

MISCELLANEOUS PAPERS

OF THE

BOTANY OF MICHIGAN

BY

CHARLES KEENE DODGE

MICHIGAN GEOLOGICAL AND BIOLOGICAL SURVEY.

Publication 31
Biological Series 6

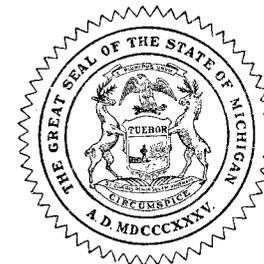


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ON THE
BOTANY OF MICHIGAN

By
C. K. DODGE

PREPARED UNDER THE DIRECTION OF
ALEXANDER G. RUTHVEN
CHIEF NATURALIST



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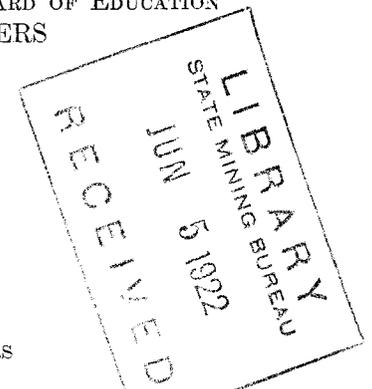
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LETTERS OF TRANSMITTAL.

*To the Honorable the Board of Geological and Biological Survey of the
State of Michigan:*

Gov. Albert E. Sleeper.
Hon. Thomas E. Johnson.
Hon. Fred Jeffers.

Gentlemen:—I have the honor to transmit herewith a manuscript containing miscellaneous papers on the botany of Michigan by the late Charles Keene Dodge, which is a contribution to the Biological Survey of the State authorized by Act No. 250 of the Session of 1905. I recommend that it be printed and bound as Publication 31, Biological Series 6.

Respectfully yours,
R. A. SMITH,
Director.

Lansing, Michigan, December 20, 1920.

Sir:—I submit herewith for publication a number of manuscripts on the botany of Michigan prepared by the late Charles Keene Dodge. Most of the field work, the results of which these papers represent, was done under the direction of the Chief Naturalist and supported by the Survey.

Respectfully,
ALEXANDER G. RUTHVEN,
Chief Naturalist.

R. A. Smith, Director,
Michigan Geological and Biological Survey.

PREFATORY NOTE

BY CECIL BILLINGTON

The several lists of plants comprising this volume were prepared by Charles Keene Dodge and include all of the unpublished manuscript left by him at his death. The papers were evidently complete, as they were marked "ready for the printer". As this volume will be the last publication of his writings it is deemed fitting to include a photograph of Mr. Dodge as a frontispiece, a short biological sketch, and a complete list, so far as they are known, of his publications.

CHARLES KEENE DODGE

Born April 26, 1844 Died March 22, 1918

Charles Keene Dodge was born on a farm in the township of Blackman, Jackson County, Michigan, five miles north of the city of Jackson, April 26, 1844. He received his education entirely in the schools of his native state, graduating from a classical course at the University of Michigan, in 1870.

After leaving the University he taught school two years in Rockland, Michigan, and two years at Hancock, Michigan. He then studied law one year at Hancock, and in 1875 was admitted to the bar. He at once removed to Port Huron, Michigan, where he practiced his profession actively until 1893. At this time he was appointed to the staff of the United States customs office at Port Huron, which position he held until his death.

On August 4, 1897, he was married to Miss Millie Burns and they made their home in Port Huron with the exception of two years spent in the west and south.

Mr. Dodge began to take an interest in systematic botany at about the time he was admitted to the bar in 1875. He had had a six weeks' course in botany under Alexander Winchell and this, together with his natural love of the great out-of-doors furnished the incentive for an active interest in this subject. At one time he wrote "Without any apparent mental effort I took to botany and was never able to let it alone. Everything described within the limits of Gray's Manual interested me. Woods, trees, fields, all formed an irresistible attraction." He has told the writer how at first he would go to the woods or fields, bringing in a few plants carefully hidden under his coat so that his

friends and neighbors could not see them. They nicknamed him "Posy" Dodge, which name he did not relish and tried to avoid occasion for its use as much as possible. However, this feeling gradually wore off, and Mr. Dodge, carrying his much-battered vasculum, was a familiar figure on the streets of Port Huron, particularly those streets leading to the country.

In his early study of botany he was greatly encouraged by the late Professor C. F. Wheeler and by Professor C. K. Davis, both of whom strongly urged him to take up systematic botany seriously, keep field notes, and establish an herbarium so that others might receive the benefit of his labor. He carried on this work until 1893, when he became dissatisfied with his collection and "threw most everything out of the back window and began over again". His ambition now was to have an herbarium embracing the flora of North America, and he engaged in exchanging material and building up a general collection. After a time, however, he came to the conclusion that he could do more effective work by confining himself to Michigan and adjacent territory, and his last herbarium labels read: "Plants of the Great Lakes Region."

In 1908 he became associated with the Michigan Geological and Biological Survey, and through the aid and encouragement of Dr. A. G. Ruthven, Chief Naturalist of the Survey and Director of the Museum of Zoology at the University of Michigan, Mr. Dodge made many of his later and more important botanical expeditions to Chippewa, Luce, Alger, Schoolcraft, Marquette, Houghton and other northern counties. In the fall of 1917 he began an investigation of the flora of Berrien County, which he did not live to complete.

As a recognition of his services in extending the knowledge of the flora of Michigan, he was appointed, in 1912, Associate Curator of Botany in the Museum of Zoology, University of Michigan, and continued a valued member of the staff until his death. His splendid herbarium, consisting of between 30,000 and 40,000 finely prepared specimens was left at his death to the Museum of Zoology at Ann Arbor, where it will be available to other students of systematic botany.

Mr. Dodge was an excellent correspondent and numbered the foremost botanists of the country among his friends. He was not interested in the study of plants for the purpose of naming new species, and had little use for the "splitters", as he called that group of botanists who are continually creating new genera and species by breaking up the old groups. He was interested principally, as he put it, "in finding out what grows wild in Michigan", and he often expressed the wish that he might live until he had made a complete survey of the State. He confined his botanical publications mainly to lists of plants of Michigan and Ontario, but had under preparation at the time of his death an ambitious book giving a list of all the known higher plants of the Great Lakes

Region, with their scientific and common names, medicinal properties, and any other obtainable information. If he had lived to complete this work it would have been a very valuable addition to the botanical information of the district.

So great was his interest in botany, and so strong was his desire that others should know the joy of plant study, that he gave to the high school in Port Huron a nearly complete set of the plants of that vicinity. He was also very generous with his papered specimens, and there are doubtless few herbariums of importance in the country that have not some of his material. He was always willing and anxious to help beginners in systematic botany and took many long tramps, through territory which afforded him nothing new, to assist them in adding to their collections. Any and all information he possessed was freely given to others.

He was an indefatigable worker, whether in the field or his herbarium. The writer had the privilege of accompanying him on some of his later excursions, and notwithstanding his age Mr. Dodge could hold his own on a tramp with most of the younger men of a party. Up to the last year of his life he would tramp all day in the hot sun and work far into the night putting up his specimens for drying, and seemingly be as fresh as ever for the next day's tramping. He would examine herbarium specimens until the small hours of the morning, and it always afforded him great pleasure when he found a plant he had not seen before. In later years he belonged to a nature club in Detroit and frequently took the long car ride necessary to attend their meetings. He was keenly interested in all branches of natural science, but would not allow himself to wander far from his botanical work.

In spite of his all-absorbing interest in botany he was active in local civic affairs and contended strongly with interests in Port Huron which sought to destroy in a measure the beauty of his home city. He took more than an ordinary interest in political affairs, both state and national, and his advanced age was undoubtedly all that kept him from joining in the activities of the Great War, the events of which he followed closely. His love of nature and his kindly disposition made him tolerant of his fellow man, and it was a rare thing to hear him speak ill of anyone.

It was apparent to those who saw Mr. Dodge in the latter part of 1917 that his health was failing. He had been suffering for some time, and the condition continued to grow acute until the next March, when he determined to undergo an operation and accordingly went to the University Hospital at Ann Arbor for that purpose. The shock of the operation proved more than he could stand, and he died on March 22, 1918. With his passing the science of botany in Michigan suffered irreparably, and his many friends and associates lost a personality which had long been an inspiration and help to them.

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CONTENTS

	Page
Letters of Transmittal.....	5
Prefatory Note by Mr. Cecil Billington.....	7
Bibliography of Charles Keene Dodge.....	10
Observations on the Flowering Plants, Ferns, and Fern Allies on and near the shore of Lake Huron from Linwood Park near Bay City, Bay County, to Mackinaw City, Cheboygan County, including the vicinity of St. Ignace, Mackinac and Bois Blanc Islands, Mackinac County, Michigan, by C. K. Dodge.....	15
Observations on the Flowering Plants, Ferns, and Fern Allies growing wild in Schoolcraft County and Vicinity in the Upper Peninsula of Michigan in 1915, by C. K. Dodge.....	75
Observations on the Wild Plants at Whitefish Point and Vermilion, near the South Shore of Lake Superior, and other parts of Chippewa County, Michigan, in 1914, by C. K. Dodge.....	125
Observations on the Flowering Plants, Ferns, and Fern Allies growing without Cultivation in Tuscola County, Michigan, by C. K. Dodge.....	165

ILLUSTRATIONS

Portrait of Charles Keene Dodge.....	Frontispiece
Map of Michigan.....	15

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ISLE ROYALE

LAKE SUPERIOR

DOMINION OF CANADA

ONTONAGON

Houghton

BARAGA

MARQUETTE

GOGEBIC

IRON

DICKINSON

ALGER

SCHOOLCRAFT

LUCY

CHIPPEWA

MACKINAW

DELTA

MENOMINEE

GREEN BAY

LAKE

WISCONSIN

MICHIGAN

HURON

EMMET

CHARLEVOIX

ILLINOIS

LA

OBSERVATIONS ON THE FLOWERING PLANTS, FERNS, AND
FERN ALLIES ON AND NEAR THE SHORE OF LAKE HURON
FROM LINWOOD PARK NEAR BAY CITY, BAY COUNTY,
TO MACKINAW CITY, CHEBOYGAN COUNTY, INCLUDING
THE VICINITY OF ST. IGNACE, MACKINAC AND BOIS
BLANC ISLANDS, MACKINAC COUNTY, MICHIGAN.

Through a suggestion of the late Professor C. A. Davis, the writer for a number of years had contemplated a botanical examination of the eastern part of the lower peninsula of Michigan along the lakes and their connecting waters from the southern state line to Mackinaw City in Cheboygan County. The opportunity to begin was offered in 1908, under the direction of Dr. A. G. Ruthven while making a biological survey of the sand dune region in Huron County on the south shore of Saginaw Bay. During that year and in 1909 the whole shore line and vicinity of Huron County and nearly all the islands in Saginaw Bay, were carefully examined, the results reported and published.* In 1910 an examination of the Saginaw Bay shore was extended west to the border of Bay County and most of Tuscola County looked over. The plants noticed have been catalogued but not published. In 1911 it was decided that a botanical survey of the Lake Huron Shore farther north was desirable, provision made for it, and the work begun in June 1912 and followed up from time to time to and including a part of 1914.

GROUND TRAVERSED

The work was begun June 18, 1912, at a point two miles south of Linwood Park in Bay County, going northward as near Lake Huron as possible. Much of the journey was made over new and almost impassable roads near the lake, plenty of time being taken to examine the vegetation. Stops and examinations were made at the following places in 1912, and the country examined about and between them: Linwood and Pinconning, Bay County; Omer and Au Grès, Arenac County; Tawas City, Oscoda and Au Sable, Iosco County; Harrisville, Alcona County; Alpena, Alpena County; Rogers, Presque Isle County; Cheboygan and Mackinaw City, Cheboygan County; St. Ignace and Mackinac Island, Mackinac County. Afterward in 1913 many of these places were revisited and in addition, Bois Blanc Island and Round Island, Mackinac County; Hillman, Atlanta, and Lewiston, Montmorency County; Mio, Oscoda County; and Rose City, Ogemaw County. The

*A Biological Survey of the Sand Dune Region on the South Shore of Saginaw Bay, Michigan, page 65. Publication 4, Biological Series, 2, 1911.

following list of plants covers the region above mentioned. Vegetation from the south line of Huron County to the south state line has also been examined as well as might be but observations covering that part are reserved for another report. To indicate what has been attempted about the Great Lakes it may be observed here also that the plants of Lambton County, Ontario (the county in Ontario lying opposite St. Clair County, Michigan) have been catalogued and published.¹ Research has been carried as far as Bruce County and Georgian Bay, in Ontario. And investigations have been made in Ontario south along St. Clair River around Lake St. Clair to Detroit River, along that river to Lake Erie and east on the north shore of Lake Erie to Point Pelee including Pelee Island in Lake Erie. In 1910-11, Essex County, Ontario, opposite Wayne County, Michigan, was examined, plants listed and a report made which was published by the Dominion Government of Ontario.²

LAKE HURON SHORE

The distance from Linwood Park in Bay County along the Lake Huron shore to Mackinaw City is approximately 200 miles. A full description here will not be attempted, general features only being mentioned. From Bay City around to Au Gres in Arenac County the shore of Saginaw Bay is very low, and the land back of it is very low, flat, and difficult to drain. The Bay is shallow for a long distance out and much obscured by a dense growth of water loving plants. From Au Gres to Mackinaw City the beach is generally sandy, but occasionally backed by a bluff or sand ridge as below and above Harrisville. The rock outcroppings are comparatively few. There are quarries at Alpena and near Rogers.

SOME LAND AND SURFACE FEATURES

The land in Bay and Arenac counties is generally very flat, and was formerly covered mostly with a dense growth of elm, red maple, ash, and mountain maple. In Ogemaw, Oscoda, Montmorency and Presque Isle counties there is much hilly and rough country. About Rose City, Ogemaw County, the hills are covered with hardwoods and the soil good. Jack pine plains, swamps, and marshy areas are frequent as are ponds and small lakes. Small hardwood tracts and streaks were noticed throughout. Evidence of destructive and devastating forest fires were seen throughout. There are thousands of acres of dead standing and fallen timbers yet to be seen. The complete destruction by an invading forest fire of the villages of Au Sable and Oscoda, Iosco County, in 1911 was still prominently in evidence June 23, 1912.

¹The Flowering Plants, Ferns and Fern Allies Growing without Cultivation in Lambton Co., Ontario. Sixteenth Annual Report Michigan Academy of Science, p. 132.
²Annotated List of Flowering Plants and Ferns of Point Pelee, Ontario and Neighboring Districts by C. K. Dodge. Canada, Department of Mines, Geological Survey.

Scarcely any attempt had yet been made to rebuild except here and there a small structure. These two villages were completely swept out of existence. Sawmills, piles of lumber, stores, residences, bridges, and even street shade trees were consumed. No substantial business had yet returned. It is a remarkable example of the sudden and complete blotting out of villages and business by fire.

LIMITATION OF SPECIES NORTH AND SOUTH NEAR AND ALONG LAKE HURON SHORE

In the following annotated list of plants the limitation of any species north or south in the region visited is noted, but it seemed that several plants were worthy of special mention. The last individual specimen of shellbark hickory was noticed in the northern part of Arenac County, last yellow barked oak near Oscoda in Iosco County, white oak near Cedar Lake in Alcona County, *Nyssa sylvatica* near Omer in Arenac County. *Acer pennsylvanicum* was observed first about two miles north of Harrisville in Alcona County, and it was common from there northward. The white flowering raspberry, *Rubus parviflorus*, was first seen a few miles northwest of Rogers in Presque Isle County, and was abundant from that point northward, while the last of the purple flowering raspberry, *Rubus odoratus*, was noted there and not again observed northward.

BEACH PLANTS

Particular attention was paid to characteristic beach plants. For the whole distance there was not much variation. The following appeared throughout: Beach pea, Pitcher's thistle, tall wormwood, sea sand reed, long-leaved reed grass, *Agropyron dasystachyum*, *Elymus canadensis*, and *Cakile edentula*.

The writer is much indebted to Agnes Chase, scientific assistant in systematic agrostology, United States Department of Agriculture, for examining the grasses; to Kenneth K. Mackenzie of New York City for looking over the *Carices* and other difficult species; to F. F. Forbes of Brookline, Massachusetts, for naming the willows; and to M. L. Fernald of the Gray Herbarium at Harvard College for examining the *Vacciniums* and other plants.

