickle Grass.

Scattered throughout in dry, open sandy places; infrequent.

Agrostis perennans (Walt.) Tuckerm. Upland Bent.

Throughout in a variety of habitats including moist sandstone ledges, moist wooded slopes and acid woods; frequent. Occasionally seems to grade into the next.

Agrostis scabra Willd. Hairgrass, Fly-away Grass.

Sandy soil in northern and eastern counties; common.

°*Agrostis stolonifera* L. var. *stolonifera* (L.) Koch

Marshy creek margins in Allamakee and Vernon counties; rare. Similar to, and often included with, *Agrostis gigantea* except has a compact, spike-like panicle about 6 mm. in diameter.

Alopecurus aequalis Sobol. Foxtail.

Wet, often marshy, shores and shallow water in the northern two-thirds of the area; infrequent.

Alopecurus carolinianus Walt.

Grounds of the Northwood Nurseries near Coon Valley, Vernon County (E. R. Koethe, 1942, WIS); rare.

°*Alopecurus pratensis* L.

Weedy railway north of Melvina, Monroe County (L. H. Shinners, 1918, WIS); rare.

Andropogon gerardi Vitman, Tall Blue-stem.

Upland prairies, roadsides, and borders of woods; common throughout.

Andropogon scoparius Michx. Small Blue-stem.

Common throughout in the same habitats as the preceding.

Aristida basiramea Engelm. (incl. *A. curtissii* (A. Gray) Nash) Triple-awned Grass.

Dry open sand; frequent throughout.

Aristida dichotoma Michx.

Dry prairie openings at Devil's Lake, Sauk County (J. H. Zimmerman, 1946, WIS); rare. Apparently disjunct from central Illinois.

Aristida intermedia Scribn. & Ball

Dry open sand in northern counties; infrequent.

Aristida oligantha Michx.

Dry open sand on a Mississippi River terrace near Onalaska, LaCrosse County; rare.

Aristida purpurascens Poir.

Dry open sand in Jackson (Wisconsin), Juneau, and LaCrosse counties; rare.

Aristida tuberculosa Nutt.

Scattered throughout on dry open sand; frequent.

°*Avena sativa* L. Cultivated Oats.

Infrequent weed of roadsides and fields. Doubtful if ever becomes established.

Bouteloua curtipendula (Michx.) Torr. Tall Grama Grass.

Dry, especially sandy, upland prairies; common throughout.

°*Bouteloua gracilis* (HBK.) Lag.

Apparently adventive along a railroad near Black Earth, Dane County (H. C. Greene and Orlin Anderson, **1950**, WIS); rare.

Bouteloua hirsuta Lag.

Dry, especially sandy, upland prairies; common throughout.

Brachyelytrum erectum (Schreb.) Beauv.

Moist wooded slopes to the south and low, often boggy, woods to the north; common throughout.

Bromus ciliatus L. (incl. *B. dudleyi* Fern.) Brome Grass.

Low sandy woods, thickets, and tamarack bogs in the northern third of the area; infrequent.

°*Bromus inermis* Leyss. Hungarian Brome Grass.

Dry soil along roads, railroads, and other weedy places; frequent throughout.

°*Bromus japonicus* Thunb.

Weed of dry soil in the southern half of the area; infrequent.

Bromus kalmii Gray

Dry, rocky hill prairies and sparsely-wooded slopes in counties to the south; low sandy woods in northeastern counties; frequent.

Bromus latiglumis (Scribn.) Hitchc.

Low sandy woods in counties to the northeast; otherwise on moist wooded slopes; frequent.

Bromus purgans L.

Moist wooded slopes and rich upland woods; frequent except in northeastern counties.

°*Bromus secalinus* L.

Rare weed; known from LaCrosse (L. H. Pammel, **1883**, WIS) and Winneshiek (B. Shimek, **1903**, IA) counties.

°*Bromus tectorum* L.

Weed of dry disturbed soil; frequent except in northeastern counties.

°*Buchloe dactyloides* (Nutt.) Engelm. Buffalo Grass.

Sandy railroad yard in North LaCrosse, LaCrosse County; rare. Apparently adventive from the West.

Calamagrostis canadensis (Michx.) Nutt. Blue-joint.

Scattered throughout in low woods, bogs, and meadows; frequent.

Calamagrostis inexpansa Gray var. *brevior* (Vasey) Stebbins

Moist open sand near Lyndon Station, Juneau County; rare.

Calamagrostis neglecta (Ehrh.) Gaertn., Meyer & Scherb.

Low sandy meadow near Arena, Iowa County (S. C. Wadmond, 1937, WIS); rare.

Calamovilfa longifolia (Hook.) Scribn.

Dry sandy soil in Carroll, Juneau, and LaCrosse counties; rare.

Cenchrus longispinus (Hack.) Fern. Sandbur.

Common throughout on dry weedy sand.

°*Chloris verticillata* Nutt.

Rocky Mississippi River bluff in Jo Daviess County; rare. Probably adventive from southwestern United States.

Cinna arundinacea L. Wood Reedgrass.

Alluvial woods, tamarack bogs, low sandy woods, and moist wooded slopes; throughout the area; frequent.

Cinna latifolia (Trev.) Griseb.

Moist sandy woods in northern counties; rare.

°*Dactylis glomerata* L. Orchard Grass.

Roadsides, railroads, and woodland borders; throughout the area; frequent.

Danthonia spicata (L.) Beauv. Poverty Grass.

Dry woodlands throughout; common.

Deschampsia cespitosa (L.) Beauv. Tufted Hairgrass.

Moist sandy meadows in LaCrosse and Sauk counties; rare.

Diarrhena americana Beauv.

Rich woods in Lafayette (L. S. Cheney, **1894**, WIS) and Monroe (H. H. Iltis, **1960**, WIS) counties; rare.

°*Digitaria ischaemum* (Schreb.) Muhl. Crab Grass.

Weed of dry, usually sandy, soil; frequent and scattered throughout the area.

°*Digitaria sanguinalis* (L.) Scop.

Weed of roadsides, yards, and waste places; common throughout.

°*Distichlis stricta* (Torr.) Rydb. Alkali Grass.

Sandy railroad yards in North LaCrosse, LaCrosse County; rare. Adventive from the West.

°*Echinochloa crusgalli* (L.) Beauv. Barnyard Grass.

Scattered throughout in wet places and disturbed soil; frequent.

Echinochloa muricata (Michx.) Fern. (*E. pungens* (Poir.) Rydb.)

Scattered throughout in wet places and disturbed soil; frequent.

Echinochloa walteri (Pursh) Nash

Wet shores in LaCrosse and Juneau counties; rare.

°*Eleusine indica* (L.) Gaertn. Goose Grass.

Weedy soil in town of Elkader, Clayton County; rare.

Elymus canadensis L. Wild Rye.

Upland prairies, sparsely-wooded ridges, dry limestone and sandstone ledges, sand plains, roadsides, and railroads; scattered throughout the area; common. Occasionally on moist wooded slopes and there often approaching *Elymus interruptus* Buckley.

Elymus interruptus Buckley

One specimen at the University of Wisconsin Herbarium may be this species: wooded summit of bluff near Woodman, Grant County (N. C. Fassett, no date, WIS). Fassett (**1951**) suggests that this is a hybrid between *Elymus canadensis* and *Hystrix patula*.

Elymus riparius Wiegand

Alluvial woods and moist wooded slopes in Adams, Grant, Dubuque, and Winneshiek counties; rare. According to Fassett (**1951**) this is an eastern species originally described as occurring from New England to western New York and southward.

Elymus villosus Muhl.

Rich upland woods, moist wooded slopes and bases of ravines; scattered throughout; common.

Elymus virginicus L. Terrell Grass.

Scattered throughout in alluvial woods and meadows; frequent.

Eragrostis capillaris (L.) Nees, Lace Grass.

Rocky hill prairies and dry, sandy upland woods in Clayton, Crawford, and Monroe counties; rare.

°*Eragrostis cilianensis* (All.) Lut. Stink Grass, Love Grass.

Generally-distributed weed of roadsides, yards, and waste areas; frequent.

Eragrostis frankii C. A. Mey.

Moist, rather weedy places in western counties; infrequent.

Eragrostis hypnoides (Lam.) BSP.

Scattered throughout on wet, sandy, or muddy shores and alluvium; frequent.

Eragrostis pectinacea (Michx.) Nees

Dry, especially sandy, soil; often weedy; common throughout.

°*Eragrostis poaeoides* Beauv.

Along railroads in Juneau (L. H. Shinners and J. Catenhusen, **1940**, WIS), LaCrosse (L. H. Shinners and J. Catenhusen, **1940**, WIS), and Sauk (J. H. Zimmerman, **1946**, WIS) counties; rare.

Eragrostis spectabilis (Pursh) Steud. Petticoat-climber.

Dry sandy soil; often weedy; frequent throughout.

°*Festuca elatior* L. Meadow Fescue.

Open margins of creeks and ponds and in low pastures from La-Crosse County southward; infrequent.

Festuca obtusa Biehler

Moist wooded slopes and low sandy woods; common throughout.

Festuca octoflora Walt.

Dry open sand in the northern half of the area; frequent.

°*Festuca ovina* L.

Dry sandy plains and prairies in LaCrosse and Juneau counties; rare.

Festuca paradoxa Desv.

Peaty meadow along the Wisconsin River in Iowa County (J. T. Curtis and L. H. Shinners, **1941**, WIS); rare.

Festuca rubra L.

Sandy meadows and rock ledges in Allamakee, LaCrosse, and Sauk counties; rare.

Festuca saximontana Rydb.

Dry, open sandy places in LaCrosse and Jackson (Wisconsin) counties; rare.

Glyceria borealis (Nash) Batchelder, Float Grass, Manna Grass.

Marshy shores, shallow water and boggy marshes in northern counties; infrequent.

Glyceria canadensis (Michx.) Trin. Rattlesnake Grass.

Moist sandy meadows, shores, and boggy places in the northern third of the area; frequent.

Glyceria grandis S. Wats. Reed Meadow Grass.

Swampy alluvial woods, tamarack bogs, marshy margins and springholes; common throughout.

Glyceria pallida (Torr.) Trin. and var. *fernaldii* Hitchc. (incl. *G. neogaea* Steud.)

Sloughs, creek margins, and boggy marshes in northern and eastern counties; infrequent.

Glyceria septentrionalis Hitchc.

Marsh near the town of Clyde, Iowa County (L. H. Shinners and J. Catenhusen, **1940**, WIS); rare. A more southern species.

Glyceria striata (Lam.) Hitchc. Fowl Meadow Grass.

Alluvial woods, tamarack bogs, marshy and springy places; common throughout.

Hierochloe odorata (L.) Beauv. Holy Grass.

Meadows and low prairies in Adams, Juneau, Lafayette, and Winona counties; rare.

Hordeum jubatum L. Squirreltail Grass.

Weed of roadsides and railways; common except in northern and eastern counties.

Hystrix patula Moench. Bottle-brush Grass.

Moist wooded slopes and rich upland woods; common except in northeastern counties.

Koeleria cristata (L.) Pers.

Scattered throughout on dry sandy plains and in sandy woods: common.

Leersia lenticularis Michx. Catchfly Grass.

Marshy slough margins and alluvial woods along the Mississippi River in Clayton, Dubuque, and LaCrosse counties; rare.

Leersia oryzoides (L.) Sw. Rice Cutgrass.

Marshy places; common throughout.

Leersia virginica Willd.

Moist woods; common throughout.

Leptoloma cognatum (Schultes) Chase. Fall Witch Grass.

Scattered throughout in dry sandy places; frequent. Often weedy.

°*Lolium multiflorum* Lam. Italian Rye Grass.

Weed of yards and roadsides; collected only in Jo Daviess and LaCrosse counties, but probably more common.

°*Lolium perenne* L. Common Darnel.

Roadside weed; collected only in Grant and Trempealeau counties, but probably more common.

Melica nitens (Scribn.) Piper

Wooded bluff bordering the Pecatonica River in Iowa County (R. Ream, 1957, WIS); rare. Reported from Allamakee County by Tolstead (1938).

Milium effusum L. Millet Grass.

Moist maple-basswood slopes and seepage bogs from Allamakee and LaCrosse counties east to Sauk County; infrequent. Two Allamakee County collections are the first on record for Iowa.

°*Miscanthus sacchariflorus* (Maxim.) Hack.

Escaping to roadsides in Clayton County; rare.

Muhlenbergia cuspidata (Nutt.) Rydb.

Dry rocky prairies in northwestern counties; infrequent.

Muhlenbergia frondosa (Poir.) Fern. Muhly.

Roadside banks, alluvial woods, and on rich wooded slopes; scattered throughout; frequent.

Muhlenbergia glomerata (Willd.) Trin.

Sandy pond margin at Mill Bluff, Monroe County; rare. Rather common throughout glaciated Wisconsin.

Muhlenbergia mexicana (L.) Trin.

Tamarack bogs, low woods, and moist wooded slopes in the northern two-thirds of the area; frequent.

Muhlenbergia racemosa (Michx.) BSP.

Rocky hill prairies, sandstone and limestone ledges, upland woods, moist wooded slopes, and grassy roadside banks; scattered throughout; frequent.

Muhlenbergia schreberi Gmel. Drop-seed, Nimble Will.

Moist to dry woods from Buffalo County south to Jo Daviess County; infrequent.

Muhlenbergia sobolifera (Muhl.) Trin.

Rocky wooded slopes in Clayton, Jo Daviess, and Sauk counties; rare.

Muhlenbergia sylvatica Torr.

Rather dry, rocky wooded slopes in Clayton, Grant, and Sauk counties; rare.

Muhlenbergia tenuiflora (Willd.) BSP.

Moist, usually rocky, wooded slopes in the southern half of the area; infrequent.

Muhlenbergia uniflora (Muhl.) Fern.

Moist open sand and sphagnous meadows in the old bed of Glacial Lake Wisconsin; infrequent but locally common.

Oryzopsis asperifolia Michx. Mountain-rice.

Low sandy woods in counties to the north; moist maple-basswood slopes in the south to Dubuque County; frequent.

Oryzopsis canadensis (Poir.) Torr.

Low sandy woods in the old bed of Glacial Lake Wisconsin in Jackson County; rare.

Oryzopsis pungens (Torr.) Hitchc.

Dry sandy woods; frequent in counties to the north; rare southward to Clayton County.

Oryzopsis racemosa (Sm.) Ricker

North- and east-facing wooded slopes in the southern two-thirds of the area; common.

Panicum agrostoides Spreng. Monroe Grass.

Moist sand bordering the Wisconsin River near Arena, Iowa County (H. C. Greene and N. C. Fassett, 1952, WIS); rare.

Panicum boreale Nash

Low sandy woods and sandy meadows from Eau Claire County southeast to Iowa County; infrequent.

Panicum capillare L. Old Witch Grass.

Roadsides, railroads, waste areas, dry open sand, and moist weedy places; common throughout.

Panicum columbianum Scribn. (incl. *P. tsugetorum* Nash)

Dry sandy places in the northern half of the area; infrequent.

Panicum commonsianum Ashe, var. *euchlamydeum* (Shinners) Pohl

Dry sandy places south to Clayton and Dane counties; infrequent.

Panicum depauperatum Muhl.

Dry sandy places; common in northeastern counties; rare southward to Clayton, Grant, and Dane counties.

Panicum dichotomiflorum Michx.

Weed of dry soil; scattered throughout; infrequent.

Panicum implicatum Scribn. (*P. lanuginosum* Ell. var. *fasciculatum* (Torr.) Fern. and var. *implicatum* (Scribn.) Fern.; incl. *P. huachucae* Ashe and *P. tennesseense* Ashe.)

Open places; common throughout.

Panicum latifolium L.

Mesic wooded slopes; common except in northern counties.

Panicum leibergii (Vasey) Scribn.

Hill prairies and dry, sparsely-wooded slopes; frequent in the southern half of the area.

Panicum lindheimeri Nash (*P. lanuginosum* Ell. var. *lindheimeri* (Nash) Fern.)

Wet woods in Grant, LaCrosse, and Juneau counties; rare.

Panicum linearifolium Scribn.

Dry to rather moist woods in the northern half of the area; infrequent.

Panicum meridionale Ashe

Dry sandy prairies and sandy upland woods in the northern half of the area; infrequent.

Panicum oligosanthes Schultes var. *scribnerianum* (Nash) Fern. (*P. scribnerianum* Nash of authors)

Scattered throughout on rocky hill prairies and dry sandy plains; frequent.

Panicum perlongum Nash

Scattered throughout on rocky hill prairies and dry sandy plains; frequent.

Panicum philadelphicum Bernh. var. *tuckermani* (Fern.) Steyermark & Schmoll (incl. *P. tuckermani* Fern.)

Moist open sandy places in northeastern counties; rare.

Panicum praecocius Hitchc. & Chase

Hill prairies, sparsely-wooded ridges, and dry open sand in the

northern half of the area; infrequent. Apparently distinct from the *Panicum implicatum* complex on the basis of the size and shape of the 1st glume.

Panicum virgatum L. Switchgrass.

Dry, open sandy places, borders of upland woods and hill prairies; common throughout. Often weedy.

Panicum wilcoxianum Vasey

Rocky hill prairies in Allamakee and Jo Daviess counties; rare.

Panicum xanthophysum Gray

Dry sandy woods and open sandy places; mainly in northeastern counties; infrequent.

Paspalum ciliatifolium Michx. (incl. *P. stramineum* Nash ex Britt.)

Dry, open sandy places; frequent throughout. Often weedy.

Phalaris arundinacea L. Reed Canary Grass.

Meadows, marshes, and shores; frequent and scattered throughout.

°*Phalaris canariensis* L. Canary Grass.

Rare weed collected near Mt. Horeb, Dane County (J. W. Thomson, 1957, WIS).

°*Phleum pratense* L. Common Timothy.

Weed of roadsides and fields; common throughout.

Phragmites communis Trin. Reed.

Scattered throughout in marshy places; frequent.

Poa alsodes Gray, Meadow Grass.

Shaded seepage bogs and moist, sandy wooded slopes in La-Crosse, Sauk and Vernon counties; rare. With *Floerkea proserpinacoides* and *Chrysosplenium americanum* at the LaCrosse County station.

°*Poa annua* L. Annual Bluegrass.

Weed of shaded grassy places; frequent and scattered throughout.

°*Poa compressa* L. Canada Bluegrass.

Prairies, woods, rock ledges, moist margins, lawns, and other weedy places; common throughout.

Poa languida Hitchc.

North-facing maple-basswood slopes in Allamakee and Jo Daviess counties; rare.

Poa nemoralis L.

Dry open woods at Devil's Lake State Park, Sauk County (J. H. Zimmerman, 1946, WIS); rare.

Poa paludigena Fern. & Wieg.

Tamarack bogs and low mossy woods in northeastern counties;

rare. The identification of a Dubuque County collection is uncertain although it seems closest to this species.

Poa palustris L. Fowl Meadow Grass.

Meadows, marshy margins, boggy woods, and moist, rocky wooded slopes; common throughout.

°*Poa pratensis* L. Kentucky Bluegrass.

Common grass of practically all terrestrial habitats. A narrow-leaved, thin-stemmed form of this species collected in Adams County (6530) fits the description of *P. angustifolia* L. Whether this is distinct from *P. pratensis* or not is difficult to determine with the material at hand.

Poa sylvestris Gray

Moist maple-basswood slopes from LaCrosse and Allamakee counties south to Jo Daviess County; infrequent.

Poa trivialis L.

Moist woodland stream margins and springy places in Allamakee, Clayton, Jo Daviess, and Vernon counties; rare.

Poa wolfii Scribn.

Material from the cold, mossy talus slope at Old Stone House in Allamakee County seems to be this species. Disjunct from northern Wisconsin.

Schizachne purpurascens (Torr.) Swallen

Scattered throughout in sandy to loamy woods; frequent.

°*Secale cerale* L. Rye.

Scattered weed of roadsides, fields, and clearings; infrequent.

°*Setaria faberii* Herrm. Giant Foxtail.

Roadsides and fields in the southern half of the area; infrequent.

°*Setaria italica* (L.) Beauv. Italian Millet.

Known from Lafayette (A. S. Mossman, 1953, WIS) and Winneshiek (B. Shimek, 1903, IA) counties; rare.

°*Setaria lutescens* (Wiegel) F. T. Hubb (*S. glauca* (L.) Beauv.)

Roadsides and fields; frequent and scattered throughout.

°*Setaria verticillata* (L.) Beauv.

Weed of disturbed soil. Known from Buffalo (N. C. Fassett, 1927, WIS), Crawford (N. C. Fassett, 1927, WIS), and Winneshiek (B. Shimek, 1903, IA) counties; rare.

°*Setaria viridis* (L.) Beauv. Green Foxtail.

Weedy roadsides, fields, and waste places; frequent throughout.

Sorghastrum nutans (L.) Nash, Indian Grass.

Scattered throughout on upland prairies; frequent.

Spartina pectinata Link, Slough Grass.

Marshy places and occasionally on dry sandy banks bordering lakes and sloughs; frequent throughout.

Sphenopholis intermedia (Rydb.) Rydb.

Shaded rock ledges, moist wooded slopes, tamarack bogs, alder thickets, alluvial woods and shaded marshy margins; scattered throughout; frequent.

Sphenopholis obtusata (Michx.) Scribn.

Upland prairies in Allamakee, LaCrosse, Jackson (Wisconsin), and Adams counties; infrequent.

Sporobolus asper (Michx.) Kunth. Drop-seed.

Dry, open sandy places in the southern half of the area; rare.

Sporobolus clandestinus (Biehler) Hitchc.

Open sandstone bluff in New Chester Twp., Adams County; rare. With *Chrysopsis villosus* and *Juniperus horizontalis*.

Sporobolus cryptandrus (Torr.) Gray, Sand Drop-seed.

Dry, open sandy places in the northern two-thirds of the area; frequent.

Sporobolus heterolepis Gray, Northern Drop-seed.

Dry, often sandy, upland prairies in western and southern counties; frequent.

Sporobolus neglectus Nash.

Rocky hill prairies and dry sandy plains in southwestern counties; infrequent.

Sporobolus vaginiflorus (Torr.) Wood, Poverty Grass.

Rocky hill prairies, sandy plains and prairies, and often weedy along dry roadsides; mainly in the northern two-thirds of the area; frequent.

°*Stipa comata* Trin. & Rupr. Speargrass.

Adventive from the West along sandy railroad borders in Iowa (J. J. Davis, **1929**, WIS) and Juneau (L. H. Shinners, **1942**, WIS) counties; rare.

Stipa spartea Trin. Porcupine Grass.

Rocky hill prairies and sandy plains; frequent throughout.

°*Stipa viridula* Trin.

Adventive from the West along railroads in Clayton (R. P. Adams, **1929**, IA) and Juneau (J. J. Davis, **1917**, WIS) counties; rare.

°*Triplasis purpurea* (Walt.) Chapm.

Dry open sand in Iowa and Juneau counties; rare. According to Fassett (**1951**) probably adventive from regions to the west or south.

°*Triticum aestivum* L. Wheat.

Occasional escape from cultivation to roadsides and waste places. Probably never established.

°*Zea mays* L. Corn.

Frequent escape to waste places and old fields. Probably never established.

Zizania aquatica L. Wild Rice.

Marshy shores and shallow water south to Grant County; infrequent.

Hydrocharitaceae (Frog's-bit Family)

Elodea canadensis Michx. Waterweed.

Scattered throughout in lakes, sloughs, and streams; frequent.

Elodea nuttallii (Planch.) St. John

Lakes, sloughs, and streams in the northern two-thirds of the area; infrequent.

Vallisneria americana Michx. Water-celery, Tapegrass.

Scattered throughout in lakes, sloughs and streams; infrequent.

Hypoxidaceae (Stargrass Family)

Hypoxis hirsuta (L.) Coville, Stargrass.

Scattered throughout on sandy to loamy upland prairies; frequent.

Iridaceae (Iris Family)

°*Belamcanda chinensis* (L.) DC. Blackberry-lily.

Escaping to roadsides in Crawford, Iowa, and Jo Daviess counties; rare.

Iris versicolor L. Blue Flag.

Boggy and marshy places in the old bed of Glacial Lake Wisconsin; rare.

Iris virginica L. var. *shrevei* (Small) E. Anderson

Scattered throughout in marshes and meadows; common.

Sisyrinchium angustifolium Mill. (incl. S. *graminoides* Bickn.) Blue-eyed-grass.

Dry sandy railroad prairie at Castle Mound Roadside Park, Jackson County, Wisconsin; rare.

Sisyrinchium campestre Bickn.

Upland prairies; common throughout.

Sisyrinchium montanum Greene

Specimens from a sandy meadow near Duck Creek, Adams County, seem to be this species; rare.

Sisyrinchium mucronatum Greene

Specimens from a dry sandy prairie at Morrison Creek, Jackson County, Wisconsin, seem to be this species; rare.

JUNCACEAE (Rush Family)

Juncus acuminatus Michx. Rush.

Moist sandy margins in northeastern counties; infrequent.

Juncus balticus Willd.

Meadow one mile west of New Diggings, Lafayette County (H. H. Iltis, 1957, WIS); rare.

Juncus brevicaudatus (Engelm.) Fern.

Moist open sand, boggy shores, and sphagnous meadows in and near the old bed of Glacial Lake Wisconsin; frequent.

Juncus bufonius L.

Moist sandy roadsides and paths in the northern half of the area; infrequent but locally abundant.

Juncus canadensis J. Gay

Moist open sand and boggy meadows in the northern half of the area; frequent.

Juncus dudleyi Wieg.

Marshy margins and sandy meadows; scattered throughout; frequent.

Juncus effusus L. Soft Rush.

Marshy places and wet woods in the northern half of the area; common.

Juncus filiformis L.

Low sandy woods in Jackson (Wisconsin) and Monroe counties; rare.

Juncus greenei Oakes & Tuckerm.

Dry to moist, open sandy places in the northern half of the area; infrequent.

Juncus interior Wieg.

Scattered throughout in moist to dry, open sandy places; infrequent.

Juncus marginatus Rostk.

Moist open sand in LaCrosse, Juneau, Adams, and Iowa counties; rare.

Juncus nodosus L.

Marshy margins and moist open sand in the northern two-thirds of the area; infrequent.

Juncus pelocarpus Mey.

Moist open sand in Wood, Adams, and Sauk counties; rare.

Juncus tenuis Willd. Path Rush.

Wet borders, along paths in woods and along roadsides and railroads; common throughout.

Juncus torreyi Coville

Open marshy places in Carroll, Monroe, and Vernon counties; rare.

Juncus vaseyi Engelm.

Moist open sandy area near Lyndon Station, Juneau County; rare.

Luzula acuminata Raf. Woodrush.

Rather moist wooded slopes from Jackson and Sauk counties south to Dubuque County; frequent.

Luzula campestris (L.) DC. var. *multiflora* (Ehrh.) Celak (*L. multiflora* (Retz.) Lejeune of authors)

Generally rather sandy wooded slopes; frequent in northern counties; rare south to Allamakee and Green counties.

Juncaginaceae (Arrow-grass Family)

Scheuchzeria palustris L. var. *americana* Fern.

Open sphagnum near Bear Bluff in Jackson County, Wisconsin; rare. With *Carex limosa, Menyanthes trifoliata, Calla palustris* and *Xyris papillosa.*

Lemnaceae (Duckweed Family)

Lemna minor L. Duckweed.

Floating aquatic of ponds, lakes, sloughs, and streams; common throughout.

Lemna perpusilla Torr.

The difficulties in distinguishing this species from the preceding are well known. Collections from Jackson (Wisconsin), Monroe, and Trempealeau counties, however, seem to fit the description.

Lemna trisulca L. Star Duckweed.

Scattered throughout the area in lakes and sloughs; infrequent.

Spirodela polyrhiza (L.) Schleid. Water-flaxseed.

Scattered throughout in lakes, ponds, and sloughs; frequent.

Wolffia columbiana Karst, Water-meal.

Scattered throughout in lakes, ponds, and sloughs; frequent.

Wolffia punctata Griseb.

Scattered throughout in lakes, ponds, and sloughs; frequent.

Liliaceae (Lily Family)

Aletris farinosa L. Colicroot.

Moist sandy meadows in LaCrosse, Adams, and Juneau counties; rare.

°*Asparagus officinalis* L. Garden Asparagus.

Roadsides, clearings, thickets, and other weedy places; common throughout.

Camassia scillioides (Raf.) Cory

Low prairies in Green and Lafayette counties; rare.

Clintonia borealis (Ait.) Raf. Corn Lily.

Moist sandy woods and tamarack bogs in northeastern counties; common.

°*Convallaria majalis* L. Lily-of-the-valley.

Persistent and spreading from cultivation in Iowa County (H. H. Iltis *et al*, no date, WIS); rare.

Erythronium albidum Nutt. Trout Lily.

Moist wooded slopes and alluvial woods; frequent except in northeastern counties.

Erythronium americanum Ker. Yellow Adder's-tongue.

Moist maple-basswood slopes in LaCrosse and Vernon counties; apparently rare.

°*Hemerocallis fulva* L. Day Lily.

Occasionally escaping from cultivation to roadsides.

Lilium michiganense Farw. Michigan Lily.

Scattered throughout in moist meadows, wet woods, and shaded seepage bogs; frequent.

Lilium philadelphicum L. Wood Lily.

Scattered throughout in dry woods and prairies; infrequent.

°*Lilium tigrinum* Ker. Tiger Lily.

Apparently escaped from cultivation at Wisconsin Dells, Sauk County; rare.

Maianthemum canadense Desf. Wild-lily-of-the-valley.

Low sandy woods, tamarack bogs, and moist wooded slopes; common to the north; rarer southward to Dubuque and Lafayette counties.

Polygonatum canaliculatum (Muhl.) Pursh (incl. *P. biflorum* (Walt.) Ell.) Solomon's Seal.

Moist to dry woods, roadsides, and woodland borders; common throughout.