ANNOTATED LIST

POLYPODIACEAE. Fern Family

Phegopteris dryopteris (L.) Fée. Oak fern. Rich open woods throughout. Common.

Adiantum pedatum L. Maidenhair. Rich open or partially shaded ground. Frequent.

Pteris aquilina L. Common brake. Abundant throughout in damp, dry, open or shaded ground.

Asplenium filix-femina (L.) Bernh. Lady fern. In damp shaded places throughout. Plentiful.

Aspidium thelypteris (L.) Sw. Marsh shield-fern. Very common throughout in damp marshy places or rich open woods.

Aspidium marginale (L.) Sw. Evergreen wood-fern. Rich shaded ground. Frequent throughout.

Aspidium cristatum (L.) Sw. Crested shield-fern. In swampy open or partially shaded places. Frequent.

Aspidium spinulosum (O. F. Müller) Sw. Spinulose shield-fern. Rich open woods throughout. Common.

Aspidium spinulosum intermedium (Muhl.) D. C. Eaton. American shield-fern. Damp rich woods and thickets. Frequent throughout.

Cystopteris bulbifera (L.) Bernh. Bulblet Cystopteris. Common on rocky ground and in shaded places. Frequent throughout. Very abundant on Mackinac Island.

Cystopteris fragilis (L.) Bernh. Brittle fern. Frequent in rich woods throughout.

Onoclea sensibilis L. Sensitive fern. Damp, open or shaded ground. Frequent and often abundant throughout.

Onoclea struthiopteris (L.) Hoffm. Ostrich fern. Fine specimens near Alpena and near Rogers in Presque Isle County. In alluvial shaded ground along streams. Throughout.

OSMUNDACEAE. Flowering Fern Family

Osmunda regalis L. Flowering fern. Wet swampy open or shaded places. Seldom abundant.

Osmunda claytoniana L. Clayton's fern. Noticed near Omer, Arenac County, Harrisville, Alcona County, and Rogers, Presque Isle County. Frequent throughout in open or partially shaded rich ground.

Osmunda cinnamomea L. Cinnamon fern. In damp open or shaded ground throughout, but seldom abundant. Fine specimens observed.

OPHIOGLOSSACEAE. Adder's Tongue Family

Botrychium virginianum (L.) Sw. Rattlesnake fern. Rich shaded ground. Plentiful throughout.

EQUISETACEAE. Horsetail Family

Equisetum arvense L. Common horsetail. Damp sandy open ground. Common throughout.

Equisetum sylvaticum L. Wood horsetail. Damp shaded ground. Frequent throughout.

Equisetum fluviatile L. Swamp horsetail. Pipes. Wet swampy places, often in shallow water. Abundant.

Equisetum hyemale intermedium. A. A. Eaton. Scouring rush. Dry open or shaded ground. Plentiful throughout.

Equisetum hyemale robustum (A. Br.) A. A. Eaton. Stout scouring rush. Dry, open or partially shaded ground. Occasional throughout.

Equisetum variegatum Schleich. Variegated equisetum. Usually in damp sand on or near Lake Huron beach. Often plentiful.

Equisetum scirpoides Michx. Sedge-like equisetum. Dryish, open or shaded places. Common and in spots abundant about St. Ignace and on Mackinac Island.

LYCOPODIACEAE. Club Moss Family

Lycopodium lucidulum Michx. Shining club-moss. Damp rich woods. Frequent throughout.

Lycopodium annotinum L. Stiff club-moss. Usually in rich shaded ground. Frequent throughout. Plentiful in hardwoods.

Lycopodium clavatum L. Common club-moss. Usually in dryish shaded ground. Frequent throughout.

Lycopodium obscurum L. Ground pine. In woods. Frequent throughout.

Lycopodium obscurum dendroideum (Michx.) D. C. Eaton. Tree-like ground pine. Noticed mostly in rich woods. Frequent throughout.

Lycopodium complanatum L. Trailing christmas-green. Dryish shaded ground. Occasional throughout.

SELAGINELLACEAE. Selaginella Family

Selaginella selaginoides (L.) Link. Collected on Mackinac Island. By E. J. Hill according to botanical notes of the late Prof. C. F. Wheeler.

Selaginella apus (L.) Spring. Creeping selaginella. Damp open ground. Frequent throughout. A small very pretty moss-like plant.

TAXACEAE. Yew Family

Taxus canadensis Marsh. American yew. In the shade of evergreens or in damp hardwoods and often abundant from Bay County to Mackinac Island, Mackinac County.

PINACEAE. Pine Family

Pinus strobus L. White pine. Small trees throughout and a few large ones. Formerly very abundant. Thousands of seedlings and small trees noticed.

Pinus banksiana Lamb. Jack pine. Noticed from near Au Gres in Iosco County to Rogers in Presque Isle County. Very abundant in

Iosco County and often in large groves. Southern limit on east side of the State near Port Austin, Huron County. In Presque Isle County near Onaway and near Mio, Oscoda County; often one foot and more in diameter, straight and free from limbs, being often cut for lumber.

Pinus resinosa Ait. Red pine. Norway pine. Frequent and often abundant in dry sandy ground from Arenac County to Mackinac Island. Small trees and seedlings abundant. Southern limit on east side of state near Port Huron, St. Clair County.

Larix laricina (Du Roi) Koch. Tamarack. Scattering throughout and trees usually small in wet swampy ground. Reported as formerly abundant.

Picea canadensis (Mill.) BSP. White spruce. Occasional from near Bay City (G. M. Bradford) to Mackinaw City in dryish ground. Abundant about St. Ignace and on Mackinac Island.

Picea mariana (Mill.) BSP. Black spruce. In swamps often with tamaracks. Frequent throughout.

Abies balsamea (L.) Mill. Balsam. First noticed south of Tawas City in Iosco County and frequent from there to Mackinac Island where it is abundant. Southern limit on east side of State near Port Austin in Huron County.

Tsuga canadensis (L.) Carr. Hemlock. Occasional from Bay County to Mackinac Island. Trees usually small. Southern limit on east side of State near Port Huron, St. Clair County.

Thuja occidentalis L. Arbor vitae. White cedar. More or less abundant throughout near the Lake Huron shore. Trees usually small. Formerly often abundant in "cedar swamps" now destroyed by lumbering and fires. Southern limit near shore on east side of State is Port Huron, St. Clair County.

Juniperus communis L. Common juniper. Near Alpena and St. Ignace. Apparently infrequent.

Juniperus communis depressa Ait. Low juniper. Common on or near the Lake Huron shore from Bay County to Mackinaw City. Abundant about St. Ignace and on Mackinac Island.

Juniperus horizontalis Moench. Shrubby red cedar. First noticed on and near the sandy beach of Lake Huron and on Thunder Bay Island in Alpena County. Frequent from there to St. Ignace.

TYPHACEAE. Cat-tail Family

Typha latifolia L. Common cat-tail. Common and often abundant throughout in wet swampy places and shallow water.

Typha angustifolia L. Narrow-leaved cat-tail. Bay County in swampy ground. G. M. Bradford.

SPARGANIACEAE. Bur-reed Family

Sparganium eurycarpum Engelm. Broad-fruited bur-reed. In shallow water and damp places from Bay County to St. Ignace and on Mackinac Island. Common.

Sparganium americanum androcladum (Engelm.) Fernald & Eames. Branching bur-reed. Bay County in swampy ground. G. M. Bradford.

NAJADACEAE. Pondweed Family

Potamogeton natans L. Common floating pondweed. In coves of slow streams and very wet places near Lake Huron shore. Occasional throughout.

Potamogeton americanus C. & S. Long-leaved pondweed. In ponds and coves of slow streams. Frequent throughout.

JUNCAGINACEAE. Arrow Grass Family

Triglochin maritima L. Seaside arrow grass. Wet marshy ground. Frequent throughout.

Triglochin palustris L. Marsh arrow grass. In damp open ground on east side of Mackinac Island, and on Bois Blanc Island, Mackinac County. Plentiful. Probably plentiful throughout but overlooked.

ALISMACEAE. Water-plantain Family

Sagittaria latifolia Willd. Broad-leaved arrow-head. In shallow water and damp places from Bay County to Mackinaw City. Plentiful throughout.

Alisma plantago-aquatica L. Water plantain. In shallow water and muddy places. Frequent throughout.

HYDROCHARITACEAE. Frog's Bit Family

Elodea canadensis Michx. Water-weed. Ponds, small lakes and in stagnant or slowly moving water. Plentiful throughout.

Vallisneria spiralis L. Wild celery. In slowly moving water of streams near the Lake Huron shore from Bay County to Mackinaw City. Plentiful throughout.

GRAMINEAE. Grass Family

Andropogon scoparius Michx. Broom beard-grass. Dry open ground from Bay County to Bois Blanc Island, Mackinac County. Frequent. Common on jack pine plains in Presque Isle, Montmorency, Oscoda and Ogemaw counties.

Andropogon furcatus Muhl. Forked beard-grass. Dry open ground from Bay County to St. Ignace, Mackinac County. Frequent. More

frequent on the jack pine plains of Presque Isle, Montmorency, Oscoda and Ogemaw counties.

Digitaria humifusa Pers. Small crab-grass. Cultivated and waste grounds from Bay County to Mackinaw City, Cheboygan County. Frequent.

Digitaria sanguinalis (L.) Scop. Crab-grass. A weed about fishery and farm buildings, in fields and gardens. Plentiful throughout.

Panicum capillare L. Old-witch grass. A common weed about cities, villages, in fields, and gardens. Plentiful throughout.

Panicum flexile (Gattinger) Scribn. Wiry witch-grass. Damp marshy open ground from Bay County to Bois Blanc Island, Mackinac County. Frequent.

Panicum depauperatum Muhl. Starved panicum. In dry open ground. Frequent throughout.

Panicum boreale Nash. Northern panicum. In damp grassy open ground near Linwood, Bay County. Plentiful at this place.

Panicum lindheimeri Nash. Lindheimer's panic-grass. Dry open ground on Bois Blanc Island. Apparently infrequent.

Panicum tsugetorum Nash. Hemlock panicum. In sandy ground near Au Gres, Arenac County. Plentiful.

Echinochloa crusgalli (L.) Beauv. Barnyard grass. In and near cultivated grounds and in damp places. Plentiful throughout.

Setaria glauca (L.) Beauv. Foxtail. A weed about dwellings and in cultivated grounds. Common throughout.

Setaria viridis (L.) Beauv. Green foxtail. A weed in gardens and other cultivated grounds. Frequent throughout.

Cenchrus carolinianus Walt. Sandbur. Bur grass. Sandy roadsides, sandy pastures and fields, and in waste places of cities and villages. Frequent throughout.

Zizania palustris L. Indian rice. Wild rice. Occasional in shallow water as if introduced.

Zizania aquatica L. Water oats. In mud and shallow water. Infrequent.

Leersia oryzoides (L.) Sw. Rice cut-grass. Scratch grass. Ditches, low banks of small streams and low places. Frequent throughout.

Phalaris arundinacea L. Reed canary grass. In wet marshy open places. Frequent throughout.

Phalaris arundinacea picta L. Ribbon grass. Noticed in many wet marshy places as an apparently permanent escape from cultivation.

Hierochloa odorata (L.) Wahlenb. Vanilla grass. Abundant in spots on the east side of Mackinac Island. Probably frequent throughout but overlooked.

Milium effusum L. Millet grass. Rich shaded ground especially in rich woods. Frequent throughout.

Oryzopsis pungens (Farr.) Hitchc. Slender mountain rice. Dry open ground from Bay County to Mackinac Island, Mackinac County. Frequent.

Oryzopsis asperifolia Michx. White-grained mountain rice. Dryish open or partially shaded ground. Frequent throughout.

Stipa spartea Trin. Porcupine grass. In sandy ground near Linwood, Bay County. Plentiful near the sandy beach at this place.

Muhlenbergia racemosa (Michx.) BSP. Marsh muhlenbergia. Damp open ground with other grasses. Frequent throughout.

Brachyelytrum erectum (Schreb.) Beauv. Bearded short-husk. Rich woods. Frequent throughout.

Phleum pratense L. Timothy. Along roads and in waste places. Apparently introduced. Plentiful throughout.

Alopecurus geniculatus aristulatus Torr. Floating foxtail. In very wet places near Linwood, Bay County. Plentiful. Probably frequent throughout.

Sporobolus cryptandrus (Torr.) Gray. Sand drop-seed. On and near sandy beach of Lake Huron. Frequent throughout.

Agrostis alba L. Red top. Damp rich meadow-like ground and often abundant in damp sand. Plentiful throughout.

Agrostis hyemalis (Walt.) BSP. Hair grass. Dry or moist open ground. Frequent throughout. Plentiful on jack pine plains in Presque Isle, Montmorency, Oscoda and Ogemaw counties.

Calamovilfa longifolia (Hook.) Hack. Long-leaved reed-grass. On the sandy beach of Lake Huron, usually above the wave line. An efficient sand binder against the action of winds. Frequent throughout. Seldom abundant.

Calamagrostis canadensis (Michx.) Beauv. Blue-joint grass. In wet open marshy places. Often abundant throughout.

Ammophila arenaria (L.) Link. Sea sand-reed. In spots throughout on the sandy beach of Lake Huron. Often abundant below the wave line. One of the best known sand binders against the action of both wind and wave.

Deschampsia flexuosa (L.) Trin. Common hair grass. Near Au Sable, Iosco County. In dry shaded ground. Noticed as frequent throughout.

Deschampsia caespitosa (L.) Beauv. Tufted hair-grass. Wet open ground on Bois Blanc Island. Apparently infrequent.

Danthonia spicata (L.) Beauv. Common wild oat grass. Dry sandy open ground. Common throughout.

Phragmites communis Trin. Reed. Margins of swamps and in marshy ground. Frequent throughout.

Eragrostis pilosa (L.) Beauv. Tufted eragrostis. Sandy open ground. Frequent near cities and villages.

- Eragrostis megastachya* (Koeler) Link. Strong-scented love-grass. Gardens and waste places. Frequent throughout.
- Melica striata* (Michx.) Hitchc. Purple oat. In spruce-cedar woods near St. Ignace. Apparently infrequent.
- Dactylis glomerata* L. Orchard grass. Waste places, streets and roadsides in and near cities and villages. Frequent throughout.
- Poa annua* L. Low spear grass. Roadsides and in lawns and yards of cities and villages. Plentiful throughout.
- Poa compressa* L. Canada blue grass. Dry open ground. Frequent throughout.
- Poa triflora* Gilib. Fowl meadow grass. In damp ground on the east side of Mackinac Island. Apparently infrequent. Perhaps overlooked.
- Poa pratensis* L. June grass. In patches throughout. Seldom thriving in dry sandy ground. Common in cities and villages and in old pastures.
- Poa debilis* Torr. Weak spear grass. In open rocky places on the east side of Mackinac Island. Apparently infrequent. Perhaps overlooked.
- Glyceria canadensis* (Michx.) Trin. Rattlesnake grass. Damp open places. Plentiful throughout.
- Glyceria nervata* (Willd.) Trin. Nerved manna-grass. In damp open or partially shaded ground. Common throughout.
- Glyceria grandis* Wats. Reed meadow grass. Banks of streams and wet meadow-like ground. Frequent throughout.
- Festuca octoflora* Walt. Slender fescue-grass. In dry open or slightly shaded ground. Frequent throughout.
- Festuca occidentalis* Hook. Western fescue-grass. Woods about St. Ignace and on Mackinac Island. Plentiful. Apparently infrequent.
- Festuca ovina* L. Sheep's fescue. Open sandy ground. Frequent throughout.
- Bromus inermis* Leyss. Hungarian brome-grass. Apparently a permanent escape from cultivation in old fields above Alpena. Apparently infrequent.
- Bromus secalinus* L. Common chess. Waste places of cities and villages and about farm dwellings. Frequent throughout.
- Bromus ciliatus* L. Fringed broom-grass. Damp slightly shaded ground. Frequent throughout.
- Bromus kalmii* Gray. Wild chess. Near St. Ignace and on Mackinac Island in damp open ground. Plentiful. Also near Mio, Oscoda County.
- Bromus punPELLIANUS melicoides* Shear. Pumpelly's brome-grass. Plentiful on the sandy beach at Mackinaw City. Apparently well established. A western grass perhaps not before noticed in Michigan. Not yet included in our present manuals. Said to exist in Illinois. (Agnes Chase.)