Polygonatum pubescens (Willd.) Pursh

Moist north- and east-facing wooded slopes and occasionally in tamarack bogs; common except in northeastern and southern counties.

Smilacina racemosa (L.) Desf. False Solomon's Seal.

Moist to dry woods and thickets; common throughout.

Smilacina stellata (L.) Desf.

Moist to dry woods, thickets, and borders; common throughout.

Smilacina trifolia (L.) Desf.

Black spruce bogs in the old bed of Glacial Lake Wisconsin; rare.

Streptopus roseus Michx. Twisted Stalk.

Moist sandy woods and, in northeastern Iowa, on cool, mossy talus slopes; from Sauk County west to Winneshiek and Dubuque counties; infrequent.

Uvularia grandiflora Sm. Bellwort.

Rich upland woods and moist wooded slopes; common throughout.

Uvularia sessilifolia L. Wild-oats.

Low sandy woods and moist wooded slopes south to Winneshiek and Sauk counties; common.

Zigadenus glaucus Nutt. (*Z. elegans* of authors, not Pursh) White Camass.

Limestone and sandstone ledges from Buffalo County south to Jo Daviess County; infrequent.

Najadaceae (Naiad Family)

Najas flexilis (Willd.) Rostk. & Schmidt, Naiad.

Scattered throughout in lakes, sloughs, and ponds; frequent.

Najas gracillima (A. Br.) Magnus

Soft-water pools in Juneau and Monroe counties; rare.

Najas guadalupensis (Spreng.) Magnus

Sloughs and ponds in Grant, LaCrosse, and Winneshiek counties; rare.

Orchidaceae (Orchis Family)

Aplectrum hyemale (Muhl.) Torr. Putty Root.

Rich woods in southwestern counties; infrequent.

Arethusa bulbosa L. Swamp-pink.

Bogs in the old bed of Glacial Lake Wisconsin; rare. Near Tomah, Monroe County (M. Reul, WIS); Cranmoor, Wood County (Stevens, WIS) and Wisconsin Rapids, Wood County (M. B. McMillan, 1900, WIS).

Calopogon pulchellus (Salisb.) R. Br. Swamp-pink.

Moist open sand, sphagnous meadows and low sandy woods; mainly in the old bed of Glacial Lake Wisconsin; infrequent.

Corallorhiza maculata Raf. Spotted Coral-root.

Rich upland woods and moist, sandy wooded slopes in Winneshiek, Clayton, Dubuque, Juneau, and Sauk counties; rare.

Corallorhiza odontorhiza (Willd.) Nutt. Late or Autumn Coral-root.

Rich upland woods and moist wooded slopes in Winneshiek, Clayton, and Jo Daviess counties; rare.

Cypripedium acaule Ait. Stemless Lady's-slipper.

Bogs, low sandy woods, and moist, sandy wooded slopes in northeastern counties; frequent.

Cypripedium calceolus L. var. *pubescens* (Willd.) Correll and var. *parviflorum* (Salisb.) Fern. Yellow Lady's-slipper.

Rich upland woods and moist wooded slopes throughout the area; common. Var. *parviflorum* is rare and apparently only in tamarack bogs.

Cypripedium reginae Walt. Showy Lady's-slipper.

Tamarack bogs and steep, north-facing wooded slopes in Allamakee, Clayton, LaCrosse, and Richland counties; rare.

Cypripedium x favillianum J. T. Curtis

An apparent hybrid of *C. calceolus* var. *pubescens* and *C. candidum*. Known from the Mazomanie Public Hunting Grounds, Dane County (J. T. Curtis and H. C. Green, **1956**, WIS); rare.

Goodyera pubescens (Willd.) R. Br. Downy Rattlesnake-plantain.

Rich upland woods and rather moist, sandy wooded slopes throughout the area; frequent.

Habenaria clavellata (Michx.) Spreng. Green Woodland Orchis.

Low sandy woods in the old bed of Glacial Lake Wisconsin; infrequent.

Habenaria dilatata (Pursh) Hook. Leafy White Orchis, Bog-candle.

Tamarack bog (now drained) in Mormon Coulee, LaCrosse County (H. P. Hansen, **1930**, WIS); rare.

Habenaria flava (L.) R. Br. Pale Green Orchis.

Sandy meadows and swampy woods in Adams and LaCrosse counties; rare.

Habenaria hookeri Torr. Hooker's Orchis.

Rich upland woods and sandy wooded slopes in LaCrosse, Winneshiek, Allamakee, and Dubuque counties; rare.

Habenaria hyperborea (L.) R. Br. Leafy Northern Green Orchis.

Tamarack Creek Bog in Trempealeau County; rare.

Habenaria lacera (Michx.) Lodd. Ragged Orchis.

Sandy sphagnous meadows in Adams and LaCrosse counties; rare.

Habenaria psycodes (L.) Spreng. Small Purple Fringed Orchis.

Low sandy woods, thickets, and tamarack bogs south to Allamakee and Sauk counties; infrequent.

Habenaria viridis (L.) R. Br. var. bracteata (Muhl.) Gray

Steep wooded slopes north to Vernon and Sauk counties; infrequent.

Liparis lilifolia (L.) Richard, Lilia-leaved Twayblade.

Wooded slopes north to Trempealeau and Sauk counties; infrequent.

Liparis loeselii (L.) Richard, Bog or Yellow Twayblade.

Scattered throughout in tamarack bogs, alder thickets, and on moist, sandy wooded slopes; infrequent.

Malaxis unifolia Michx. Green Adder's-mouth.

Rather moist sandy woods in Jackson (Wisconsin) and Vernon counties; rare.

Orchis spectabilis L. Showy Orchis.

Moist wooded slopes and rich upland woods in the southern two-thirds of the area; common.

Pogonia ophioglossoides (L.) Ker. Pogonia.

Low sandy woods and bogs in the old bed of Glacial Lake Wisconsin; rare.

Spiranthes cernua (L.) Richard, Common or Nodding Ladies'-tresses.

Scattered throughout on rocky hill prairies and in moist sandy meadows; infrequent.

Spiranthes gracilis (Bigel.) Beck (incl. *S. lacera* Raf.)

Sandy jack pine woods in Jackson (Wisconsin) and Monroe counties; rare.

Triphora trianthophora (Sw.) Rydb. Nodding Pogonia.

Rich upland woods in Clayton (B. Shimek, **1921**, IA), Dubuque (R. F. Thorne, **1958**, IA), Grant (H. H. Iltis, **1957**, WIS), Green (R. B. Anthony, **1935**, WIS), and Lafayette (Self, **1888**, WIS) counties; rare.

Pontederiaceae (Pickerelweed Family)

Heteranthera dubia (Jacq.) MacM. Water-stargrass.

Shallow water and wet mud of lakes and sloughs; especially along the Mississippi River; infrequent.

Pontederia cordata L. Pickerelweed.

Scattered throughout along marshy shores and in shallow water of sloughs and lakes; infrequent.

Potamogetonaceae (Pondweed Family)

Potamogeton alpinus Balbis, Pondweed.

Drainage ditch near Cranmoor, Wood County (N. C. Fassett, **1936**, WIS); rare.

Potamogeton amplifolius Tuckerm.

Shallow water of lakes and sloughs in Jackson (Wisconsin), Juneau, Richland, and Wood counties; rare.

Potamogeton berchtoldi Fieber

Soft-water pools and flowages in Juneau and Monroe counties; rare. Similar to *P. pusillus* but differs in having definite lacunae bordering midribs of leaves and stipules that are separate instead of connate.

Potamogeton capillaceus Poir.

Quiet acid waters in Jackson (Wisconsin) and Juneau counties; rare. Similar to, and sometimes included with, *P. diversifolius*.

°*Potamogeton crispus* L.

Shallow waters of the Mississippi River; frequent.

Potamogeton diversifolius Raf.

Soft-water pools in Jackson (Wisconsin), Monroe, and Adams counties; rare. Often does well stranded on moist sand.

Potamogeton epihydrus Raf.

Soft-water flowages and streams in Jackson (Wisconsin), Monroe, Juneau, and Adams counties; frequent.

Potamogeton foliosus Raf.

Streams, sloughs, and ponds; frequent except in northeastern counties.

Potamogeton gramineus L.

Soft-water lakes and flowages in Sauk and Juneau counties; rare.

Potamogeton natans L.

Soft-water lakes and flowages in Adams, Juneau, Sauk, and Wood counties; rare.

Potamogeton nodosus Poir.

Lakes, sloughs, and streams; scattered throughout and especially along the Mississippi River; frequent.

Potamogeton oakesianus Robbins.

Soft-water flowages in Juneau and Wood counties; rare.

Potamogeton pectinatus L. "Sago."

Mississippi River sloughs and backwaters; frequent.

Potamogeton pulcher Tuckerm.

Soft-water pools in Juneau and Sauk counties; rare.

Potamogeton pusillus L.

Quiet waters in Adams and LaCrosse counties; rare.

Potamogeton richardsonii (Ar. Benn.) Rydb. Red-head Pondweed.

Lakes and sloughs in the northern two-thirds of the area; frequent.

Potamogeton robbinsii Oakes.

Soft-water lakes in Juneau and Sauk counties; rare.

Potamogeton spirillus Tuckerm.

Soft-water flowages in Juneau County; rare.

Potamogeton strictifolius Ar. Benn.

Soft-water stream in the Trempealeau Lakes Area, LaCrosse County; rare. Disjunct from eastern and northern Wisconsin.

Potamogeton vaseyi Robbins

Lakes in LaCrosse, Juneau, and Sauk counties; rare.

Potamogeton zosteriformis Fern. Flat-stem Pondweed.

Scattered throughout in quiet and flowing waters; frequent.

Smilacaceae (Greenbrier Family)

Smilax ecirrhata (Engelm.) S. Wats.

Rich upland woods and moist wooded slopes; common except in the old bed of Glacial Lake Wisconsin.

Smilax herbacea L. (incl. S. *lasioneura* Hook.) Carrion Flower.

Common throughout in woods and thickets.

Smilax hispida Muhl. (*S. tamnoides* L. var. *hispida* (Muhl.) Fern.) Greenbrier, Catbrier.

Common throughout in woods and thickets.

Trilliaceae (Trillium Family)

Trillium cernuum L. Nodding Trillium.

Low sandy woods in Monroe, Sauk, and Adams counties; rare.

Trillium flexipes Raf. (incl. *T. gleasoni* Fern. and *T. declinatum* (Gray) Gleason)

Moist wooded slopes; common except in the old bed of Glacial Lake Wisconsin.

Trillium grandiflorum (Michx.) Salisb. Large Trillium.

Moist wooded slopes in Jackson (Wisconsin), LaCrosse, Sauk, and Vernon counties; rare.

Trillium nivale Riddell, Dwarf White or Snow Trillium.

Calcareous wooded slopes in Dubuque (R. F. Thorne, 1954, IA) and Winneshiek (T. E. Savage, 1899, IA) counties; rare.

Trillium recurvatum Beck. Purple Trillium.

Rich wooded slopes in Carroll and Jo Daviess counties; rare.

Typhaceae (incl. Sparganiaceae) (Cattail Family)

Sparganium americanum Nutt. (incl. *S. andocladum* (Engelm.) Morong) Bur-reed.

Marshy shores and shallow water of sloughs, lakes, and flowages

in northern counties; infrequent. Although apparently distinct in eastern and southeastern United States (Beal, **1960**), *S. androcladum* and *S. americanum* seem to intergrade and are indistinguishable in the "Driftless Area."

Sparganium chlorocarpum Rydb. (and var. *acaule* (Beeby) Fern.)

Wet sandy shores and shallow water of creeks, sloughs, and flowages; frequent in the northern third of the area; rare southward to Crawford County.

Sparganium eurycarpum Engelm.

Scattered throughout in marshy places and shallow water; frequent.

Typha angustifolia L. Cat-tail.

Marshy shores and shallow water in Adams and Juneau counties; apparently rare.

Typha latifolia L.

Common throughout in marshes and shallow water.

Xyridaceae (Yellow-eyed-grass)

Xyris papillosa Fassett var. *exserta* Fassett

Plants fitting Fassett's description (**1937b**) were collected on a floating sphagnum mat in a bog near Bear Bluff, Jackson County, Wisconsin. This species had been collected twice previously in Wisconsin; in Sawyer and Oneida counties in the northern part of the state. Fassett states that *X. caroliniana* is "perhaps the closest relative of *X. papillosa*." It is known in Wisconsin from the dune region toward the southern end of Lake Michigan.

Xyris torta Sm.

Moist open sandy places in Adams and Juneau counties; rare.

Zannichelliaceae (Horned Pondweed Family)

Zannichellia palustris L. Horned Pondweed

Lakes, sloughs, and creeks north to LaCrosse and Richland counties; infrequent.

DICOTYLEDONEAE

Acanthaceae (Acanthus Family)

Ruellia humilis Nutt. Wild Petunia.

Dry sandy soil in Carroll and Crawford counties; rare.

ACERACEAE (Maple Family)

Acer negundo L. Box-elder.

Moist to dry woods and as a weed tree in various open places; common throughout.

Acer rubrum L. Red Maple.

Low sandy woods, tamarack bogs, and in rather mesic upland woods and ravines south to Vernon and Sauk counties; common.

Acer saccharinum L. Silver Maple.

Alluvial woods and shores; common throughout.

Acer saccharum Marsh. (incl. *A. nigrum* Michx. f.) Sugar Maple, Hard Maple, Black Maple.

Moist wooded slopes and rich upland woods; common except in northeastern counties.

Acer spicatum Lam. Mountain Maple.

North- and east-facing wooded slopes in areas of rugged topography south to Sauk and Dubuque counties; frequent.

ADOXACEAE (Moschatel Family)

Adoxa moschatellina L. Moschatel.

Moist shaded soil around limestone and sandstone outcrops from Vernon and Winneshiek counties south to Jo Daviess County; infrequent.

AIZOACEAE (Carpetweed Family)

°*Mollugo verticillata* L. Carpetweed.

Dry weedy soil; common throughout.

AMARANTHACEAE (Amaranth Family)

Amaranthus albus L. Tumbleweed.

Scattered throughout in weedy sandy soil; infrequent.

Amaranthus gracizans L. (incl. *A. blitoides* S. Wats.) Prostrate Pigweed.

Weed of waste places, yards, roadsides, etc.; frequent.

°*Amaranthus powellii* S. Wats.

Rare weed. Known in the "Driftless Area" from Blue River, Grant County (J. J. Davis, 1927, WIS).

°*Amaranthus retroflexus* L. Pigweed.

Weed of disturbed soil throughout the area; frequent.

Amaranthus tamaricinus Nutt. (*Acnida tamariscina* (Nutt.) Wood) Water-hemp.

Marshy margins and moist weedy places in southern and western counties; infrequent.

Amaranthus tuberculatus (Moq.) J. D. Sauer (*Acnida altissima* Riddell and var. *subnuda* (S. Wats.) Fern.) Water-hemp.

Marshy margins and moist weedy places in western counties; infrequent.

Froelichia floridana (Nutt.) Moq. (incl. *F. gracilis* (Hook.) Moq.)

Dry, often weedy sand; frequent and scattered throughout the area. The two taxa involved here are treated as distinct by Sauer and Davidson (1961).

Anacardiaceae (Cashew Family)

Rhus aromatica Ait. (incl. *R. trilobata* Nutt. and *R. arenaria* (Greene) G. N. Jones) Fragrant Sumac.

Sand dunes and sandy hill prairies in Carroll, Grant, and Jo Daviess counties; rare.

Rhus copallina L. Dwarf or Shining Sumac.

Dry sandstone ledges and other open sandy places in the old bed of Glacial Lake Wisconsin; infrequent.

Rhus glabra L. Smooth Sumac.

Prairie borders of upland woods and other dry open places; common throughout.

Rhus radicans L. Poison Ivy.

Woods, thickets, fencerows, and open sandy places; common throughout.

Rhus typhina L. Staghorn Sumac.

Prairie borders of upland woods, thickets, and rocky slopes; common throughout.

Rhus vernix L. Poison Sumac.

Tamarack bogs and occasionally in spruce bogs; south to LaCrosse and Sauk counties; frequent.

Annonaceae (Custard-apple Family)

Asimina triloba (L.) Dunal, Pawpaw.

Reported from Jackson County, Iowa, by Cooperrider (1962). A sheet at the herbarium at the University of Wisconsin is labeled "SW Wisconsin." The collector, J. Clarke, gives no other data. Also reputed to occur in Clayton county.

Apocynaceae (Dogbane Family)

Apocynum androsaemifolium L. Spreading Dogbane.

Sandy to loamy upland woods and borders; common throughout.

Apocynum cannabinum L. Indian Hemp.

Upland prairies and other open places north to LaCrosse County; infrequent.

Apocynum sibiricum Jacq.

Moist or dry soil of open, often weedy, places; frequent except in northeastern counties.

Apocynum x medium Greene.

Sandy upland woods in Juneau, Richland, and Sauk counties; rare. Evidently a hybrid of *A. androsaemifolium* and *A. cannabinum*.

°*Vinca minor* L. Common Periwinkle.

Escaping into an upland wood from a country cemetery in Chipmunk Coulee, LaCrosse County; rare.

Aquifoliaceae (Holly Family)

Ilex verticillata (L.) Gray, Winterberry.

Tamarack bogs, alder thickets, and low sandy woods south to LaCrosse and Richland counties; common.

Nemopanthus mucronata (L.) Trel. Mountain-holly.

Low sandy woods and boggy thickets in the old bed of Glacial Lake Wisconsin and adjacent areas; frequent.

Araliaceae (Ginseng Family)

Aralia hispida Vent. Bristly Sarsaparilla.

Exposed sandstone ledges and other dry, open sandy places in northeastern counties; frequent.

Aralia nudicaulis L. Wild Sarsaparilla.

Low sandy woods and boggy thickets in northeastern counties; rich upland woods, moist wooded slopes, and shaded rock ledges elsewhere; common throughout.

Aralia racemosa L. Spikenard.

Rich upland woods and moist wooded slopes; common except in northeastern counties.

Panax quinquefolius L. Ginseng.

Rich upland woods and moist wooded slopes; frequent except in northeastern counties.

Panax trifolius L. Dwarf Ginseng.

Moist sandy woods in Adams, Jackson (Wisconsin), Sauk, and Vernon counties; infrequent.

Aristolochiaceae (Birthwort Family)

Asarum canadense L. (incl. *A. acuminatum* (Ashe) Bickn. and *A. reflexum* (Bickn.) Robins.) Wild-ginger.

Moist, usually rocky, wooded slopes; common except in northeastern counties.

Asclepiadaceae (Milkweed Family)

Asclepias amplexicaulis Sm. Sand Milkweed.

Dry sandy plains and prairies in the northern two-thirds of the area; frequent.

Asclepias exaltata L. Poke Milkweed.

Rich upland woods and moist wooded slopes; frequent except in the old bed of Glacial Lake Wisconsin.

Asclepias hirtella (Pennell) Woodson

Dry sandy prairie on Goose Island, LaCrosse County; rare.

Asclepias incarnata L. Swamp Milkweed.

Marshy places and meadows; common throughout.

Asclepias lanuginosa Nutt.

Sandy hillside prairies in Allamakee, Iowa, Juneau, and Winneshiek counties; rare.

Asclepias meadii Torr.

Known from near Lancaster, Grant County (E. L. Greene, **1879**, WIS); rare and probably now extinct since the habitat (mesic prairie) has largely been destroyed.

Asclepias ovalifolia Decne.

Dry, usually sandy, upland prairies in the northern two-thirds of the area; infrequent.

Asclepias purpurascens L.

Sparsely wooded hillsides in Carroll and Clayton counties; rare.

Asclepias syriaca L. Common Milkweed.

Dry prairies and in a variety of dry weedy places; common throughout.

Asclepias tuberosa L. Butterfly Weed.

Scattered throughout on rocky hill prairies and dry sandy plains; common.

Asclepias verticillata L.

Upland prairies, roadsides, railroads, and pastures; common except in northeastern counties.

Asclepias viridiflora Raf. Green Milkweed.

Scattered throughout on rocky hill prairies and dry sandy plains; frequent.

°*Cynanchum nigrum* (L.) Pers.

Rare weed of fencerows and around towns. Known from Potosi, Grant County (J. J. Davis, **1913**, WIS).

Balsaminaceae (Touch-me-not Family)

Impatiens biflora Walt. Touch-me-not.

Open marshy places, lower wooded slopes, tamarack bogs, and wet thickets; common throughout.

Impatiens pallida Nutt. Pale Touch-me-not.

Lower wooded slopes and seepage bogs; common except in northeastern counties.

Berberidaceae (Barberry Family)

°*Berberis thunbergii* DC. Japanese Barberry.

Escaped from cultivation to woods in Adams, Grant, and Sauk counties; rare.

°*Berberis vulgaris* L. Common Barberry.

Escaped from cultivation to open woods and thickets in Clayton (B. Shimek, 1919, IA), Dane (R. Bere, 1953, WIS), and Trempealeau (N. C. Fassett, 1927, WIS) counties; rare.

Caulophyllum thalictroides (L.) Michx. Blue Cohosh.

Moist wooded slopes; common except in northeastern counties.

Jeffersonia diphylla (L.) Pers. Twinleaf.

Moist maple-basswood slopes in Allamakee, Dubuque, Grant, and Jo Daviess counties; rare.

Podophyllum peltatum L. May-apple.

Rich upland woods and moist wooded slopes; common except in northeastern counties.

Betulaceae (Birch Family)

Alnus crispa (Ait.) Pursh, Green Alder.

Boggy thickets and moist sandy places in Juneau and Adams counties; rare.

Alnus rugosa (DuRoi) Spreng. Speckled Alder.

Low woods, bogs, and moist wooded slopes; common in northeastern counties; rarer southward to Allamakee and Lafayette counties.

Betula lutea Michx. f. Yellow Birch.

Tamarack bogs and moist wooded slopes south to Dubuque and Sauk counties; common.

Betula nigra L. River or Red Birch.

Alluvial woods, margins of streams and sloughs, and occasionally in mesic upland woods; common throughout; especially along the major rivers.

Betula papyrifera Marsh. Paper, Canoe, or White Birch.

Dry upland situations in southern and western counties; low sandy woods and boggy places to the northeast; common.

Betula pumila L. var. *glandulifera* Regel, Low or Swamp Birch.

Bogs and sandy meadows in the northern third of the area; frequent.

Betula x *sandbergi* Britt.

Boggy meadows in northeastern counties; infrequent.

Carpinus caroliniana Walt. Blue-beech.

Low sandy woods in northeastern counties; moist, north- and east-facing wooded slopes elsewhere; common.

Corylus americana Walt. American Hazel.

Dry to moist woods, meadows, pastures, and open hillsides; common throughout.

Corylus cornuta Marsh. (*C. rostrata* Ait.) Beaked Hazel.

Low sandy woods in northeastern counties; moist wooded slopes southwest to Dubuque County; common.

Ostrya virginiana (Mill.) K. Koch, Ironwood.

Rich upland woods and moist wooded slopes; common except in northeastern counties.

Bignoniaceae (Bignonia Family)

°*Campsis radicans* (L.) Seem. Trumpet-creeper.

Apparently escaped at Potosi, Grant County (Charles Goessl, WIS); rare.

°*Catalpa speciosa* Warder, Catalpa.

Apparently spontaneous at two stations in LaCrosse County; rare.

Boraginaceae (Borage Family)

°*Cynoglossum officinale* L. Common Hound's-tongue.

Dry rocky pastures north to LaCrosse and Adams counties; frequent.

°*Echium vulgare* L. Blueweed.

Dry roadsides and pastures in Richland (M. A. Fosberg, 1948, WIS) and Dane (R. Burton, 1948, WIS) counties; rare.

Hackelia virginiana (L.) I. M. Johnston, Stickseed.

Weedy upland woods and wooded slopes in western and southern counties; common.

Hackelia americana (Gray) Fern. (*H. deflexa* of authors)

Shaded limestone and sandstone ledges in Allamakee, Dubuque, Grant, and Sauk counties; infrequent.

°*Lappula myosotis* Moench (*L. echinata* Gilib.) Stickseed.

Weed of dry, sandy or gravelly places in western counties; infrequent.

°*Lappula redowskii* (Hornem.) Greene (*L. occidentalis* (S. Wats.) Greene)

Dry railroad beds in Adams, Grant, Iowa, and Juneau counties; rare.

Lithospermum canescens (Michx.) Lehm. Puccoon.

Scattered throughout on dry sandy plains and prairies; common.

Lithospermum croceum Fern.

Scattered throughout on dry sandy plains and prairies; common.

Lithospermum incisum Lehm.

Dry, open sandy places and rocky hill prairies north to Adams and LaCrosse counties; frequent.

Lithospermum latifolium Michx.

Rich woods north to Winneshiek, Vernon, and Lafayette counties; infrequent.

°*Lycopsis arvensis* L. Small Bugloss.

Dry sandy soil six miles NE of Black River Falls, Jackson County, Wisconsin (D. F. Grether, 1947, WIS); rare.

Mertensia paniculata (Ait.) G. Don, Northern Lungwort.

Mossy talus slopes in Fillmore and Winneshiek counties; rare. Disjunct from the Lake Superior Region.

Mertensia virginica (L.) Pers. Bluebells.

Alluvial woods, meadows, and bases of moist wooded slopes north to LaCrosse and northern Sauk counties; infrequent.

Myosotis laxa Lehm. Forget-me-not.

Moist sand bars along the Wisconsin River from Grant County to Juneau County; infrequent.

°*Myosotis scorpioides* L. True Forget-me-not.

Escaped to wet margins of streams and sloughs in LaCrosse and Sauk counties; rare.

Myosotis verna Nutt. (*M. virginica* (L.) BSP.)

Dry sandy prairies and thin soil on exposed sandstone and quartzite ledges; from Lafayette County north to Juneau and Trempealeau counties; infrequent.

Onosmodium hispidissimum Mackenz. False-gromwell. Marble-seed.

Dry rocky prairies in Allamakee, Crawford, and Winneshiek counties; rare.

Onosmodium occidentale Mackenz.

Rocky, often weedy, prairies in southern and western counties; infrequent.

Cactaceae (Cactus Family)

Opuntia fragilis (Nutt.) Haw. Prickly-pear.

Dry sandy plains and outcrops in Adams County; rare. Apparently disjunct from northwestern Iowa.

Opuntia humifusa Raf. (*O. rafinesquii* Engelm.)

Dry sandy plains north to LaCrosse and Sauk counties; infrequent.

Callitrichaceae (Water-starwort Family)

Callitriche deflexa A. Br. var. *austini* (Engelm.) Hegelm. (*Callitriche terrestris* Raf.) Water-starwort.

Moist shaded soil in the McGilvray Bottoms alluvial woods, Trempealeau County; rare. A southern species, this is the only known station in Wisconsin.

Callitriche heterophylla Pursh.

Wet shores and shallow waters of streams and flowages in Jackson (Wisconsin) and Sauk counties; rare. Two collections seem to approach *C. anceps* Fern., a more northern species.

Callitriche palustris L. (*C. verna* L.)

Wet shores and shallow water of streams, sloughs, and ponds south to Crawford and Sauk counties; infrequent.

°*Callitriche stagnalis* Scop.

Cold streams in Dane and Monroe counties; rare.

Campanulaceae (Bluebell Family)

Campanula americana L. Tall Bellflower.

Roadsides, thickets, and weedy places in mesic woods; mainly in southern and western counties; common.

Campanula aparinoides Pursh (incl. *C. uliginosa* Rydb.) Marsh Bellflower.

Open marshy places, boggy thickets, and sandy meadows; common in the northern third of the area; infrequent southward to Jo Daviess County. The "Driftless Area" material shows both extremes plus a wide range of intermediates between *C. aparinoides* and *C. uliginosa*.

°*Campanula rapunculoides* L.

Escaped to roadsides in LaCrosse, Green, and Winneshiek counties; rare.

Campanula rotundifolia L. (*C. intercedens* Witasek) Harebell. Bluebell.

Rocky prairies, limestone and sandstone ledges, sandy upland

woods and steep, north- and east-facing wooded talus slopes; common throughout.

Lobelia cardinalis L. Cardinal Flower.

Alluvial woods and meadows along the major rivers; frequent.

Lobelia inflata L. Indian-tobacco.

Scattered throughout in mesic woods and occasionally in weedy places; common.

Lobelia kalmii L.

Sandy shore of an island in the Mississippi River near Marquette, Clayton County (B. Shimek, 1921, IA); rare. Fairly common in recently-glaciated areas to the east of the "Driftless Area."

Lobelia siphilitica L. Great Lobelia.

Moist alluvium, sedge meadows, low roadsides, and pastures; common except in northeastern counties.

Lobelia spicata Lam. (incl. *L. leptostachys* A. DC.) Pale Spike Lobelia.

Sparsely-wooded bluffs and ridges, rocky hill prairies, sandy meadows, and dry roadsides; scattered throughout; common.

Triodanis perfoliata (L.) Nieuwl. (*Specularia perfoliata* (L.) A. DC.) Venus' Looking-glass.

Dry, open sandy places and occasionally on shaded sandstone ledges; frequent throughout.

Capparaceae (Caper Family)

Polanisia dodecandra (L.) DC. ssp. *dodecandra* (*P. graveolens* Raf.) Clammyweed.

Dry weedy sand and railroad gravel in southern and western counties; infrequent.

Caprifoliaceae (Honeysuckle Family)

Diervilla lonicera Mill. Bush Honeysuckle.

Low sandy woods in northeastern counties; elsewhere on moist wooded slopes and rock ledges; common in the northern two-thirds of the area; rarer southward to Jo Daviess and Dubuque counties.

Linnaea borealis L. var. *americana* (Forbes) Rehd. Twinflower.

Tamarack bogs and on mossy, north-facing talus slopes; in Clayton, LaCrosse, Trempealeau, and Winneshiek counties; rare.

Lonicera canadensis Marsh. Honeysuckle.

Known from near New Lisbon, Juneau County (I. Cull and M. S. Bergseng, 1946, WIS); rare.