- Agropyron smithii* Rydb. Western wheat-grass. In cities, villages and waste places from Bay County to Bois Blanc Island, Mackinac County. Frequent.
- Agropyron repens* (L.) Beauv. Quack-grass. In cities, villages and cultivated grounds. Frequent throughout.
- Agropyron dasystachyum* (Hook.) Scribn. Northern wheat-grass. In spots on the sandy beach of Lake Huron. A sand binder against the action of wind. Seldom abundant. Occasional throughout.
- Agropyron caninum* (L.) Beauv. Awned sheat-grass. Near Linwood in Bay County in dryish open ground. Apparently infrequent.
- Secale cereale* L. Rye. On the sandy beach of Lake Huron near Linwood in Bay County. Apparently a permanent escape. Plentiful.
- Hordeum jubatum* L. Squirrel-tail grass. Noticed now in waste places of all cities and villages. Frequent throughout. From the west.
- Elymus virginicus* L. Virginia wild rye. In damp shaded ground. Apparently infrequent.
- Elymus canadensis* L. Nodding wild rye. On and near sandy beach of Lake Huron. A good sand binder against the action of wind. Plentiful throughout.
- Hystrix patula* Moench. Bottle-brush grass. Open or shaded ground from Bay County to Mackinaw City. Frequent. Noticed in particular near Mio, Oscoda County.

CYPERACEAE. Sedge Family

- Cyperus filiculmis* Vahl. Slender cyperus. Dry open ground near Mio, Oscoda County. Plentiful.
- Dulichium arundinaceum* (L.) Britton. Dulichium. In wet open places and on borders of ponds. Plentiful throughout.
- Eleocharis obtusa* (Willd.) Schultes. Blunt spike-rush. In damp, muddy, mostly open places, often in damp sand. Frequent throughout.
- Eleocharis palustris* (L.) R. & S. Creeping spike-rush. In wet marshy open ground. Plentiful throughout.
- Eleocharis palustris glaucescens* (Willd.) Gray. Slender creeping spike-rush. In damp open ground at St. Ignace. Plentiful. Perhaps existing throughout, but overlooked.
- Eleocharis palustris vigens* Bailey. Large creeping spike-rush. In shallow water of small lakes, and slow streams. Frequent throughout.
- Eleocharis acicularis* (L.) R. & S. Needle spike-rush. Wet muddy or wet sandy places near Lake Huron shore, and in springy spots. Frequent throughout.
- Eleocharis tenuis* (Willd.) Schultes. Slender spike-rush. Wet marshy open places. Frequent throughout.
- Eleocharis rostellata* Torr. Beaked spike-rush. On the east side of

Mackinac Island, in wet swampy ground. Plentiful at that place. Apparently infrequent.

Scirpus pauciflorus Lightf. Few-flowered club-rush. Wet open ground near Alpena along Lake Huron shore. Abundant in spots throughout.

Scirpus caespitosus L. Tufted club-rush. Wet marshy open places on Bois Blanc Island. Frequent.

Scirpus hudsonianus (Michx.) Fernald. Alpine cotton-grass. Open boggy places in Presque Isle County. Plentiful.

Scirpus subterminalis Torr. Water club-rush. Ponds and borders of slow streams. Frequent throughout.

Scirpus americanus Pers. Three-square. In very wet places along the Lake Huron shore, on borders of small lakes and along low banks of streams. Plentiful throughout.

Scirpus validus Vahl. Great bulrush. In wet marshy places near shore of Lake Huron and about small lakes. Plentiful throughout.

Scirpus occidentalis (Wats.) Chase. Western bulrush. From Bay County to Mackinac Island. Very abundant in shallow water of Lake Huron above Bay City. Also in marshes, swamps, on the margins of streams, and in and about small lakes.

Scirpus fluviatilis (Torr.) Gray. River bulrush. In very wet places near Linwood, Bay County. Plentiful.

Scirpus atrovirens Muhl. Dark green bulrush. Marshy open ground. Common throughout.

Scirpus cyperinus pelius Fernald. Wool-grass. In damp marshy open places. Common throughout.

Eriophorum callitrix Cham. Sheathed cotton-grass. In open bogs. Frequent throughout.

Eriophorum gracile Roth. Slender cotton-grass. Near lighthouse in Presque Isle County, in a swampy open place. Frequent throughout.

Eriophorum viridi-carinatum (Engelm.) Fernald. Tall cotton-grass. Common throughout in open or partially shaded boggy places.

Eriophorum virginicum L. Virginia cotton-grass. Bogs and damp meadow-like ground. Frequent throughout.

Rynchospora alba (L.) Vahl. White beaked-rush. Open bogs. Frequent throughout.

Rynchospora capillacea Torr. Capillary beaked-rush. Wet open ground. Plentiful throughout.

Cladium mariscoides (Muhl.) Torr. Twig rush. Bogs and wet sandy ground. Common throughout.

Carex scoparia Schkuhr. Pointed broom sedge. Low open ground. Frequent throughout.

Carex tribuloides Wahlenb. Blunt brown sedge. Damp, usually shaded ground. Frequent throughout.

Carex tribuloides reducta Bailey. Smaller blunt brown sedge. Damp, partially shaded ground. Frequent throughout.

Carex siccata Bailey. Hillside sedge. Dry open ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Carex cristata Schwein. Crested sedge. Usually in wet shaded ground. Frequent throughout.

Carex mirabilis Dewey. Larger straw sedge. Dry open or partially shaded ground. Frequent throughout.

Carex mirabilis tinctoria Fernald. Smaller straw sedge. Dry open or partially shaded ground, Bois Blanc Island. Plentiful. Probably to be found throughout, but overlooked.

Carex straminea Willd. Straw sedge. Dry open or partially shaded ground. Frequent throughout.

Carex festucea Olney. Fescue sedge. Dry open ground. Frequent throughout.

Carex bebbii Olney. Bebb's sedge. Low open ground, from Bay County to Bois Blanc Island, Mackinac County. Frequent.

Carex aenea Fernald. Wiry sedge. Open sandy ground near Cheboygan, Cheboygan County. Plentiful.

Carex stellulata Good. Little prickly sedge. Open low ground. Frequent throughout.

Carex stellulata cephalantha (Bailey) Fernald. Larger prickly sedge. Marshy open ground. Plentiful throughout.

Carex scirpoides Schkuhr. Inland sedge. Noticed in particular near Alpena and on Mackinac Island. Frequent throughout.

Carex canescens L. Silvery sedge. Wet open or partially shaded ground. Frequent throughout.

Carex bromoides Schkuhr. Brome-like sedge. In swampy places and damp shaded ground. Frequent throughout.

Carex deweyana Schwein. Dewey's sedge. Rich shaded ground. Mostly in rich open woods. Frequent throughout.

Carex tenuiflora Wahlenb. Sparce-flowered sedge. Wet boggy open or partially shaded ground. Frequent throughout.

Carex trisperma Dewey. Three-fruited sedge. Wet boggy ground. Noticed mostly in tamarack-black spruce swamps. Frequent throughout.

Carex tenella Schkuhr. Soft-leaved sedge. Swampy shaded ground especially in damp woods. Frequent throughout.

Carex rosea Schkuhr. Stellate sedge. Dryish shaded ground and open woods. Frequent throughout.

Carex muhlenbergii Schkuhr. Muhlenberg's sedge. Dry open ground near Pinconning, Bay County. Plentiful.

Carex vulpinoidea Michx. Fox sedge. Low wet open ground. Frequent throughout.

- Carex diandra* Schrank. Lesser paniced sedge. Wet marshy or meadow-like ground. Frequent throughout.
- Carex stipata* Muhl. Awl-fruited sedge. In very wet open or partially shaded ground. Common throughout.
- Carex sartwellii* Dewey. Sartwell's sedge. In wet marshy open ground from Bay County to Mackinac Island. Plentiful.
- Carex crinita* Lam. Fringed sedge. Wet open or partially shaded ground. Plentiful throughout.
- Carex aquatilis subtricta* Kükenthal. Smaller water sedge. On Thunder Bay Island in Alpena County and on Mackinac Island. Usually in wet marshy open ground. Plentiful throughout.
- Carex stricta* Lam. Tussock sedge. Very wet usually open ground growing in bunches. Frequent throughout.
- Carex aurea* Nutt. Golden-fruited sedge. Noticed throughout in open or shaded grassy ground. Plentiful.
- Carex hassii* Bailey. Hasse's sedge. In damp sand, usually not far from Lake Huron shore, from Sand Point in Huron County to Bois Blanc Island in Mackinac County. Formerly referred to *C. bicolor* All.
- Carex leptalea* Wahlenb. Bristle-stalked sedge. Bogs and very wet meadow-like ground. Abundant throughout.
- Carex polygama* Schkuhr. Brown sedge. Wet marshy places and open bogs. Plentiful throughout.
- Carex gracillima* Schwein. Graceful sedge. Damp open or shaded ground, usually in rich woods. Frequent throughout.
- Carex scirpoidea* Michx. Scirpus-like sedge. On and near beach of Thunder Bay Island in Alpena County. Plentiful at that place. Not noticed elsewhere.
- Carex umbellata* Schkuhr. Umbel-like sedge. Dry sandy open ground. Apparently infrequent.
- Carex albicans* Willd. White-tinged sedge. In open woods about St. Ignace and on Mackinac Island. Plentiful. Not noticed elsewhere.
- Carex communis* Bailey. Fibrous-rooted sedge. Dryish open woods throughout. Plentiful.
- Carex varia* Muhl. Emmon's sedge. Dry open ground near Pincanning in Bay County. Plentiful.
- Carex pennsylvanica* Lam. Pennsylvania sedge. In dry open ground. Frequent throughout.
- Carex livida* (Wahlenb.) Willd. Livid sedge. Open bogs. Frequent throughout.
- Carex tetanica* Schkuhr. Wood's sedge. Noticed in damp ground near Linwood in Bay County. Probably growing throughout.
- Carex limosa* L. Mud sedge. Open bogs, Bois Blanc Island, Mackinac County. Plentiful.

- Carex eburnea* Boott. Brittle-leaved sedge. On shaded hillsides and bluffs and in dry open or shaded ground. Frequent throughout.
- Carex laxiflora patulifolia* (Dewey) Carey. Two-edged sedge. Rich shaded ground. Frequent throughout.
- Carex laxiflora varians* Bailey. Woodland sedge. In open woods on Mackinac Island. Frequent throughout.
- Carex granularis haleana* (Olney) Porter. Schriver's sedge. In open ground from Bay County to Mackinac Island. Frequent.
- Carex crawei* Dewey. Crawe's sedge. Thunder Bay Island in Alpena County, 1907. Probably to be found throughout.
- Carex flava* L. Yellow sedge. In wet marshy places throughout. Common.
- Carex oederi* Retz. Oeder's sedge. In damp sand near Rogers, Cheboygan County. Plentiful in damp sandy open ground near shores.
- Carex oederi pumila* (Cosson & Germain) Fernald. Smaller Oeder's sedge. Damp sandy ground and plentiful on Mackinac Island. F. W. Hunnewell 2d.
- Carex castanea* Wahlenb. Chestnut sedge. In alluvial woods near Rogers, Presque Isle County. Plentiful. Probably growing throughout.
- Carex capillaris* L. Hair-like sedge. Open damp ground on Thunder Bay Island in Alpena County and on Mackinac Island, Mackinac County. Plentiful. Often abundant.
- Carex capillaris elongata* Olney. Tall hair-like sedge. Open or partially shaded ground on Mackinac Island, Mackinac County. Plentiful.
- Carex arctata* Boott. Drooping wood sedge. In open woods throughout. Plentiful.
- Carex debilis rudgei* Bailey. Rudge's sedge. Open woods and open meadowlike ground in Arenac County and Alcona County. Plentiful. Probably growing throughout.
- Carex filiformis* L. Slender sedge. In very wet marshy places. Abundant throughout.
- Carex lanuginosa* Michx. Woolly sedge. In wet low open ground, especially in damp open sand. Plentiful throughout.
- Carex oligosperma* Michx. Few-seeded sedge. Open boggy ground. Plentiful throughout.
- Carex riparia* W. Curtis. River bank sedge. Very wet swampy places. Frequent throughout.
- Carex pseudo-cyperus*. Cyperus-like sedge. In marshy open ground throughout. Frequent.
- Carex comosa* Boott. Bristly sedge. Open marshy and swampy ground. Frequent throughout.
- Carex hystericina* Muhl. Porcupine sedge. Wet open marshy places. Common throughout.

Carex retrorsa Schwein. Retrorse sedge. In marshy open or partially shaded ground. Plentiful throughout.

Carex intumescens Rudge. Bladder sedge. In swampy, wet woods and meadows. Frequent throughout.

Carex lupulina Muhl. Hop sedge. Open marshy places. Frequent throughout.

Carex rostrata Stokes. Beaked sedge. Very wet open ground. Frequent throughout.

ARACEAE. Arum Family

Arisaema triphyllum (L.) Schott. Jack-in-the-pulpit. Damp rich shaded ground. Common throughout.

Peltandra virginica (L.) Kunth. Green arrow arum. In shallow water near Bay City, Bay County. Plentiful. G. M. Bradford.

LEMNACEAE. Duckweed Family

Spirodela polyrhiza (L.) Schleid. Greater duckweed. Covering shallow water in pools, ponds and coves throughout. Frequent and often abundant.

Lemna minor L. Lesser duckweed. Covering shallow stagnant water and often on mud. Common throughout.

ERIOCAULACEAE. Pipewort Family

Eriocaulon articulatum (Huds.) Morong. Seven-angled pipewort. Margin of Long Lake in Cheboygan County. Plentiful. Apparently infrequent.

XYRIDACEAE. Yellow-eyed Grass Family

Xyris flexuosa Muhl. Slender yellow-eyed grass. In a very wet marshy place near Au Sable, Iosco County. Apparently infrequent.

PONTEDERIACEAE. Pickerel-weed Family

Pontederia cordata L. Pickerel-weed. In shallow water on borders of small lakes, in large ponds, and coves of streams, from Bay County to Mackinaw City. Frequent throughout.

Heteranthera dubia (Jacq.) MacM. Water star-grass. Shallow water near Bay City, Bay County. G. M. Bradford.

JUNCACEAE. Rush Family

Juncus bufonius L. Toad rush. Damp open ground. Common throughout.

Juncus tenuis Willd. Slender rush. Fields, roadsides, and along paths. Common.

Juncus dudleyi Wiegand. Dudley's rush. Damp open ground from Bay City, Bay County, to Mackinac Island, Mackinac County. Plentiful.

Juncus balticus littoralis Engelm. Baltic rush. Sandy beaches of Lake Huron and in dry or damp open ground, but seldom abundant. On the sandy beach of Lake Huron it is an efficient sand binder.

Juncus effusus L. Common rush. Low damp open ground. Common throughout.

Juncus brachycephalus (Engelm.) Buchenau. Small-headed rush. Wet marshy places near Bay City in Bay County. Frequent. Probably growing throughout.

Juncus brevicaudatus (Engelm.) Fernald. Narrow paniced-rush. Wet muddy open places. Frequent throughout.

Juncus canadensis J. Gay. Canada rush. Marshy open places. Frequent throughout.

Juncus pelocarpus Mey. Brown-fruited rush. Wet sandy open places and damp sandy shores. Frequent throughout.

Juncus nodosus L. Knotted rush. Wet marshy places and in damp sand. Frequent throughout.

Juncus torreyi Coville. Torrey's rush. Damp low sandy ground near Bay City, Bay County. G. M. Bradford.

Juncus alpinus insignis Fries. Richardson's rush. Damp sand on and near Lake Huron beach from Bay City, Bay County to Mackinac Island. Plentiful.

Luzula saltuensis Fernald. Hairy wood-rush. Dryish open woods throughout. Plentiful.

Luzula campestris multiflora (Ehrh.) Celak. Common wood-rush. Fields and meadow-like ground. Frequent throughout.

LILIACEAE. Lily Family

Tofieldia glutinosa (Michx.) Pers. Glutinous tofieldia. In marshy or damp sandy open ground. Plentiful throughout.

Zygadenus chloranthus Richards. Glaucous zygadenus. In damp sandy ground at St. Ignace and on Mackinac Island. Plentiful.

Uvularia grandiflora Sm. Large-flowered bellwort. Rich woods. Frequent throughout.

Oakesia sessilifolia (L.) Watts. Sessile-leaved bellwort. In open woods or open ground. Frequent. Often plentiful.

Allium tricoccum Ait. Wild leek. Rich hardwoods. Plentiful throughout.

Hemerocallis fulva L. Common day lily. A permanent escape throughout in and near cities and villages.

Lilium philadelphicum andinum (Nutt.) Ker. Western red lily.

Damp rich open or partially shaded ground or in sandy places. Common and often abundant throughout especially along railroads.

Lilium superbum L. Turk's-cap lily. Rich open or slightly shaded ground on north side of Bois Blanc Island, Mackinac County. Apparently infrequent.

Erythronium americanum Ker. Yellow adder's-tongue. In rich open woods from Bay City, Bay County to Mackinac Island, Mackinac County. Frequent throughout. Often abundant.

Erythronium albidum Nutt. White adder's-tongue. Rich partially shaded ground. From Bay County to Alpena County. Frequent.

Asparagus officinalis L. Garden asparagus. Noticed as a permanent escape near cities and villages throughout.

Clintonia borealis (Ait.) Raf. Yellow clintonia. Moist woods and shaded swampy places. Common throughout.

Smilacina racemosa (L.) Desf. False spikenard. Usually in rich shaded ground. Plentiful throughout.

Smilacina stellata (L.) Desf. Star-flowered Solomon's seal. Equally at home in dry sandy open ground or in rich woods. Common throughout.

Smilacina trifolia (L.) Desf. Three-leaved Solomon's seal. Swampy and boggy ground. Frequent throughout.

Maianthemum canadense Desf. False lily-of-the-valley. Rich shaded ground. Common throughout.

Streptopus amplexifolius (L.) DC. Claspingleaved twisted-stalk. In damp rich woods on Mackinac Island, Mackinac County, also on Bois Blanc Island. F. W. Hunnewell 2d.

Streptopus roseus Michx. Sessile-leaved twisted-stalk. Damp rich woods. Plentiful throughout.

Polygonatum biflorum (Walt.) Ell. Small Solomon's seal. Rich shaded ground. Common throughout.

Medeola virginiana L. Indian cucumber-root. In beech and maple woods near St. Ignace and Rogers. Plentiful. Probably frequent throughout.

Trillium grandiflorum (Michx.) Salisb. Large-flowered wake-robin. In rich shaded ground. Common throughout.

Trillium cernuum L. Nodding wake-robin. On Thunder Bay Island in Alpena County in rich woods. Probably frequent throughout.

Smilax hispida Muhl. Hispid greenbriar. Rich damp thickets near Au Gres, Arenac County, and in Cheboygan County. Plentiful near Mio, Oscoda County. Apparently infrequent.

AMARYLLIDACEAE. Amaryllis Family

Hypoxis hirsuta (L.) Coville. Star grass. In damp open ground near Linwood, Bay County. Abundant.

IRIDACEAE. Iris Family

Iris versicolor L. Larger blue flag. Occasional in low and damp open ground throughout.

Iris lacustris Nutt. Lake dwarf iris. First noticed near Alpena and not far from the Lake Huron shore in damp or dry and open or slightly shaded ground. Very abundant in spots from there to St. Ignace, and on Bois Blanc Island in Mackinac County.

Sisyrinchium augustifolium Mill. Pointed blue-eyed grass. In damp open ground from Bay County to Mackinac Island, Mackinac County. Frequent.

ORCHIDACEAE. Orchis Family

Cypripedium arietinum R. Br. Ram's head lady's slipper. Said to be plentiful in swamps near Huron Beach north of Alpena. Not seen by writer.

Cypripedium parviflorum Salisb. Smaller yellow lady's slipper. In damp rich shaded ground from Bay County to St. Ignace and on Mackinac Island, Mackinac County. Frequent.

Cypripedium parviflorum pubescens (Willd.) Knight. Larger yellow lady's slipper. In rich shaded ground from Bay County to St. Ignace and on Mackinac Island, Mackinac County. Frequent.

Cypripedium hirsutum Mill. Showy lady's slipper. Occasional throughout in damp or wet open or slightly shaded ground. Abundant in spots in Presque Isle and Cheboygan counties.

Cypripedium acaule Ait. Stemless lady's slipper. In shaded sandy ground throughout but seldom abundant.

Orchis spectabilis L. Showy orchis. Rich woods. Occasional throughout.

Habenaria bracteata (Willd.) R. Br. Long bracted orchis. In rich woods from Alpena to St. Ignace and on Mackinac Island, Mackinac County. Frequent.

Habenaria flava (L.) Gray. Tubercled orchis. In wet open or shaded places from Alpena to St. Ignace and on Mackinac Island. Frequent.

Habenaria hyperborea (L.) R. Br. Tall leafy-green orchis. In damp woods from Alpena to St. Ignace and on Mackinac Island. Frequent.

Habenaria dilatata (Pursh) Gray. Tall white bog orchis. In very wet open boggy places from Bay City, Bay County, to St. Ignace and on Mackinac Island, Mackinac County. Frequent.

Habenaria clavellata (Michx.) Spreng. Small green wood orchis. Bogs and moist ground. Frequent.

Habenaria obtusata (Pursh) Richards. Small northern bog orchis. Rich woods. Frequent throughout.

Habenaria hookeri Torr. Hooker's orchis. Dry or damp shaded

ground from Bay County to Mackinac Island, Mackinac County. Frequent.

Habenaria orbiculata (Pursh) Torr. Large round-leaved orchis. Rich shaded ground from Bay County to Mackinac Island, Mackinac County. Apparently infrequent.

Habenaria lacera (Michx.) R. Br. Ragged fringed orchis. In open ground from Bay County to Mackinac Island, Mackinac County. Frequent.

Habenaria psycodes (L.) Sw. Smaller purple-fringed orchis. Wet places and in damp meadow-like ground. Frequent throughout.

Pogonia ophioglossoides (L.) Ker. Rose pogonia. Wet boggy ground. Occasional throughout.

Calopogon pulchellus (Sw.) R. Br. Calopogon. Grass pink. In boggy open ground from Bay County to Mackinaw City, Cheboygan County. Apparently infrequent.

Arethusa bulbosa L. Arethusa. In an open bog near the life saving station above Cheboygan, Cheboygan County. Probably frequent throughout.

Spiranthes gracilis (Bigel) Beck. Slender ladies' tresses. Dry open ground. Occasional throughout. Probably often overlooked.

Spiranthes cernua (L.) Richards. Nodding ladies' tresses. Bogs and damp open ground. Frequent throughout. Abundant in damp open ground at St. Ignace and on Mackinac Island, Mackinac County.

Epipactis repens ophioides (Fernald) A. A. Eaton. Lesser rattlesnake plantain. Rich woods from Alpena, Alpena County to St. Ignace, Mackinac County. Apparently infrequent.

Epipactis tesselata (Lodd.) A. A. Eaton. Checkered rattlesnake plantain. In damp rich woods on Mackinac Island, Mackinac County. Apparently infrequent. The late Prof. C. F. Wheeler noted this plant in Michigan as early as 1901.

Epipactis decipiens (Hook.) Ames. Menzies' rattlesnake plantain. In rich shaded ground about St. Ignace and on Mackinac Island, Mackinac County. Apparently infrequent.

Listera convallarioides (Sw.) Torr. Broad-lipped twayblade. Damp rich shaded ground on Mackinac Island. Plentiful. Apparently infrequent.

Corallorrhiza trifida Chatelain. Early coral-root. In rich shaded ground about St. Ignace and abundant on Mackinac Island, Mackinac County. Noticed from Bay County to Mackinac Island.

Corallorrhiza maculata Raf. Large coral-root. Usually in rich shaded ground. Noticed as occasional from Alpena to St. Ignace. Very abundant on Mackinac Island, Mackinac County.

Corallorrhiza striata Lindl. Striped coral-root. Noticed from near

Alpena to St. Ignace and on Mackinac Island. Usually in rich shaded ground. Plentiful on Thunder Bay Island, Alpena County.

Microstylis unifolia (Michx.) BSP. Green adder's-mouth. Rich woods near Bay City, Bay County. G. M. Bradford.

Liparis leoselii (L.) Richards. Fen orchis. From Bay County to Mackinac Island, Mackinac County. Frequent.

Calypso bulbosa (L.) Oakes. Calypso. In rich shaded ground on Thunder Bay Island in Alpena County. Apparently infrequent.

SALICACEAE. Willow Family

Salix nigra Marsh. Black willow. Banks of streams and in damp places from Bay County to Mackinaw City, Cheboygan County. Usually small trees or mere shrubs. Plentiful.

Salix nigra falcata (Pursh) Torr. Falcate-leaved black willow. Along small streams near Bay City, Bay County. Frequent. G. M. Bradford.

Salix amygdaloides Anders. Peach-leaved willow. Common from near Linwood, Bay County, through Arenac County. Not noticed farther north. Reported in Michigan Flora as near Harrisville in Alcona County.

Salix lucida Muhl. Shining willow. Wet open ground. Common throughout.

Salix serissima (Bailey) Fernald. Autumn willow. Damp open ground from Bay County to Mackinaw City, Cheboygan County. Occasional throughout.

Salix alba L. White willow. Frequently planted but seldom escaping so far as observed.

Salix longifolia Muhl. Sand bar willow. Noticed as quite frequent on and near the Lake Huron beach from Bay County to Mackinaw City, Cheboygan County.

Salix cordata Muhl. Heart-leaved willow. Along small streams and in damp places with other willows. Frequent throughout.

Salix glaucophylla Bebb. Broad-leaved willow. Noticed as frequent from Arenac County to St. Ignace and on Mackinac Island, Mackinac County. Usually in sandy ground on or near sandy beach of Lake Huron.

Salix syrticola Fernald. Furry willow. On and near the Lake Huron beach from Point Lookout in Arenac County to St. Ignace and on Mackinac Island. Common.

Salix pedicellaris Pursh. Bog willow. In very swampy places from Bay County to Cheboygan, Cheboygan County. Frequent.

Salix discolor Muhl. Glaucous willow. Along streams and in low ground. Frequent throughout.

Salix petiolaris Sm. Slender willow. In wet marshy places from Bay

County to St. Ignace and on Mackinac Island, Mackinac County. Plentiful.

Salix humilis Marsh. Prairie willow. In dry sandy ground from Linwood in Bay County to Mackinaw City, Cheboygan County. Common.

Salix sericea Marsh. Silky willow. In wet marshy ground from Bay County to St. Ignace and on Mackinac Island, Mackinac County. Frequent.

Salix rostrata Richards. Bebb's willow. In dry or damp open ground. Frequent throughout.

Salix candida Flügge. Sage willow. In boggy open ground from Bay County to St. Ignace and on Mackinac Island, Mackinac County. Frequent.

Populus alba L. White poplar. Occasionally planted especially in cities and villages and often spreading by root.

Populus tremuloides Michx. American aspen. Common throughout, especially on burnt over ground.

Populus grandidentata Michx. Large-toothed aspen. Common throughout.

Populus balsamifera L. Balsam poplar. Very abundant throughout on and near the Lake Huron shore. Many large trees noticed from Alpena to Mackinaw City, Cheboygan County.

Populus deltoides Marsh. Cotton-wood. Noticed in Bay and Arenac Counties, but not farther north. Plentiful. A sort of horticultural form cultivated as a street and road tree noticed in cities and villages, under common name of "large-leaved poplar" or "Carolina poplar."

Populus nigra italica DuRoi. Lombardy poplar. Planted in cities and occasionally spreading by root.

MYRICACEAE. Sweet Gale Family

Myrica gale L. Sweet gale. In wet open places. Common throughout. Noticed south as far as Sand Point, Huron County. Noticed also in Oakland County by C. Billington.

Myrica asplenifolia L. Sweet fern. Sandy open ground from near Omer in Arenac County to Mackinaw City, Cheboygan County. Abundant on jack pine plains.

JUGLANDACEAE. Walnut Family

Juglans cinerea L. Butternut. From Bay County to the north line of Alpena County. Frequent. One very large tree and a number of small ones near center of Bois Blanc Island, Mackinac County.

Juglans nigra L. Black walnut. Planted occasionally in cities and

villages and about farm houses. As a native tree probably not farther north than Tuscola County and the Saginaw valley.

Carya ovata (Mill.) K. Koch. Shag-bark hickory. From near Pinconning in Bay County to the north line of Arenac County. Frequent. Not noticed farther north.

Carya cordiformis (Wang) K. Koch. Bitter-nut. Rich ground with other trees from Pinconning, Bay County, to Alpena County. Frequent.

BETULACEAE. Birch Family

Corylus americana Walt. Common hazelnut. Rich open ground near Pinconning, Bay County, but not noticed farther north along or near the Lake Huron shore.

Corylus rostrata Ait. Beaked hazelnut. Rich open ground from Bay County to St. Ignace and on Mackinac Island, Mackinac County. Common.

Ostrya virginiana (Mill.) K. Koch. Ironwood. In rich woods with other trees from Bay County to St. Ignace and on Mackinac Island, Mackinac County. Plentiful.

Carpinus caroliniana Walt. Blue beech. Noticed only in Bay and Arenac counties, in rich woods with other trees. Frequent.

Betula lutea Michx. f. Yellow birch. Rich ground usually with beech and sugar maple from Bay County to St. Ignace and on Mackinac Island where fine specimens of this species now exist. *Betula lenta* L., cherry birch, was not noticed.

Betula alba papyrifera (Marsh.) Spach. White birch. Dryish ground with other trees from Bay County to St. Ignace and on Mackinac Island, Mackinac County. Often abundant on burnt-over ground and frequently mingled with beech maple and yellow birch.

Betula pumila L. Low birch. In low swampy open ground. Frequent throughout.

Alnus incana (L.) Moench. Speckled alder. In low wet ground from Bay County to St. Ignace and on Mackinac Island, Mackinac County. Abundant.

FAGACEAE. Beech Family

Fagus grandifolia Ehrh. Beech. With sugar maple and yellow birch forming hardwood forests from Bay County to St. Ignace and on Mackinac Island, Mackinac County. Formerly abundant in spots and streaks, now much reduced by lumbering.

Quercus alba L. White oak. Found from Bay County to a point just south of Harrisville in Alcona County, and not noticed farther north near the Lake Huron shore. Frequent on the Michigan divide. Noticed near Mullet Lake in Cheboygan County, also near Lewiston, Montmorency County, where it is plentiful.

Quercus macrocarpa Michx. Bur oak. Rich ground with other trees from Bay County to Mackinaw City, Cheboygan County. Seldom plentiful.

Quercus bicolor Willd. Swamp white oak. Rich ground with other trees from Bay County to Bois Blanc Island, Mackinac County. Seldom plentiful.

Quercus ellipsoidalis E. J. Hill. Hill's oak. Near Lewiston, Montmorency County. Plentiful.

Quercus rubra L. Red Oak. Fringing the Lake Huron shore more or less from Bay County to Mackinac Island, Mackinac County. Abundant on Mackinac Island and Bois Blanc Island, Mackinac County.

Quercus velutina Lam. Yellow-barked oak. Dry sandy open ground. With other trees from Bay County to Alpena and Montmorency counties. Frequent.

URTICACEAE. Nettle Family

Ulmus fulva Michx. Slippery elm. Said to be plentiful in Bay County. G. M. Bradford. Reported but not seen near Tawas City in Iosco County. Said to be plentiful in Montmorency County. Noticed near Rose City, Ogemaw County.

Ulmus americana L. American elm. Common from Bay County to Mackinaw City, Cheboygan County. A few large trees on Mackinac Island, Mackinac County. Plentiful and trees large on Bois Blanc Island, Mackinac County.

Ulmus racemosa Thomas. Rock Elm. Rich ground with other trees and plentiful in Presque Isle, Montmorency, Oscoda and Ogemaw counties.

Celtis occidentalis L. Sugarberry. At Point Lookout in Arenac County. Perhaps its northern limit. Prof. C. F. Wheeler's notes, dated August 10, 1900. On Little Charity Island in Saginaw Bay.