Lonicera dioica L.

Low sandy woods, tamarack bogs, and on moist to rather dry

wooded slopes; common in the northern two thirds of the area; rare south to Jo Daviess County.

°*Lonicera morrowi* Gray

Infrequent escape to upland woods and open rocky places.

Lonicera prolifera (Kirchn.) Rehd. Grape Honeysuckle.

Rich upland woods, rocky, sparsely-wooded ridges and on dry limestone ledges; mainly in southern and western counties; common.

°*Lonicera tatarica* L. Tartarian Honeysuckle.

Escaped to dry, sparsely-wooded slopes in Juneau, LaCrosse, Sauk, and Winneshiek counties; rare.

°*Lonicera xylosteum* L. Fly Honeysuckle.

Escaped to dry woods and thickets in Green and LaCrosse counties; rare.

Sambucus canadensis L. Common Elder.

Moist to dry woods and thickets, roadsides and moist open places; common throughout.

Sambucus pubens Michx. Red-berried Elder.

Low sandy woods in northeastern counties; elsewhere on steep, moist, north- and east-facing wooded slopes; south to Sauk and Dubuque counties; common.

Symphoricarpos albus (L.) Blake, Snowberry.

Scattered in the northern half of the area on dry limestone and sandstone ledges; infrequent. An Allamakee County collection is apparently the first (as native) for Iowa.

Symphoricarpos occidentalis Hook. Wolfberry.

Relic prairies along railroads and on rocky wooded bluffs; mainly in western counties; infrequent.

Symphoricarpos orbiculatus Moench, Coralberry.

Relic prairies along railroads in Buffalo and Grant counties; rare.

Triosteum aurantiacum Bickn. (and var. *illinoense* (Wieg.) Palmer & Steyerm.) Wild Coffee.

Rich upland woods and moist wooded slopes north to Sauk and LaCrosse counties; common. Var. *illinoense*, given species rank by some authors and collectors, appears to intergrade with typical *T. aurantiacum* in the "Driftless Area."

Triosteum perfoliatum L. Tinker's-weed.

Rich upland woods and moist wooded slopes north to Sauk and LaCrosse counties; frequent. Possibly not distinct from the preceding.

Viburnum acerifolium L. Maple-leaved Viburnum.

Low sandy woods and moist, sandy wooded slopes in northeastern counties; frequent.

Viburnum lentago L. Nannyberry.

Woods and thickets; common except in the old bed of Glacial Lake Wisconsin.

Viburnum opulus L. var. *americanum* Ait. (*V. trilobum* Marsh.) Highbush-cranberry.

Low sandy woods, tamarack bogs, and moist, north-facing wooded slopes from Adams County southwest to Winneshiek and Dubuque counties; frequent.

Viburnum rafinesquianum Schultes, Downy Arrow-wood.

Rich upland woods and moist wooded slopes; scattered throughout; common.

Caryophyllaceae (Pink Family)

°*Agrostemma githago* L. Purple Cockle.

Weed of cultivated fields in Vernon (H. P. Hansen, **1929**, WIS) and Monroe (S. C. Stuntz, **1892**, WIS) counties; rare.

Arenaria lateriflora L. Grove Sandwort.

Mesic woods north to Trempealeau and Adams counties; frequent.

Arenaria stricta Michx. (and subsp. *dawsonensis* (Britt.) Maguire) Rock Sandwort.

Thin soil on dry limestone and sandstone ledges in Adams, Allamakee, Iowa, Sauk, and Vernon counties; rare.

Cerastium arvense L. Field Chickweed.

Mossy, north-facing wooded bluffs in Clayton, Winneshiek, and Fillmore counties; dry, open sandy places in LaCrosse and Jackson (Wisconsin) counties; infrequent.

Cerastium nutans Raf.

Weedy woods and open disturbed soil north to Winona and Sauk counties; frequent.

°*Cerastium viscosum* L.

Weed of pastures in Juneau (C. Lemke, **1956**, WIS) and Lafayette (A. S. Mossman, **1953**, WIS) counties; rare.

°*Cerastium vulgatum* L. Common Mouse-ear Chickweed.

Weedy woods, open alluvium, wet margins, and roadsides; scattered throughout; frequent.

°*Lychnis alba* Mill. Campion.

Roadsides, railroads, fields, and dry woodland borders; common throughout.

°*Lychnis dioica* L. Red Campion.

Known from Coon Valley, Vernon County (E. A. Baird, **1920**, WIS); rare.

°*Myosoton aquaticum* (L.) Moench (*Stellaria aquatica* (L.) Scop.) Giant Chickweed.

Moist grassy roadsides and moist woods along creeks; frequent except in northeastern counties.

Paronychia fastigiata (Raf.) Fern. Forked Chickweed.

Sandy upland woods and dry sandstone ledges and talus; mainly in western and central counties; infrequent.

Paronychia fastigiata (Raf.) Fern. Forked Chickweed.

Sandy upland woods and dry sandstone ledges and talus in Adams, Juneau, LaCrosse, Sauk, and Trempealeau counties; infrequent.

°*Saponaria officinalis* L. Bouncing Bet.

Roadsides and waste places; common except in the old bed of Glacial Lake Wisconsin.

°*Saponaria vaccaria* L. Cowherb, Cow-cockle.

Weed of roadsides and fields in Green (S. C. Stunt, **1891**, WIS) and Sauk (C. W. C., **1895**, WIS) counties; rare.

°*Scleranthus annuus* L.

Dry open sand in northeastern LaCrosse County; rare.

Silene antirrhina L. Sleepy Catchfly.

Dry, open sandy places; often weedy; common throughout.

°*Silene armeria* L. None-so-pretty.

Escaped from cultivation in LaCrosse, LaCrosse County; rare.

°*Silene cserei* Baumg.

Scattered throughout on gravel and cinders along railways; infrequent.

°*Silene cucubalus* Wibel. Bladder Catchfly.

Dry roadsides in Adams, Lafayette, and Monroe counties; rare.

°*Silene dichotoma* Ehrh. Forking Catchfly.

Dry sandy roadsides in Jackson (Wisconsin), LaCrosse, and Monroe counties; rare.

Silene nivea (Nutt.) Otth, Snowy Campion.

Low rich woods and moist, open grassy places in southern and western counties; infrequent.

°*Silene noctiflora* L. Night-flowering Catchfly.

Grassy roadside in Farmington Twp., LaCrosse County; rare.

Silene stellata (L.) Ait. f. Starry Campion.

Dry borders of upland woods in Allamakee, Buffalo, LaCrosse, and Trempealeau counties; rare.

°*Spergula arvensis* L. Corn Spurrey.

Weed of cultivated ground in Dane (J. W. Thomson, **1953**, WIS) and Jackson (D. F. Grether, **1947**, WIS) counties; rare.

°*Stellaria graminea* L. Common Stitchwort.

Moist weedy places in Richland and Vernon counties; rare.

Stellaria longifolia Muhl.

Sedge meadows, wet woods, and marshy margins south to Allamakee and Sauk counties; frequent.

°*Stellaria media* (L.) Cyrillo, Common Chickweed.

Weedy woods, pastures, yards, and waste places; common throughout.

Celastraceae (Staff Tree Family)

Celastrus scandens L. Bittersweet.

Upland woods, wooded slopes, rock ridges, roadsides, and fencerows; common throughout.

Euonymus atropurpureus Jacq. Wahoo.

Rich upland woods, moist wooded slopes, and sandy alluvial woods in southern and western counties; common.

Ceratophyllaceae (Hornwort Family)

Ceratophyllum demersum L. Hornwort, Coontail.

Scattered throughout in lakes, sloughs, and ponds; frequent.

Ceratophyllum echinatum Gray

Soft-water sloughs and flowages in Adams, Juneau, and Sauk counties; rare.

Chenopodiaceae (Goosefoot Family)

Atriplex patula L.

Weedy mesic woods in LaCrosse and Winneshiek counties; rare.

°*Chenopodium album* L. (and var. *lanceolatum*) Lamb's-quarters.

Weedy places in southern and western counties; infrequent.

°*Chenopodium ambrosioides* L. Mexican-tea.

Known from Grant (N. C. Fassett, **1934**, WIS) and Crawford (N. C. Fassett, **1930**, WIS) counties; rare.

°*Chenopodium atrovirens* Rydb.

Sandy prairie near Ferry Bluff, Sauk County (M. Gale, **1953**, WIS); rare.

°*Chenopodium berlandieri* Moq.

Along railway at Perrot State Park, Trempealeau County (H. C. Greene & J. T. Curtis, **1956**, WIS); rare.

°*Chenopodium botrys* L. Jerusalem-oak.

Rare weed. Known from Dubuque (P. Bartsch, **1895**, IA), LaCrosse (N. C. Fassett, **1927**, WIS), and Wood (L. S. Cheney, **1894**, WIS) counties.

°*Chenopodium capitatum* (L.) Asch.

Dry open places in Dane (L. S. Chaney, **1899**, WIS) and Vernon (H. P. Hansen, **1929**, WIS) counties; rare. Possibly native.

Chenopodium desiccatum A. Nels. var. *desiccatum*

Dry open places in Dane (N. C. Fassett, **1936**, WIS) and Juneau (J. T. Curtis and H. C. Greene, **1956**, WIS) counties; rare.

Chenopodium foggii Wahl.

Weedy roadsides in Dane (J. Wright, **1945**, WIS), Juneau (R. Wills, **1957**, WIS), and Sauk (H. H. Iltis and G. Noamesi, **1956**, WIS) counties; rare.

Chenopodium gigantospermum Aellen (*C. hybridum* of American authors) Maple-leaved Goosefoot.

Roadsides, waste places, and moist weedy woods; mainly in southern and western counties; frequent.

°*Chenopodium murale* L.

Known from Prairie du Chien, Crawford County (H. H. Smith, **1932**, WIS); rare.

Chenopodium pratericola Rydb. (*C. leptophyllum* of authors, not Nutt.)

Roadsides, railroads, and weedy upland woods in the northern half of the area; infrequent.

Chenopodium standleyanum Aellen (*C. boscianum* of authors)

Weedy woods, shaded banks, and rock ledges in southern and western counties; infrequent.

°*Chenopodium urbicum* L.

Known from Black Earth, Dane County (A. B. Seymour, **1931**, WIS); rare.

Corispermum nitidum Kit. Bugseed.

Dry open sand on an old Mississippi River terrace south of Thomson, Carroll County; rare.

Cycloloma atriplicifolium (Spreng.) Coult. Winged Pigweed.

Scattered throughout in dry, open sandy places; infrequent.

°*Kochia scoparia* (L.) Roth, Summer-Cypress.

Waste areas and rocky shores north to LaCrosse County; infrequent.

°*Salsola kali* L. var. *tenuifolia* G. F. W. Mey. Russian-thistle.

Weed of dry, open sandy places in southern and western counties; infrequent.

Cistaceae (Rockrose Family)

Helianthemum bicknellii Fern. Frostweed.

Dry sandy plains and prairies, sandstone outcrops and talus, and

in sandy upland woods; common in the northern two-thirds of the area; rare southward to Jo Daviess County.

Helianthemum canadense (L.) Michx.

Dry sandy plains and prairies, sandstone outcrops and talus, and in sandy upland woods; in the northern two-thirds of the area; common.

Hudsonia tomentosa Nutt. Poverty-grass.

Dry sandy plains and open sandstone ledges and talus south to Jackson County, Iowa; infrequent.

Lechea intermedia Leggett, Pinweed.

Sandy upland woods, dry sandy prairies, and on open sandstone ledges and talus; in northeastern counties and in Allamakee County; infrequent.

Lechea stricta Leggett

Sandy upland woods, dry sandy prairies, and on open sandstone ledges and talus; scattered throughout; frequent.

Lechea tenuifolia Michx.

Sandy upland woods, dry sandy prairies, and on open sandstone ledges and talus; scattered throughout; infrequent.

Compositae (Composite Family)

**Achillea millefolium* L. (incl. *A. lanulosa* Nutt.) Yarrow.

Roadsides, pastures, prairies, and dry, open sandy places; common throughout.

Agoseris cuspidata (Pursh) Raf. (*Microseris cuspidata* (Pursh) Schultz Bip.)

Dry sandy soil in Dane, Iowa, Jo Daviess, Sauk, and Winneshiek counties; rare.

Ambrosia artemisiifolia L. Common Ragweed.

Roadsides, railways, waste areas, and open sandy places; common throughout.

Ambrosia psilostachya DC. var. *coronopifolia* (T. & G.) Farw.

Dry, open sandy places; common throughout.

Ambrosia trifida L. Great Ragweed.

Weed of roadsides, railways, disturbed ground, and waste places; common throughout.

Anaphalis margaritacea (L.) C. B. Clarke, Pearly Everlasting.

Open sandy woods near Lyndon Station, Juneau County; rare.

Antennaria neglecta Greene (incl. *A. canadensis* Greene, *A. petaloidea* Fern. and *A. neodioica* Greene) Lady's-tobacco.

Upland prairies and dry upland woods; common throughout.

Antennaria plantaginifolia (L.) Richards. (incl. *A. fallax* Greene, *A. parlinii* Fern. and *A. munda* Fern.)

Dry open woods, dry prairies, and pastures; common throughout.

°*Anthemis cotula* L. Stinking Chamomile.

Roadsides, weedy alluvium, and waste places; frequent except in northeastern counties.

°*Anthemis tinctoria* L.

Known from Viroqua, Vernon County (H. T. Richards, **1956**, WIS); rare.

°*Arctium minus* (Hill) Bernh. Common Burdock.

Roadsides, pastures, weedy woods, and waste places; common throughout.

°*Artemisia absinthium* L. Wormwood.

Weedy pasture near Decorah, Winneshiek County (W. L. Tolstead, **1933**, Ia. State Univ., Ames); rare.

°*Artemisia biennis* Willd.

Moist weedy places in Allamakee, LaCrosse, Vernon, and Winneshiek counties; rare.

Artemisia caudata Michx.

Rocky hill prairies, sandy plains, and dry limestone and sandstone ledges; common throughout.

Artemisia dracunculus L. (*A. dracunculoides* Pursh)

Rocky hill prairies in Crawford and Winneshiek counties; rare.

Artemisia frigida Willd. Prairie Sagewort.

Dry sandy prairie bordering railway in Perrot State Park, Trempealeau County; rare.

Artemisia ludoviciana Nutt. (*A. gnaphalodes* Nutt.) Prairie-sage.

Dry, open sandy places south to Clayton and Iowa counties; frequent.

Artemisia serrata Nutt.

Roadsides and rather low pastures in Buffalo, Sauk, Monroe, Trempealeau, and Winneshiek counties; rare.

Aster azureus Lindl. Aster.

Scattered throughout on upland prairies and in sandy upland woods; common.

Aster ciliolatus Lindl. (*A. lindleyanus* T. & G. in Wisconsin literature)

Dry sandy woods in Jackson (Wisconsin), Monroe, and Sauk counties; rare.

Aster cordifolius L.

Rich upland woods and moist wooded slopes in southern and western counties; infrequent.

Aster drummondii Lindl.

Rich upland woods and rather moist wooded slopes in LaCrosse, Allamakee, and Winneshiek counties; infrequent.

Aster dumosus L.

Moist open sand near Ketchum Creek, Jackson County, Wisconsin; rare.

Aster ericoides L. (*A. multiflorus* Ait.)

Roadsides and upland prairies in southern and western counties; frequent.

Aster junciformis Rydb.

Bogs and sandy meadows in Trempealeau, Jackson (Wisconsin), Juneau, and Adams counties; infrequent.

Aster laevis L.

Dry upland prairies and open upland woods; scattered throughout; frequent.

Aster lateriflorus (L.) Britt.

Upland woods, moist wooded slopes and alluvial woods; scattered throughout; frequent.

Aster linariifolius L.

Dry open sand; mainly on old terraces of the Wisconsin and Mississippi rivers; infrequent.

Aster macrophyllus L. (and var. *velutinus* Burgess)

Low sandy woods, moist wooded slopes, and rich upland woods south to Winneshiek, Vernon, and Sauk counties; frequent. The Winneshiek County collection is apparently the first for Iowa. Plants of low sandy woods in northeastern counties fit the description of var. *velutinus*.

Aster novae-angliae L. New England Aster.

Roadsides in southern and western counties; frequent.

Aster oblongifolius Nutt.

Rocky hill prairies; frequent except in northeastern counties.

Aster ontarionis Wieg. (*A. pantotrichus* Blake in Wisconsin literature)

Scattered throughout in alluvial woods and boggy thickets; frequent.

Aster pilosus Willd.

Rocky hill prairies and ridges in Winneshiek, Clayton, Dubuque and Jo Daviess Counties; infrequent.

Aster praealtus Poir. (*A. coerulescens* DC. in Wisconsin literature)

Low thickets and meadows in Adams, Carroll, Juneau, and LaCrosse counties; rare.

Aster prenanthoides Muhl.

Moist weedy woods; frequent except in northeastern counties.

Aster ptarmicoides (Nees) T. & G.

Sandy upland woods and moist sandy meadows in the old bed of Glacial Lake Wisconsin; rocky hill prairies in western counties; frequent.

Aster puniceus L. (incl. *A. lucidulus* (Gray) Wieg.)

Scattered throughout in tamarack bogs, seepage bogs, and low sandy woods; frequent.

Aster sagittifolius Wedemeyer ex Willd.

Scattered throughout in dry upland woods and occasionally on moist wooded slopes; common.

Aster sericeus Vent. Silky Aster.

Sandy to loamy upland prairies; common throughout.

Aster shortii Lindl.

Rich upland woods and moist wooded slopes in southwestern counties; common. Sparsely-toothed leaves and more elongate involucral bracts of some plants may indicate some gene exchange with *A. cordifolius*. This putative hybrid is known as *Aster x finkii* Rydb.

Aster simplex Willd. (*A. paniculatus* Lam. in Wisconsin literature)

Moist open places from Dubuque County north to Jackson County; infrequent.

Aster umbellatus Mill.

Tamarack bogs, low sandy woods, and meadows south to La-Crosse and Sauk counties; frequent.

Bidens aristosa (Michx.) Britt. Bur Marigold.

Boggy thickets in Adams and Monroe counties; rare.

Bidens cernua L.

Marshy places and muddy shores south to Clayton County; frequent.

Bidens coronata (L.) Britt.

Open bogs, sandy meadows, and marshy shores in the northern third of the area; frequent.

Bidens discoidea (T. & G.) Britt.

Marshy shores and weedy woods in the northern half of the area; infrequent.

Bidens frondosa L.

Scattered throughout in marshy places and on muddy or sandy shores; frequent.

Bidens polylepis Blake

Marshy slough margin bordering the Wisconsin River in Iowa County; rare.

Bidens tripartita L. (incl. *B. connata* Muhl. & *B. comosa* (Gray) Wieg.)

Muddy shores and marshy places; common throughout.

Bidens vulgata Greene

Marshy shores in LaCrosse and Winneshiek counties; apparently rare.

Boltonia asteroides (L.) L'Hér. (*B. latisquama* Gray var. *recognita* Fern. & Grisom of Wisconsin collectors)

Wet margins in Grant, Juneau, and LaCrosse counties; rare.

Cacalia atriplicifolia L. Pale Indian-plantain.

Dry open woods near Galesville, Trempealeau County (R. H. Denniston, 1914, WIS); rare.

Cacalia muhlenbergii (Schulz. Bip.) Fern. Great Indian-plantain.

Rich woods and occasionally persisting in pastures; mainly in southern and western counties; frequent.

Cacalia suaveolens L.

Boggy thickets and meadows south to Winneshiek and Sauk counties; infrequent.

Cacalia tuberosa Nutt.

Loamy upland prairies north to Dane and Allamakee counties; infrequent.

°*Carduus acanthoides* L. Plumeless-thistle.

Dry roadsides and pastures in Dane, Iowa, Green, and Lafayette counties; rare.

°*Centaurea jacea* L. Star-thistle.

Near Coon Valley, Vernon County (J. B. Marks, 1939, WIS); rare.

°*Centaurea maculosa* Lam.

Dry sandy borders of roadsides and railroads in the eastern half of the area; infrequent.

°*Centaurea solstitalis* L. Yellow Star-thistle.

Known from near DeSota, Crawford County (H. Richards, 1958, WIS); rare.

°*Chrysanthemum leucanthemum* L. Chrysanthemum.

Roadsides, pastures and rocky alluvium; mainly in southern and western counties; frequent.

°*Chrysanthemum parthenium* (L.) Bernh.

Escaped from cultivation at Lone Rock, Richland County (M. Jamieson, 1932, WIS); rare.

Chryospsis villosa (Pursh) Nutt. (incl. *C. wisconsinensis* Shinners, *C. camporum* Greene, and *C. ballardi* Rydb.) Golden-aster.

Dry open sand in Adams and Carroll counties; rare.

°*Cichorium intybus* L. Chicory.

Weed of dry roadsides and pastures in southern and western counties; frequent.

Cirsium altissimum (L.) Spreng. Thistle.

Rich upland woods and moist wooded slopes; common except in northeastern counties.

°*Cirsium arvense* (L.) Scop. Canada Thistle.

Common weed of roadsides, fields and pastures; mainly in southern and western counties.

Cirsium discolor (Muhl.) Spreng.

Dry to moist open places; frequent except in northeastern counties.

°*Cirsium flodmani* (Rydb.) Arthur

Dry sandy roadside near Melrose, Jackson County, Wisconsin; rare.

Cirsium hillii (Canby) Fern.

Dry upland prairies in southern and western counties; infrequent.

Cirsium muticum Michx. Swamp Thistle.

Sandy meadows and boggy thickets south to Vernon and Sauk counties; frequent.

Cirsium undulatum (Nutt.) Spreng.

Roadside weed near the town of Schultz, Green County (H. C. Greene, **1947**, WIS); rare.

°*Cirsium vulgare* (Savi) Tenore, Bull Thistle

Weedy roadsides, fields, waste areas, marshy shores, and wet thickets; common throughout.

°*Coreopsis lanceolata* L. Tickseed.

Escaped to dry roadsides in LaCrosse and Monroe counties; rare.

Coreopsis palmata Nutt.

Dry sandy plains, rocky hill prairies, and borders of upland woods; common throughout.

°*Coreopsis tinctoria* Nutt.

Escaped from cultivation in Crawford (H. H. Smith, **1922**, WIS) and Trempealeau (R. H. Denniston, **1914**, WIS) counties; rare.

°*Cosmos bipinnatus* Cav. Cosmos.

Apparently escaped from cultivation at Fountain City, Buffalo County (H. H. Smith, **1922**, WIS); rare.

°*Crepis tectorum* L. Hawk's-beard.

Dry sandy roadsides and fields in Adams and Wood counties; rare.

Dyssodia papposa (Vent.) Hitchc. Fetid Marigold.

Rocky hill prairie bordering the Mississippi River in Jo Daviess County; rare.

Echinacea pallida Nutt. Purple Coneflower.

Dry prairie remnants in Carroll and Grant counties; rare.

Eclipta alba (L.) Hassk. Yerba-de-Tago.

Muddy shores of the Mississippi River in Crawford (J. J. Davis, **1915**, WIS) and Grant (R. B. Anthony, **1933**, WIS) counties; rare.

Erechtites hieracifolia (L.) Raf. Pilewort.

Scattered throughout in moist to dry woods, tamarack bogs, meadows, and waste places; frequent.

Erigeron annuus (L.) Pers. Daisy-fleabane.

Dry to moist woods, boggy thickets, roadsides, and pastures; common throughout.

Erigeron canadensis L. (*Conyza canadensis* (L.) Cron.) Horse Weed.

Weed of roadsides, railroads, waste areas, etc.; common throughout.

Erigeron divaricatus Michx. (*Conyza ramosissima* Cron.)

Dry sandy soil in Iowa (Charles Goessl, **1921**, WIS) and La-Crosse (N. C. Fassett, **1927**, WIS) counties; rare.

Erigeron philadelphicus L.

Alluvial woods, low pastures, weedy alluvium, moist wooded slopes, and on shaded sandstone and limestone ledges; mainly in southern and western counties; frequent.

Erigeron pulchellus Michx. Robin's-plantain.

Upland woods and rather moist wooded slopes; mainly in southern and western counties; common.

Erigeron strigosus Muhl. Daisy-fleabane.

Dry prairies, upland woods and roadsides; common throughout.

Eupatorium altissimum L. Thoroughwort.

Dry upland prairies and borders of upland woods north to La-Crosse County; infrequent.

Eupatorium maculatum L. Joe-pye-weed.

Open marshy places, boggy thickets, and wet meadows in the northern two-thirds of the area; common.

Eupatorium perfoliatum L. Thoroughwort Boneset.

Marshy places, meadows, and wet thickets; common throughout.

Eupatorium purpureum L.

Rich upland woods and moist wooded slopes; common except in northeastern counties.

Eupatorium rugosum Houtt. White Snakeroot.

Rich upland woods, moist wooded slopes, and occasionally in waste places; common except in northeastern counties.

Eupatorium serotinum Michx.

Dry, sparsely-wooded slopes in Grant and Jo Daviess counties; rare.

Eupatorium sessilifolium L. Upland Boneset.

Dry wooded slopes north to Allamakee and Sauk counties; infrequent.

°*Galinsoga ciliata* (Raf.) Blake

Weed of moist waste places; infrequent. *Galinsoga parviflora* has not been collected in the "Driftless Area" though it may well occur there.

Gnaphalium obtusifolium L. (incl. *G. saxicola* Fassett) Catfoot.

Open sandy places, sandy upland woods, and occasionally on shaded sandstone ledges; common throughout. Shade forms from sandstone cliffs at Wisconsin Dells have been called *G. saxicola*.

Gnaphalium uliginosum L. Low Catfoot.

Moist sand along rivers and streams south to LaCrosse and Sauk counties; infrequent.

°*Grindelia squarrosa* (Pursh) Dunal, Tarweed.

Scattered throughout along dry sandy roadsides; infrequent.

Helenium autumnale L. Sneezeweed.

Throughout the area in low pastures, meadows, shores, and moist thickets; common.

°*Helenium flexuosum* Raf. (*H. nudiflorum* Nutt.)

Rather moist sandy roadside northeast of Black River Falls, Jackson County, Wisconsin; rare. Probably adventive from the Southeast.

°*Helianthus annuus* L. Common Sunflower.

Weed of roadsides and railroads; infrequent.

Helianthus decapetalus L.

Rich upland woods and moist wooded slopes; scattered throughout; infrequent.

Helianthus giganteus L.

Sandy or boggy meadows and borders of sandy upland woods; in the northern third of the area; infrequent.

Helianthus grosseserratus Martens

Mesic prairies and wooded roadside banks north to Iowa and Jackson counties; infrequent.

Helianthus hirsutus Raf.

Dry prairies in Lafayette, Monroe and Vernon counties; rare.

Helianthus maximiliani Schred.

Known from Buffalo (E. A. Baird, 1920, WIS) and Sauk (R. H. True, 1892, WIS) counties; rare.

Helianthus occidentalis Riddell

Upland prairies and dry sandy woods; common throughout.

Helianthus petiolaris Nutt.

Weed of dry sandy soil; mainly in western counties; apparently rare.

Helianthus rigidus (Cass.) Desf. (*H. laetiflorus* Pers. of authors)

Scattered throughout on dry upland prairies; infrequent.

Helianthus strumosus L.

Roadside banks, prairie borders of upland woods and dry open woods; common throughout.

Helianthus strumosus L. x *H. decapetalus* L.

A collection from Buffalo County seems to be this.

Helianthus strumosus L. x *H. tuberosus* L.

A collection from Green County seems to be this.

Helianthus tuberosus L. Jerusalem-artichoke.

Scattered throughout in alluvial woods and moist weedy places; infrequent.

Heliopsis helianthoides (L.) Sweet (and var. *scabra* (Dunal) Fern.)

Roadsides, meadows, upland prairies, and woods; common except in northeastern counties.

°*Hieracium aurantiacum* L. Devil's Paint-brush.

Dry sandy places in northeastern counties; common.

°*Hieracium floribundum* Wimmer & Grab. King Devil.

Dry open sand in northeastern LaCrosse County; rare.

Hieracium longipilum Torr.

Dry sandy plains and prairies south to Crawford and Dane counties; common.

°*Hieracium pratense* Tausch.

Weedy wooded slope near Camp Decorah, LaCrosse County; rare.

Hieracium scabrum Michx.

Open sandy woods south to Sauk and Dubuque counties; frequent.

Hieracium umbellatum L. (and var. *canadense* (Michx.) Brietung)

Dry sandy woods, moist, sandy wooded slopes, moist to dry sandstone ledges, and on mossy north-facing talus slopes; south to Clayton and Lafayette counties; common.

°*Inula helenium* L.

Weedy roadside near Canoe Creek, Winneshiek County (Shimek, 1903, IA); rare.

°*Iva xanthifolia* Nutt. Marsh-elder.

Roadsides and waste places in LaCrosse and Winneshiek counties; rare.

Krigia biflora (Walt.) Blake, Dwarf Dandelion.

Dry upland woods in the northern two-thirds of the area; common.

Krigia virginica (L.) Willd.

Open sandy places in Adams, Carroll, Dane, Iowa, and Richland counties; rare.

Kuhnia eupatorioides L. False Boneset.

Scattered throughout on dry upland prairies; frequent.

Lactuca biennis (Moench) Fern. Wild Lettuce.

Roadsides and weedy woods in western counties; apparently rare.

Lactuca canadensis L.

Dry weedy places; common throughout.

Lactuca floridana (L.) Gaertn. (*L. villosa* Jacq.)

Weed of rich woods, thickets, and openings in Allamakee, Crawford, Grant, and Dane counties; rare.

Lactuca ludoviciana (Nutt.) Riddell

Steep wooded slope at Bluffton, Winneshiek County (R. F. Thorne, **1952**, IA); rare.

Lactuca pulchella (Pursh) DC.

Railway just east of Mt. Horeb, Dane County (J. R. H., **1916**, WIS); rare.

°*Lactuca scariola* L. Prickly Lettuce.

Weed of roadsides, pastures, fields, and waste areas; mainly in southern and western counties; infrequent.

Liatris aspera Michx. Blazing Star.

Common throughout on dry upland prairies.

Liatris cylindracea Michx.

Dry upland prairies; mainly in western counties; frequent.

Liatris ligulistylis (Nels.) K. Schum.

Mesic railroad prairie near Mondovi, Buffalo County (H. H. Iltis, **1956**, WIS); rare.

Liatris pycnostachya Michx.

Moist sandy meadows south to Iowa and Winneshiek counties; infrequent.

°*Matricaria matricarioides* (Less.) Porter (incl. *M. suaveolens* (Pursh) Buchenau), Pineapple Weed.

Common weed of roadsides, yards and waste places.

Parthenium integrifolium L. Wild-quinine.

Upland prairies in Dubuque, Lafayette, and Winneshiek counties; rare.

Polymnia canadensis L. Leafcup.

Moist, north- and east-facing wooded slopes north to LaCrosse and Sauk counties; common.

Prenanthes alba L. Rattlesnake Root.

Low sandy woods in northeastern counties; elsewhere on moist wooded slopes, in rich upland woods and on wooded roadside banks; common throughout.

Prenanthes crepidinea Michx.

Mesic prairie near Lynxville, Crawford County (R. H. Denniston, **1915**, WIS); rare.

Prenanthes racemosa Michx.

Meadows and upland prairies in Jackson (Wisconsin), Lafayette, and Winneshiek counties; rare.

Ratibida columnifera (Nutt.) Wooton & Standl. Prairie-coneflower.

Dry sandy prairies in Buffalo and Jackson (Wisconsin) counties; rare.

Ratibida pinnata (Vent.) Barnh.

Upland prairies and borders of dry woods; common except in northeastern counties.

Rudbeckia laciniata L. Coneflower.

Moist woods; common throughout.

Rudbeckia serotina Nutt.(*R. hirta* of Wisconsin authors) Black-eyed Susan.

Dry roadsides, pastures, prairies and upland woods; common throughout.

Rudbeckia subtomentosa Pursh

Low prairies bordering the Wisconsin River in Dane, Iowa, and Richland counties; rare.

Rudbeckia triloba L.

Moist rich woods north to Allamakee and Iowa counties; frequent.

Senecio aureus L. Golden Ragwort.

Moist rich woods and boggy thickets; scattered throughout; frequent.

Senecio congestus (R. Br.) DC. var. *palustris* (L.) Fern.

North-facing wooded slope at Bluffton, Winneshiek County (R. F. Thorne, **1954**, IA); rare.

Senecio pauperculus Michx. (incl. *S. balsamitae* Muhl.)

Moist meadows in Adams and Grant counties; apparently rare. Possibly not distinct from the next.

Senecio plattensis Nutt.

Upland prairies, sparsely-wooded slopes and dry pastures; scattered throughout; frequent.

°*Senecio vulgaris* L. Common Groundsel.

Roadside weed at Prairie du Sac, Sauk County (J. Schorta, **1941**, WIS); rare.

Silphium integrifolium Michx. Rosinweed.

Upland prairies in Dane, Iowa, Lafayette, and Jo Daviess counties; rare.

Silphium laciniatum L. Compass Plant.

Upland prairies; mainly in western counties bordering the Mississippi River; frequent.

Silphium perfoliatum L. Cup Plant.

Moist rich thickets and woods and on low mesic prairies; common except in northeastern counties.

Silphium terebinthinaceum Jacq. Prairie-dock.

Prairie remnants along railroads and roadsides in Adams and Dane counties; rare.

Solidago altissima L. Goldenrod.

Weedy borders of woods and sandy meadows; scattered throughout; infrequent. Similar to the next, but distinguished here by the larger involucre in *S. altissima*.

Solidago canadensis L.

Upland woods, woodland borders, and upland prairies; mainly in southern and western counties; frequent.

Solidago erecta Pursh (incl. *S. castrensis* Steele ?)

Sandy upland woods near Potter's Flowage Juneau County; rare. This is an eastern species but does occur in NW Indiana. It may be the same as *S. castrensis* or *S. hispida* Muhl. var. *tonsa* Fern. It seems likely, in fact, that these three taxa, plus *S. sciaphila* Steele, may represent extremes of a wide-ranging polymorphic species.

Solidago flexicaulis L. (*S. latifolia* L.)

Rich upland woods and moist wooded slopes; common except in northeastern counties.

Solidago gigantea Ait. (incl. *S. serotina* Ait.)

Prairies, bogs, meadows, woods, and weedy places; common in the northern third of the area; rarer southward to Clayton and Lafayette counties.

Solidago graminifolia (L.) Salisb. (*S. media* (Greene) Bush ex Friesner in Jones & Fuller, 1955)

Moist to dry, open sandy places; common in the northern third of the area; rarer southward to Iowa and Carroll counties.

Solidago hispida Muhl. (see note with *S. erecta*)

Dry sandy woods and open sandstone ledges in northern and eastern counties; mossy north-facing wooded slopes in northeastern Iowa; infrequent.

Solidago juncea Ait.

Dry, open sandy places in Jackson (Wisconsin) and Monroe counties; rare.

Solidago missouriensis Nutt. (*S. glaberrima* Martens in Jones & Fuller, 1955)

Dry upland prairies and borders of upland woods in southern and western counties; infrequent.

Solidago nemoralis Ait.

Dry sandy plains, rocky hill prairies and sandy upland woods; common throughout.

Solidago patula Muhl.

Shaded bogs in Sauk County; rare.

Solidago pruinosa Greene

Dry sandy railroad bank near Fountain City, Buffalo County; rare. A western species, possibly new for Wisconsin.

Solidago rigida L.

Dry upland prairies; frequent except in northeastern counties.

Solidago sciaphila Steele (see note with *S. erecta*)

Limestone and sandstone cliffs and ledges and cold, mossy talus slopes; common in southern and western counties bordering the Mississippi River; infrequent elsewhere.

Solidago spathulata DC. (incl. *S. racemosa* Greene)

Sandy jack pine woods on Bear Bluff, Jackson County, Wisconsin; rare.

Solidago speciosa Nutt.

Dry, usually sandy, upland prairies, dry upland woods and borders; frequent in the northern half of the area; rarer southward to Clayton and Grant counties.

Solidago uliginosa Nutt.

Bogs, low woods, and moist sandy meadows in the northern third of the area; infrequent.

Solidago ulmifolia Muhl.

Rich upland woods, moist wooded slopes, and occasionally on mesic prairies; common except in northeastern counties.

°*Sonchus arvensis* L. Field Sow-thistle.

Roadside weed in Buffalo and Crawford counties; apparently rare.

°*Sonchus asper* (L.) Hill, Spiny-leaved Sow-thistle.

Roadside weed in LaCrosse and Sauk counties; apparently rare.

°*Sonchus oleraceus* L. Common Sow-thistle.

Roadside weed in LaCrosse County; apparently rare.

°*Sonchus uliginosus* Bieb.

Roadside weed in Jackson and LaCrosse counties; apparently rare.

°*Tanacetum vulgare* L. Tansy.

Escaped to roadsides, pastures, and waste places in western counties; rare.

°*Taraxacum erythrospermum* Andrz. Red-seeded Dandelion.

Scattered throughout in weedy woods and pastures; frequent.

°*Taraxacum officinale* Weber, Common Dandelion.

Weedy woods, roadsides, lawns, pastures, etc.; common throughout.

°*Tragopogon dubius* Scop. Goat's-beard.

Dry weedy places; common throughout.

°*Tragopogon pratensis* L.

Weed of dry open places in Adams, Allamakee, Jackson (Wisconsin), and Trempealeau counties; rare.

Vernonia fasciculata Michx. Ironweed.

Scattered throughout in alluvial meadows, low pastures, dry prairies, and apparently as a weed in rocky upland woods; frequent.

°*Xanthium strumarium* L. (incl. *X. chinense* Mill., *X. italicum* Moretti, *X. speciosum* Kearney and *X. echinatum* Murr.) Cocklebur.

Waste places, fields, pastures, and weedy woods; scattered throughout; frequent.

Convolvulaceae (Convolvulus Family)

°*Convolvulus arvensis* L. Field Bindweed.

Dry roadsides; mainly in southern and western counties; frequent.

Convolvulus sepium L. Wild Morning-glory.

Roadsides, fields, and waste places; common throughout.

Convolvulus spithamaeus L. Low Bindweed.

Dry upland woods; frequent in northern counties; rare southward to Dubuque and Jo Daviess counties.

Cuscuta campestris Yuncker, Dodder.

Shores of Lake Onalaska, LaCrosse County; rare. Parasitic on *Salix*.

Cuscuta cephalanthi Engelm.

Alluvial woods along the Black River in LaCrosse County; rare.

Cuscuta coryli Engelm.

Dry woods in Lafayette (L. S. Cheney, **1888**, WIS) and Sauk (H. H. Smith, **1922**, WIS) counties; rare.

Cuscuta cuspidata Engelm.

Alluvial woods and boggy thickets south to Crawford and Iowa counties; infrequent. On a variety of shrubs and herbs including *Salix interior*, *Epilobium coloratum*, *Lycopus americanus* and *Solidago*.

Cuscuta glomerata Choisy

Known from LaCrosse, LaCrosse County (N. C. Fassett and R. I. Evans, **1935**, WIS); rare.

Cuscuta gronovii Willd.

Shores, ditches, alluvial woods, marshes, and boggy thickets in the northern two-thirds of the area; frequent. Often on *Impatiens biflora*.

Cuscuta pentagona Engelm.

Dry habitats in Grant (N. C. Fassett, **1935**, WIS) and Juneau (J. W. Thomson, **1937**, WIS) counties; rare.

Cuscuta polygonorum Engelm.

Moist places in Juneau (L. S. Cheney, **1894**, WIS) and Lafayette (P. K. Nelson, **1946**, WIS) counties; rare.

°*Ipomoea purpurea* (L.) Roth, Common Morning-glory.

Escaped to waste places in Iowa and LaCrosse counties; rare.

Cornaceae (Dogwood Family)

Cornus alternifolia L. f. Pagoda Dogwood.

Rich upland woods and moist wooded slopes; common except in the Glacial Lake Wisconsin Region

Cornus canadensis L. Bunchberry.

Common in low sandy woods and bogs in northeastern counties; rare southward to Clayton County where associated with *Equisetum scirpoides*, *Aconitum noveboracense*, *Linnaea borealis* and *Streptopus roseus* on a mossy, north-facing talus slope.

Cornus drummondi Meyer

A southern species, collected on rich wooded slopes in Clayton and Dubuque counties; rare.

Cornus obliqua Raf. Silky Dogwood.

Alluvial woods, tamarack bogs, low sandy woods and thickets, and along shores; south to Clayton and Grant counties; frequent.

Cornus racemosa Lam. Gray Dogwood.

Moist to dry woods and borders; common throughout.

Cornus rugosa Lam. Round-leaved Dogwood.

Rich upland woods and moist wooded slopes; common throughout.

Cornus stolonifera Michx. Red Osier.

Sandy shores, low sandy woods, and tamarack bogs south to Winneshiek and Sauk counties; frequent.

Crassulaceae (Orpine Family)

°*Sedum acre* L. Mossy Stonecrop.

Escaped to dry sandy places in Jackson (J. J. Davis, **1925**, WIS) and Sauk (B. Harper, **1891**, WIS) counties; rare.

°*Sedum sarmentosum* Bunge.

Escaped to sandstone ledges in Sauk and Vernon counties; rare.

°*Sedum telephium* L. (incl. *S. triphyllum* (Haw.) S. F. Gray and *S. purpureum* (L.) Link.)

Escaped to dry sandy places in Adams, Dane, Juneau, and Sauk counties; rare.

Cruciferae (Mustard Family)

°*Alyssum alyssoides* L. Yellow Alyssum.

Weedy roadside south of Barneveld, Iowa County (B. Thomson, **1958**, WIS); rare.

Arabis canadensis L. Sicklepod.

Rich upland woods and rocky wooded slopes; common except in sandy northeastern counties.

Arabis drummondii Gray

Wooded talus slopes and quartzite and sandstone ledges in Allamakee, Sauk, and Winneshiek counties; rare.

Arabis glabra (L.) Bernh. Tower Mustard.

Dry, rather weedy places in Jackson (Wisconsin) and Winona counties; rare.

Arabis hirsuta (L.) Scop.

Moist to dry limestone and sandstone ledges, wooded talus slopes, and rocky prairies in southern and western counties; frequent.

Arabis laevigata (Muhl.) Poir.

Dry to moist, usually rocky, wooded slopes and shaded limestone and sandstone ledges north to Trempealeau and Sauk counties; infrequent.

Arabis lyrata L.

Dry sandy places, rock ledges and cool, north-facing talus slopes; common in the northern two thirds of the area; rare southward to Clayton, Carroll, and Green counties.

Arabis missouriensis Greene (*A. viridis* Harger)

Rather weedy, rocky wooded slopes in Allamakee County; rare. A questionable species in need of study in this area. Morphologically between *A. laevigata* and *A. hirsuta*.

Arabis perstellata E. L. Br. (*A. shortii* (Fern.) Gl.)

Rocky wooded slopes and moist rocky alluvium north to Winneshiek and Lafayette counties; rare. Often weedy.

°*Armoracia lapathifolia* Gilib. Horseradish.

Escaped to roadsides in LaCrosse, Wood, and Dane counties; rare.

°*Barbarea vulgaris* R. Br. Yellow Rocket.

Roadsides, moist alluvium, meadows, and weedy shores north to Trempealeau and Sauk counties; common.

°*Berteroa incana* (L.) DC. Hoary Alyssum.

Roadsides, dry pastures, and dry sandy places; scattered throughout; infrequent.

°*Brassica juncea* (L.) Coss. Chinese Mustard.

Disturbed soil in Trempealeau and Winneshiek counties; rare.

°*Brassica kaber* (DC.) L. C. Wheeler, Charlock.

Dry weedy places in Adams, Allamakee, Grant, Trempealeau, and Winona counties; apparently rare.

°*Brassica nigra* (L.) Koch, Black Mustard.

Moist roadsides and weedy alluvium in western counties; infrequent.

°*Brassica rapa* L.

Roadsides in Sauk and Wood counties; rare.

°*Camelina sativa* (L.) Crantz

Rare weed known from Dubuque County (J. A. Anderson, 1900, IA).

°*Capsella bursa-pastoris* (L.) Medic. Shepherd's-purse.

Weed of roadsides, yards, waste places, etc.; common except in northeastern counties.

Cardamine bulbosa (Schreb.) BSP. Spring Cress.

Shaded springy places in southern and western counties; infrequent.

Cardamine douglassii (Torr.) Britt.

Seepage bog at the foot of a steep, sandy wooded bluff along Coon Creek, Vernon County; rare. This was forma *albidula* Farw.

Cardamine parviflora L. var. *arenicola* (Britt.) O. E. Schulz.

Moist open sand and dry prairie openings in Juneau and Sauk counties; rare.

Cardamine pensylvanica Muhl.

Seepage bogs, swampy alluvial woods, shaded stream margins, and occasionally on moist wooded slopes; mainly in the northern two-thirds of the area; frequent.

°*Cardaria fenestrata* (Boiss.) Rollins

Rhodora 42: 306. 1940.

A collection from Lansing Twp., Allamakee County (R. F. Thorne, 1956, IA), may be this species.

°*Coronopus didymus* (L.) Smith

Weedy yard in LaCrosse, LaCrosse County; rare. Apparently the first record of this southern weed in Wisconsin.

Dentaria laciniata Muhl. Toothwort.

Low rich woods and moist wooded slopes north to LaCrosse and Sauk counties; frequent.

Descurainia pinnata (Walt.) Britt. Tansy Mustard.

Weed of dry sand and railroad gravel; mainly in southern and western counties; frequent.

°*Descurainia richardsonii* (Sweet) O. E. Schulz

Rocky railroad bed near the Black River in Trempealeau County; rare. Adventive from the West.

°*Descurainia sophia* (L.) Webb

Dry sandy roadside on Goose Island, LaCrosse County; rare.

Draba nemorosa L.

Dry, sandy Mississippi River terrace on French Island, LaCrosse County; rare.

Draba reptans (Lam.) Fern.

Scattered throughout in dry, open sandy places; infrequent.

°*Erucastrum gallicum* (Willd.) O. E. Schulz, Dog Mustard.

Sandy railroad bank below Wyalusing State Park, Grant County; rare.

°*Erysimum asperum* (Nutt.) DC. Western Wallflower.

Dry railroad banks in Carroll and Grant counties; rare.

°*Erysimum cheiranthoides* L. Wormseed Mustard.

Roadsides, railroads, low pastures, weedy shores, and weedy woods; mainly in western counties; frequent.

°*Erysimum inconspicuum* (S. Wats.) MacM.

Dry railroad banks in Adams, Grant, and Trempealeau counties; rare.

°*Hesperis matronalis* L. Mother-of-the-evening.

Roadsides and pastures in Dane (N. C. Fassett, 1931, WIS) and Vernon (W. V. Grotjan, 1951, WIS) counties; rare.

°*Lepidium campestre* (L.) R. Br. Cow Cress.

Rocky weedy places in Jo Daviess County; rare.

°*Lepidium densiflorum* Schrad. Peppergrass.

Roadsides, waste places, and dry sandy plains; common throughout.

Lepidium virginicum L. Poor Man's Pepper.

Roadsides and waste places; mainly in west-central counties; frequent.

°*Nasturtium officinale* R. Br. Watercress.

Scattered throughout in springholes and cold streams; frequent.

°*Raphanus raphanistrum* L.

Roadsides and old fields in Allamakee, Jo Daviess, and LaCrosse counties; apparently rare.

Rorippa islandica (Oeder) Borbas, Yellow Cress.

Shores and moist alluvium; common throughout.

Rorippa sessiliflora (Nutt.) Hitchc.

Muddy shores and flats along the Mississippi River north to LaCrosse County; rare.

°*Rorippa sylvestris* (L.) Bess. Creeping Yellow Cress.

Moist weedy places along the Mississippi and Wisconsin rivers in Allamakee, Dane, Grant, and Iowa counties; rare.

°*Sisymbrium altissimum* L. Tumble Mustard.

Dry, open weedy places; mainly in western counties; frequent.

°*Sisymbrium officinale* (L.) Scop. Hedge Mustard.

Dry, open weedy places in Allamakee, Juneau, LaCrosse, and Vernon counties; infrequent.

°*Thalaspi arvense* L. Penny Cress.

Scattered throughout in weedy places; frequent.

Cucurbitaceae (Gourd Family)

°*Cucurbita maxima* Duchesne, Squash.

Seeming to persist around waste places in Iowa, Jackson (Wisconsin), and LaCrosse counties; rare.

Echinocystis lobata (Michx.) T. & G. Wild or Prickly Cucumber.

Scattered throughout in alluvial woods, tamarack bogs, and low thickets; frequent.

Sicyos angulatus L. Bur-cucumber.

Moist wooded shores and low thickets in Eau Claire, Grant, and LaCrosse counties; infrequent.

Droseraceae (Sundew Family)

Drosera intermedia Hayne, Sundew.

On sphagnum and moist open sand in the old bed of Glacial Lake Wisconsin; rare. Disjunct from northern Wisconsin.

Drosera rotundifolia L.

Bogs and moist, open sandy places in the old bed of Glacial Lake Wisconsin; frequent.

Elaeagnaceae (Oleaster Family)

°*Elaeagnus angustifolia* L. Russian Olive.

Apparently escaped along a wooded roadside near LaCrosse, LaCrosse County; rare.

°*Shepherdia argentea* Nutt. Buffalo Berry.

Planted and spreading in Kingston Twp., Juneau County; rare.

Ericaceae (Heath Family)

Andromeda glaucophylla Link. Bog Rosemary.

Black spruce bogs in the old bed of Glacial Lake Wisconsin; rare.

Arctostaphylos uva-ursi (L.) Spreng. Bearberry.

Sandy jack-pine woods and exposed sandstone outcrops; common in northeastern counties; rare southward to Iowa County.

Chamaedaphne calyculata (L.) Moench, Leather Leaf.

Common in bogs and sphagnous meadows in the old bed of Glacial Lake Wisconsin.

Chimaphila umbellata (L.) Bart. Pipsissewa.

Common in the northern third of the area in dry sandy woods; rare southward on moist, sandy wooded slopes to Winneshiek, Allamakee, and Green counties.

Epigaea repens L. Trailing Arbutus.

Dry to rather moist, sandy woods south to LaCrosse, Monroe, and Sauk counties; common.

Gaultheria hispidula (L.) Muhl. Creeping Snowberry.

Spruce bogs in the old bed of Glacial Lake Wisconsin in Jackson County; rare.

Gaultheria procumbens L. Creeping Wintergreen.

Sandy woods south to Vernon and Sauk counties; common.

Gaylussacia baccata (Wang.) K. Koch, Huckleberry.

Sandy woods, sandstone ledges, and bogs; common in the northern third of the area; rare southward to Iowa and Vernon counties.

Kalmia polifolia Wang. Pale or Bog Laurel.

Spruce bogs in the old bed of Glacial Lake Wisconsin; rare.

Ledum groenlandicum Oeder, Labrador-tea.

Bogs and dry sandstone ledges in northeastern counties; frequent.

Monotropa hypopithys L. Pine-sap.

Sandy to loamy upland woods in Adams, Dubuque, Juneau, and Monroe counties; rare.

Monotropa uniflora L. Indian-pipe.

Scattered throughout in upland woods, low sandy woods, and bogs; frequent.

Pyrola asarifolia Michx. Pink Pyrola.

Boggy woods in Adams and Trempealeau counties; rare.

Pyrola elliptica Nutt. Shinleaf.

Upland woods, moist wooded slopes, and low sandy woods; scattered throughout; common.

Pyrola rotundifolia L. var. *americana* (Sweet) Fern.

Sandy woods south to LaCrosse and Sauk counties; frequent.

Pyrola secunda L. One-sided Pyrola.

Sandy woods in northeastern counties; cold, mossy talus slopes and rich upland woods in northeastern Iowa; infrequent.

Rhododendron lapponicum (L.) Wahlenb. Lapland Rosebay.

Rather moist sandstone cliff at the Upper Dells of the Wisconsin River, Columbia County; rare. A single colony of plants there, extending about eight feet along an overhanging cliff. Discovered by L. S. Cheney and R. H. True in 1898.

Vaccinium angustifolium Ait. (incl. *V. brittonii* Porter) Low Sweet Blueberry.

Sandy woods, sandstone ledges, and bogs; common in the northern half of the area; rare southward to Clayton and Lafayette counties.

Vaccinium cespitosum Michx. Dwarf Bilberry.

Dry sandstone ledges at the Dells of the Wisconsin River (T. J. Hale, 1861, WIS); rare.

Vaccinium macrocarpon Ait. Large or American Cranberry.

Black spruce bogs, sphagnous meadows, and boggy woods in the old bed of Glacial Lake Wisconsin; frequent.

Vaccinium myrtilloides Michx. Velvet-leaf Blueberry.

Sandy upland woods and dry sandstone ledges south to Clayton and Lafayette counties; infrequent.

Vaccinium oxycoccos L. Small Cranberry.

Black spruce bogs and boggy meadows in the old bed of Glacial Lake Wisconsin; rare.

EUPHORBIACEAE (Spurge Family)

Acalypha gracilens Gray, Three-seeded Mercury.

Dry pasture bordering the Buffalo River, Buffalo County; rare. A southern species, possibly new for Wisconsin.

Acalypha rhomboidea Raf.

Shores, pastures, weedy woods, roadsides, and waste places; scattered throughout; frequent.

Croton glandulosus L. Croton.

Dry open sand on old terraces of the Mississippi and Wisconsin rivers in Buffalo, Carroll, Clayton, Iowa, and Sauk counties; rare.

°*Croton monanthogynus* Michx.

Dry sandy railway at Muscoda, Grant County (J. J. Davis, 1934, WIS); rare.

Crotonopsis linearis Michx. Rushfoil.

Abundant on dry open sand of a Mississippi River terrace south of Thomson, Carroll County; rare.

Euphorbia corollata L. Flowering Spurge.

Dry open habitats and waste places; common throughout.

°*Euphorbia cyparissias* L. Cypress Spurge.

Escaped from cultivation to roadsides and borders of cemetaries in the northern half of the area; frequent.

Euphorbia dentata Michx.

Dry roadsides and railways north to Trempealeau County; infrequent.

°*Euphorbia esula* L. Leafy Spurge.

Escaped along a roadside just north of Trempealeau, Trempealeau County; rare.

Euphorbia geyeri Engelm.

Scattered throughout on open sand and gravel; infrequent.

Euphorbia glyptosperma Engelm.

Rocky hill prairies and dry, open sandy places; mainly in western counties; infrequent.

Euphorbia heterophylla L. Painted-leaf.

Rocky hill prairies and dry weedy places north to LaCrosse County; infrequent.

Euphorbia maculata L. Eyebane.

Rocky hill prairies and dry weedy places; chiefly in southern and western counties; frequent.

°*Euphorbia marginata* Pursh, Snow-on-the-mountain.

Escaped from cultivation in Jackson (Wisconsin) and LaCrosse counties; rare.

Euphorbia supina Raf. Milk-purslane.

Dry sand, gravel, and thin soil on limestone ledges; common and scattered throughout.

Fagaceae (Beech Family)

°*Castanea dentata* (Marsh.) Borkh. Chestnut.

Apparently reseeding and becoming established in Koethe's Woods, Vernon County; rare.

Quercus alba L. White Oak.

Low sandy woods (with white pine and red maple) in northeastern counties; otherwise in rich upland woods and wooded slopes; common throughout.

Quercus bicolor Willd. Swamp White Oak.

Alluvial woods along the larger streams throughout the area; frequent.

Quercus ellipsoidalis E. J. Hill, Jack Oak.

Dry to rather moist sandy woods and on sparsely-wooded ridges; common in the northern third of the area; infrequent southward to Clayton and Lafayette counties.

Quercus macrocarpa Michx. Bur Oak.

Sandy to loamy woods throughout the area; common.

Quercus prinoides Willd. (and var. *acuminata* Michx., incl. *Q. Muehlenbergii* Engelm.) Chestnut Oak or Chinquapin Oak.

Dry calcareous bluffs in southwestern counties; frequent. The treatment presented in Gleason (**1952**) seems most suitable here. Although the majority of the plants fit var. *acuminata* (*Q. muehlenbergii*), at one Allamakee County station plants of the description of var. *prinoides* were collected.

Quercus rubra L. Red Oak.

Rich upland woods, moist wooded slopes, and low sandy woods; common throughout.

Quercus velutina Lam. Black Oak.

Dry woods; common throughout.

Gentianaceae (Gentian Family)

Bartonia virginica (L.) BSP.

Open bogs, moist sandy meadows, and low sandy woods; restricted, except for a LaCrosse County station, to the old bed of Glacial Lake Wisconsin; infrequent.

Gentiana andrewsii Griseb. Closed or Bottle Gentian.

Low sandy woods and meadows south to Allamakee and Richland counties; frequent.

Gentiana crinita Froel. Fringed Gentian.

Moist meadows in Adams and Winneshiek counties; rare.

Gentiana flavida Gray, Yellowish Gentian.

Sparsely-wooded ridges in Allamakee, LaCrosse, and Winneshiek counties; rare.

Gentiana puberula Michx. Prairie Gentian.

Sandy to loamy upland prairies in Allamakee, LaCrosse, and Winneshiek counties; rare.

Gentiana quinquefolia L. Stiff Gentian.

Calcareous, sparsely-wooded ridges and slopes in southern and western counties; frequent.

Gentiana rubricaulis Schw.

Sandy meadow near Duck Creek in Adams County; rare. Similar to the next but differs in having more open flowers with eciliate corolla lobes.

Gentiana saponaria L. Soapwort Gentian.

Sandy meadow near Duck Creek in Adams County; rare.

Menyanthes trifoliata L. Buckbean or Bogbean.

Bogs in the old bed of Glacial Lake Wisconsin; rare.

Geraniaceae (Geranium Family)

Geranium bicknellii Britt. Cranesbill.

Sandy roadsides and clearings in Jackson (Wisconsin), Juneau, Monroe, and Vernon counties; rare.

Geranium carolinianum L.

Dry sandy area near the Black River in Trempealeau County; rare.

Geranium maculatum L.

Low sandy woods in northeastern counties; otherwise in rich upland woods and on moist wooded slopes; common throughout.

Guttiferae (St. John's-wort Family)

Hypericum boreale (Britt.) Bickn. St. John's-wort.

Moist, open sandy places, shallow water and boggy quagmires in the northern third of the area; infrequent.

Hypericum canadense L.

Moist open sand in the northern third of the area; infrequent.

Hypericum ellipticum Hook.

Moist, open sandy places in Jackson (Wisconsin) and Adams counties; rare.

Hypericum gentianoides (L.) BSP. Pineweed.

Dry open sand in Adams, Iowa, Juneau, and Monroe counties; infrequent.

Hypericum kalmianum L. Kalm's St. John's-wort.

Sandy meadows and low sandy woods; mainly in the old bed of Glacial Lake Wisconsin; infrequent. Except for the "Driftless Area," this species is known only from recently-glaciated regions. McLaughlin (1931) believes that it must have survived the Wisconsin ice sheets in the "Driftless Area" and that it has since migrated out along the Great Lakes.

Hypericum majus (Gray) Britt.

Moist sandy shores and meadows in the northern half of the area; frequent.

Hypericum mutilum L.

Moist sandy shores and meadows south to Allamakee and Richland counties; infrequent.

°*Hypericum perforatum* L. Common St. John's-wort.

Scattered throughout on weedy upland prairies and along dry roadsides; frequent.

Hypericum punctatum Lam.

Weedy woods, roadsides, and pastures; scattered throughout the area; frequent.

Hypericum pyramidatum Ait. (*H. ascyron* of authors, not L.)