Cannabis sativa L. Hemp. In and near cities and villages in waste ground. Often plentiful.

Humulus lupulus L. Common hop. Apparently an escape from cultivation near Linwood, Bay County, and about Alpena, Alpena County.

Urtica gracilis Ait. Slender nettle. Damp, open or partially shaded ground from Bay County to St. Ignace, Mackinac County. Seldom abundant.

Laportea canadensis (L.) Gaud. Wood nettle. In rich shaded ground from Bay County to Cheboygan County. Frequent.

SANTALACEAE. Sandalwood Family

Comandra richardsoniana Fernald. Richards' bastard toad-flax. In dry open ground from Bay County to St. Ignace and on Mackinac Island,

Mackinac County. Common and often abundant. *C. umbellata* (L.) Nutt. Common bastard toad-flax, not noticed.

LORANTHACEAE. Mistletoe Family

Arceuthobium pusillum Peck. Dwarf mistletoe. On *Picea canadensis* (Mill.) BSP., white spruce, Bois Blanc Island, Mackinac County. Abundant. Probably throughout, but overlooked.

POLYGONACEAE. Buckwheat Family

Rumex britannica L. Great water dock. Wet, marshy, usually open ground from Bay County to St. Ignace, Mackinac County. Frequent.

Rumex crispus L. Yellow dock. A weed throughout in cities, village and cultivated fields. Often plentiful in pastures.

Rumex mexicanus Meisn. Willow-leaved dock. Growing in large bunches on and near sandy beach of Lake Michigan west of St. Ignace, also on and near sandy beach, Bois Blanc Island, Mackinac County.

Rumex obtusifolius L. Bitter dock. A weed along roads and near dwellings throughout. Often plentiful in pastures and cultivated grounds.

Rumex acetosella L. Field sorrel. In cultivated grounds. Frequent throughout and often abundant.

Polygonum aviculare L. Knotgrass. About dwellings and in cities and villages. Common.

Polygonum erectum L. Erect knotweed. Roadsides and streets in and near cities and villages. Frequent throughout.

Polygonum ramosissimum Michx. Bushy knotweed. Sandy beach on Bois Blanc Island, Mackinac County. Plentiful. Not noticed elsewhere.

Polygonum tenue Michx. Slender knotweed. Dry open sandy ground from Bay County to Mackinaw City, Cheboygan County. Frequent.

Polygonum lapathifolium L. Pale persicaria. Wet open places from Bay County to Mackinaw City. Frequent throughout.

Polygonum amphibium L. Water persicaria. About ponds, small lakes, along slow streams, often floating in water. Plentiful.

Polygonum amphibium hartwrightii (Gray) Bissel. Hartwright's persicaria. Damp open ground on Bois Blanc Island, appearing quite distinct. Plentiful in several places.

Polygonum mühlenbergii (Meisn.) Wats. Swamp persicaria. Bay County to St. Ignace, Mackinac County. Plentiful.

Polygonum pennsylvanicum L. Pennsylvania persicaria. Damp open places. Frequent throughout.

Polygonum hydropiper L. Common smartweed. Damp open ground

from Bay County to St. Ignace, Mackinac County. Frequent. Often abundant.

Polygonum acre HBK. Water smartweed. Damp open ground and along streams. Frequent throughout.

Polygonum persicaria L. Lady's thumb. Damp places and in waste grounds of cities and villages. Frequent throughout.

Polygonum hydropiperoides Michx. Mild water pepper. Along low banks of streams from Bay County to St. Ignace, Mackinac County. Occasional throughout.

Polygonum virginianum L. Virginia knotweed. Rich shaded ground in Bay and Arenac counties. Plentiful.

Polygonum sagittatum L. Arrow-leaved tear-thumb. Damp open or partially shaded places from Bay County to St. Ignace, Mackinac County. Frequent throughout.

Polygonum convolvulus L. Black bindweed. Noticed as a weed in cities, villages and cultivated grounds generally. Plentiful.

Polygonum cilinode Michx. Fringed black bindweed. Dry open or rocky ground from Bay County to St. Ignace, Mackinac County. Plentiful throughout.

Fagopyrum esculentum Moench. Buckwheat. Occasional about cities and villages and in cultivated grounds. Probably not a permanent escape.

Polygonella articulata (L.) Meisn. Coast jointweed. Noticed in sandy open ground from Bay County to Mackinaw City. Plentiful and often abundant. Common on jack pine plains.

CHENOPODIACEAE. Goosefoot Family

Chenopodium botrys L. Jerusalem oak. In dry, sandy open ground as a weed. Frequent and often plentiful throughout.

Chenopodium capitatum (L.) Asch. Strawberry blite. Damp or dryish open ground from Bay County to St. Ignace, Mackinac County. Plentiful throughout.

Chenopodium glaucum L. Oak-leaved goosefoot. As a weed in cities and villages. Frequent throughout.

Chenopodium hybridum L. Maple-leaved goosefoot. Dryish open or partially shaded ground from Bay County to St. Ignace, Mackinac County. Plentiful. Often a weed in cultivated grounds.

Chenopodium album L. Pigweed. Lamb's quarters. A common weed in cities, villages and cultivated grounds.

Atriplex patula hastata (L.) Gray. Halberd-leaved orache. Noticed only as a weed in cities and villages. Frequent throughout.

Atriplex patula littoralis (L.) Gray. Shore orache. On and near the sandy beaches of Lake Huron. Occasional throughout.

Salsola kali tenuifolia G. F. W. Mey. Russian thistle. A weed throughout. Not frequent or troublesome.

AMARANTHACEAE. Amaranth Family

Amaranthus retroflexus L. Amaranth pigweed. Noticed as a weed throughout in cultivated grounds. Frequent.

Amaranthus graecizans L. Tumble-weed. In cultivated grounds throughout. Plentiful.

Amaranthus blitoides Wats. Prostrate amaranth. A weed about cities and villages and in cultivated grounds. Plentiful throughout.

AIZOACEAE. Carpet-weed Family

Mollugo verticillata L. Carpet-weed. In open sandy ground from Bay County to St. Ignace, Mackinac County. Occasional.

CARYOPHYLLACEAE. Pink Family

Spergula arvensis L. Corn spurry. Sandy open ground. Occasional throughout, in and near cities and villages.

Arenaria serpyllofolia L. Thyme-leaved sandwort. Dry, sandy, open ground. As a weed throughout. Plentiful.

Stellaria longifolia Muhl. Long-stalked stitchwort. In marshy, open ground from Bay County to Mackinaw City. Frequent.

Stellaria graminea L. Lesser stitchwort. Grassy open ground near Pinconning, Bay County. Plentiful at this place.

Stellaria media (L.) Cyrill. Common chickweed. Noticed as a weed in cities, villages and cultivated grounds. Often plentiful.

Cerastium arvense L. Field chickweed. Mackinac Island, Mackinac County. In dryish open ground. Abundant in one place. Not noticed elsewhere.

Cerastium vulgatum L. Common mouse-ear chickweed. Occasional in damp or dryish open ground. As a weed in cities, villages and cultivated grounds. Plentiful.

Agrostemma githago L. Common cockle. Occasional about cities and villages and in waste grounds.

Lychnis alba Mill. White campion. Dry fields and cultivated grounds, and about cities and villages. Frequent.

Silene antirrhina L. Sleepy catchfly. In dry and sandy open ground from Bay County to St. Ignace, Mackinac County. Frequent.

Silene noctiflora L. Night-flowering catchfly. About cities and villages, and in waste places as a weed. Frequent.

Silene latifolia (Mill.) Britten & Rendle. Bladder campion. As a weed in waste places of cities and villages. Occasional throughout.

Saponaria officinalis L. Bouncing bet. In sandy open ground from Bay County to Mackinaw City. Frequent and often plentiful.

Gypsophila muralis L. Low gypsophyll. Well established in an old field at Misery Bay near Alpena. Plentiful.

Gypsophila elegans Bieb. Elegant gypsophila. Apparently a permanent escape from cultivation in and about the village of Mackinac Island, Mackinac County. Plentiful.

PORTULACACEAE. Purslane Family

Claytonia virginica L. Spring beauty. Rich shaded ground from Bay County to St. Ignace, Mackinac County. Frequent.

Claytonia caroliniana Michx. Carolina spring beauty. In slightly shaded ground on Mackinac Island, and Bois Blanc Island, Mackinac County. Plentiful. Not noticed farther south.

Portulaca oleracea L. Common purslane. Occasional as a weed in cities, villages, cultivated grounds and waste places.

NYMPHAEACEAE. Water Lily Family

Nymphaea advena Ait. Yellow water lily. More or less frequent in small lakes, ponds and coves of streams from Bay County to St Ignace, Mackinac County.

Castalia odorata (Ait.) Woodville & Wood. Sweet-scented water lily. Ponds, small lakes, borders of slow streams and coves from Alpena to St. Ignace, Mackinac County. Plentiful.

Castalia tuberosa (Paine) Greene. White water lily. In small lakes, ponds, and coves of streams from Bay County to St. Ignace, Mackinac County. Plentiful.

Brasenia shreberi Gmel. Water shield. In shallow water of small lakes and coves of streams from Bay County to Mackinaw City, Cheboygan county. Plentiful.

RANUNCULACEAE. Crowfoot Family

Ranunculus circinatus Sibth. Stiff water crowfoot. In shallow stagnant water from Bay County to St. Ignace, Mackinac County. Often abundant.

Ranunculus delphinifolius Torr. Yellow water crowfoot. In ponds, ditches and stagnant water from Bay County to St. Ignace, Mackinac County. Often abundant.

Ranunculus flammula filiformis (Michx.) Hook. Smaller creeping spearwort. Near life saving station above Rogers on the low sandy beach of Lake Huron. Probably frequent on sandy and gravelly shores throughout but overlooked.

Ranunculus sceleratus L. Cursed crowfoot. In very wet open places

from Bay County to St. Ignace and on Mackinac Island, Mackinac County. Plentiful.

Ranunculus abortivus L. Smaller-flowered crowfoot. In damp open or shaded ground from Bay County to St. Ignace and on Mackinac Island, Mackinac County. Common and often abundant.

Ranunculus recurvatus Poir. Hooked crowfoot. In damp open or partially shaded ground throughout. Frequent.

Ranunculus septentrionalis Poir. Swamp buttercup. In damp open or shaded ground. Frequent throughout.

Ranunculus bulbosus L. Bulbous crowfoot. In dry open ground near Bay City, Bay County. Plentiful. G. M. Bradford.

Ranunculus acris L. Tall crowfoot. From Bay County to St. Ignace in Mackinac County. Plentiful. From Harrisville to St. Ignace and on Mackinac Island, it is a pernicious weed, covering pastures and cultivated grounds, even penetrating woods and thickets.

Ranunculus pennsylvanicus L.f. Bristly crowfoot. Damp open ground. Frequent throughout.

Thalictrum dioicum L. Early meadow rue. In damp woods and thickets from Bay County to St. Ignace, Mackinac County. Plentiful.

Thalictrum dasycarpum Fisch. & Lall. Purplish meadow rue. From Bay County throughout in open or shaded ground. Plentiful.

Hepatica triloba Chaix. Round-lobed liver-leaf. In dryish open or shaded ground. Frequent throughout.

Hepatica acutiloba DC. Sharp-lobed liver-leaf. In beech-maple woods from Bay County to St. Ignace, Mackinac County. Frequent.

Anemone multifida Poir. Red wind-flower. First noticed in sandy open ground near Alpena and it is frequent from there to St. Ignace, Mackinac County, on or near the sandy beach of Lake Huron.

Anemone cylindrica Gray. Long-fruited anemone. In dry open or partially shaded sandy ground from Bay County to Alpena. Plentiful. Common on jack pine plains.

Anemone virginiana L. Tall anemone. In dryish open or slightly shaded ground throughout. Plentiful.

Anemone canadensis L. Canada anemone. In damp or dryish open or partially shaded ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Anemone quinquefolia L. Wood anemone. Rich partially shaded ground from Bay County to St. Ignace, Mackinac County.

Clematis virginiana L. Virginia virgin's bower. Borders of rich woods, damp thickets and along streams. Plentiful throughout.

Caltha palustris L. Marsh marigold. In very wet open or shaded places. Abundant throughout.

Coptis trifolia (L.) Salisb. Goldthread. In swampy or damp open or shaded ground. Common throughout.

Aquilegia canadensis L. Wild columbine. In sandy or rocky open or partially shaded ground throughout. Plentiful.

Aquilegia vulgaris L. Garden columbine. Apparently permanently established on the gravelly beach of Mackinac Island, Mackinac County.

Actaea rubra (Ait.) Willd. Red baneberry. In damp rich open woods. Frequent throughout.

Actaea rubra forma *neglecta* (Gillman) Robinson. Gillman's baneberry. Noticed as frequent on Mackinac Island and in other places. Pedicels capillary, berries white.

Actaea alba (L.) Mill. White baneberry. In dryish rich open woods. Plentiful throughout.

Hydrastis canadensis L. Golden seal. Reported as occasional in rich woods throughout but not noticed by the writer.

BERBERIDACEAE. Barberry Family

Caulophyllum thalictroides (L.) Michx. Papoose root. Rich open woods. Occasional throughout.

Berberis vulgaris L. Common Barberry. Cultivated as an ornamental shrub in cities and villages but not noticed as escaping.

PAPAVERACEAE. Poppy Family

Sanguinaria canadensis L. Bloodroot. Open rich woods from Bay County to St. Ignace, Mackinac County. Plentiful.

FUMARIACEAE. Fumitory Family

Adlumia fungosa (Ait.) Greene. Climbing fumatory. Damp shaded ground from Bay County to St. Ignace, Mackinac County. Infrequent.

Dicentra cucullaria (L.) Bernh. Dutchman's breeches. Rich shaded ground throughout. Frequent.

Dicentra canadensis (Goldie) Walp. Squirrel corn. Rich woods from Bay County to St. Ignace. Frequent.

Corydalis sempervirens (L.) Pers. Pale corydalis. Dry open ground from Bay County to St. Ignace. Often abundant on burned over areas.

Corydalis aurea Willd. Golden corydalis. Near Alpena, Alpena County, in open sandy ground. Apparently rare.

CRUCIFERAE. Mustard Family

Draba arabisans Michx. Twisted whitlow-grass. On rocky bluff east side of Mackinac Island. Abundant. Not noticed elsewhere.

Alyssum alyssoides L. Yellow alyssum. In dry open ground about cities and villages. Often plentiful.

Thlaspi arvense L. Field penny cress. From Bay County to St. Ignace, Mackinac County, in cities and villages. Infrequent.

Lepidium virginicum L. Wild peppergrass. In cities, villages and cultivated grounds as a weed. Seldom abundant.

Lepidium apetalum Willd. Apetalous peppergrass. A weed in cities and villages throughout but apparently infrequent.

Capsella bursa-pastoris (L.) Medic. Shepherd's purse. Cultivated grounds and waste places. Common.

Camelina sativa (L.) Crantz. False flax. About cities and villages and along railroads as a weed. Infrequent.

Cakile edentula (Bigel.) Hook. American sea rocket. On and near sandy beach of Lake Huron throughout. Seldom abundant.

Brassica arvensis (L.) Ktze. Common mustard. About cities and villages and in cultivated grounds as a weed, but not noticed as abundant anywhere.

Brassica nigra (L.) Koch. Black mustard. Noticed as a weed about cities and villages. Infrequent.

Brassica campestris L. Rutabaga. Occasional as a temporary escape about cities and villages and along railways.

Conringia orientalis (L.) Dumont. Hare's-ear mustard. Apparently well established about cottages and in cultivated grounds on Bois Blanc Island, Mackinac County.

Sisymbrium officinale leiocarpum DC. Smooth podded hedge mustard. About cities and villages and in cultivated grounds. Infrequent.

Sisymbrium altissimum L. Tumble mustard. About depot grounds in cities and villages, and in waste places. Frequent.

Braya humilis (C. A. Mey.) Robinson. Low rock cress. On Mackinac Island. G. H. Hicks. Not noticed in 1912.

Erysimum cheiranthoides L. Worm-seed mustard. About cities and villages and in waste places as a weed throughout, but infrequent.

Radicula nasturtium-aquaticum (L.) Britten & Rendel. True water cress. In ditches, small creeks and about springs throughout. Often plentiful.

Radicula palustris (L.) Moench. Marsh cress. In wet open ground from Bay County to St. Ignace, Mackinac County. Plentiful, often abundant.

Radicula palustris hispida (Desv.) Robinson. Hispid yellow cress. Wet open ground throughout. Infrequent.

Radicula armoracia (L.) Robinson. Horseradish. Frequent in damp places about cities and villages. Noticed in particular as a well established escape in an old field at Misery Bay near Alpena, Alpena County.

Barbarea vulgaris R.Br. Common winter cress. Low open ground. Frequent throughout. Abundant in spots in Cheboygan County and on Mackinac Island, Mackinac County.

Dentaria diphylla Michx. Two-leaved toothwort. In rich shaded

ground throughout. Noticed in particular near St. Ignace and on Mackinac Island.

Dentaria laciniata Muhl. Cut-leaved toothwort. Rich damp shaded ground. Occasional throughout. Probably often overlooked.

Cardamine bulbosa (Schreb.) BSP. Spring cress. Wet meadow-like ground or in damp and springy places. In Bay and Arenac Counties. Perhaps throughout but overlooked.

Cardamine douglassii (Torr.) Britton. Purple cress. Rich damp shaded ground. In Bay and Arenac counties. Frequent.

Cardamine pennsylvanica Muhl. Pennsylvania bitter-cress. Wet springy ground, and along creeks throughout. Infrequent.

Arabis lyrata L. Lyre-leaved rock-cress. Dry sandy open ground, usually on or near sandy beach of Lake Huron. Frequent throughout.

Arabis glabra (L.) Bernh. Tower mustard. Dry open or partially shaded ground. Frequent throughout.

Arabis drummondii Gray. Drummond's rock-cress. Dry open ground on Mackinac Island, Mackinac County, and also near Harrisville, Alcona County. Probably to be found throughout.

Arabis holboellii Hornem. Holboell's rock-cress. Dry sandy open ground near Alpena and on sandy beach at Mackinaw City. Frequent.

CAPPARIDACEAE. Caper Family

Polanisia graveolens Raf. Clammy-weed. Sandy open ground at Bay City. G. M. Bradford.

SARRACENIACEAE. Pitcher-plant Family

Sarracenia purpurea L. Pitcher plant. Swampy ground and often abundant in damp sand. Common throughout.

DROSERACEAE. Sundew Family

Drosera rotundifolia L. Round-leaved sundew. Open swampy ground or in damp sand. Frequent throughout.

Drosera longifolia L. Oblong-leaved sundew. In bogs near Alpena. Plentiful. H. H. Hindshaw.

Drosera linearis Goldie. Slender-leaved sundew. Wet boggy places on Bois Blanc Island, Mackinac County. Plentiful.

CRASSAULACEAE. Orpine Family

Penthorum sedoides L. Ditch stonecrop. Open swampy ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Sedum acre L. Mossy stonecrop. In dry sandy open ground along roads, in cemeteries, cities and villages. Often abundant.

Sedum purpureum Tausch. Live-for-ever. Along roads, near cities and villages. Frequent throughout. Seldom blooming.

SAXIFRAGACEAE. Saxifrage Family

Tiarella cordifolia L. False miterwort. In rich shaded ground from Bay County to St. Ignace, Mackinac County. Frequent.

Mitella diphylla L. Two-leaved bishop's cap. In rich damp woods throughout. Frequent.

Mitella nuda L. Naked bishop's cap. In damp shaded ground. Plentiful throughout.

Chrysosplenium americanum Schwein. Golden saxifrage. Wet, usually shaded places. Frequent throughout.

Parnassia parviflora DC. Small-flowered grass-of-parnassus. In marshy open ground on Mackinac Island. F. W. Hunnewell 2nd. Apparently infrequent.

Parnassia caroliniana Michx. Carolina grass-of-parnassus. Common throughout in low marshy open ground.

Ribes cynosbati L. Prickly gooseberry. In damp open or shaded ground. Frequent from Bay County to St. Ignace, Mackinac County.

Ribes gracile Michx. Missouri gooseberry. In rich shaded ground from Bay County to Mackinaw City, Cheboygan County. Frequent.

Ribes oxycanthoides L. Smooth gooseberry. Damp open or partially shaded ground. Frequent throughout.

Ribes oxycanthoides calcicola Fernald. Low wild gooseberry. In shaded ground on Mackinac Island. F. W. Hunnewell 2nd. Common.

Ribes floridum L'Her. Wild black currant. Rich shaded ground. Common throughout.

Ribes lacustre (Pers.) Poir. Swamp black currant. Common in damp shaded ground from Alpena to St. Ignace and on Mackinac Island.

Ribes prostratum L'Her. Skunk currant. In damp open or shaded ground from Alpena to St. Ignace and on Mackinac Island. Plentiful.

Ribes triste Pall. Swamp red currant. Rich damp woods throughout. Plentiful.

Ribes triste albinervium (Michx.) Fernald. Glabrous swamp red currant. Rich woods on Bois Blanc Island, Mackinac County. Plentiful.

Ribes aureum Pursh. Missouri currant. Cultivated but apparently not escaping.

HAMAMELIDACEAE. Witch-hazel Family

Hamamelis virginiana L. Witch-hazel. Dry open ground or often in slight shade of other trees. Frequent throughout. Common near Lewiston, Montmorency County.

ROSACEAE. Rose Family

Physocarpus opulifolius (L.) Maxim. Nine-bark. Low open ground or along banks of streams. Frequent throughout.

Spiraea salicifolia L. Meadow-sweet. In damp open or slightly shaded ground. Common throughout.

Sorbaria sorbifolia (L.) A.Br. Ash-leaved spiraea. Cultivated throughout but apparently not spreading.

Pyrus malus L. Common apple. In open ground on borders of woods and about cities and villages. Plentiful throughout. Abundant on Thunder Bay Island, Alpena County, where it seems to be stunted, shrubs two feet high and spreading being in full bloom June 25, 1907.

Pyrus arbutifolia atropurpurea (Britton) Robinson. Purple-fruited chokeberry. In very wet places and swamps. Frequent throughout.

Pyrus melanocarpa (Michx.) Willd. Black chokeberry. In moist or dryish open ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Pyrus americana Marsh. Americana mountain ash. First noticed near Black River in Alcona County. Occasional from there to Mackinaw City, Cheboygan County. Apparently variable and approaching *Sorbus americana decora* Sarg. See Manual of the Trees of North America, by Prof. C. S. Sargent, page 357.

Pyrus sitchensis (Roem.) Piper. Western mountain ash. West side of Mackinac Island, Mackinac County. Forms approaching this species noticed as far south as Alpena.

Amelanchier sanguinea (Pursh) DC. Low juneberry. Open dry or damp ground and along streams. Frequent throughout. See Rhodora, Vol. 14-138.

Amelanchier florida Lindley. Round-leaved juneberry. Sandy open ground near Alpena, Alpena County. Plentiful. See Rhodora, Vol. 14-143.

Amelanchier canadensis (L.) Medicus. Common juneberry. Dryish ground. Common throughout.

Crataegus punctata Jacq. Large-fruited thorn. In open ground or woods throughout. Plentiful.

Crataegus douglasii Lindl. (*C. brockwayae* Sarg.) Douglas' thorn. On Bois Blanc Island. Apparently infrequent. Dryish open or partially shaded ground.

Fragaria virginiana Duchesne. Common strawberry. This and the following species were noticed in particular as very abundant, rank, thrifty, and producing fruit in great abundance from Alpena to Mackinaw City.

Fragaria vesca americana Porter. American wood strawberry. Very common throughout in damp open or shaded ground.

Waldsteinia fragarioides (Michx.) Trattinick. Barren strawberry. Usually in shaded ground and noticed from Bay County to Mackinac Island, Mackinac County. Frequent.

Potentilla monspeliensis L. Rough cinquefoil. About cities and villages and in cultivated grounds. Frequent.

Potentilla argentea L. Silvery cinquefoil. In dry open ground throughout and often abundant.

Potentilla palustris (L.) Scop. Marsh five-finger. Wet swampy ground throughout. Common.

Potentilla fruticosa L. Shrubby cinquefoil. In damp open ground throughout. Frequent.

Potentilla tridentata Ait. Three-toothed cinquefoil. Abundant in a dry old field near Oscoda, Iosco County. Not noticed elsewhere. Very probably overlooked.

Potentilla anserina L. Silver weed. In dry sandy open ground usually on or near the sandy beach of Lake Huron. Noticed as a bad field weed near Alpena.

Potentilla canadensis L. Five-finger. In dry open ground from Bay County to St. Ignace, Mackinac County. Frequent.

Geum canadense Jacq. White avens. In rich open woods throughout. Plentiful.

Geum virginianum L. Rough avens. Damp open ground in Alpena and Presque Isle counties. Apparently infrequent.

Geum strictum Ait. Yellow avens. In damp meadow-like ground. Plentiful throughout.

Geum rivale L. Water avens. Damp open or rich shaded ground. Frequent throughout.

Rubus idaeus aculeatissimus (C.A.Mey.) Regal & Tiling. Wild red raspberry. Common throughout in dry open or shaded ground.

Rubus occidentalis L. Black raspberry. In damp rich shaded ground from Bay County to Mackinaw City. Plentiful. Also near Rose City, Ogemaw County.

Rubus odoratus L. Purple-flowering raspberry. First noticed near Alpena and from there quite frequent to a short distance north west of Rogers where the next species apparently takes its place. For several miles the two species intermingle. Probably frequent from Bay County to Presque Isle County. Southern limit on east side of Michigan appears to be near Port Huron, St. Clair County.

Rubus parviflorus Nutt. Salmon berry. First noticed a few miles northwest of Rogers in Presque Isle County. Within a few miles the change from the preceding to this species is quite complete. Here it is a vigorous shrub with pure white flowers often over two inches in diameter. Common from this point to St. Ignace and on Mackinac Island, Mackinac County.

Rubus triflorus Richards. Dwarf raspberry. In wet shaded ground. Common throughout.

Rubus allegheniensis Porter. High bush blackberry. In dry open or slightly shaded ground. Frequent throughout.

Rubus pergratus Blanchard. Red stemmed raspberry. Open places in beech-maple woods on Mackinac Island. Plentiful. By F. F. Forbes. See North American Flora Vol. 22, 467.

Rubus hispida L. Hispid blackberry. In dryish or swampy open or shaded ground from Bay County to St. Ignace, Mackinac County. Frequent.

Rubus villosus Ait. Dewberry. In dry open ground from Bay County to St. Ignace, Mackinac County. Frequent. (Formerly under name of *R. canadensis*.)

Agrimonia gryposepala Wallr. Tall hairy agrimony. In dryish open or shaded ground from Bay City to St. Ignace, Mackinac County. Frequent. Also near Mio, Oscoda County.

Rosa acicularis Lindl. Prickly rose. First noticed a few miles north of Harrisville in Alcona County. Common from there and often abundant in dryish open or slightly shaded ground to St. Ignace and on Mackinac Island.

Rosa blanda Ait. Meadow rose. In dry open or slightly shaded ground. Plentiful. Very frequently abundant on the sandy beach of Lake Huron and acting as a sand binder. From a short distance north of Harrisville to Mackinac Island it grows with the preceding species.

Rosa spinosissima L. Scotch rose. Noticed in Bay County as an escape from cultivation. Apparently infrequent.

Rosa rubiginosa L. Sweetbriar. Near cities and villages from Bay County to St. Ignace and on Mackinac Island. Plentiful.

Rosa carolina L. Swamp rose. In wet open ground especially on low banks of small streams. Frequent throughout.

Prunus serotina Ehrh. Wild black cherry. In rich woods with other trees from Bay County to St. Ignace. Frequent.

Prunus virginiana L. Choke cherry. Damp or dry ground on borders of woods or near sandy beaches of Lake Huron. Common throughout.

Prunus pennsylvanica L.f. Wild red cherry. Dry open ground with other trees. Often abundant on burnt over lands. Noticed throughout.

Prunus cuneata Raf. Appalachian cherry. Damp open ground above Au Gres, Arenac County. Common on jack pine plains.

Prunus pumila L. Sand cherry. On and near sandy beach of Lake Huron from Bay County to St. Ignace, Mackinac County. Abundant.

Prunus cerasus L. Common garden cherry. Occasional as an escape in cities and villages throughout.

LEGUMINOSAE. Pulse Family

Lupinus perennis L. Wild lupine. Sandy open ground near Pinconning in Bay County. Apparently infrequent. Perhaps overlooked.

Trifolium pratense L. Red clover. Growing everywhere like a native plant. From Rogers to Mackinaw City it thrives and is rank on sandy ground and in open woods far from cultivated grounds.

Trifolium repens L. White clover. In fields, pastures and along roads. Plentiful. From Rogers to Mackinaw City it grows very large and rank even on sandy ground and in open woods and thickets far from cultivated land.

Trifolium hybridum L. Alsike clover. About cities and villages. Plentiful from Rogers to Mackinaw City. This also looks thrifty. The region between these cities seems to be naturally adapted to the clovers.

Melilotus officinalis (L.) Lam. Yellow melilot. About cities and villages. Occasional.

Melilotus alba Desr. Sweet clover. In cities and villages. Frequent from Bay County to Alpena.

Medicago sativa L. Alfalfa. Occasional about cities and villages from Bay County to Mackinac Island, Mackinac County.

Medicago lupulina L. Black medic. About cities and villages and in waste places. Frequent.

Robinia pseudo-acacia L. Common locust. Planted but not escaping in cities and villages.

Lespedeza capitata Michx. Round-headed bush-clover. In dry open ground, Bay County. Apparently infrequent.

Vicia angustifolia (L.) Reichard. Smaller common vetch. Near Pinconning in Bay County. Apparently infrequent.

Vicia cracca L. Tufted vetch. On Mackinac Island. Apparently infrequent.

Vicia villosa Roth. Hairy vetch. In waste places near Pinconning in Bay County.

Lathyrus maritimus (L.) Bigel. Beach pea. Common on sandy beach of Lake Huron from Au Gres in Arenac County to St. Ignace and on Mackinac Island, Mackinac County.

Lathyrus palustris L. Marsh vetchling. In marshy open ground throughout. Plentiful.

Lathyrus palustris linearifolius Ser. Winged marsh vetchling. Near Lake Huron shore and on margins of woods from Bay County to Mackinac Island, Mackinac County. Plentiful.

Lathyrus ochroleucus Hook. Cream-colored vetchling. In open dryish woods from Bay County to St. Ignace. Frequent.

LINACEAE. Flax Family

Linum usitatissimum L. Common flax. Along the railroads in Bay County and about cities and villages to St. Ignace, Mackinac County.

OXALIDACEAE. Wood Sorrel Family

Oxalis corniculata L. Lady's sorrel. About cities and villages appearing as if introduced. Apparently infrequent.

GERANIACEAE. Geranium Family

Geranium maculatum L. Wild cranesbill. In open woods and thickets throughout. Plentiful.

Geranium robertianum L. Herb robert. In damp shaded ground from Alpena to St. Ignace, Mackinac County. Abundant in spots on Mackinac Island.

Geranium bicknellii Britton. Bicknell's cranesbill. Open or partially shaded ground from Arenac County to St. Ignace, Mackinac County. Often very abundant on low recently burnt over ground.

RUTACEAE. Rue Family

Zanthoxylum americanum Mill. Northern prickly ash. Near Pinconning in Bay County and Standish, Arenac County. Plentiful. Also on Bois Blanc Island, Mackinac County. Common about Hillman, Montmorency County, and Mio, Oscoda County.

SIMARUBACEAE. Quassia Family

Ailanthus glandulosa Desf. Ailanthus. Tree of heaven. Cultivated some as an ornamental tree in cities throughout, but apparently not permanently escaping.

POLYGALACEAE. Milkwort Family

Polygala pauciflora Willd. Fringed polygala. In dry shaded ground from Bay County to Mackinac Island, Mackinac County. Plentiful.

Polygala polygama Walt. Racemed milkwort. Dry open sandy ground throughout. Frequent. Common on jack pine plains in Montmorency, Oscoda and Ogemaw counties.

Polygala senega L. Seneca snakeroot. Dryish open or partially shaded ground in Bay and Alpena counties. Apparently infrequent.