Grassy roadsides, woodland borders, low thickets, and stream margins; scattered throughout; frequent.

Hypericum sphaerocarpum Michx.

Dry, open sandy places in Carroll and Dubuque counties; rare.

Hypericum virginicum L. Marsh St. John's-wort.

Sandy shores, bogs, low sandy woods, meadows, and alluvial marshes; frequent in the northern third of the area; rare southward to Grant County.

Haloragaceae (Water-milfoil Family)

Myriophyllum exalbescens Fern. Water Milfoil.

Quiet waters; especially along the Missisippi River; frequent.

Myriophyllum farwellii Morong

Acid waters in the old bed of Glacial Lake Wisconsin; rare. Occasionally semi-terrestrial in boggy quagmires.

Myriophyllum heterophyllum Michx.

Wisconsin River near Germantown, Juneau County (L. S. Cheney, 1894, WIS); rare.

Myriophyllum pinnatum (Walt.) BSP. (*M. scabratum* Michx.)

Known from Dubuque County (J. A. Anderson, 1900, IA); rare.

Proserpinaca palustris L. Mermaid Weed.

Roadside ditch in Cutler Twp., Juneau County; rare.

Hamamelidaceae (Witch-hazel Family)

Hamamelis virginiana L. Witch-hazel.

Low sandy woods in northeastern counties; otherwise on steep, north- and east-facing wooded slopes; common in the northern half of the area; rarer southward to Clayton, Dubuque, and Jo Daviess counties.

Hippocastanaceae (Buckeye Family)

°*Aesculus glabra* Willd. Ohio Buckeye.

Apparently escaped in Kothe's Woods, Vernon County; rare.

°*Aesculus hippocastanum* L. Horse-chestnut.

Apparently escaped from a cemetery into an upland woods near Wisconsin Dells, Columbia County; rare.

Hydrophyllaceae (Waterleaf Family)

Ellisia nyctelea L.

Weedy woods, stream banks, and roadsides in southern and western counties; frequent.

Hydrophyllum appendiculatum Michx. Waterleaf.

Moist maple-basswood slopes in southern and western counties north to LaCrosse County; frequent.

Hydrophyllum virginianum L. John's-cabbage.

Moist wooded slopes and alluvial woods; common except in northeastern counties.

Juglandaceae (Walnut Family)

Carya cordiformis (Wang.) K. Koch, Bitternut Hickory.

Rich upland woods, moist wooded slopes, and alluvial woods; common except in northeastern counties.

Carya ovata (Mill.) K. Koch, Shagbark Hickory.

Dry, usually loamy, woods; common except in northeastern counties.

Juglans cinerea L. Butternut.

Moist wooded slopes and alluvial woods; common except in northeastern counties.

Juglans nigra L. Black Walnut.

Sparsely-wooded slopes, rich upland woods, and alluvial woods; common except in northeastern counties.

Labiatae (Mint Family)

Agastache nepetoides (L.) Kuntze. Yellow or Catnip Giant Hyssop.

Open woods in Crawford (Charles Goessl, 1921, WIS), Grant (N. C. Fassett, 1930, WIS), and Lafayette (A. S. Mossman, 1953, WIS) counties; rare.

Agastache scrophulariaefolia (Willd.) Ktze. Purple Giant Hyssop.

Roadside banks and weedy woods; frequent except in northeastern counties.

Blephilia hirsuta (Pursh) Benth. Wood Mint.

Moist wooded slopes and bases of ravines in southwestern counties; frequent.

°*Elsholtzia ciliata* (Thunb.) Hylander

Weed at Devil's Lake State Park, Sauk County (J. H. Zimmerman, 1946, WIS); rare.

°*Galeopsis tetrahit* L. Hemp-nettle.

Moist woods (appears native) in Allamakee, Jackson (Wisconsin), and Winneshiek counties; rare.

°*Glechoma hederacea* L. var. *parviflora* Druce (*G. heterophylla* Waldst. & Kit.) Ground-ivy.

Weed of moist woods, shaded alluvium, roadsides, and yards; common except in northeastern counties.

Hedeoma hispida Pursh, Mock Pennyroyal.

Dry prairies, pastures, and open sandy places; common throughout.

Hedeoma pulegioides (L.) Pers.

Rocky prairie hillsides in Jo Daviess and LaCrosse counties; rare.

°*Leonurus cardiaca* L. Motherwort.

Thickets, weedy stream margins, recent clearings, and waste places; common except in northeastern counties.

°*Leonurus marrubiastrum* L.

Low pasture bordering the Upper Iowa River in Winneshiek County; rare.

Lycopus americanus Muhl. Water-horehound.

Shores, marshes and wet thickets; common throughout.

Lycopus uniflorus Michx.

Bogs, marshes, shores, low woods, and seepage slopes south to Winneshiek and Grant counties; common.

Lycopus virginicus L.

Scattered throughout in alluvial woods; infrequent.

°*Marrubium vulgare* L. Horehound.

Rocky, pastured Mississippi River bluff in Jo Daviess County; rare.

°*Mentha alopecuroides* Hull, Wooly Mint.

Springy creek margin in Bohemian Valley, LaCrosse County; rare.

Mentha arvensis L. (incl. *M. canadensis* L.)

Marshy shores, wet meadows and weedy alluvium; common throughout.

°*Mentha cardiaca* Baker

Marshy creek margins in Jackson (Wisconsin) and Sauk counties; rare.

°*Mentha piperita* L. Peppermint.

Wet stream margin in Whitestown Twp., Vernon County; rare.

°*Mentha spicata* L. Spearmint.

Springy creek margin in Bohemian Valley, LaCrosse County; rare.

Monarda fistulosa L. Wild Bergamot.

Roadsides, pastures, borders of upland woods, and upland prairies; common throughout.

°*Monarda didyma* L. Oswego Tea or Bee Balm.

Weed in Devil's Lake State Park, Sauk County (R. Koeppen, **1956**, WIS); rare.

Monarda punctata L. Dotted Monarda.

Dry sandy plains and prairies; common throughout.

°*Nepeta cataria* L. Catnip.

Roadsides, clearings, woodland borders, and pastures; common except in northeastern counties.

°*Ocimum basilicum* L. Basil.

Escaped from cultivation near Mt. Horeb, Dane County (J. W. Thomson, **1953**, WIS); rare.

Physostegia formosior Lunnell (*P. parviflora* Nutt. and *P. speciosa* Sweet) False Dragonhead.

Marshy shores, meadows, and alluvial woods; scattered throughout the area; frequent.

Prunella vulgaris L. Heal-all.

Dry to moist loamy woods, low pastures, and roadsides; common throughout.

Pycnanthemum virginianum (L.) Durand & Jackson, Mountain-mint.

Upland prairies, sedge meadows, boggy thickets, and borders of upland woods; common throughout.

°*Salvia nemorosa* L. Sage.

Escaped from cultivation in York Twp., Green County (H. C. Greene, **1948**, WIS); rare.

Salvia reflexa Hornem.

Rocky hill prairies in Buffalo, Dane, Green, and Jo Daviess counties; rare.

°*Satureja vulgaris* (L.) Fritsch (*Clinopodium vulgare* L.) Basil.

Abundant in a dry pasture at Quandahl, Allamakee County; rare.

Scutellaria galericulata L. (*S. epilobiifolia* A. Hamilton) Common Skullcap.

Marshes, swampy woods, and meadows; mainly in the northern half of the area; frequent.

Scutellaria lateriflora L. Mad-dog Skullcap.

Marshes, shores, boggy thickets and meadows; common throughout.

Scutellaria ovata Hill, Heart-leaved Skullcap.

Calcareous woods from Vernon County south to Dubuque County; infrequent.

Scutellaria parvula Michx. (incl. *S. leonardi* Epling)

Dry sandy plains, rocky hill prairies and occasionally on rather moist wooded slopes; common throughout.

Stachys aspera Michx.

Marshy shores and meadows in Clayton and Trempealeau counties; rare.

Stachys hispida Pursh (*sensu* Gleason, 1952)

Shores, meadows, and low thickets; mainly in the northern half of the area; frequent.

Stachys palustris L. Woundwort.

Moist shores, low thickets, and occasionally on mesic prairies; infrequent and scattered throughout.

Stachys tenuifolia Willd.

Moist shores, meadows, and alluvial woods; chiefly in western and central counties; infrequent.

Teucrium canadense L. (incl. *T. occidentale* Gray) American Germander.

Moist shores, alluvial woods, and dry weedy places; common except in northeastern counties.

°*Thymus serpyllum* L. Creeping Thyme.

Yard weed in Arcadia, Trempealeau County (F. V. Burcalow, 1954, WIS); rare.

Trichostema brachiatum L. (*Isanthus brachiatus* (L.) BSP.) False Pennyroyal.

Rocky hill prairies north to Iowa and Winneshiek counties; infrequent.

LEGUMINOSAE (Pulse Family)

Amorpha canescens Pursh, Leadplant.

Sandy or loamy upland prairies, dry woods, and occasionally on rather moist wooded slopes; common throughout.

Amorpha fruticosa L. False or Bastard Indigo.

Moist open shores and alluvial thickets along the major rivers of the area; frequent.

Amphicarpa bracteata (L.) Fern. (incl. *A. pitcheri* T. & G.) Hog-peanut.

Dry to moist woods and thickets; common throughout.

Apios americana Medic. Groundnut.

Alluvial thickets, tamarack bogs, and occasionally on rather weedy upland prairies; scattered throughout; frequent.

Astragalus canadensis L. Milk-vetch.

Dry upland woods and borders north to Sauk and Trempealeau counties; frequent.

Astragalus caryocarpus Ker. Ground-plum. Buffalo-bean.

Dry prairie ridge SW of Kendallville, Winneshiek County (B. Shimek, **1927**, IA); rare. A western species.

Baptisia leucantha T. & G. Prairie False Indigo.

Scattered throughout on sandy to loamy upland prairies; frequent.

Baptisia leucophaea Nutt.

Scattered throughout on sandy to loamy upland prairies and in open upland woods; frequent.

Cassia hebecarpa Fern. Wild Senna.

Alluvial meadows and thickets along the Wisconsin River in Grant and Iowa counties; rare.

Cassia marilandica L.

Alluvial meadows and thickets in Grant and Iowa counties; rare.

Chamaecrista fasciculata (Michx.) Greene (*Cassia fasciculata* Michx.) Partridge-pea.

Scattered throughout in dry weedy soil; frequent.

°*Coronilla varia* L. Crown-vetch.

Rare weed; known from Green (H. C. Greene, **1957**, WIS) and Iowa (J. T. Curtis, **1946**, WIS) counties.

°*Crotalaria sagittalis* L. Rattlebox.

Dry, open sandy places along the Mississippi River in Clayton and LaCrosse counties; rare.

Desmodium canadense (L.) DC. Tick-trefoil.

Scattered throughout on upland prairies and along dry roadsides; frequent.

Desmodium canescens (L.) DC.

Prairie remnant near Potosi, Grant County (C. Goessl, 1923, WIS and N. C. Fassett, 1934, WIS); rare. Occasionally, plants closer to *Desmodium illinoense* appear to combine some characters of this species.

Desmodium cuspidatum (Muhl.) Loud. (*D. bracteosum* (Michx.) DC. of authors)

Upland woods and pastures; mainly in western and southern counties; infrequent.

Desmodium glutinosum (Muhl.) Wood (*D. acuminatum* Michx.)

Rich upland woods and moist wooded slopes; common throughout.

Desmodium illinoense Gray

Roadsides and upland prairies; scattered throughout; frequent.

Desmodium nudiflorum (L.) DC.

Rich upland woods and moist, sandy wooded slopes; frequent except in extreme southern counties and the old bed of Glacial Lake Wisconsin.

Desmodium paniculatum (L.) DC. (incl. *D. dillenii* Dar. & *D. glabellum* (Michx.) DC.)

Sparsely-wooded bluffs and rocky hill prairies north to Sauk and Crawford counties; rare.

Gleditsia triacanthos L. Honey Locust.

Alluvial woods and occasionally on dry bluffs along the Mississippi River north to Allamakee County; frequent.

°*Glycine max* (L.) Merr. Soy-bean.

Escaped to roadsides and waste places in Clayton and Jackson (Wisconsin) counties; rare.

°*Glycyrrhiza lepidota* (Nutt.) Pursh, Wild Licorice.

Dry sandy railroad embankments in LaCrosse County; rare. Apparently adventive from the West.

Gymnocladus dioica (L.) K. Koch, Kentucky Coffee-tree.

Alluvial woods and lower wooded slopes along the Mississippi River north to Trempealeau County; infrequent.

Lathyrus ochroleucus Hook. Vetchling.

Upland woods and moist wooded slopes south to Dubuque and Sauk counties; frequent.

Lathyrus palustris L. (and var. *myrtifolius* (Muhl.) Gray)

Meadows, marshy shores, and boggy thickets in the northern half of the area; frequent.

°*Lathyrus tuberosus* L. Tuberous Vetchling.

Weedy roadside just west of Cross Plains, Dane County (H. C. Greene, **1952**, WIS); rare.

Lathyrus venosus Muhl. var. *intonsus* Butters & St. John

Dry sandy plains, upland prairies, and dry woods south to Allamakee and Green counties; frequent.

Lespedeza capitata Michx. Bush-clover.

Dry sandy plains and prairies; common throughout.

Lespedeza leptostachya Engelm.

Upland prairies in Dane (T. J. Hale, no date, WIS) and LaCrosse (T. J. Hale, **1861**, WIS) counties; formerly rare and probably now extinct.

Lespedeza procumbens Michx.

Dry open woods near Potosi, Grant County (T. J. Hale, **1861**, WIS); rare.

Lespedeza repens (L.) Bart.

Roadside bank near Dickeyville, Grant County (Fassett, **1934**, WIS); rare. Possibly not distinct from the preceding.

Lespedeza violacea (L.) Pers.

Open upland woods and clearings in Grant, Jo Daviess, and Sauk counties; rare.

Lespedeza virginica (L.) Britt.

Prairie openings in upland woods at Devil's Lake State Park, Sauk County; rare.

°*Lotus corniculatus* L. Birdsfoot-trefoil.

Recently adventive along dry roadsides and in pastures; infrequent.

Lupinus perennis L. Wild Lupine.

Dry sandy prairies and openings in sandy upland woods; frequent in the northern third of the area; rare southward to Winneshiek and Green counties.

°*Medicago falcata* L.

Roadside weed in Adams and Sauk counties; rare.

°*Medicago lupulina* L. Black Medick.

Weed of roadsides, yards, and waste places; common throughout.

°*Medicago sativa* L. Alfalfa.

Escaped to roadsides, old fields, and waste places; common throughout.

°*Medicago sativa* L. x *M. falcata* L.

A collection from Devil's Lake State Park, Sauk County (J. H. Zimmerman and N. C. Fassett, **1946**, WIS), seems to be this; rare.

°*Melilotus alba* Desr. White Melilot.

Weed of roadsides, fields, waste places, and dry borders; common throughout.

°*Melilotus officinalis* (L.) Lam. Yellow Melilot.

Roadsides and weedy borders of woods; common throughout.

Petalostemon candidus (Willd.) Michx. White Prairie-clover.

Sandy to loamy upland prairies; frequent except in northeastern counties.

Petalostemon occidentalis (Gray) Fern. (*P. oligophyllus* (Torr.) Rydb.)

Hillside prairie near Fountain City, Buffalo County (H. H. Smith, 1922, WIS); rare. A western species.

Petalostemon purpureus (Vent.) Rydb. Purple Prairie-clover.

Sandy to loamy upland prairies; frequent except in northeastern counties.

Petalostemon villosus Nutt. Silky Prairie-clover.

Dry sandy prairie between Onalaska and Holman, LaCrosse County; rare.

Psoralea argophylla Pursh. Scurf-pea.

Sandy prairie slope bordering the Upper Iowa River in Hanover Twp., Allamakee County; rare.

Psoralea esculenta Pursh. Breadroot.

Dry calcareous prairies and sparsely-wooded ridges in Dane, Green, Iowa, and Lafayette counties; rare.

°*Robinia pseudo-acacia* L. Black Locust.

Frequent escape to roadsides and dry or moist woods; scattered throughout.

Strophostyles helvola (L.) Ell. Wild Bean.

Open sandy soil along the Mississippi River north to Buffalo County; infrequent.

Strophostyles leiosperma (T. & G.) Piper

Dry sandy roadsides in Clayton and LaCrosse counties; rare.

Tephrosia virginiana (L.) Pers. Goat's-rue.

Scattered throughout on dry sandy plains and prairies; frequent.

°*Trifolium agarium* L. Yellow or Hop-clover.

Weed of roadsides, eroded banks and fields south to Crawford and Sauk counties; infrequent.

°*Trifolium arvense* L. Rabbit-foot Clover.

Dry sandy roadsides in Jackson (Wisconsin), LaCrosse, Monroe, and Juneau counties; rare.

°*Trifolium hybridum* L. Alsike Clover.

Spread from cultivation to roadsides and clearings; common throughout.

°*Trifolium pratense* L. Red Clover.

Spread from cultivation to roadsides, etc.; common throughout.

°*Trifolium procumbens* L. Low Hop-clover.

Roadsides banks, clearings, and rocky alluvium; frequent except in northeastern counties.

°*Trifolium repens* L. White Clover.

Roadsides, lawns, pastures, etc.; common throughout.

Vicia americana Muhl. Vetch.

Rich upland woods, moist wooded slopes, and prairie remnants; scattered throughout; infrequent.

°*Vicia angustifolia* Reichard, Common Vetch.

Grassy roadsides, pastures, and borders of upland woods north to LaCrosse and Dane counties; frequent.

Vicia caroliniana Walt. Wood Vetch.

Sandy wooded slopes in Monroe and Sauk counties; rare.

°*Vicia cracca* L. Tufted Vetch.

Roadside near Coloma, Adams County (F. J. W. Schmidt, **1934**, WIS); rare.

°*Vicia villosa* Roth, Hairy or Winter Vetch.

Roadsides and old fields; scattered throughout; infrequent.

Lentibulariaceae (Bladderwort Family)

Utricularia cornuta Michx. Bladderwort.

Known in the "Driftless Area" only from near Lyndon Station, Juneau County (J. J. Davis, **1936**, WIS).

Utricularia geminiscapa Benj. (*U. clandestina* Nutt.)

Soft-water flowages and boggy marshes in the old bed of Glacial Lake Wisconsin; rare. The range of this species is centered along the Atlantic Coastal Plain.

Utricularia gibba L.

Soft-water flowages and boggy marshes in the old bed of Glacial Lake Wisconsin; rare. Also an Atlantic Coastal Plain species.

Utricularia intermedia Hayne

Soft-water flowages and boggy marshes in Adams, Jackson (Wisconsin), Juneau, and LaCrosse counties; rare. Often semi-terrestrial on wet sphagnum.

Utricularia minor L.

Soft-water flowages and boggy places in the old bed of Glacial Lake Wisconsin; rare.

Utricularia vulgaris L.

Scattered throughout in sloughs, lakes, and flowages; infrequent. Occasionally semi-terrestrial in marshes. Collections from Juneau and Monroe counties are var. *americana* Gray.

Limnanthaceae (False Mermaid Family)

Floerkea proserpinacoides Willd. False Mermaid.

Shaded seepage places at bases of wooded slopes and occasionally in bogs in Dubuque, Grant, LaCrosse, Sauk, and Vernon counties; rare.

Linaceae (Flax Family)

Linum medium (Planch.) Britt. Flax.

Moist sandy meadow along Duck Creek, Adams County; rare and apparently new for Wisconsin. The range of this species is centered along the Atlantic Coastal Plain.

Linum sulcatum Riddell

Sandy to loamy upland prairies; frequent except in northeastern counties.

°*Linum usitatissimum* L. Common Flax.

Rare weed of dry soil; a single collection from Fountain City, Buffalo County (N. C. Fassett and L. R. Wilson, 1927, WIS).

Loranthaceae (Mistletoe Family)

Arceuthobium pusillum Peck, Dwarf Mistletoe.

Parasitic on black spruce and occasionally tamarack in bogs of the old bed of Glacial Lake Wisconsin; rare and disjunct from northern Wisconsin.

Lythraceae (Loosestrife Family)

Ammannia coccinea Rottb.

Mud flat bordering the Mississippi River near Thomson, Carroll County; rare.

Decodon verticillatus (L.) Ell. Water-willow, Water Pin-down.

Pond margin near French Creek, Allamakee County; rare.

Lythrum alatum Pursh, Loosestrife.

Meadows and alluvial marshes north to Allamakee and Adams counties; infrequent.

°*Lythrum salicaria* L. Spiked Loosestrife.

Escaping to marshy places in Carroll, Clayton, and LaCrosse counties; rare.

Peplis diandra Nutt. Water-purslane

Shallow quiet waters in Buffalo, Juneau, and Monroe counties; rare.

Rotala ramosior (L.) Koehne. Tooth-cup.

Moist open sand and mud in Adams, Iowa, Juneau, Sauk, and Trempealeau counties; infrequent.

Malvaceae (Mallow Family)

°*Abutilon theophrasti* Medic. Indian Mallow, Buttonweed.

Weed of roadsides and fields; common except in northeastern counties.

°*Althaea officinalis* L. Marshmallow.

Rare weed of marshy places; known from Lynxville, Crawford County (J. J. Davis, **1915**, WIS).

°*Althaea rosea* Cav. Hollyhock.

Seems to persist occasionally in waste places and along roads.

Callirhoe triangulata (Leavenw.) Gray, Poppy Mallow.

Dry sandy plains and prairies; especially on terraces of the Mississippi and Wisconsin rivers; infrequent.

Hibiscus militaris Cav. Halberd-leaved Rose Mallow.

Swampy alluvial woods and shores of the Mississippi and lower Wisconsin rivers in Dubuque and Grant counties; rare.

°*Hibiscus trionum* L. Flower-of-an-hour.

Dry roadsides and waste places; mainly in western counties; frequent.

°*Malva neglecta* Wallr. Cheeses.

Weed of yards and waste places; frequent except in northeastern counties.

°*Malva rotundifolia* L. (reported as *M. borealis* Wallm. by Fassett, **1932a**)

Weed at Prairie du Chien, Crawford County (H. H. Smith, **1922**, WIS); rare.

Napaea dioica L. Glade Mallow.

Roadsides, moist thickets, and mesic prairie remnants north to Winneshiek and Dane counties; rare.

Melastomataceae (Melastoma Family)

Rhexia virginica L. Deergrass. Meadow Beauty.

Moist, open sandy places in Adams, Iowa, Jackson (Wisconsin), Juneau, and Sauk counties; rare.

MENISPERMACEAE (Moonseed Family)

Menispermum canadense L. Moonseed.

Woods and thickets; common throughout.

MORACEAE (Mulberry Family)
(incl. Cannabinaceae)

**Cannabis sativa* L. Hemp. Marijuana.

Weed of roadsides, fields, and waste places; mainly in southern and western counties; frequent.

**Humulus japonicus* Sieb. & Zucc. Japanese Hop.

Weed of roadsides and waste places; mainly in southern and western counties; infrequent.

Humulus lupulus L. (incl. *H. americanus* Nutt.) Common Hop.

Roadside banks, tamarack bogs, and wet woods; scattered throughout the area; frequent.

**Maclura pomifera* (Raf.) Schneid. Hedge-apple. Osage-orange.

Apparently spontaneous along roadsides in Grant, Jo Daviess, and Lafayette counties; rare.

**Morus alba* L. White Mulberry.

Weed tree of waste places and woods; frequent except in northeastern counties.

Morus rubra L. Red Mulberry.

Moist wooded slopes north to Sauk and Winneshiek counties; infrequent.

MYRICACEAE (Wax-myrtle Family)

Comptonia peregrina (L.) Coult. (*Myrica asplenifolia* L.) Sweet-fern.

Dry sandy woods and clearings in northeastern counties; common.

Myrica gale L. Sweet Gale.

Swampy area three miles north of Rocky Arbor Roadside Park, Juneau County (P. A. Orport, 1949, WIS); rare.

NYCTAGINACEAE (Four-o'clock Family)

Mirabilis hirsuta (Pursh) MacM. Four-o'clock.

Upland prairies in LaCrosse and Trempealeau counties; rare.

Mirabilis nyctaginea (Michx.) MacM.

Roadsides, dry prairies, sparsely-wooded ridges, and rock ledges; common throughout.

NYMPHAEACEAE (Water-lily Family)

Brasenia schreberi Gmel. Water Shield.

Soft-water flowages in the old bed of Glacial Lake Wisconsin; rare.

Nelumbo lutea (Willd.) Pers. Lotus.

Sloughs and backwaters of the Mississippi River; frequent.

Nuphar luteum (L.) Sibth & Sm. subsp. *variegatum* (Engelm.) Beal (*N. advena* (Ait.) Ait. f. and *N. variegatum* Engelm.)

Spatter-dock.

Lakes, sloughs and flowages in the northern two-thirds of the area; infrequent.

Nymphaea odorata Ait. Fragrant Water-lily.

Shallow water of Potter's Flowage, Juneau County; rare. Difficult to distinguish from the next and possibly not distinct.

Nymphaea tuberosa Paine, Water-lily.

Lakes, sloughs and flowages; mainly in the northern two-thirds of the area; infrequent.

OLEACEAE (Olive Family)

Fraxinus americana L. White Ash.

Rich upland woods and rather moist wooded slopes; common except in northeastern counties.

Fraxinus nigra Marsh. Black Ash.

Alluvial woods, moist wooded slopes, and occasionally in tamarack bogs and other acid woods; scattered throughout; common.

Fraxinus pennsylvanica Marsh. (incl. *F. lanceolata* Borkh.) Red or Green Ash.

Alluvial woods and often in dry open places near streams; scattered throughout; common.

°*Syringa vulgaris* L. Common Lilac.

Persisting and often seeming to spread in LaCrosse, Allamakee, Jo Daviess, and Sauk counties; infrequent.

ONAGRACEAE (Evening primrose Family)

Circaea alpina L. Enchanter's Nightshade.

Moist, shaded sandstone ledges and talus slopes south to Dubuque and Sauk counties; frequent.

Circaea quadrisulcata (Maxim.) Franch. & Sav. var. *canadensis* (L.) Hara (*C. latifolia* Hill)

Moist to dry woods; common throughout.

Epilobium angustifolium L. Fireweed.

Roadside banks and boggy meadows in the northern third of the area; on mossy talus slopes in northeastern Iowa; frequent.

Epilobium coloratum Biehler

Meadows, marshes, shores, and boggy thickets south to Dubuque County; common.

Epilobium glandulosum Lehm. var. *adenocaulon* (Haussk.) Fern.

Marshy shores and moist thickets south to Allamakee and Sauk counties; infrequent.

Epilobium leptophyllum Raf.

Marshy and boggy places south to LaCrosse and Juneau counties; infrequent.

Epilobium palustre L.

Open bogs in the old bed of Glacial Lake Wisconsin; rare.

Epilobium strictum Muhl.

Bog along Tamarack Creek in Trempealeau County; rare and apparently disjunct from northern and eastern Wisconsin.

Gaura biennis L. Gaura.

Dry roadsides north to Vernon and Dane counties; rare.

Ludwigia palustris (L.) Ell. Water-purslane.

Muddy or sandy shores south to LaCrosse and Iowa counties; frequent.

Ludwigia polycarpa Short & Peter

Wet shores and marshes; mainly in the northern half of the area; infrequent.

Oenothera biennis L. (incl. *O. strigosus* (Rydb.) Mackenz. & Bush) Evening-primrose.

Roadside banks, pastures and weedy woods; common throughout.

Oenothera laciniata Hill

Dry sandy soil in Onalaska, LaCrosse County (Alvin Peterson, 1955, WIS); rare.

Oenothera parviflora L.

Weedy woods and clearings; mainly in western counties; infrequent. Distinguished from *O. biennis* by the presence of long hairs with reddish pustular bases on the stem.

Oenothera perennis L.

Moist, open sandy places south to LaCrosse and Iowa counties; infrequent.

Oenothera rhombipetala Nutt.

Scattered throughout the area on dry sandy plains and prairies; common.

Oenothera serrulata Nutt.

Dry sandy places in Allamakee, Buffalo, Juneau, and Winneshiek counties; infrequent.

Orobanchaceae (Broom-rape Family)

Conopholis americana (L.) Wallr. Squawroot.

Dry upland woods in LaCrosse and Sauk counties; rare.

Orobanche fasciculata Nutt. Broom-rape.

Rocky, sparsely-wooded bluffs in Allamakee and Iowa counties; rare.

Orobanche uniflora L. One-flowered Cancer-root.

Damp woods and thickets in Grant, Lafayette, Sauk, and Vernon counties; rare.

Oxalidaceae (Wood Sorrel Family)

Oxalis europaea Jord. Wood Sorrel. Lady's Sorrel.

Roadsides, pastures, yards, and weedy woods; common throughout.

Oxalis stricta L.

Roadsides, pastures, yards and woods; scattered throughout; frequent.

Oxalis violacea L. Violet Wood Sorrel.

Scattered throughout on dry upland prairies; frequent.

Papaveraceae (Poppy Family)

°*Argemone mexicana* L.

Escaped from cultivation in LaCrosse, LaCrosse County (T. J. Hale, 1861, WIS); rare.

°*Chelidonium majus* L. Celandine.

Moist shaded roadsides and weedy woods in Allamakee, Lafayette, Sauk, and Winneshiek counties; rare.

Corydalis aurea Willd. Golden Corydalis.

Cool, mossy, north-facing talus slope one mile west of Wykoff in Fillmore County; rare.

Corydalis micrantha (Engelm.) Gray ssp. *micrantha*. Slender Fumewort.

Open sandy soil in Allamakee, Grant, Jo Daviess, LaCrosse, and Lafayette counties; rare.

Corydalis sempervirens (L.) Pers. Pale Corydalis.

Sandy woods, sandstone and quartzite ledges, and occasionally weedy along sandy roadsides; south to Allamakee and Sauk counties; infrequent.