EUPHORBIACEAE. Spurge Family

Euphorbia polygonifolia L. Seaside Spurge. Occasional on the sandy beach of Lake Huron from Arenac County to Mackinaw City, Cheboygan County. Often in drifting sand.

Euphorbia maculata L. Milk purslane. Dry open ground about cities and villages, appearing as if introduced.

Euphorbia helioscopia L. Wartweed. At St. Ignace and on Mackinac

Island, Mackinac County. Plentiful. Perhaps throughout but overlooked.

Euphorbia cyparissias L. Cypress spurge. Along roads, about cities and villages, and in cemeteries. In spots abundant throughout.

ANACARDIACEAE. Cashew Family

Rhus typhina L. Staghorn sumach. Dryish open ground on borders of woods. Frequent throughout.

Rhus glabra L. Smooth sumach. Dry open ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Rhus toxicodendron L. Poison ivy. In dry or damp open or shaded ground. Common along and near the sandy beach of Lake Huron.

AQUIFOLIACEAE. Holly Family

Ilex verticillata (L.) Gray. Winterberry. Low open ground from Bay County to Mackinaw City, Cheboygan County. Frequent.

Nemopanthus mucronata (L.) Trel. Mountain holly. Damp places with other shrubs from Bay County to St. Ignace, Mackinac County. Plentiful.

CELASTRACEAE. Staff Tree Family

Celastrus scandens L. Bittersweet. In woods and thickets. Common throughout.

ACERACEAE. Maple Family

Acer pennsylvanicum L. Striped maple. First noticed in a small piece of timber about two miles north of Harrisville in Alcona County. Common in woods with other trees from that point to St. Ignace and on Mackinac Island.

Acer spicatum Lam. Mountain maple. Damp woods and thickets. Abundant throughout.

Acer saccharum Marsh. Sugar maple. Rich ground. One of the principal trees forming hardwoods and common throughout. Formerly very abundant.

Acer saccharinum L. Silver maple. Cultivated as an ornamental tree in cities and villages but not noticed as escaping.

Acer rubrum L. Red maple. Usually in damp rich ground with other trees. Plentiful from Bay County to St. Ignace, Mackinac County.

Acer negundo L. Box elder. Cultivated as an ornamental tree in cities and villages but apparently not spreading.

SAPINDACEAE. Soapberry Family

Aesculus hippocastanum L. Common horse-chestnut. Cultivated as an ornamental street tree in cities and villages throughout, but apparently not spreading.

BALSAMINACEAE. Touch-me-not Family

Impatiens biflora Walt. Spotted touch-me-not. Damp open or partially shaded ground. Abundant throughout.

RHAMNACEAE. Buckthorn Family

Rhamnus alnifolia L'Her. Alder-leaved buckthorn. Damp open or shaded ground. Plentiful throughout.

Ceanothus americanus L. New Jersey tea. Dry open ground near Onaway, Presque Isle County. Apparently infrequent.

Ceanothus ovatus Desf. Smaller red-root. Dry open ground from Bay County to Mackinaw City. Frequent throughout.

VITACEAE. Vine Family

Psedera vitacea (Knerr) Greene. American woodbine. Damp shaded ground from Bay County to St. Ignace, Mackinac County. Frequent throughout. Noticed also near Lewiston, Montmorency County.

Vitis vulpina L. River-bank grape. From Bay County to Round Island and Bois Blanc Island, Mackinac County. Frequent. Noticed as frequent in Montmorency, Oscoda and Ogemaw counties.

TILIACEAE. Linden Family

Tilia americana L. Basswood. Rich ground with other trees, especially in hardwoods. Frequent throughout. Trees often very large.

MALVACEAE. Mallow Family

Malva rotundifolia L. Common mallow. About dwellings and in cities and villages. Common throughout.

Malva moschata L. Musk mallow. Noticed along roads and in old fields, Presque Isle County. Occasional throughout.

HYPERICACEAE. St. John's-wort Family

Hypericum ascyron L. Great St. John's-wort. Damp places and banks of streams throughout. Infrequent.

Hypericum perforatum L. Common St. John's-wort. In fields and pastures and along roads. Frequent throughout.

Hypericum kalmianum L. Kalm's St. John's-wort. Usually in dry sandy ground on and near the sandy shores of Lake Huron. Frequent throughout.

Hypericum virginicum L. Marsh St. John's-wort. Open marshy ground throughout. Frequent.

CISTACEAE. Rockrose Family

Helianthemum canadense (L.?) Michx. Common frostweed. In sandy open ground from Bay County to St. Ignace, Mackinac County. Frequent throughout.

Hudsonia tomentosa Nutt. False heather. Noticed from above Au Gres in Arenac County to St. Ignace, Mackinac County. In spots very abundant, often covering open or shaded sandy ground on or near sandy beaches of Lake Huron.

Lechea intermedia Leggett. Large-podded pinweed. Dry sandy open ground. Frequent throughout. Also near Mio, Oscoda County.

VIOLACEAE. Violet Family

Viola cucullata Ait. Marsh blue violet. In very wet marshy open places throughout. Plentiful.

Viola nephrophylla Greene. Small mottled blue violet. In damp, open or shaded ground. Plentiful throughout.

Viola lanceolata L. Lance-leaved violet. In damp open ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Viola pallens (Banks) Brainard. Northern white violet. Wet, springy open or partially shaded ground. Frequent throughout.

Viola blanda Wild. Sweet white violet. Moist rich shaded ground from Bay County to St. Ignace, Mackinac County. Frequent throughout.

Viola incognita Brainard. Large-leaved white violet. In rich woods from Bay County to St. Ignace, Mackinac County. Plentiful.

Viola renifolia Gray. Kidney-leaved violet. Rich shaded ground throughout. Plentiful. A form such as is noticed on Mackinac Island, Mackinac County, has been named *V. renifolia brainerdii* Fernald, Brainerd's sweet violet. It is abundant north.

Viola pubescens Ait. Downy yellow violet. Dryish sandy shaded ground from Bay County to Bois Blanc Island, Mackinac County. Frequent.

Viola scabriuscula Schwein. Smooth yellow violet. In damp rich shaded ground throughout. Plentiful.

Viola canadensis L. Canada violet. In rich shaded ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Viola conspersa Reichenb. American dog violet. In rich shaded ground from Bay County to St. Ignace, Mackinac County. Plentiful, often abundant.

Viola arenaria DC. Sand violet. Sandy sterile open ground from Bay County to Mackinaw City, Cheboygan County. Frequent.

CACTACEAE. Cactus Family

Opuntia rafinesquii Engelm. Western prickly pear. Reported west of Alpena, Alpena County, in open sandy ground. Not seen by writer.

THYMELAEACEAE. Mezereum Family

Dirca palustris L. Moose-wood. Leather-wood. Rich open woods. Frequent. Noticed in particular near Presque Isle Bay in Presque Isle County.

ELAEAGNACEAE. Oleaster Family

Shepherdia canadensis (L.) Nutt. Canadian buffalo-berry. In dry open or partially shaded ground. Frequent throughout.

ONAGRACEAE. Evening Primrose Family

Ludvigia polycarpa Short & Peter. Many-fruited ludvigia. Wet open places in Bay County. Plentiful.

Ludvigia palustris Walt. Water purslane. Ditches and very wet places throughout. Often abundant.

Epilobium angustifolium L. Great willow-herb. Fireweed. In dryish open or shaded ground, being very abundant throughout on burnt over land.

Epilobium molle Torr. Downy willow-herb. In marshy or boggy ground from Bay County to Mackinaw City, Cheboygan County. Frequent.

Epilobium densum Raf. Linear-leaved willow-herb. Low marshy open ground. Frequent throughout.

Epilobium adenocaulon Haussk. Northern willow-herb. In damp open ground from Bay County to St. Ignace. Plentiful.

Oenothera biennis L. Common evening primrose. In dry open or shaded ground throughout. Often abundant on and near the sandy beach of Lake Huron.

Circaea lutetiana L. Enchanter's nightshade. Beech-maple woods throughout. Frequent. Often plentiful.

Circaea alpina L. Smaller enchanter's nightshade. In damp woods throughout. Common. Often abundant.

HALORAGIDACEAE. Water Milfoil Family

Myriophyllum spicatum L. Spiked water milfoil. In shallow water along slow streams, on margins of ponds, in old ditches and coves. Frequent throughout.

Myriophyllum heterophyllum Michx. Various-leaved water-milfoil. In shallow water of ponds, old ditches, and slow streams. Frequent throughout.

Proserpinaca palustris L. Mermaid-weed. Very wet places and often in shallow water. Frequent throughout.

Hippuris vulgaris L. Mare's-tail. Ponds, slow shallow streams, and coves. Plentiful throughout.

ARALIACEAE. Ginseng Family

Aralia racemosa L. Spikenard. In rich woods and thickets, throughout. Frequent.

Aralia hispida Vent. Bristly sarsaparilla. In open dry ground from Bay County to St. Ignace. Plentiful. Abundant on dry burned over ground.

Aralia nudicaulis L. Wild sarsaparilla. In rich shaded ground. Abundant throughout.

Panax quinquefolium L. Ginseng. Reported throughout but not seen. Collected near Vanderbilt, Otsego County, by Prof. A. E. Bessey, 1912.

Panax trifolium L. Dwarf ginseng. Ground nut. Beech-maple woods. Plentiful throughout.

UMBELLIFERAE. Parsley Family

Sanicula marilandica L. Sanicle. In rich shaded ground throughout. Plentiful.

Osmorhiza claytoni (Michx.) Clarke. Woolly sweet cicily. In rich open woods throughout. Common.

Osmorhiza longistylis (Torr.) DC. Smoother sweet cicily. Rich open woods from Bay County to St. Ignace, Mackinac County. Frequent.

Osmorhiza divaricata Nutt. Western sweet cicily. Rich shaded ground on Thunder Bay Island, Alpena County. Plentiful. Also on Mackinac Island. F. W. Hunnewell 2d.

Conium maculatum L. Poison hemlock. About St. Ignace and on Mackinac Island. Frequent about cities and villages in waste places.

Cicuta maculata L. Water hemlock. Marshy open ground from Bay County to Mackinaw City, Cheboygan County. Noticed in particular near Onaway, Presque Isle County.

Cicuta bulbifera L. Bulb-bearing water hemlock. In wet open ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Carum carvi L. Caraway. As a weed throughout in and about cities and villages. Often abundant.

Sium cicutaefolium Schrank. Water parsnip. In very wet open places from Bay County to St. Ignace. Plentiful.

Taenidia integerrima (L.) Drude. Yellow pimpermell. Dry open shaded ground throughout. Frequent.

Pastinaca sativa L. Parsnip. Along roads and about cities and vil-

lages as an escape. Abundant in many places in Cheboygan County, growing in open woods and thickets like a native plant.

Heracleum lanatum Michx. Cow parsnip. Dryish rich open ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Angelica atropurpurea L. Great angelica. Damp, rich open ground in Bay and Arenac counties. Apparently infrequent.

Daucus carota L. Carrot. Roadsides and old fields near Alpena and Mackinaw City. Apparently becoming a troublesome weed.

CORNACEAE. Dogwood Family

Cornus canadensis L. Dwarf cornel. In damp or dryish shaded ground throughout. Abundant.

Cornus circinata L'Her. Round-leaved cornel. In dry open or shaded ground throughout, especially near the Lake Huron sandy beaches.

Cornus amomum Mill. Silky cornel. Damp open ground. Apparently infrequent.

Cornus baileyi Coult. & Evans. Bailey's cornel. Along the sandy shores of Lake Huron from Bay County to Mackinac Island, Mackinac County. Frequent.

Cornus stolonifera Michx. Red-osier dogwood. In wet swampy or dry sandy ground from Bay County to Mackinac Island, Mackinac County. Plentiful.

Cornus paniculata L'Her. Panicked cornel. Frequent in damp or dry open ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Cornus alternifolia L.f. Alternate-leaved cornel. Borders of woods and banks of streams. Frequent throughout.

Nyssa sylvatica Marsh. Rich open ground. Noticed near Linwood in Bay County, and near Omer in Arenac County. Apparently infrequent. Not noticed farther north.

ERICACEAE. Heath Family

Chimaphila umbellata (L.) Nutt. Prince's pine. In dry shaded ground from Bay County to Mackinac Island, Mackinac County. Frequent.

Moneses uniflora (L.) Gray. One-flowered pyrola. Damp rich woods from Bay County to St. Ignace, Mackinac County. Frequent.

Pyrola secunda L. One-sided wintergreen. Rich shaded ground throughout. Frequent.

Pyrola chlorantha Sw. Greenish-flowered wintergreen. In open dryish woods about St. Ignace and Mackinac Island. Plentiful.

Pyrola elliptica Nutt. Shin leaf. In rich shaded ground from Bay County to St. Ignace, Mackinac County. Frequent.

Pyrola asarifolia Michx. Liver-leaf wintergreen. In damp shaded ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Pyrola asarifolia incarnata (Fisch.) Fernald. Purple-flowered wintergreen. In shaded wet and boggy places from Alpena to St. Ignace and on Mackinac Island. Plentiful.

Monotropa uniflora L. Indian pipe. In rich shaded ground at St. Ignace and on Mackinac Island. Probably frequent throughout, but overlooked.

Ledum groenlandicum Oeder. Labrador tea. In open or shaded boggy ground from Bay County to St. Ignace. Plentiful. One of the dominant bog shrubs of the region.

Kalmia angustifolia L. Sheep laurel. Noticed from Arenac County to Alpena. Very abundant in spots on flat and damp open ground above Au Gres and about Oscoda. Said to be a winter food for deer.

Kalmia polifolia Wang. Pale laurel. Open boggy ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Andromeda glaucophylla Link. Bog rosemary. In bogs and very wet places from Bay County to St. Ignace, Mackinac County. Common. One of the dominant bog shrubs of the region.

Chamaedaphne calyculata (L.) Moench. Leather leaf. In open bogs from Bay County to St. Ignace, Mackinac County. Common and often abundant. One of the dominant bog shrubs of the region.

Epigaea repens L. Trailing arbutus. Occasional in sandy shaded ground. Often among pines, from Bay County to St. Ignace and on Mackinac Island, Mackinac County. Frequent. Seldom plentiful.

Gaultheria procumbens L. Wintergreen. Dry open or shaded ground, and sometimes in sphagnum swamps from Bay County to Mackinac Island, Mackinac County. Abundant.

Arctostaphylos uva-ursi (L.) Spreng. Bearberry. In open sandy ground from Arenac County to St. Ignace, Mackinac County. Plentiful.

Chiogenes hispidula (L.) T. & G. Creeping snowberry. Wet shaded swampy places and in tamarack swamps. Frequent.

Gaylussacia baccata (Wang.) C. Koch. Black huckleberry. Dry sandy open or shaded ground, sometimes in swamps from Bay County to St. Ignace, Mackinac County. Common. Frequent on jack pine plains. Noticed on sand dunes near Mackinaw City in great abundance loaded with plump juicy fruit, September 23, 1913.

Gaylussacia baccata forma *glaucocarpa* (Robinson) Mackenzie. Blue huckleberry. Sandy ground and near sandy beaches of Lake Huron from Bay County to Mackinaw City, Cheboygan County. Frequent.

Gaylussacia baccata forma *leucocarpa* (Porter) Fernald. White huckleberry. Covering sand dunes near Mackinaw City on September 23, 1913. White fruit abundant and juicy. This and the preceding species were growing together.

Vaccinium pennsylvanicum Lam. Low sweet blueberry. Common

from Bay County to St. Ignace. Very abundant in Arenac and Iosco counties on dry open ground and growing with the following variety.

Vaccinium pennsylvanicum nigrum Wood. Low black blueberry. Common from Bay County to St. Ignace. Often very abundant and growing with the preceding. These two shrubs produce a great abundance of delicious berries nearly every season, both known in the market as blueberries.

Vaccinium canadense Kalm. Sour-top. In dry or swampy open ground from Bay County to St. Ignace, Mackinac County. Frequent.

Vaccinium corymbosum L. Swamp blueberry. In swampy open or shaded ground from Bay County to St. Ignace, Mackinac County. Frequent.

Vaccinium oxycoccos L. Small cranberry. In sphagnum swamps from Bay County to St. Ignace, Mackinac County. Frequent.