Dicentra canadensis (Goldie) Walp. Squirrel-corn.

Maple-basswood slopes; mainly in southern and western counties; infrequent.

Dicentra cucullaria (L.) Bernh. Dutchman's Breeches.

Moist wooded slopes; common except in northeastern counties.

Sanguinaria canadensis L. Bloodroot.

Moist wooded slopes; common except in northeastern counties.

PHRYMACEAE (Lopseed Family)

Phryma leptostachya L. Lopseed.

Moist to dry woods; common except in northeastern counties.

PHYTOLACCACEAE (Pokeweed Family)

°*Phytolacca americana* L. Pokeweed.

Rare weed; known from Mt. Ida, Grant County (L. S. Cheney, 1927, WIS).

PLANTAGINACEAE (Plantain Family)

Plantago aristata Michx. Bracted Plantain.

Dry, open sandy places in Allamakee, Jo Daviess, LaCrosse, and Monroe counties; infrequent.

°*Plantago lanceolata* L. Buckhorn Plantain.

Weed of yards and grassy roadsides; frequent.

°*Plantago major* L. Common Plantain.

Scattered throughout in yards, pastures, and waste places; infrequent.

°*Plantago media* L. Hoary Plantain.

Weed on a golf course at LaCrosse, LaCrosse County; rare.

Plantago purshii R. & S.

Dry, open sandy places; mainly in the northern two-thirds of the area; common.

Plantago rugelii Dcne.

Roadsides, yards, waste places, etc.; common throughout.

Plantago virginica L.

Dry open hillsides in Green, Jo Daviess, and Richland counties; rare.

PLATANACEAE (Plane Tree Family)

Platanus occidentalis L. Sycamore.

Alluvial woods and rather dry slopes along the Mississippi River in Jo Daviess County and along the Wisconsin River in Dane, Iowa, and Sauk counties; rare.

POLEMONIACEAE (Polemonium Family)

°*Gilia rubra* (L.) Heller, Standing-cypress.

Escaped from cultivation in Adams County, about 18 miles north of Wisconsin Dells (J. W. Thomson, WIS); rare.

Phlox divaricata L. Blue Phlox.

Moist wooded slopes and alluvial woods; common except in northeastern counties.

°*Phlox paniculata* L. Perennial Phlox.

Escaped to roadsides in LaCrosse, Vernon, and Allamakee counties; rare.

Phlox pilosa L. Prairie Phlox.

Upland prairies and dry open woods; quite common throughout.

°*Phlox subulata* L.

Apparently escaped from cultivation near Black River Falls, Jackson County, Wisconsin (D. F. Grether, 1947, WIS); rare.

Polemonium reptans L. Jacob's-ladder.

Rich upland woods, moist wooded slopes, tamarack bogs and low sandy thickets; common throughout.

POLYGALACEAE (Milkwort Family)

Polygala cruciata L. Cross-leaf Milkwort.

Sandy meadows in Adams, Juneau, and LaCrosse counties; rare.

Polygala incarnata L.

Sandy upland prairies in Allamakee, Dane, Crawford, and Iowa counties; rare.

Polygala paucifolia Willd. Fringed Polygala, Bird-on-the-wing.

Sandy woods near Wisconsin Rapids, Wood County (M. B. McMillan, 1900, WIS); rare.

Polygala polygama Walt.

Dry sandy plains and blowouts; common in northern counties; rare southward along the Wisconsin River and in Allamakee and Carroll counties. The Allamakee County collection apparently represents a new record for Iowa.

Polygala sanguinea L.

Moist to rather dry, open sandy places; frequent in the northern half of the area; rarer southward to Clayton and Jo Daviess counties.

Polygala senega L. Seneca-snakeroot.

Sparsely-wooded slopes and prairie openings in calcareous soils north to LaCrosse and Sauk counties; infrequent.

Polygala verticillata L.

Sparsely-wooded slopes and prairie openings in Allamakee, Iowa, LaCrosse, and Winneshiek counties; infrequent.

POLYGONACEAE (Buckwheat Family)

°*Fagopyrum sagittatum* Gilib. (*F. esculentum* Moench, *Polygonum fagopyrum* L.) Buckwheat.

Escaped from cultivation in Clayton, Crawford, Jackson (Wisconsin), Juneau, and Vernon counties; rare.

Polygonella articulata (L.) Meisn. Jointweed.

Dry, open sandy places; frequent in the northern half of the area; rare southward to Carroll County.

Polygonum amphibium L. (*P. natans* Eat. and *P. fluitans* Eat. of authors) Water Smartweed.

Aquatic, or terrestrial in marshy places; scattered throughout the area; infrequent.

°*Polygonum anchoreum* Blake

Sandy roadside in Millston Twp., Jackson County, Wisconsin; apparently rare. Possibly not distinct from *P. erectum*.

Polygonum arifolium L. Halberd-leaved Tearthumb.

Marshy margins and boggy woods in Jackson (Wisconsin) Monroe, Richland, and Sauk counties; infrequent.

°*Polygonum aviculare* L. Knotweed.

Roadsides and other dry weedy places; scattered throughout; frequent. An extremely variable species.

Polygonum careyi Olney

Moist open sand and boggy places in the old bed of Glacial Lake Wisconsin; infrequent.

Polygonum cilinode Michx. Climbing Buckwheat.

Low sandy woods in Jackson (Wisconsin) and Monroe counties; rare.

Polygonum coccineum Muhl. (*P. muhlenbergii* (Meisn.) S. Wats.)

Slough margins and meadows in Allamakee, LaCrosse, and Juneau counties; apparently rare.

°*Polygonum convolvulus* L. Black Bindweed.

Roadsides and other dry weedy places; scattered throughout; common.

Polygonum erectum L.

Roadside weed in Allamakee and Monroe counties; apparently rare.

Polygonum exsertum Small

Wisconsin River bottomland above Sauk City, Sauk County (N.

C. Fassett, 1926, WIS); rare. Possibly not distinct from *P. ramosissimum*.

Polygonum hydropiper L. Common Smartweed.

Wet shores, meadows, and marshes south to Dubuque County; frequent.

Polygonum hydropiperoides Michx. Mild Water-pepper.

Shaded slough margins in Clayton and Jackson (Wisconsin) counties; rare.

Polygonum lapathifolium L.

Shores, meadows, and moist disturbed soil; scattered throughout; common.

Polygonum pensylvanicum L. Pinkweed.

Shores, meadows, low pastures, dry roadsides, and waste places; scattered throughout; common.

°*Polygonum persicaria* L. Lady's-thumb.

Weed of roadsides, waste places, pastures, etc. in Allamakee, Clayton, LaCrosse, Lafayette, and Monroe counties; infrequent.

Polygonum prolificum (Small) Robins.

Low pasture at North LaCrosse, LaCrosse County; rare. Possibly not distinct from *P. ramosissimum*.

Polygonum punctatum Ell. Water Smartweed.

Shores, meadows, marshes, and wet woods south to Clayton and Iowa counties; frequent.

Polygonum ramosissimum Michx. Bushy Knotweed.

Sandy roadsides and railroads in Allamakee, Buffalo, and La-Crosse counties; probably more common.

Polygonum sagittatum L. Tearthumb.

Marshy places, meadows, low woods, and thickets south to Clayton and Iowa counties; common.

Polygonum scandens L. (incl. *P. cristatum* Engelm. & Fray) Climbing False Buckwheat.

Roadsides, weedy shores, and waste places; scattered throughout; frequent.

Polygonum tenue Michx.

Dry, open sandy places south to Allamakee and Richland counties; frequent.

Polygonum virginianum L. (*Tovara virginiana* (L.) Raf.) Jumpseed.

Moist wooded slopes and ravines and alluvial woods; scattered throughout; frequent.

°*Rumex acetosella* L. Sheep-sorrel. Sour Dock.

Weed of dry, sterile soil; common throughout.

Rumex altissimus Wood. Pale Dock.

Roadsides and railroads; mainly in western counties; infrequent.

°*Rumex crispus* L. Yellow or Curly Dock.

Roadsides, low pastures, and weedy alluvium, mainly in southern and western counties; frequent.

Rumex maritimus L. var. *fueginus* (Phil.) Dusen, Golden Dock.

Muddy shore of the Mississippi River in Buffalo County; rare.

Rumex mexicanus Meisn. (incl. *R. triangulivalvis* (Danser) Rech. f.)

Roadsides, railroads, and rocky alluvium in Allamakee, Buffalo, LaCrosse, and Vernon counties; infrequent.

°*Rumex obtusifolius* L. Bitter Dock.

Low pastures, marshy places, wet thickets, and roadsides; scattered throughout; frequent.

Rumex orbiculatus Gray (*R. brittanica* L.) Water Dock.

Boggy places in Adams, LaCrosse, and Trempealeau counties; rare.

°*Rumex patientia* L. Patience Dock.

Moist weedy places in Allamakee and Trempealeau counties; rare.

Rumex verticillatus L. Swamp Dock.

Marshes and wet shores; scattered throughout; frequent.

Portulacaceae (Purslane Family)

Claytonia virginica L. Spring Beauty.

Moist wooded slopes; frequent except in northeastern counties.

Montia chamissoi (Ledeb.) Durand & Jackson

Wet, shaded sandstone ledges on Gwinn's Bluff and Queen's Bluff (the same?) south of Winona, Winona County. The following collections from these stations are in the University of Minnesota Herbarium: J. M. Holzinger, 1889 and 1896; C. O. Rosendahl, 1919, 1937 and 1951. Disjunct from the Rocky Mountains in Colorado and Wyoming.

°*Portulaca grandiflora* Hook. Rose-moss.

Weedy sidewalk in LaCrosse, LaCrosse County; rare.

°*Portulaca oleracea* L. Common Purslane.

Dry sandy places and around sidewalks, buildings, etc.; frequent.

Talinum rugospermum Holzinger, Fameflower.

Dry, open sandy places south to Allamakee and Dane counties; frequent.

Primulaceae (Primrose Family)

Androsace occidentalis Pursh

Dry, open sandy places in Allamakee, Carroll, Dane, Jo Daviess, LaCrosse, Pepin, and Sauk counties; infrequent.

Dodecatheon meadia L. Shooting Star.

Upland prairies and borders of upland woods north to Columbia and Grant counties; frequent.

Dodecatheon radicatum Greene (*D. amethystium* (Fassett) Fassett) Jeweled Shooting Star.

Moist sandstone and limestone cliffs and ledges bordering or near the Mississippi River north to Trempealeau County; frequent. Flowers two to three weeks earlier than *D. meadia.*

Lysimachia ciliata L. Loosestrife.

Alluvial woods, meadows, tamarack bogs, and moist wooded slopes; scattered throughout; common.

Lysimachia lanceolata Walt. and ssp. *hybrida* (Michx.) Ray (incl. *L. hybrida* Michx.)

Wet woods, shores, meadows, and dry sandy places; common in the northern third of the area; rarer southward to Clayton and Iowa counties.

°*Lysimachia nummularia* L. Moneywort.

Alluvial woods throughout the area; frequent. Generally appears native.

Lysimachia quadriflora Sims.

Moist meadows in Sauk (H. P. Hansen, **1931**, WIS), Jo Daviess (H. E. Ahles, **1951**, ILL), and Trempealeau (H. P. Hansen, **1930**, WIS) counties; rare.

Lysimachia quadrifolia L. Whorled Loosestrife.

Common in northeastern counties in moist to dry sandy woods; rare southward in sandy woods to Green and Jo Daviess counties.

Lysimachia terrestris (L.) BSP. Swamp Loosestrife.

Meadows, marshes, shores, and bogs; frequent in northern counties; rare southward to Carroll and Dubuque counties.

Lysimachia thyrsiflora L. Tufted Loosestrife.

Scattered throughout in alluvial woods, meadows, and tamarack bogs; infrequent.

Lysimachia x *producta* (Gray) Fern.

Hybrid of *L. quadrifolia* and *L. terrestris.* Sandy meadows in Adams and Juneau counties; rare.

Primula mistassinica Michx. Bird's-eye-primrose.

Moist sandstone and limestone ledges at the Dells of the Wisconsin River, Juneau County, and Apple River Canyon, Jo Daviess County; rare.

Trientalis borealis Raf. Star Flower.

Tamarack bogs, low sandy woods and moist, sandy wooded slopes south to Vernon and Sauk counties; common.

RANUNCULACEAE (Crowfoot Family)

Aconitum noveboracense Gray, Monkshood.

Shaded ledges and cool, mossy talus slopes in Allamakee, Clayton, Dubuque, Sauk, and Vernon counties; infrequent. Disjunct from northeastern Ohio.

Actaea pachypoda Ell. (*A. alba* (L.) Mill.) White Baneberry.

Rich upland woods and moist wooded slopes north to LaCrosse and Juneau counties; common.

Actaea rubra (Ait.) Willd. Red Baneberry.

Moist wooded slopes; common except in northern counties.

Anemone canadensis L. Anemone.

Moist woods and open grassy places; common except in northeastern counties.

Anemone caroliniana Walt.

Dry sandy plains and prairies along the Mississippi River in Carroll, Jo Daviess, and LaCrosse counties; rare.

Anemone cylindrica Gray, Thimbleweed.

Dry upland prairies and open upland woods; common throughout.

Anemone multifida Poir. var. *hudsoniana* DC. (*A. hudsoniana* Richards.)

Dry sandstone bluff bordering County Trunk B, New Chester Twp., Adams County; rare. Previously known in Wisconsin only from Sheboygan County (Fassett, **1946**).

Anemone patens L. Pasque Flower.

Dry prairies and sparsely-wooded ridges; frequent except in northeastern counties.

Anemone quinquefolia L. Wood Anemone.

Upland woods, moist wooded slopes, and low sandy woods; common throughout.

Anemone virginiana L. (incl. *A. riparia* Fern.) Thimbleweed.

Upland woods and borders and moist wooded slopes; common except in northeastern counties.

Anemonella thalictroides (L.) Spach, Rue-anemone.

Sandy to loamy upland woods and moist wooded slopes; common except in the old bed of Glacial Lake Wisconsin.

Aquilegia canadensis L. Wild Columbine.

Rock ledges and cliffs, moist wooded slopes, and upland woods; common throughout.

Caltha palustris L. Marsh-marigold.

Low woods, bogs, and meadows; common in the northern half of the area; rare southward to Carroll County.

Clematis pitcheri T. & G. Clematis.

Dry, open sandy places near Savanna, Carroll County; rare. A southern species.

Clematis verticillaris DC.

Moist, wooded talus slopes in northeastern Iowa, LaCrosse County and Sauk County; infrequent.

Clematis virginiana L. Virgin's-bower.

Moist to dry woods, thickets, and prairies; common except in northeastern counties.

Coptis groenlandica (Oeder) Fern. (*C. trifolia* (L.) Salisb.) Goldthread.

Moist sandy woods and tamarack bogs; common in the old bed of Glacial Lake Wisconsin; otherwise in Trempealeau, LaCrosse and Sauk counties.

Delphinium virescens Nutt. Larkspur.

Sandy upland prairies in Jackson, Monroe, LaCrosse, Trempealeau, and Winneshiek counties; infrequent.

Hepatica acutiloba DC. Hepatica.

Moist wooded slopes; common except in northeastern counties.

Hepatica americana (DC.) Ker.

Moist, sandy wooded slopes south to LaCrosse and Sauk counties; frequent.

Hydrastis canadensis L. Golden-seal, Yellow-root.

Maple-basswood forests in Allamakee, Clayton, Dubuque, Grant, and Vernon counties; infrequent.

Isopyrum biternatum (Raf.) T. & G. False Rue-anemone.

Moist wooded slopes and low rich woods in southern and western counties north to Jackson County, Wisconsin; frequent.

Ranunculus abortivus L. Kidneyleaf Buttercup.

Moist to dry woods and in weedy places around towns; common except in the old bed of Glacial Lake Wisconsin.

°*Ranunculus acris* L. Tall or Common Buttercup.

Roadsides and pastures in Allamakee, Dane, Fillmore, and Sauk counties; rare.

Ranunculus aquatilis L. var. *capillaceus* (Thuill.) DC. (*R. tricophyllus* Chaix.) White Water Crowfoot.

Streams in Allamakee, LaCrosse, and Monroe counties; rare.

Ranunculus circinatus Sibth. (*R. longirostris* Godr.) White Water Crowfoot.

Streams in Adams, Allamakee, Dane, and Winneshiek counties; infrequent.

Ranunculus fascicularis Muhl. Early Buttercup.

Upland plains and prairies north to Jackson County, Wisconsin; apparently infrequent.

Ranunculus flabellaris Raf. Yellow Water Crowfoot.

Wet shores in Crawford, Jackson (Wisconsin), and Trempealeau counties; rare.

Ranunculus pensylvanicus L. f. Bristly Crowfoot.

Scattered throughout in open marshy places and along shores; common.

Ranunculus recurvatus Poir.

Rich upland woods and moist wooded slopes in the southern half of the area; low sandy woods in northern counties; common.

Ranunculus rhomboideus Goldie. Prairie Buttercup.

Dry sandy plains and prairies south to Winneshiek and Dane counties; frequent.

Ranunculus sceleratus L. Cursed Crowfoot.

Shores, meadows, and alluvial woods in Allamakee, Grant, La-Crosse, and Clayton counties; infrequent.

Ranunculus septentrionalis Poir. Swamp Buttercup.

Moist wooded slopes, alluvial woods, and meadows; common except in northeastern counties.

Thalictrum dasycarpum Fisch. & Lall. Purple Meadow-rue.

Moist to dry woods and thickets, shores, meadows, and grassy roadsides; common throughout.

Thalictrum dioicum L. Early Meadow-rue.

Low sandy woods and alluvial thickets in counties to the northeast; elsewhere in rich upland woods and on moist wooded slopes; common throughout.

Thalictrum revolutum DC. Skunk- or Wax-leaved Meadow-rue.

Moist thicket bordering Rush Creek, Carroll County; rare.

Resedaceae (Mignonette Family)

°*Reseda alba* L. Mignonette.

Apparently escaped from cultivation near Mt. Horeb, Dane County (L. R. Paulson, **1957**, WIS); rare.

Rhamnaceae (Buckthorn Family)

Ceanothus americanus L. New Jersey-tea.

Dry open woods and upland prairies; common throughout.

Ceanothus herbaceus Raf. (*C. ovatus* of authors, not Desf.) Redroot.

Sandy plains, rocky hill prairies, and dry open woods south to Grant and Iowa counties; common.

Rhamnus alnifolia L'Hér. Buckthorn.

Tamarack bogs and low thickets in northern counties; cool, north-facing talus slopes in northeastern Iowa; frequent.

°*Rhamnus cathartica* L. Common Buckthorn.

Escaped to woods and thickets in LaCrosse, Monroe, and Winneshiek counties; rare.

°*Rhamnus frangula* L.

Apparently an escape in low sandy woods at Castle Mound, Jackson County, Wisconsin; rare.

Rhamnus lanceolata Pursh

Rocky, sparsely-wooded bluffs north to Richland and Clayton counties; rare.

Rosaceae (Rose Family)

Agrimonia gryposepala Wallr. Agrimony.

Rich upland woods, moist wooded slopes, and low thickets; scattered throughout; frequent.

Agrimonia pubescens Wallr.

Upland woods and moist wooded slopes; scattered throughout; frequent.

Agrimonia striata Michx.

Dry sandy banks, meadows, and low sandy woods in Allamakee, Eau Claire, and LaCrosse counties; infrequent.

Amelanchier arborea (Michx. f.) Fern. Juneberry. Shadbush. Serviceberry.

Rather moist wooded slopes and boggy woods south to Clayton and Sauk counties; frequent.

Amelanchier interior Nielsen.

Low sandy woods, tamarack bogs, sandy wooded slopes and dry sandstone ledges; frequent. This "species" is a catch-all for things intermediate between *A. sanguinea* and *A. laevis* or *A. arborea*.

Amelanchier laevis Wieg.

Moist to dry sandy woods and sandstone ledges south to Clayton and Dane counties; infrequent.

Amelanchier sanguinea (Pursh) DC.

Steep, usually rocky, wooded slopes; scattered throughout; frequent.

Amelanchier spicata (Lam.) K. Koch (incl. *A. humilis* Wieg. and *A. stolonifera* Wieg.)

Dry woods and rock ledges; scattered throughout; frequent.

Aruncus dioicus (Walt.) Fern. Goat's-beard.

Moist wooded slopes and bases of ravines in Carroll and Jo Daviess counties; rare.

Crataegus calpodendron (Ehrh.) Medic. Hawthorn.

Open woods and thickets in Adams, Dubuque, and LaCrosse counties; infrequent.

Crataegus chrysocarpa Ashe

Dry sandy thicket in Melrose Twp., Jackson County, Wisconsin; rare.

Crataegus coccinea L.

Dry thicket in White Pine Hollow, Dubuque County (R. F. Thorne, 1958, IA); rare.

Crataegus macrosperma Ashe

Moist to dry open woods and thickets in the northern third of the area; apparently rare.

Crataegus mollis (T. & G.) Scheele

Borders of dry woods in Allamakee and LaCrosse counties; rare.

Crataegus pedicellata Sarg.

Sandy alluvial woods in Melrose Twp., Jackson County, Wisconsin; rare.

Crataegus punctata Jacq.

Moist to dry woods and pastures; mainly in southwestern counties; infrequent.

Crataegus succulenta Schrad.

Dry open woods in LaCrosse and Winneshiek counties; apparently rare.

Filipendula rubra (Hill) Robins. Queen-of-the-prairie.

Known from near Mazomanie, Dane County (1865, WIS); rare. Possibly once native on low prairies.

Fragaria vesca L. Woodland Strawberry.

Rich upland woods, moist wooded slopes, and on cliffs and rock ledges; common except in the old bed of Glacial Lake Wisconsin.

Fragaria virginiana Duchesne, Common Strawberry.

Dry to moist woods, upland prairies, and roadsides; common throughout.

Geum aleppicum Jacq. Avens.

Low woods and boggy thickets in the northern half of the area; infrequent.

Geum canadense Jacq.

Woods, thickets, and meadows; common throughout.

Geum laciniatum Murr.

Wet woods and marshy places in the northern two-thirds of the area; frequent.

Geum rivale L. Purple Avens.

Tamarack bogs in LaCrosse and Sauk counties; rare.

Geum triflorum Pursh, Prairie Smoke.

Sandy to loamy upland prairies south to Sauk and Allamakee counties; infrequent.

Physocarpus opulifolius (L.) Maxim. Ninebark.

Low sandy woods in northeastern counties; elsewhere on rocky wooded slopes and rock ledges; common throughout.

Potentilla anserina L. Silverweed.

Moist sandy soil in LaGrange Twp., Monroe County (M. N. Dana, 1953, WIS); rare.

°*Potentilla argentea* L. Silvery Cinquefoil.

Open sandy soil; common in northern counties; rarer southward to Winneshiek and Green counties.

Potentilla arguta Pursh, Tall Cinquefoil.

Upland prairies and occasionally along roadsides and in old fields; common throughout.

Potentilla fruticosa L. Shrubby Cinquefoil.

Limestone and sandstone ledges and moist sandy meadows in Allamakee, Crawford, Jo Daviess, Juneau, Sauk, and Winneshiek counties; infrequent.

Potentilla norvegica L. (incl. *P. monspeliensis* L.)

Meadows, shores, alluvium, and dry weedy places; common throughout.

Potentilla palustris (L.) Scop. Marsh Five-finger.

Marshy shores and open boggy places; frequent in northern counties; rare south along the Wisconsin River to Grant and Iowa counties.

°*Potentilla recta* L.

Dry roadsides and railways; frequent except in northeastern counties.

Potentilla simplex Michx. Old Field Cinquefoil.

Dry to moist woods and open sandy places; common throughout.

Potentilla tridentata Ait. Three-toothed Cinquefoil.

Dry sandstone outcrops and in sandy upland woods in Jackson (Wisconsin), Adams, Allamakee, and Winneshiek counties; infrequent. Apparently restricted to St. Peter sandstone outcrops in northeastern Iowa.

Prunus americana Marsh. (incl. *P. lantana* Mack. & Bush) Wild Plum.

Dry to rather moist woods and thickets and dry open places; scattered throughout; common.

Prunus nigra Ait. Canada Plum.

Maple-basswood forests in Allamakee, Clayton, Crawford, Vernon, and Winneshiek counties; infrequent.

Prunus pensylvanica L. f. Pin Cherry

Moist to dry woods and thickets south to Clayton and Lafayette counties; common.

Prunus pumila L. Sand Cherry.

Dry, open sandy places and sandstone outcrops in the northern two-thirds of the area; common.

Prunus serotina Ehrh. Black Cherry.

Low sandy woods in northeastern counties; elsewhere in rich upland woods and on moist wooded slopes; common throughout.

Prunus virginiana L. Choke Cherry.

Woods, thickets, and dry open places; common throughout.

Pyrus americana (Marsh.) DC. American Mountain-ash.

Moist sandy woods and bogs in Jackson County, Wisconsin.

°*Pyrus communis* L. Pear.

Apparently escaped from cultivation near McGregor, Clayton County (B. Shimek, 1921, IA); rare.

Pyrus decora (Sarg.) Hyland, Mountain-ash.

Tamarack bogs and sandstone and quartzite cliffs and talus; in Juneau, Richland, Sauk, and Trempealeau counties; rare.

Pyrus ioensis (Wood) Bailey, Wild Crab.

Scattered throughout in open woods; infrequent.

°*Pyrus malus* L. Apple.

Apparently escaped to roadsides and open woods in Juneau, La-Crosse, Allamakee, and Jo Daviess counties; rare.

Pyrus melanocarpa (Michx.) Willd. (incl. *P. arbutifolia* (L.) L. f. var. *atropurpurea* (Britt.) Rob.) Black Chokeberry.

Low woods and thickets, tamarack bogs, and dry sandstone ledges; common in the northern third of the area; rare southward (on St. Peter sandstone outcrops) to Winneshiek and Lafayette counties. Both pubescent and glabrous plants are found in the area with seemingly no geographic or ecologic pattern.

Rosa acicularis Lindl. Rose.

Cool, mossy, north-facing talus slopes in Allamakee and Clayton counties; rare. Not previously reported from Iowa.

Rosa blanda Ait.

Woods, upland prairies, and shores; mainly in west-central counties; frequent.

Rosa carolina L.

Dry upland prairies throughout the area; frequent. A most variable species in the "Driftless Area." Some "hard to place" specimens may be introgressant types with *R. suffulta* or possibly with *R. virginiana* Mill. of eastern United States.

°*Rosa eglanteria* L. Sweetbriar.

Escaped to a rocky Mississippi River bluff in Hanover Twp., Jo Daviess County; rare.

Rosa fendleri Crep. (*R. woodsii* Lindl.)

Dry upland prairies in LaCrosse and Vernon counties; apparently rare.

Rosa palustris Marsh.

Swampy woods and shores in Jackson (Wisconsin), Monroe, Juneau, and Adams counties; infrequent.

Rosa suffulta Greene (*R. arkansana* Porter var. *suffulta* (Greene) Cockerell of Iowa collectors)

Upland prairies and sparsely-wooded slopes; mainly in west-central counties; infrequent.

Rosa x *rudiuscula* Greene

Hybrid of *Rosa carolina* and *Rosa suffulta*. Dry, sparsely-wooded slopes in Allamakee, Clayton, and Winneshiek counties; rare.

Rubus allegheniensis Porter (*sensu* Gleason) Common Blackberry.

Dry to rather moist woods and thickets; common throughout.

Rubus flagellaris L. (*sensu* Gleason) Northern Dewberry.

Sandy woods and dry sandy plains and blowouts; common in the northern third of the area; infrequent southward to Clayton, Carroll and Lafayette counties.

Rubus hispidus L. (*sensu* Gleason) Dewberry.

Low sandy woods and sphagnous meadows; common in the old bed of Glacial Lake Wisconsin; otherwise collected in Eau Claire and LaCrosse counties.

Rubus occidentalis L. Black Raspberry.

Dry to moist woods and thickets; common throughout.

Rubus pubescens Raf.

Common in northern counties in low sandy woods, boggy thickets, and tamarack bogs; infrequent southward to Dubuque and Jo Daviess counties on steep, wooded talus slopes and rock ledges.

Rubus setosus Bigel (*sensu* Gleason)

Sandy meadow and low sandy woods in Jackson (Wisconsin) and LaCrosse counties; rare.

Rubus strigosus Michx. (*R. idaeus* L.) Red Raspberry.

Tamarack bogs, low sandy woods, and moist wooded slopes; common except in extreme southern counties.

°*Sorbaria sorbifolia* (L.) A. Br. False Spiraea.

Persistent and spreading from cultivation at Quandahl, Allamakee County; rare.

Spiraea alba Du Roi. Meadow-sweet.

Meadows, marshes, and shores; common in the northern third of the area; infrequent southward to Clayton and Jo Daviess counties.

Spiraea tomentosa L. Hardhack. Steeple Bush.

Acid meadows, bogs, and occasionally on dry sandstone ledges; common in northeastern counties; rare southwestward to LaCrosse and Richland counties.

Rubiaceae (Madder Family)

Cephalanthus occidentalis L. Buttonbush.

Alluvial woods, shores, and marshes; frequent along the Wisconsin, Mississippi, and Black rivers.

Diodia teres Walt. Buttonweed.

Dry sandy terraces of the Mississippi and Wisconsin rivers in Carroll and Iowa counties; rare.

Galium aparine L. Spring Cleavers.

Moist woods and waste places north to Sauk and Jackson (Wisconsin) counties; common.

Galium asprellum Michx. Rough Bedstraw.

Wet woods, bogs, and marshy margins; frequent in the northern half of the area; rare southward to Jo Daviess County.

Galium boreale L. Northern Bedstraw.

Upland woods and borders, sandstone and limestone ledges, and cool, mossy talus slopes; common throughout.

Galium brevipes Fern. & Wieg.

Low sandy woods in Adams County; rare. A northern species that is rare in Wisconsin.

Galium circaezans Michx. Wild-licorice.

Upland woods north to Vernon and Juneau counties; frequent.

Galium concinnum T. & G.

Rich upland woods, moist wooded slopes and occasionally in alluvial woods; common except in northeastern counties.

Galium labradoricum (Wieg.) Wieg.

Open boggy places in LaCrosse and Trempealeau counties; rare.

Galium lanceolatum Torr. Wild-licorice.

Dry, sandy wooded slopes in Juneau and Sauk counties; rare.

Galium obtusum Bigel.

Alluvial woods, meadows, and shores south to Clayton and Iowa counties; frequent.

Galium tinctorium L.

Bogs, marshes, meadows, and shores in the northern half of the area; frequent.

Galium trifidum L.

Marshes and shores in the northern half of the area; infrequent.

Galium triflorum Michx. Sweet-scented Bedstraw.

Wet woods and moist wooded slopes; common throughout.

°*Galium verum* L. Yellow Bedstraw.

Weed on Grandad Bluff near LaCrosse, LaCrosse County (Irene Cull, 1945, WIS); rare.

Houstonia caerulea L. Bluets.

Open woods between Mt. Vernon and Belleville, Dane County (N. C. Fassett, 1930, WIS); rare.

Houstonia longifolia Gaertn.

Dry open sand and jack-pine woods south to Vernon and Sauk counties; common.

Mitchella repens L. Partridge Berry

Common in low sandy woods in northeastern counties; rare southward in rich upland woods to Winneshiek County.

Rutaceae (Rue Family)

Ptelea trifoliata L. Wafer-ash.

Dry, open sandy places and moist woods in Jo Daviess and Carroll counties; rare.

Zanthoxylum americanum Mill. Prickly-ash.

Dry to moist woods and thickets; common throughout.

Salicaceae (Willow Family)

°*Populus alba* L. White Poplar.

Infrequent escape to roadsides and fields.

Populus balsamifera L. Balsam Poplar. Taccamahac, Hackmatack.

Low sandy woods in Knapp Twp., Jackson County; rare.

°*Populus candicans* Ait. Balm of Gilead.

Spread from cultivation in Winneshiek County (B. Shimek, 1903 IA); rare.

Populus deltoides Marsh. Cottonwood.

Alluvial woods, open alluvium, roadsides, and dry upland situations; common throughout.

Populus grandidentata Michx. Large-toothed Aspen.

Dry upland woods and borders; common throughout.

Populus tremuloides Michx. Quaking Aspen.

Dry to moist woods and open rocky ridges; common throughout.

°*Salix alba* L. White Willow.

Escaped to moist places in LaCrosse and Winneshiek counties; rare.

Salix amygdaloides Anderss. Peach-leaved Willow.

Pond and creek margins; mainly in west-central counties; frequent.

°*Salix babylonica* L. Weeping Willow.

Apparently escaped along a stream in Greenfield Twp., LaCrosse County; rare.

Salix bebbiana Sarg. Long-beaked Willow.

Common in the northern half of the area in bogs, meadows, low woods, and marshy margins; rare southward to Clayton and Dubuque counties on springy, north-facing wooded slopes.

Salix candida Flugge, Hoary Willow.

Bog along Tamarack Creek, Trempealeu County; rare.

Salix discolor Muhl. Pussy-willow.

Open marshy places, meadows, bogs, and springy wooded slopes; common in the northern two thirds of the area; rarer southward to Dubuque and Carroll counties.

°*Salix fragilis* L. Crack Willow.

Stream and lake margins; scattered throughout; infrequent.

Salix glaucophylloides Fern. (*S. glaucophylla* Bebb.) Blue-leaf Willow.

Sandy creek margin near Lyndon Station, Juneau County; rare.

Salix humilis Marsh. Prairie Willow.

Dry prairies, borders of upland woods, and, in northeastern counties, in low sandy woods; common throughout. The plants assigned to this species are highly variable and in need of more study. An interesting variant occurs in low sphagnous woods in northeastern counties where it grows as a rather tall shrub (up to 8 feet) and has broader, less pubescent and less revolute leaves than the prairie forms to the south. In open bogs and meadows dwarf shrubs with very small leaves are found. These are assigned here to *S. tristis* Ait.

Salix interior Rowlee, Sandbar Willow.

Moist open alluvium, margins of lakes and streams, and occasionally in moist weedy places; scattered throughout; common.

Salix lucida Muhl. Shining Willow.

Sandy meadows and boggy places south to Allamakee and southern Juneau counties; infrequent.

Salix nigra Marsh. Black Willow.

Margins of lakes and streams north to LaCrosse and Adams counties; infrequent.

Salix pedicellaris Pursh var. *hypoglauca* Fern.

Boggy places in the northern third of the area; infrequent.

Salix petiolaris Sm. (incl. *S. gracilis* Anderss.)

Meadows and bogs; common in the northern third of the area; rare southward to Winneshiek and Iowa counties. Two collections may be *S.* x *subsericea* (Anderss.) Schneider, the hybrid of *S. petiolaris* and *S. sericea*.

Salix pyrifolia Anderss. (*S. balsamifera* Barrett) Balsam Willow.

Meadows and open bogs in the old bed of Glacial Lake Wisconsin; infrequent.

Salix rigida Muhl. (*S. cordata* Muhl., not Michx.)

Meadows and moist margins; scattered throughout; frequent.

Salix sericea Marsh. Silky Willow.

Moist sandy meadows in Jackson (Wisconsin) and Richland counties; rare.

Salix tristis Ait. (*S. humilis* var. *microphylla* (Anderss.) Fern.) Sage Willow.

Sandy meadows and open bogs in Adams, Iowa, Jackson (Wisconsin), and LaCrosse counties; rare.

Santalaceae (Sandalwood Family)

Comandra umbellata (L.) Nutt. (incl. *C. richardsiana* Fern.) Bastard-toadflax.

Dry upland woods and prairies; common throughout.

Sarraceniaceae (Pitcher Plant Family)

Sarracenia purpurea L. Pitcher Plant.

Frequent in bogs in the old bed of Glacial Lake Wisconsin; otherwise known from Trempealeau County.

Saxifragaceae (Saxifrage Family)

Chrysosplenium americanum Schwein. Water-mat.

Shaded seepage bogs and wet sandy woods south to LaCrosse and Sauk counties; infrequent.

Chrysosplenium ioense Rydb. (*C. tetrandrum* of early Iowa collectors and possibly Fries.) Golden Saxifrage.

Mossy talus slopes in Allamakee, Clayton, Dubuque, and Winneshiek counties; rare. Disjunct here from the Rocky Mountains and northern Canada.

Heuchera richardsonii R. Br. Alumroot.

Dry upland woods, sandstone and limestone ledges, and dry plains and prairies; common throughout.

Mitella diphylla L. Bishop's-cap.

Moist, rocky wooded slopes; common except in northeastern counties.

Mitella nuda L.

Bog along Tamarack Creek in Trempealeau County; rare.

Parnassia glauca Raf. Grass-of-Parnassus.

Wet meadows in Adams, Trempealeau, and Winneshiek counties; rare.

Penthorum sedoides L. Ditch Stonecrop.

Scattered throughout in swampy alluvial woods and open marshy places; common.

Ribes americanum Mill. Wild Black Currant.

Wet woods and thickets and moist wooded slopes; frequent in the northern half of the area; rare southward to Carroll County.

Ribes cynosbati L. Prickly Gooseberry.

Wooded slopes, rich upland woods, and shaded limestone and sandstone cliffs and ledges; common except in northeastern counties.

Ribes glandulosum Grauer, Skunk Currant.

Wet sandy woods and boggy thickets in Jackson (D. F. Grether, 1947, WIS) and Sauk (T. F. Kouba, 1942, WIS) counties; rare.

Ribes hirtellum Michx.

Boggy woods in Trempealeau County; rare.

Ribes hudsonianum Richards.

Cool, mossy talus slopes in Clayton and Dubuque counties; rare. Disjunct from northeastern Wisconsin.

Ribes missouriense Nutt. Missouri Gooseberry

Moist to dry woods and thickets; common except in northeastern counties.

°*Ribes odoratum* Wendland f. Buffalo Currant.

Escaped to dry sandy places in Carroll, Clayton, and LaCrosse counties; rare.

°*Ribes sativum* Syme, Red Currant.

Escaped to limestone ledges on Miller Bluff at LaCrosse, LaCrosse County; rare.

Saxifraga pensylvanica L. (incl. *S. forbesii* Vasey) Swamp Saxifrage.

Boggy thickets, moist meadows, wet limestone and sandstone ledges, and mossy talus slopes; scattered throughout; frequent.

Sullivantia renifolia Rosend. (*S. sullivantii* of Iowa collectors, not Britt.)

Shaded limestone and sandstone cliffs; frequent except in northeastern counties.

SCROPHULARIACEAE (Figwort Family)

Aureolaria grandiflora (Benth.) Pennell (*Gerardia grandiflora* Benth.) False Foxglove.

Sandy to loamy upland woods in Adams, Iowa, Clayton, Juneau, and Sauk counties; infrequent.

Aureolaria pedicularia (L.) Raf. (*Gerardia pedicularia* L.)

Sandy upland woods in the northern third of the area; frequent.

Castilleja coccinea (L.) Spreng. Scarlet Painted-cup.

Rocky prairies and openings in dry woods in southern and western counties; moist sandy meadows in the old bed of Glacial Lake Wisconsin; infrequent.

Castilleja sessiliflora Pursh, Downy Painted-cup.

Rocky hill prairies; mainly in west-central counties; infrequent.

°*Chaenorrhinum minus* (L.) Lange, Dwarf Snapdragon.

Dry sand and gravel of railroad beds; mainly in southern and western counties; infrequent.

Chelone glabra L. Turtlehead.

Tamarack bogs, low sandy woods and thickets, and moist meadows in the northern half of the area; frequent.

Gerardia aspera Dougl. Gerardia.

Rocky hill prairies; mainly in west-central counties; infrequent.

Gerardia auriculata Michx. (*Tomanthera auriculata* (Michx.) Raf.)

Prairie openings in Clayton (B. Shimek, **1920**, IA) and Lafayette (Self, **1888**, WIS) counties; rare.

Gerardia gattingeri Small

Sandy prairie openings in Adams, Lafayette, and Sauk counties; rare.

Gerardia purpurea L. (and var. *parviflora* Benth.)

Moist, open sandy places and meadows in Adams, Grant, Iowa, Richland, and Winneshiek counties; infrequent.

Gerardia skinneriana Wood.

Dry sandy prairies in Adams and Allamakee counties; rare.

Gerardia tenuifolia Vahl

Moist, open sandy places; frequent in the northern third of the area; less common south to Dubuque County.

Gratiola aurea Muhl. Golden-pert.

Moist open sand at Silver Lake, Adams County; rare. Growing with *Fimbristylis autumnalis*, *Juncus pelocarpus*, *Rotala ramosior*, and *Carex crawfordii*.

Gratiola neglecta Torr.

Moist sandy places and mud flats; scattered throughout; frequent.

Linaria canadensis (L.) Dumont, Old-field Toadflax.

Dry sandy plains and blowouts throughout the area; frequent.

°*Linaria vulgaris* Hill, Butter-and-eggs.

Weedy roadsides and borders of dry woods; frequent and scattered throughout the area.

Lindernia dubia (L.) Pennell (incl. *L. anagallidea* (Michx.) Pennell) False Pimpernel.

Wet shores throughout the area; frequent.

Melampyrum lineare Desr. Cow-wheat.

Sandy jack-pine woods in Jackson (Wisconsin), Juneau, and Adams counties; frequent.

Mimulus glabratus HBK. var. *fremontii* (Benth.) Grant (*M. geyeri* Torr.) Monkey Flower.

Shallow water of cold springy places in Adams, Dubuque, Jo Daviess, LaCrosse, and Trempealeau counties; rare.

Mimulus ringens L.

Marshy places, moist shores, and wet alluvial woods; scattered throughout; common.

Pedicularis canadensis L. Common Lousewort.

Dry upland prairies and open woods; scattered throughout; common.

Pedicularis lanceolata Michx.

Meadows, marshes, boggy thickets, and open seepage slopes; scattered throughout; infrequent.

Penstemon digitalis Nutt. Beard-tongue.

Dry sandy prairies in Jackson (Wisconsin), LaCrosse, and Winneshiek counties; rare.

Penstemon gracilis Nutt. (and var. *wisconsinensis* (Pennell) Fassett)

Dry sandy plains and prairies south to LaCrosse and Iowa counties; frequent.

Penstemon grandiflorus Nutt.

Dry sandy plains and prairies in Jackson (Wisconsin), Juneau, LaCrosse, and Sauk counties; rare.

Penstemon hirsutus (L.) Willd.

Dry sandy prairie in Easton Twp., Adams County; rare.

Penstemon pallidus Small

Rocky hill prairie on a Mississippi River bluff in Hanover Twp., Jo Daviess County; rare.

Scrophularia lanceolata Pursh, Figwort.

Upland prairies, roadsides, railroad banks, and open woods; common except in northeastern counties.

Scrophularia marilandica L.

Alluvial woods, moist thickets, wooded slopes, and open alluvium north to Sauk and LaCrosse counties; frequent. Often rather weedy.

Seymeria macrophylla Nutt (*Dasistoma macrophylla* (Nutt.) Raf.)

Sparsely-wooded hillside near Potosi, Grant County (N. C. Fassett, 1935, WIS); rare.

°*Verbascum blattaria* L. Moth Mullein.

Weedy pastures in LaCrosse and Lafayette counties; rare. Both the white- and yellow-flowered forms collected.

°*Verbascum phlomoides* L.

Weedy roadsides and pastures in Clayton, Dubuque, Jackson (Wisconsin), and LaCrosse counties; rare.

°*Verbascum thapsus* L. Common Mullein.

Roadsides, pastures, and fields; common throughout.

Veronica americana (Raf.) Schwein. American Brooklime.

Margins and shallow water of swift streams in Allamakee, LaCrosse, Vernon, and Winneshiek counties; infrequent.

Veronica anagallis-aquatica L. Water Speedwell.

Margins and shallow water of streams and springholes in Allamakee and Winneshiek counties; rare.

°*Veronica arvensis* L. Corn Speedwell.

Mesic woods, rocky prairies, and in a number of weedy places; mainly in the southern half of the area; frequent.

Veronica connata Raf. (*V. salina* Schur., *V. comosa* Richter)

Stream near Monroe, Green County (S. C. Stuntz, 1891, WIS); rare. Also, reported from LaCrosse and Grant counties by Salamun (1951).

Veronica peregrina L. Purslane Speedwell.

Moist alluvium, sandstone ledges and talus, weedy woods, yards, and recently-disturbed soil; scattered throughout; frequent. The glandular-pubescent var. *xalapensis* (HBK.) Pennell is about as common as the glabrous var. *peregrina*.

°*Veronica persica* Poir. Bird's-eye.

Door-yard weed in Potosi and Glenhaven, Grant County; rare.

Veronica scutellata L. Marsh Speedwell.

Wet sandy places in the northern third of the area; infrequent.

°*Veronica serpyllifolia* L.

Moist shaded places in woods north to Jackson (Wisconsin) and Juneau counties; infrequent.

Veronicastrum virginicum (L.) Farw. Culver's-root.

Low sandy woods, rich upland woods and ravines, upland prairies, meadows, roadsides, and pastures; common throughout.

Wulfenia bullii (Eat.) Barnh. (*Synthyris bullii* (Eat.) Heller, *Besseya bullii* (Eat.) Rydb.)

Rather sandy, sparsely-wooded ridges in Jo Daviess and Lafayette counties; rare.

Solanaceae (Nightshade Family)

°*Datura stramonium* L. Jimsonweed.

Waste places, pastures, fields, etc.; frequent except in northeastern counties.

°*Lycium halimifolium* Mill. Matrimony Vine.

Escaped to roadsides and waste places in Clayton and Richland counties; rare.

°*Nicandra physalodes* (L.) Pers. Apple-of-Peru.

Weed of cultivated ground in Allamakee (R. F. Thorne, **1952**, IA) and Grant (N. C. Fassett, **1935**, WIS) counties; rare.

°*Petunia axillaris* (Lam.) BSP. Petunia.

Apparently escaped and persisting near McGregor, Clayton County (B. Shimek, **1921**, IA); rare.

Physalis heterophylla Nees, Ground-cherry.

Scattered throughout in dry open places; frequent.

°*Physalis ixocarpa* Brotero, Tomatillo.

Weed in Dubuque County (J. A. Anderson, **1900**, IA); rare. Also, reported from Crawford and Grant counties by Fassett (**1944**).

Physalis longifolia Nutt. (incl. *P. subglabrata* Mack. & Bush)

Weed of disturbed soil in Allamakee County (T. J. Fitzpatrick, **1895**, IA); rare.

Physalis pruinosa L. Strawberry-tomato.

Waste area in LaCrosse, LaCrosse County; rare.

Physalis pubescens L.

Weedy clearing on a Mississippi River bluff near Stoddard, Vernon County; rare.

Physalis virginiana Mill. (incl. *P. lanceolata* of authors, not Michx.)

Scattered throughout in dry open places; frequent.

°*Solanum carolinense* L. Horse-nettle.

Recent clearings, pastures, fields, roadsides, and waste places; mainly in southern and western counties; infrequent.

°*Solanum dulcamara* L. European Bittersweet.

Waste places, roadsides, and boggy thickets; mainly in the northern half of the area; infrequent.

°*Solanum nigrum* L. (incl. *S. americanum* Mill.) Black Nightshade.

Weed of roadsides, waste places, and fields; scattered throughout; frequent.

°*Solanum rostratum* Dunal, Buffalo Bur.

Weed of barnyards and waste places in LaCrosse, Winneshiek, and Dubuque counties; rare.

Staphyleaceae (Bladdernut Family)

Staphylea trifolia L. Bladdernut.

Moist, rocky wooded slopes; common except in northeastern counties.

Thymelaeaceae (Mezereum Family)

Dirca palustris L. Wicopy. Leatherwood.

Moist, north- and east-facing wooded slopes in southern and western counties; frequent.

Tiliaceae (Linden Family)

Tilia americana L. Basswood. Linden.

Moist wooded slopes, rather dry rocky bluffs, alluvial woods, and rather mesic sandy woods; common throughout.

Ulmaceae (Elm Family)

Celtis occidentalis L. Hackberry.

Moist ravines and alluvial woods; common except in northeastern counties.

Ulmus americana L. American Elm.

Moist ravines and alluvial woods; common throughout.

Ulmus rubra Muhl. Slippery or Red Elm.

Rather dry wooded slopes and upland woods; common except in northeastern counties.

Ulmus thomasi Sarg. Rock or Cork Elm.

Rich maple-basswood forests from LaCrosse County southward; infrequent.

Umbelliferae (Parsley Family)

°*Anethum graveolens* L. Dill.

Escaped from cultivation to a waste area near Muscoda, Iowa County; rare.

Angelica atropurpurea L. Angelica.

Moist open meadows north to LaCrosse and Sauk counties; infrequent.

Berula pusilla (Nutt.) Fern. (*B. erecta* (Huds.) Cov.) Water-parsnip.

Springy creek margins in Adams and Buffalo counties; rare.

°*Carum carvi* L. Caraway.

Escaped to dry roadsides in Clayton and LaCrosse counties; rare.

Chaerophyllum procumbens (L.) Crantz.

Low rich woods in Apple River Canyon, Jo Daviess County; rare. A more southern species.

Cicuta bulbifera L. Water-hemlock.

Open marshy places and tamarack bogs in the northern two-thirds of the area; frequent.

Cicuta maculata L. Spotted Cowbane.

Scattered throughout in meadows, marshy places, and alluvial woods; common.

°*Conium maculatum* L. Poison-hemlock.

Low weedy roadside just east of Thomson, Carroll County; rare.

Cryptotaenia canadensis (L.) DC. Honewort.

Moist wooded slopes, floors of ravines, and alluvial woods; common except in northeastern counties.

°*Daucus carota* L. Queen Anne's Lace.

Weed of roadsides, pastures, and clearings; chiefly in southern and western counties; frequent.

°*Eryngium planum* L.

Escaped from cultivation in Devil's Lake State Park, Sauk County (J. H. Zimmerman, 1946, WIS); rare.

Eryngium yuccifolium Michx. Rattlesnake-master.

Dry to rather moist prairies north to Winneshiek and Iowa counties; infrequent.

Heracleum maximum Bartr. (*H. lanatum* Michx.) Masterwort.

Moist roadsides, meadows, and low thickets; scattered throughout the area; frequent.

Hydrocotyle americana L. Water Pennywort.

Boggy woods and sphagnous meadows south to Vernon and Sauk counties; frequent.

Osmorhiza claytoni (Michx.) C. B. Clarke, Sweet Cicely.

Rich upland woods and moist wooded slopes; common except in northeastern counties.

Osmorhiza longistylis (Torr.) DC. Anise Root.

Moist wooded slopes and ravines; frequent except in northeastern counties.

Oxypolis rigidior (L.) C. & R. Cowbane.

Scattered throughout in meadows and (occasionally) low woods; infrequent.

°*Pastinaca sativa* L. Parsnip.

Weed of roadsides and pastures; common except in northeastern counties.

Polytaenia nuttallii DC. Prairie-parsley.

Dry prairies and open woods in Dane (near Cross Plains, WIS), Iowa (J. J. Davis, 1927, WIS), Monroe (J. J. Davis, 1916, WIS), and Sauk (J. H. Zimmerman, 1946, WIS) counties; rare.

Sanicula canadensis L. Black Snakeroot.

Dry upland woods and clearings north to Sauk and Trempealeau counties; frequent.

Sanicula gregaria Bickn.

Rich upland woods, moist wooded slopes, and occasionally in alluvial woods; common except in northeastern counties.

Sanicula marilandica L.

Moist wooded slopes, rich upland woods, and (in northeastern counties) low sandy woods; scattered throughout the area; common.

Sanicula trifoliata Bickn.

Moist, north- and east-facing wooded slopes north to Sauk and LaCrosse counties; common.

Sium suave Walt. Water-parsnip.

Scattered throughout in open marshy places and alluvial woods; frequent.

Spermolepis inermis (Nutt.) Math. & Const.

Dry open sand on an old Mississippi River terrace near Savanna, Carroll County; rare.

Taenidia integerrima (L.) Drude, Yellow Pimpernel.

Dry upland prairies and oak-hickory woodlands in southern and western counties; infrequent.

Thaspium barbinode (Michx.) Nutt. Meadow-parsnip.

Wooded, north- and east-facing talus slopes in southwestern counties; infrequent.

Thaspium trifoliatum (L.) Gray

Roadside at the town of Dill, Green County (S. C. Wadmond, 1936, WIS); rare.

Zizia aptera (Gray) Fern. Golden Alexanders.

Mesic prairies in Vernon (N. C. Fassett, 1934, WIS) and Winneshiek (B. Shimek, 1927, IA) counties; rare.

Zizia aurea (L.) W. D. J. Koch

Rich upland woods and borders, moist wooded slopes, and occasionally in meadows; common except in northeastern counties.

URTICACEAE (Nettle Family)

Boehmeria cylindrica (L.) Sw. Bog-hemp.

Scattered throughout in wet woods, low thickets, and open marshy places; frequent.

Laportea canadensis (L.) Wedd. Wood-nettle.

Moist mesic woods; common except in the old bed of Glacial Lake Wisconsin.

Parietaria pensylvanica Muhl. Pellitory.

Moist to dry rock ledges and cliffs, weedy places in woods, and around buildings in towns; common except in northeastern counties.

Pilea fontana (Lunell) Rydb. Clearweed.

Sandy shores, low sandy woods, and boggy thickets in Adams, Allamakee, Juneau, and LaCrosse counties; infrequent.

Pilea pumila (L.) Gray

Alluvial woods, bases of ravines, and other moist shaded places; common and scattered throughout.

Urtica dioica L. (and var. *procera* (Muhl.) Wedd.) Stinging Nettle.

Alluvial woods, low thickets, and roadsides; common throughout.

VALERIANACEAE (Valerian Family)

Valeriana ciliata T. & G. (*V. edulis* of authors, not Nutt.) Valerian.

Rocky hill prairies and sparsely-wooded ridges in Allamakee, Iowa, and LaCrosse counties; rare.

VERBENACEAE (Vervain Family)

Lippia lanceolata Michx. (*Phyla lanceolata* (Michx.) Greene) Frog Fruit.

Open alluvial woods, marshy margins, and meadows north to Trempealeau and Iowa counties; infrequent.

Verbena bracteata Lag. & Rodr. Vervain.

Roadsides, railroads, and weedy yards; scattered throughout; frequent.

Verbena hastata L. Blue Vervain.

Shores, marshes, moist meadows, and low pastures; common throughout.

Verbena simplex Lehm.

Dry, usually sandy, soil in Allamakee (T. J. Fitzpatrick, 1895, IA), Lafayette (H. H. Smith, 1922, WIS), and Sauk (T. J. Hale, 1861, WIS) counties; rare.

Verbena stricta Vent. Hoary Vervain.

Upland prairies, roadsides, railroads, pastures, and weedy borders of upland woods; scattered throughout; common.

Verbena urticifolia L. White Vervain.

Roadsides, low pastures, and stream banks; common except in northeastern counties.

Verbena bracteata Lag. & Rodr. x *V. stricta* Vent.

Dry sandy soil in Iowa Twp., Allamakee County; rare.

Violaceae (Violet Family)

Hybanthus concolor (T. F. Frost) Spreng. Green-violet.

Rich wooded slopes in Allamakee, Dubuque, and Grant counties; rare.

Viola adunca J. E. Smith, Sand Violet.

Dry sandy woods and sandstone ledges in northeastern counties; infrequent.

Viola affinis LeConte

Moist, sandy wooded slopes, and shaded boggy places in Adams and Vernon counties; rare.

°*Viola arvensis* Murr. Wild Pansy.

Sandy vacant lot in LaCrosse, LaCrosse County; rare.

Viola conspersa Reichenb.

Low sandy woods, tamarack bogs and boggy thickets in Adams, LaCrosse, Sauk, and Vernon counties; infrequent.

Viola cucullata Ait.

Boggy meadows, tamarack bogs, and low sandy woods south to LaCrosse and Sauk counties; infrequent.

Viola fimbriatula Sm. Sand Violet.

Rather dry sandy woods along Perry Creek, Jackson County, Wisconsin; rare.

Viola incognita Brainerd

Low sandy woods and boggy places in northern counties; rich upland woods and moist wooded slopes to the south. Frequent in the northern half of the area; rare southward to Allamakee and Jo Daviess counties. Possibly new for Illinois.

Viola lanceolata L. Lance-leaved Violet.

Boggy meadows and moist open sand; mainly in northeastern counties; frequent.

Viola macloskeyi F. E. Lloyd subsp. *pallens* (Banks) M. S. Baker (*V. pallens* (Banks) Brainerd)

Bogs, wet sandy thickets, and sphagnous meadows south to Vernon and Sauk counties; infrequent.

Viola missouriensis Greene.

Moist wooded slopes and alluvial woods in Clayton, Jo Daviess, LaCrosse, and Vernon counties; apparently rare.

Viola nephrophylla Greene

Mossy talus slopes, tamarack bogs, and meadows; mainly in western counties; infrequent.

Viola papilionacea Pursh

Weedy places around towns in Grant, Fillmore, and Houston counties; rare.

Viola pedata L. Pansy Violet.

Dry sandy plains and prairies; common in the northern half of the area; infrequent south to Carroll County.

Viola pedatifida G. Don

Dry sandy plains and prairies; scattered throughout; frequent.

Viola pensylvanica Michx. (*V. eriocarpa* Schw.) Smooth Yellow Violet.

Rich upland woods, moist wooded slopes, and alluvial woods; common except in northeastern counties.

Viola pubescens Ait. Downy Yellow Violet.

Moist wooded slopes and low sandy woods in Adams, Allamakee, Dubuque, LaCrosse, Sauk, and Vernon counties; infrequent.

Viola renifolia Gray

Cool, mossy talus slopes in Allamakee, Clayton, Dubuque, Vernon, and Winneshiek counties; rare. Disjunct from northern regions of Wisconsin and Minnesota.

Viola rugulosa Greene (incl. *V. canadensis* of authors and collectors, not L.)

Wooded talus slopes in Allamakee, Clayton, Dubuque, Sauk, and Winneshiek counties; rare.

Viola sagittata Ait. Arrow-leaved Violet.

Moist to rather dry, open sandy places; frequent in northeastern counties; rare southward to Iowa and Dubuque counties.

Viola selkirkii Pursh

Moist sandy woods in Sauk County; rare. Disjunct from northern Wisconsin.

Viola septentrionalis Greene

Rather moist, rocky wooded slopes in Dane, Sauk, and Vernon counties; rare.

Viola sororia Willd.

Rich upland woods, moist wooded slopes, and alluvial woods; common except in northeastern counties.

°*Viola tricolor* L. Pansy. Johnny-jump-up.

Escaped in Grant (Ina Buckmaster, 1883, WIS) and Wood (M. B. McMillan, 1900, WIS) counties; rare.

Viola fimbriatula Sm. x *V. affinis* LeConte.

Dry sandy woods along Perry Creek, Jackson County, Wisconsin; rare.

Viola lanceolata L. x *V. macloskeyi* Lloyd.

Moist sandy meadows in Sauk, Jackson, and LaCrosse counties; rare.

Viola pedatifida G. Don x *V. nephrophylla* Greene.

Pasture in Darlington Twp., Lafayette County; rare.

Viola pedatifida G. Don x *V. papilionacea* Pursh.

Dry, sandy wooded slopes in Allamakee and LaCrosse counties; rare.

Viola pedatifida G. Don x *V. sororia* Willd.

Dry prairies in Jo Daviess and Winneshiek counties; rare.

Viola sororia Willd. x *V. nephrophylla* Greene.

Known from near Viroqua, Vernon County (J. J. Davis, **1930**, WIS); rare.

Vitaceae (Vine Family)

Parthenocissus quinquefolia (L.) Planch. Virginia Creeper. Woodbine.

Scattered throughout in dry to moist woods and open, rocky or sandy places, common.

Parthenocissus vitacea (Knerr) Hitchc. (*P. inserta* (Kerner) K. Fritsch)

Dry to moist woods, sandy thickets, and borders of upland woods; scattered throughout; not quite as common as the preceding.

Vitis aestivalis Michx. (incl. *V. bicolor* LeConte and *V. argentifolia* Munson) Summer or Pigeon Grape.

Rocky upland woods and rather dry wooded slopes; frequent except in northeastern counties.

Vitis riparia Michx. (*V. vulpina* of collectors and authors, not L.) Frost Grape.

Dry to moist woods, thickets, and open weedy places; common except in northeastern counties.

Zygophyllaceae (Caltrop Family)

°*Tribulus terrestris* L. Caltrop.

Dry, sandy railroad bank at Lone Rock, Richland County (J. J. Davis, **1936**, WIS); rare.

STATISTICAL SUMMARY

A. Components of the flora of the "Driftless Area":

Major Groups	*Species*	
	native	naturalized
Pteridophytes	61	0
Gymnosperms	13	0
Monocotyledons	424	50
Dicotyledons	846	245
totals	1,344	295

B. Total number of species: 1,639. Of this total, 1,503 were collected by the author. Of the remaining 136, 62 are native and 74 introduced.

C. Number of families represented: 133.

D. Largest families with number of species in each:

Compositae	184	Scrophulariaceae	43
Gramineae	165	Labiatae	41
Cyperaceae	161	Ranunculaceae	36
Rosaceae	65	Polygonaceae	33
Leguminosae	63	Umbelliferae	30
Cruciferae	47	Violaceae	30

E. Largest genera with number of species in each:

Carex	113	Panicum	20
Viola	29	Salix	18
Aster	24	Solidago	18
Polygonum	22	Juncus	16
Potamogeton	21		

EXCLUDED SPECIES

The majority of the species listed below are from literature reports for which this writer has not seen voucher specimens. Others are excluded for various reasons—stated for each. The list follows the same sequence of families and species as the catalogue.

Equisetaceae

Equisetum variegatum Schleich. Known from outside the "Driftless Area" in Dane County.

Selaginellaceae

Selaginella apoda (L.) Fern. Reported from Jo Daviess County by Fuller (**1945**).

Isoetaceae

Isoetes melanopoda Gay & Dur. Reported from Jo Daviess County by Fuller (**1945**).

Ophioglossaceae

Botrychium simplex E. Hitchc. Reported from outside the "Driftless Area" in Wood County by Tryon (**1940**).

Aspidiaceae

Woodsia cathcartiana Robins. There are several old reports of this —apparently all based on *Woodsia oregana*.

Woodsia scopulina D. C. Eat. Reported from Winneshiek County by Tolstead (**1938**).

Amaryllidaceae

Allium stellatum Fraser. Reported from Jo Daviess County by Jones and Fuller (**1955**) and from Winneshiek County by Tolstead (**1938**). Possibly now extinct in this area .

Araceae

Peltandra virginica (L.) Schott & Endl. Reported from LaCrosse County by Pammel (**1908**). A very doubtful report although Pammel does list the other aroids that he might have confused with it.

Commelinaceae

Commelina virginica L. Reported from Jo Daviess County by Fuller (**1945**).

Tradescantia occidentalis (Britt.) Smyth. Known from outside the "Driftless Area" in Pepin County.

Tradescantia virginiana L. Reported from Buffalo (Cratty, **1922**) and Houston (Wheeler, **1900**) counties.

Cyperaceae

Carex assiniboinensis W. Boott. Reported from Winneshiek County by Tolstead (**1938**) and confirmed by Gilly (**1946**).

Carex conjuncta W. Boott. Reported from Jackson County, Iowa, by Cooperrider (**1962**).

Carex festucacea Schkuhr. Reports by this writer (**1957a, 1957b, 1959, 1960**) were based on misidentified *Carex tenera*.

Carex flava L. Collected by this writer just outside the "Driftless Area" in Waushara County.

Carex frankii Kunth. Reported from Jackson County, Iowa, by Cooperrider (**1962**).

Carex gracilescens Steud. Reported from Jo Daviess County by Jones and Fuller (**1955**).

Carex laxiculmis Schwein. A report of this from LaCrosse County by this writer (**1957b**) was based on misidentified *Carex digitalis*.

Carex praegracilis W. Boott. Known from outside the "Driftless Area" in Clayton County.

Carex sartwellii Dew. Known from outside the "Driftless Area" in Clayton County.

Carex squarrosa L. A report of this from LaCrosse County by this writer (**1957b**) was based on misidentified *Carex typhina*.

Carex suberecta (Olney) Britt. Reported from Jo Daviess County by Fuller (**1945**).

Carex sychnocephala Carey. Collected by this writer just outside the "Driftless Area" in Waushara County.

Carex torta W. Boott. Reported from Houston (Wheeler, **1900**) and Jo Daviess (Fuller, **1945**) counties. Probably based on misidentified *Carex stricta*.

Carex virescens Muhl. Reported from Jo Daviess County by Jones and Fuller (**1955**).

Cladium mariscoides (Muhl.) Torr. Collected by this writer just outside the "Driftless Area" in Waushara County.

Eleocharis equisetoides (Ell.) Torr. Reported from Jo Daviess County by Fuller (**1945**).

Eleocharis quadrangulata (Michx.) R. & S. Reported from Jo Daviess County by Fuller (**1945**).

Eleocharis tenuis (Willd.) Schult. Reported from Jo Daviess County by Fuller (**1945**).

Eriophorum callitrix Cham. Reported from LaCrosse County by Pammel (**1908**). Probably based on misidentified *Eriophorum spissum*.

Eriophorum viridicarinatum (Engelm.) Fern. Reported from Trempealeau County by Greene (**1953**).

Scirpus expansus Fern. A report from Monroe County by this writer (**1957b**) was based on misidentified *Scirpus rubrotinctus*.

Scirpus polyphyllus Vahl. Reported from Jo Daviess County by Fuller (**1945**).

Scirpus smithii Gray. Collected by this writer just outside the "Driftless Area" in Waushara County.

Eriocaulaceae

Eriocaulon septangulare With. Reported (personal correspondence) from the Trempealeau Lakes Area along the Mississippi River in Trempealeau County by William Greene of the U.S. Fish and Wildlife Service, Winona, Minnesota. A collection (not seen by this writer) was made from this station by Dr. Greene in 1956 and is on file at the U.S. Fish and Wildlife Service Herbarium at Winona.

Gramineae

Alopecurus geniculatus L. Reported from Jo Daviess County by

Fuller (**1945**) and from outside the "Driftless Area" in Winneshiek County by Shimek (**1905**).

Aristida longispica Poir. Reported from Jo Daviess County by Jones and Fuller (**1955**).

Arrhenatherum elatius (L.) Mert. & Koch. Reported from northwestern Dane County by Fassett (**1951**).

Avena fatua L. Tolstead (**1938**) reports this for northeastern Iowa but doesn't mention the more common *Avena sativa*. Also reported from Jo Daviess County by Fuller (**1945**).

Eragrostis pilosa (L.) Beauv. Reported from Jo Daviess County by Fuller (**1945**) and from outside the "Driftless Area" in Winneshiek County by Tolstead (**1938**).

Glyceria fluitans (L.) R. Br. Reported from LaCrosse County by Pammel (**1908**). Probably based on misidentified *Glyceria borealis*.

Holcus lantanus L. Reported from "the Upper Mississippi River" by Lapham (**1852**).

Hordeum pusillum Nutt. Reported from Jo Daviess County by Jones and Fuller (**1955**).

Hordeum vulgare L. Reported from outside the "Driftless Area" in Dane County by Fassett (**1951**).

Melica mutica Walt. Reported from Jo Daviess County by Fuller (**1945**).

Panicum boscii Poir. Reported from Jo Daviess County by Jones and Fuller (**1955**).

Panicum clandestinum L. Reported from Jo Daviess County by Jones and Fuller (**1955**).

Panicum dichotomum L. Known from just outside the "Driftless Area" in Dane County. Reported from Jo Daviess (Fuller, **1945**) and Winneshiek (Fitzpatrick, **1899**) counties.

Panicum miliaceum L. Reported from Jo Daviess County by Fuller (**1945**).

Panicum pseudopubescens Nash. Reported from Jo Daviess County by Jones and Fuller (**1955**).

Panicum villosissimum Nash. Reported from Jo Daviess County by Jones and Fuller (**1955**).

Poa chapmaniana Scribn. Reported from Jo Daviess County by Fuller (**1945**).

Triodia flava (L.) Smyth. Reported from Jo Daviess County by Fuller (**1945**).

Juncaceae

Juncus alpinus Vill. Collected by this writer just outside the "Driftless Area" in Waushara County.

Juncus brachycephalus (Engelm.) Buch. Collected by this writer just outside the "Driftless Area" in Waushara County.

Liliaceae

Zigadenus elegans Pursh. Reports by this writer (**1957a, 1957b**) were based on misidentified *Zigadenus glaucus*.

Orchidaceae

Corallorhiza trifida Chatelain. Reported from Houston County by Rosendahl (**1903**).

Cypripedium candidum Muhl. Reported from Houston (Wheeler, **1900**), LaCrosse (Pammel, **1908**), and Winneshiek (Shimek, **1905**) counties.

Habenaria leucophaea (Nutt.) Gray. Reported from Houston (Wheeler, **1900**) and Jo Daviess (Jones and Fuller, **1955**) counties.

Spiranthes romanzoffiana Cham. Reported from Juneau County by Fuller (**1933**).

Potamogetonaceae

Potamogeton friesii Rupr. Reported from Jo Daviess County by Fuller (**1945**).

Potamogeton perfoliatus L. Known from just outside the "Driftless Area" in Portage County, Wisconsin.

Potamogeton praelongus Wulfen. Reported from Jo Daviess County by Fuller (**1945**).

Potamogeton vaginatus Turcz. Reported from outside the "Driftless Area" in Dane County by Ross and Calhoun (**1951**).

Smilacaceae

Smilax rotundifolia L. There are several old reports of this—probably all based on misidentified *Smilax hispida*.

Trilliaceae

Trillium erectum L. Reported from Houston County by Wheeler (**1900**). Later (**1916**) Rosendahl and Butters stated that the specimens were all *Trillium declinatum* (*T. flexipes*).

Amaranthaceae

Amaranthus ambigens Standl. Credited to southeastern Minnesota by Fernald (**1950**).

Amaranthus hybridus L. Reported from Jackson County, Iowa, by Cooperrider (**1962**) and from Jo Daviess County by Fuller (**1945**).

Amaranthus spinosus L. Reported from Jo Daviess County by Fuller (**1945**).

Asclepiadaceae

Asclepias sullivantii Engelm. Reported from outside the "Driftless Area" in Dane and Green counties by Noamesi and Iltis (**1957**).

Boraginaceae

Cynoglosum boreale Fern. Reported from Grant County by Kruschke (**1944**).

Lithospermum arvense L. Reported from Jo Daviess County by Fuller (**1945**).

Capparaceae

Cristatella jamesii Torr. & Gray. Reported from Jackson County, Iowa, by Cooperrider (**1962**) and from Jo Daviess County by Gleason (**1910**) and Jones and Fuller (**1955**).

Caprifoliaceae

Viburnum dentatum L. Reported from Houston County by Wheeler (**1900**). Probably based on misidentified *Viburnum rafinesquianum* which Wheeler does not list.

Viburnum prunifolium L. Reported from Jo Daviess County by Jones and Fuller (**1955**).

Caryophyllaceae

Arenaria serpyllifolia L. Reported from Jo Daviess County by Jones and Fuller (**1955**).

Dianthus armeria L. Reported from Iowa and Lafayette counties by Schlising and Iltis (**1961**).

Dianthus barbatus L. Reported from Grant County by Schlising and Iltis (**1961**).

Gypsophila paniculata L. Reported from Adams and Sauk counties by Schlising and Iltis (**1961**).

Scleranthus perennis L. Reported from Juneau and Sauk counties by Schlising and Iltis (**1961**).

Stellaria palustris Retz. Reported from Iowa County by Schlising and Iltis (**1961**).

Celastraceae

Celastrus articulatus Thunb. Reported from Carroll County by Jones and Fuller (**1955**).

Chenopodiaceae

Chenopodium bushianum Aellen. Reported from Jackson County, Iowa, by Cooperrider (**1962**).

Cistaceae

Lechea villosa Ell. Reported from Jo Daviess County by Fuller (**1945**).

Compositae

Arctium lappa L. Reported from Iowa County by Johnson and Iltis (**1963**) and from outside the "Driftless Area" in Winneshiek County by Shimek (**1905**).

Artemisia annua L. Reported from Jackson County, Iowa (Cooperrider, **1962**), and Jo Daviess County (Fuller, **1945**).

Artemisia canadensis Michx. Reported from Jo Daviess County by Fuller (**1945**).

Aster patens Ait. Reported from Houston County by Wheeler (**1900**). A doubtful report since Wheeler does not list the closely-related *Aster oblongifolius*.

Aster tradescanti L. Reported from Winneshiek County by Shimek (**1905**). Probably based on misidentified *Aster simplex*.

Aster vimineus Lam. Reported from Jo Daviess County by Fuller (**1945**).

Bidens laevis (L.) BSP. Reported from Houston County by Wheeler (**1900**). Probably based on misidentified *Bidens cernua* which Wheeler does not list.

Centaurea vochinensis Bernh. Reported from outside the "Driftless Area" in Dane County by Johnson and Iltis (**1963**).

Chrysanthemum balsamita L. Known from outside the "Driftless Area" in Dane County.

Coreopsis grandiflora Hogg. Reported from Jackson County, Iowa, by Cooperrider (**1962**).

Helianthus atrorubens L. Reported from Houston County by Wheeler (**1900**). Probably based on misidentified *Helianthus rigidus* (*H. laetiflorus*) which Wheeler does not list.

Helianthus divaricatus L. Reported from Houston County by Wheeler (**1900**). This species is known in Wisconsin only from the extreme eastern part of the state.

Helianthus trachelifolius Mill. Reported from Houston County by Wheeler (**1900**). Possibly based on misidentified *Helianthus strumosus*.

Hieracium gronovii L. Reported from Jo Daviess County by Fuller (**1945**).

Hieracium scabriusculum Schwein. (and var. *columbianum* (Rydb.) Lepage) Reported from several counties in the "Driftless Area" by Johnson and Iltis (**1963**).

Iva ciliata Willd. Reported from Jo Daviess County by Fuller (**1945**).

Lapsana communis L. Reported from Iowa County by Johnson and Iltis (**1963**).

Liatris x *gladewitzii* (Farwell) Shinners. Reported from Crawford County by Johnson and Iltis (**1963**).

Liatris spicata (L.) Willd. Reported from Jo Daviess County by Fuller (**1945**).

Megalodonta beckii (Torr.) Greene. Reported from LaCrosse County by Pammel (**1908**).

Polymnia uvedalia L. Reported from outside the "Driftless Area" in Winneshiek County by Shimek (**1905**).

Prenanthes altissima L. Reported from Jo Daviess County by Fuller (**1945**).

Prenanthes aspera Michx. Reported from Sauk County by Johnson and Iltis (**1963**).

Senecio obovatus Muhl. Reported from Jo Daviess County by Fuller (**1945**).

Solidago gymnospermoides (Greene) Fern. Reported from several counties in the "Driftless Area" by Salamun (**1963**). Similar to *Solidago graminifolia*.

Solidago riddellii Frank. Reported from outside the "Driftless Area" in Winneshiek County by Tolstead (**1938**) and from Dane and Greene counties by Salamun (**1963**).

Tragopogon porrifolius L. Reported from Grant, Juneau, and Lafayette counties by Johnson and Iltis (**1963**).

Vernonia missurica Raf. Reported from Jo Daviess County by Fuller (**1945**).

Vernonia noveboracensis (L.) Michx. Reported by Lapham (**1852**) from "the Upper Mississippi region in Wisconsin."

Convolvulaceae

Convolvulus repens L. Reported from Houston County by Wheeler (**1900**). Probably based on misidentified *Convolvulus arvensis* which Wheeler does not list.

Cuscuta indecora Choisy. Reported from Houston County by Wheeler (**1900**).

Ipomoea pandurata (L.) G. F. W. Mey. Reported from Winneshiek County by Fitzpatrick (**1899**).

Cornaceae

Cornus amomum Mill. Reported from Houston County by Wheeler (**1900**). Probably based on *Cornus obliqua* which Wheeler does not list.

Crassulaceae

Sempervivum tectorum L. Reported from northeastern Iowa by Tolstead (**1938**).

Cruciferae

Arabidopsis thaliana (L.) Heynh. Reported from Jo Daviess County by Fuller (1945).

Arabis divaricarpa Nels. Reported (as *A. brachycarpa*) from Winneshiek County by Shimek (1905).

Armoracia aquatica (Eat.) Wieg. Reported from Jo Daviess County by Fuller (1945).

Barbarea orthoceras Ledeb. Reports from LaCrosse County by this writer (1957a and 1957b) were based on *Barbarea vulgaris*.

Brassica hirta Moench. Reported (as *Sinapis alba* L.) from outside the "Driftless Area" in Winneshiek County by Shimek (1905).

Camelina microcarpa Andrz. Known from outside the "Driftless Area" in Dane County and reported from Jackson County, Iowa, by Cooperrider (1962).

Cardamine hirsuta L. Reported from Winneshiek County by Fitzpatrick (1899).

Cardaria draba (L.) Desv. Reported from outside the "Driftless Area" in Winneshiek County by Tolstead (1938).

Conringia orientalis (L.) Dumort. Reported from Jo Daviess County by Fuller (1945).

Iodanthus pinnatifidus (Michx.) Steud. Reported from Fillmore (Rosendahl, 1903) and Jo Daviess (Jones and Fuller, 1955) counties.

Lobularia maritima (L.) Desv. Known from just outside the "Driftless Area" in Dane County.

Dipsacaceae

Dipsacus sylvestris Huds. Known from outside the "Driftless Area" in Green County.

Elatinaceae

Elatine triandra Schkuhr. Known from just outside the "Driftless Area" in Columbia County.

Ericaceae

Moneses uniflora (L.) Gray. Reported from Grant County by Fassett (1929).

Euphorbiaceae

Acalypha virginica L. Reported from northeastern Iowa by Tolstead (1938). Probably based on misidentified *Acalypha rhomboidea* which Tolstead does not list.

Euphorbia commutata Engelm. Reported from Winneshiek County by Tolstead (1938).

Euphorbia helioscopia L. Reported from Adams County by Fassett (1933).

Euphorbia humistrata Engelm. Reported from Jo Daviess County by Fuller (**1945**).

Euphorbia peplus L. Reported from Dane County by Fassett (**1933**).

Euphorbia polygonfolia L. Reported from Jo Daviess County by Fuller (**1945**).

Euphorbia vermiculata Raf. Reported from outside the "Driftless Area" in Dane and Green counties by Fassett (**1933**).

Fagaceae

Quercus coccinea Wang. There are several reports of this in the older literature—probably all based on *Quercus velutina* or *Quercus ellipsoidalis*.

Quercus palustris Muenchh. Reported from Jackson County, Iowa, by Cooperrider (**1962**) and from Jo Daviess County by Jones and Fuller (**1955**).

Quercus stellata Willd. Reported from "the Upper Mississippi River" by Lapham (**1852**).

Gentianaceae

Sabatia campestris Nutt. Reported from Jackson County, Iowa, by Cooperrider (**1962**).

Geraniaceae

Geranium robertianum L. Reported from Jo Daviess County by Fuller (**1945**).

Haloragaceae

Myriophyllum verticillatum L. Reported from Jo Daviess County by Fuller (**1945**).

Hippuridaceae

Hippuris vulgaris L. Reported from outside the "Driftless Area" in Dane County by Fassett (**1930**).

Hydrophyllaceae

Hydrophyllum canadense L. Reported from Jo Daviess County by Fuller (**1945**).

Juglandaceae

Carya illinoensis (Wang.) K. Koch. Reported from Jackson County, Iowa, by Cooperrider (**1962**) and from Jo Daviess County by Jones and Fuller (**1955**).

Carya laciniosa (Michx.) Loud. Reported from Jo Daviess County by Fuller (**1945**).

Labiatae

Agastache foeniculum (Pursh) Kuntze. Reported from just outside the "Driftless Area" in Dane County by Koeppen (**1957**).

Blephilia ciliata (L.) Benth. Reported from Jo Daviess County by Fuller (**1945**).

Calamintha glabella (Michx.) Benth. Reported from Vernon County by Koeppen (**1957**).

Collinsonia canadensis L. Known from just outside the "Driftless Area" in Sauk County.

Dracocephalum parviflorum Nutt. Reported from LaCrosse County by Koeppen (**1957**).

Hyssopus officinalis L. Reported from just outside the "Driftless Area" in Dane County by Koeppen (**1957**).

Lamium maculatum L. Reported from Grant County by Koeppen (**1957**).

Lycopus asper Greene. Reported (as *L. lucidus* Turcz.) from Houston County by Wheeler (**1900**).

Lycopus rubellus Moench. Reported from Houston County by Wheeler (**1900**).

Mentha citrata Ehrh. Reported from Jo Daviess County by Fuller (**1945**).

Mentha gentilis L. Reports from LaCrosse County by this writer (**1957b**, **1959**) were based on a smooth form of *Mentha arvensis*.

Physostegia virginiana (L.) Benth. Reported from Houston (Wheeler, **1900**) and LaCrosse (Pammel, **1908**) counties. Both reports based on what is now called *Physostegia formosior*.

Pycnanthemum flexuosum (Walt.) BSP. Reported (as *Koellia flexuosa*) from Winneshiek County by Shimek (**1905**).

Pycnanthemum pilosum Nutt. Reported from Jo Daviess County by Fuller (**1945**).

Lauraceae

Lindera benzoin (L.) Blume. Reported from Jo Daviess County by Fuller (**1945**).

Leguminosae

Cassia nictitans L. Reported from Jo Daviess County by Fuller (**1945**).

Dalea enneandra Pursh. Reported from Crawford County by Fassett (**1939**).

Desmanthus illinoensis (Michx.) MacM. Reported from Jo Daviess County by Fuller (**1945**).

Desmodium pauciflorum (Nutt.) DC. Reported from Winneshiek County by Shimek (**1905**).

Lathyrus latifolius L. Known from outside the "Driftless Area" in Green County.

Lespedeza hirta (L.) Horn. Reported from Jo Daviess County by Fuller (**1945**).

Lotus americanus (Nutt.) Bisch. Reported from Jo Daviess County by Fuller (**1945**).

Oxytropis chartacea Fassett. Known from just outside the "Driftless Area" in Waushara County.

Psoralea tenuiflora Pursh. Reported from Jo Daviess County by Jones and Fuller (**1955**).

Robinia viscosa Vent. Reported from Jo Daviess County by Jones and Fuller (**1955**).

Vicia sativa L. Reported from outside the "Driftless Area" in Winneshiek County by Tolstead (**1938**).

Linaceae

Linum rigidum Pursh. Reported from Juneau County by Fassett (**1933**).

Malvaceae

Malva sylvestris L. Reported from just outside the "Driftless Area" in Green County by Fassett (**1932a**).

Malva verticillata L. Reported from northeastern Iowa by Tolstead (**1938**).

Sida spinosa L. Reported from Jo Daviess County by Fuller (**1945**).

Martyniaceae

Proboscidea louisinica (Mill.) Thell. Reported from Carroll County by Jones and Fuller (**1955**).

Moraceae

Morus tartarica L. Reported from Carroll County by Jones and Fuller (**1955**).

Nyctaginaceae

Mirabilis linearis (Pursh) Heimerl. Reported from Houston County by Wheeler (**1900**).

Onagraceae

Epilobium hornemanni Reichenb. Reported by Cheney (**1899**) from the Wisconsin River Dells in Juneau County.

Epilobium x *wisconsinense* Ugent. Rhodora 65: 274. **1963.** Reported from Grant and Lafayette counties by Ugent (**1962**).

Gaura coccinea Nutt. Reported from outside the "Driftless Area" in Dane County by Ugent (**1962**).

Gaura parviflora Dougl. Known from outside the "Driftless Area" in Winneshiek County.

Oenothera fruticosa L. Reported from Jo Daviess County by Fuller (**1945**).

Oenothera nuttalli Sweet. Reported from Juneau County by Ugent (**1962**).

Oenothera pilosella Raf. Reported from Grant County by Ugent (**1962**).

Oenothera speciosa Nutt. Reported from Jo Daviess County by Fuller (**1945**).

Oxalidaceae

Oxalis corniculata L. There are several old reports of this—probably all based on misidentified *Oxalis europaea*.

Papaveraceae

Argemone alba Lestib. Reported from Grant County by Cheney (**1899**).

Corydalis flavula (Raf.) DC. Reported from Jo Daviess County by Fuller (**1945**).

Polemoniaceae

Collomia linearis Nutt. Known from just outside the "Driftless Area" in Green County and reported from Jo Daviess County by Jones and Fuller (**1955**).

Phlox glaberrima L. Reported from LaCrosse County by Pammel (**1908**).

Phlox maculata L. Reported from outside the "Driftless Area" in Winneshiek County by Tolstead (**1938**).

Polygonaceae

Polygonum douglasii Greene. A report from Winneshiek County by Shimek (**1905**) was based on misidentified *Polygonella articulata*.

Polygonum orientale L. Reported from Jackson County, Iowa by Cooperrider (**1962**) and from Houston County by Wheeler (**1900**).

Polygonum scabrum Moench. Reported from Crawford County by Mahony (**1932**).

Rumex venosus Pursh. Reported from Dubuque County by Goodman (**1939**).

Primulaceae

Lysimachia clethroides Duby. Reported from outside the "Driftless Area" in Columbia County by Iltis and Shaughnessy (**1960**).

Lysimachia vulgaris L. Reported from outside the "Driftless Area" in Dane County by Iltis and Shaughnessy (**1960**).

Ranunculaceae

Ranunculus hispidus Michx. Reported from Houston County by Rosendahl (**1903**) and from Jo Daviess County by Fuller (**1945**). Probably based on misidentified *Ranunculus fascicularis*.

Ranunculus repens L. Reported from Jo Daviess County by Fuller (**1945**).

Rosaceae

Amelanchier canadensis (L.) Medic. Reported from LaCrosse County by Pammel (**1891a**) and from Houston County by Wheeler (**1900**). Both probably based on misidentified *Amelanchier arborea*.

Crataegus crus-galli L. Reported from Clayton County by Tolstead (1938).

Crataegus margaretta Ashe. A report by this writer (**1957b**) from Jackson County, Wisconsin, was based on misidentified *Crataegus chrysocarpa*.

Geum macrophyllum Willd. Reported from LaCrosse (Pammel, **1908**) and Winneshiek (Shimek, **1905**) counties. Probably based on misidentified *Geum aleppicum* which neither author lists.

Potentilla rivalis Nutt. Reported from LaCrosse County by Pammel (**1908**).

Pyrus aucuparia (L.) Gaertn. Reported from outside the "Driftless Area" in Winneshiek County by Tolstead (**1938**).

Pyrus coronaria L. Reported from the LaCrosse Area by Pammel (**1891a**).

Rosa lunellii Greene. Reported from Jo Daviess County by Jones and Fuller (**1955**).

Rosa multiflora Thunb. Often planted by conservation groups in southern counties.

Rubus neglectus Peck. Reported from Winneshiek County by Tolstead (**1938**).

Rubus odoratus L. Reported from Carroll County by Jones and Fuller (**1955**).

Rubiaceae

Galium palustre L. Reported from Jo Daviess County by Fuller (**1945**).

Salicaceae

Salix pentandra L. Reported from outside the "Driftless Area" in Dane and Eau Claire counties by Argus (**1964**).

Salix purpurea L. Reported from outside the "Driftless Area" in Dane County by Argus (**1964**).

Salix serissima Fern. Reported from outside the "Driftless Area" in Dane and Waushara counties by Argus (**1964**).

Saururaceae

Saururus cernuus L. Reported from Jo Daviess County by Fuller (**1945**) and from "the Upper Mississippi in Wisconsin" by Lapham (**1852**).

Saxifragaceae

Parnassia parviflora DC. Reported from LaCrosse County by Pammel (**1908**). Probably based on misidentified *Parnassia glauca*.

Ribes grossularia L. Reported (as *Ribes uva-crispa* L.) from Houston County by Wheeler (**1900**). Probably based on *Ribes cynosbati*.

Scrophulariaceae

Collinsia verna Nutt. Reported from Stephenson County, Illinois, by Jones and Fuller (**1955**).

Mimulus alatus Ait. Reported from Jo Daviess County by Fuller (**1945**).

Penstemon tubaeflorus Nutt. Reported from Crawford County by Salamun (**1951**).

Simaroubaceae

Ailanthus altissima (Mill.) Swingle. Reported from Jo Daviess County by Fuller (**1945**).

Solanaceae

Solanum triflorum Nutt. Reported from Carroll County by Jones and Fuller (**1955**).

Ulmaceae

Ulmus pumila L. Commonly planted but not definitely spontaneous.

Verbenaceae

Verbena officinalis L. Known from just outside the "Driftless Area" in Sauk County.

Verbena hastata L. x *V. urticifolia* L. Reported from Jo Daviess County by Jones and Fuller (**1955**).

Violaceae

Viola palmata L. There are several reports of this in the older literature. Probably any of the several hybrids formed by crosses between *Viola pedatifida* and others such as *V. nephrophylla*, *V. sororia* and *V. papilionacea*.

Vitaceae

Vitis cinerea Engelm. There are several old reports of this—probably all based on misidentified *Vitis aestivalis*.

Vitis vulpina L. There are several old reports of this—probably all based on misidentified *Vitis riparia*.

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Distribution map of *Aconitum noveboracense*.

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