Vaccinium macrocarpon Ait. Large cranberry. American cranberry. Open bogs and swampy places from Bay County to St. Ignace. Frequent.

PRIMULACEAE. Primrose Family

Primula farinosa L. Bird's eye primrose. Damp rich shaded ground on Thunder Bay Island in Alpena County. Apparently infrequent.

Primula farinosa americana Farr. Yellow-leaved primrose. In damp sand near Lake Huron shore above Alpena. Apparently infrequent. Perhaps overlooked.

Primula mistassinica Michx. Dwarf Canadian primrose. Damp open ground east side of Mackinac Island. Plentiful. Probably frequent throughout, but overlooked.

Lysimachia terrestris (L.) BSP. Bulb-bearing loosestrife. Low wet ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Lysimachia thyrsiflora L. Tufted loosestrife. In swampy open places throughout. Often in shallow water. Plentiful.

Steironema ciliatum (L.) Raf. Fringed loosestrife. Low usually shaded ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Steironema quadriflorum (Sims) Hitchc. Prairie moneywort. Noticed only in Bay County in marshy or prairie-like ground. Plentiful.

Trientalis americana (Pers.) Pursh. Star flower. In rich shaded ground throughout. Common.

OLEACEAE. Olive Family

Fraxinus americana L. White ash. In rich damp ground with other trees from Bay County to St. Ignace, Mackinac County. Frequent, but never plentiful.

Fraxinus pennsylvanica Marsh. Red ash. Often standing out in the

open or on borders of woods and on low ground with other trees. Noticed throughout. Frequent.

Fraxinus pennsylvanica lanceolata (Borkh.) Sarg. Green ash. Damp ground with other trees and along streams. Occasional throughout.

Fraxinus nigra Marsh. Black ash. In low wet ground from Bay County to St. Ignace, Mackinac County. Before the forest fires it was very abundant in swamps and with other trees in thick woods. Also along low banks of streams.

Syringa vulgaris L. Common lilac. Near Alpena as an escape from cultivation.

GENTIANACEAE. Gentian Family

Gentiana crinita Froel. Fringed gentian. On Mackinac Island as reported by Whitney. Not noticed in 1912.

Gentiana procera Holm. Smaller fringed gentian. Abundant on low damp ground at St. Ignace and on Mackinac Island.

Gentiana linearis latifolia Gray. (*G. grayi* Kusnezaw) Gray's gentian. Wet marshy open ground near St. Ignace and on Bois Blanc Island, Mackinac County. Plentiful.

Helenia deflexa (Sm.) Griseb. Spurred gentian. Damp shaded ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Menyanthes trifoliata L. Buckbean. In bogs and shallow water from Bay County to St. Ignace, Mackinac County. Frequent.

APOCYNACEAE. Dogbane Family

Vinca minor L. Common periwinkle. In and near the cemetery, Mackinac Island. Apparently a permanent escape.

Apocynum androsaemifolium L. Spreading dogbane. Dry open ground throughout. Frequent.

Apocynum cannabinum L. Indian hemp. Damp open ground from Bay County to Bois Blanc Island, Mackinac County. Plentiful.

Apocynum cannabinum hypericifolium (Ait.) Gray. Clasping-leaved dogbane. Damp open ground in Bay and Arenac Counties. Plentiful.

ASCLEPIADACEAE. Milkweed Family

Asclepias incarnata L. Swamp milkweed. Damp open ground from Bay County to St. Ignace, Mackinac County. Infrequent.

Asclepias syriaca L. Common milkweed. In sandy open ground throughout but seldom abundant. Apparently infrequent northward.

Asclepias phytolaccoides Pursh. Poke milkweed. In moist shaded or open ground near Rogers in Presque Isle County. Apparently infrequent.

CONVOLVULACEAE. Convolvulus Family

Convolvulus spithameus L. Upright bindweed. From Bay County to St. Ignace, Mackinac County. Frequent. Very abundant on rocky open or shaded ground in Presque Isle and Cheboygan counties. Noticed as an abundant and troublesome weed on the farm of Albert Robinson near Onaway in Presque Isle County.

Convolvulus sepium L. Hedge bindweed. From Bay County to St. Ignace, Mackinac County. Usually in damp open ground. Apparently infrequent.

BORAGINACEAE. Borage Family

Cynoglossum officinale L. Common hound's tongue. In dry open ground throughout. Frequent.

Cynoglossum boreale Fernald. Northern wild comfrey. In open dryish woods from Bay County to Mackinac Island, Mackinac County. Frequent.

Lappula virginiana (L.) Greene. Begger's lice. Rich shaded ground from Bay County to St. Ignace, Mackinac County. Frequent. Abundant in hardwoods east of Onaway, Presque Isle County.

Lappula echinata Gilibert. European stickseed. Noticed throughout on roadsides and in cities and villages. A harmless weed except that the burs get into wool.

Lappula redowskii occidentalis (Wats.) Rydb. Western hairy stickseed. Noticed in open ground not far from Lake Huron shore above Alpena. Apparently infrequent.

Symphytum officinale L. Common comfrey. Noticed in open ground near Harrisville and Alpena. Apparently infrequent.

Myosotis virginica macrosperma (Engelm.) Fernald. Larger spring scorpion-grass. In dryish slightly shaded ground on Mackinac Island. F. W. Hunnewell 2nd. Apparently infrequent.

Lithospermum officinale L. Common gromwell. Dry open or shaded ground at St. Ignace and on Mackinac Island. Plentiful. Not noticed elsewhere.

Lithospermum gmelini (Michx.) Hitchc. Hairy puccoon. Sandy open ground near Lake Huron shore from Bay County to St. Ignace, Mackinac County. Frequent.

Lithospermum angustifolium Michx. Narrow-leaved puccoon. Noticed in dry open ground only at St. Ignace, Mackinac County. Probably to be found throughout but overlooked.

Echium vulgare L. Blue-weed. Noticed only in open ground on Mackinac Island. As a weed it is extending northward.

VERBENACEAE. Vervain Family

Verbena hastata L. Blue vervain. From Bay County to St. Ignace, Mackinac County. Apparently infrequent.

LABIATAE. Mint Family

Scutellaria laterifolia L. Mad-dog skullcap. Damp shaded ground from Bay County to St. Ignace, Mackinac County. Frequent.

Scutellaria galericulata L. Marsh skullcap. Wet open ground throughout. Frequent.

Marrubium vulgare L. Common horehound. Occasional as an escape about cities and villages.

Nepeta cataria L. Catnip. In cities and villages throughout. Apparently scarce.

Nepeta hederacea (L.) Trevisan. Ground ivy. Open dryish or damp shaded ground. Frequent and appearing like a native plant.

Prunella vulgaris L. Heal-all. Open or shaded ground. Frequent throughout.

Galeopsis tetrahit L. Common hemp nettle. "Abundant on Mackinac Island." Winchell's Cat. Noticed as abundant on the bluff near the park, Mackinac Island, in 1913.

Leonurus cardiaca L. Common motherwort. About cities and villages and in cultivated grounds. Frequent throughout.

Monarda mollis L. Pale wild bergamot. Dry open ground throughout. Frequent.

Blephilia hirsuta (Pursh.) Benth. Moist shaded ground on Bois Blanc Island, Mackinac County. Apparently infrequent.

Satureja glabra (Nutt.) Fernald. Low calamint. In damp open ground near Lake Huron shore from Alpena to Mackinac Island, Mackinac County. Frequent.

Satureja vulgaris (L.) Fritsch. Basil. Dry open ground from Bay County to St. Ignace, Mackinac County. Frequent.

Lycopus uniflorus Michx. Bugle-weed. Low open or shaded ground. Plentiful throughout.

Lycopus americanus Muhl. Cut-leaved water horehound. In damp open or shaded ground from Bay County to St. Ignace, Mackinac County. Frequent.

Mentha spicata L. Spearmint. About cities and villages and along roads. Infrequent.

Mentha piperita L. Peppermint. In damp open ground from Bay County to St. Ignace, Mackinac County. Occasional throughout.

Mentha citrata Ehrh. Bergemot mint. Well established and plentiful in an old field near Misery Bay northeast of Alpena, Alpena County.

Mentha arvensis canadensis (L.) Briquet. American wild mint. Damp open or shaded ground from Bay County to St. Ignace, Mackinac County. Frequent.

SOLANACEAE. Nightshade Family

Solanum dulcamara L. Climbing nightshade. Bittersweet. Open or

shaded ground throughout. Growing like a native plant even in woods and swamps.

Solanum nigrum L. Black nightshade. Shaded or rich open ground, usually as a weed in cities and villages. Infrequent.

† *Physalis grandiflora* Hook. Large white-flowered ground cherry. In sandy open ground near Alpena. Apparently infrequent.

‡ *Physalis heterophylla* Nees. Clamy ground cherry. In dry and sandy open ground from Bay County to St. Ignace. Frequent.

Lycium halimifolium Mill. Common matrimony vine. Occasional as an escape about cities and villages.

† *Hyoscyamus niger* L. Black henbane. Noticed at St. Ignace and on Mackinac Island, as a sort of weed in waste places.

SCROPHULARIACEAE. Figwort Family

Verbascum thapsus L. Common mullein. As a weed along roads, in pastures, old fields and open woods. Frequent throughout.

Linaria vulgaris Hill. Butter and eggs. Throughout as a weed in and near cities and villages. Often plentiful.

Linaria canadensis (L.) Dumont. Blue toad-flax. In dry sandy open or slightly shaded ground from Bay County to Alpena. Not noticed farther north.

Scrophularia leporella Bicknell. Hare figwort. In dryish open ground from Bay County to St. Ignace, Mackinac County. Frequent.

Pentstemon hirsutus (L.) Willd. Hairy beard-tongue. Dry open or partially shaded ground from Bay County to Mackinac Island, Mackinac County. Frequent.

Chelone glabra L. Turtlehead. Wet open places from Bay County to St. Ignace, Mackinac County. Frequent.

Mimulus ringens L. Square-stemmed monkey-flower. Wet open ground from Bay County to St. Ignace, Mackinac County. Frequent.

Mimulus glabratus jamesii (T. & G.) Gray. James' mimulus. In very wet springy places on Mackinac Island, Mackinac County, and near Presque Isle Bay, Presque Isle County. Plentiful.

Veronica americana Schwein. American brooklime. In and near brooks, ditches and very wet places from Bay County to St. Ignace and on Mackinac Island. Plentiful and often abundant.

Veronica scutellata L. Marsh speedwell. In damp open ground from Bay County to St. Ignace, Mackinac County. Frequent.

Veronica officinalis L. Common speedwell. Dryish open or shaded ground from Bay County to Mackinac Island, Mackinac County. Frequent throughout.

Veronica serpyllifolia L. Thyme-leaved speedwell. In open or shaded grassy ground throughout. Plentiful.

Veronica peregrina L. Purslane speedwell. Gardens and waste grounds about cities and villages. Frequent.

Gerardia paupercula (Gray) Britton. Small-flowered gerardia. In sterile or wet boggy ground from Bay County to St. Ignace. Frequent.

Castilleja coccinea (L.) Spreng. Scarlet painted cup. Damp open ground from Bay County to Mackinac Island, Mackinac County. Plentiful. Often abundant.

Melampyrum lineare Lam. Cow wheat. Dryish open woods from Bay County to St. Ignace, Mackinac County. Frequent. Often plentiful.

Pedicularis canadensis L. Common lousewort. Dryish shaded ground from Bay County to St. Ignace, Mackinac County. Frequent.

Pedicularis lanceolata Michx. Swamp lousewort. Wet swampy places. Frequent throughout.

LENTIBULARIACEAE. Bladderwort Family

Utricularia vulgaris americana Gray. Greater bladderwort. Ponds, small lakes, coves and ditches from Bay County to St. Ignace, Mackinac County. Frequent.

Utricularia intermedia Hayne. Flat-leaved bladderwort. In wet mossy open places from Bay County to Mackinac Island, Mackinac County. Frequent. Often abundant.

Utricularia cornuta Michx. Horned bladderwort. In damp sand near Lake Huron shore from Bay County to St. Ignace, Mackinac County. Frequent. Often abundant.

Pinguicula vulgaris L. Butterwort. On wet rocky beach of Thunder Bay Island in Alpena County. Plentiful. Perhaps more frequent but overlooked.

OROBANCHACEAE. Broom-rape Family

Epifagus virginiana (L.) Bart. Beech drops. Under beeches from Bay County to Mackinac Island, Mackinac County. Frequent, often plentiful.

Conopholis americana (L. f.) Wallr. Squaw-root. In oak-maple woods on Mackinac Island. Apparently rare. Probably overlooked.

Orobanche uniflora L. One-flowered cancer-root. Abundant in spots on Mackinac Island. Probably frequent throughout but overlooked.

PLANTAGINACEAE. Plantain Family

Plantago major L. Common plantain. Occasional throughout, especially near cities and villages.

Plantago rugelii Done. Rugel's plantain. Noticed as occasional in cultivated grounds near cities and villages.

Plantago lanceolata L. English plantain. Becoming common as a

weed throughout along roads, in pastures, cultivated fields and waste places.

RUBIACEAE. Madder Family

Galium aparine L. Cleavers. Noticed in Cheboygan County and on Mackinac Island, usually in rich shaded ground. Plentiful.

Galium circaezans Michx. Wild liquorice. Rich woods from Bay County to St. Ignace, Mackinac County. Frequent.

Galium lanceolatum Torr. Torry's wild liquorice. Dryish open woods from Bay County to Mackinac Island, Mackinac County. Frequent.

Galium boreale L. Northern bedstraw. Dryish open ground from Bay County to St. Ignace, Mackinac County. Frequent.

Galium trifidum L. Small bedstraw. In damp open ground from Bay County to Mackinac Island, Mackinac County. Plentiful.

Galium tinctorium L. Stiff marsh bedstraw. Damp open or partially shaded ground from Bay County to St. Ignace. Plentiful.

Galium asprellum Michx. Rough bedstraw. In damp shaded ground from Bay County to Mackinac Island, Mackinac County. Plentiful.

Galium triflorum Michx. Sweet-scented bedstraw. In open rich woods and thickets throughout. Common.

Mitchella repens L. Partridge berry. In dryish open woods from Bay County to St. Ignace and on Mackinac Island, Mackinac County. Plentiful.

Cephalanthus occidentalis L. Button-bush. Near Linwood in Bay County. Not noticed farther north.

Houstonia ciliolata Torr. Fringed houstonia. Abundant in spots often covering the ground on Thunder Bay Island in Alpena County. Apparently infrequent.

CAPRIFOLIACEAE. Honeysuckle Family

Diervilla lonicera Mill. Bush honeysuckle. Common and often abundant throughout in dry sandy open or slightly shaded ground.

Lonicera tatarica L. Tartarian honeysuckle. An occasional escape about cities and villages.

Lonicera canadensis Marsh. American fly honeysuckle. In open woods from Bay County to St. Ignace and Bois Blanc Island, Mackinac County. Plentiful.

Lonicera oblongifolia (Goldie) Hook. Swamp fly honeysuckle. In swampy places from Bay County to St. Ignace, Mackinac County. Frequent.

Lonicera hirsuta Eat. Hairy honeysuckle. In rich open or partially shaded ground from Alpena County to St. Ignace and on Mackinac Island, Mackinac County. Frequent.

Lonicera glaucescens Rydb. Douglas' honeysuckle. In dryish open or partially shaded ground from Bay County to St. Ignace, Mackinac County. Frequent.

Lonicera dioica L. Glauous honeysuckle. Dryish open or partially shaded ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Symphoricarpos occidentalis Hook. Wolfberry. Dry open ground about Mio, Oscoda County. Abundant.

Symphoricarpos racemosus Michx. Snowberry. In dry open or partially shaded ground from Bay County to St. Ignace and on Mackinac Island, Mackinac County. Frequent. Also plentiful about Mio, Oscoda County.

Linnaea borealis americana (Forbes) Rehder. Moist, usually shaded ground from Bay County to Mackinac Island, Mackinac County, where it is very abundant.

Viburnum opulus americanum (Mill) Ait. Cranberry-tree. Rich open woods and along streams from Bay County to Bois Blanc Island, Mackinac County. Plentiful.

Viburnum acerifolium L. Arrow-wood. In open woods from Bay County to Mackinaw City, Cheboygan County. Plentiful.

Viburnum pubescens (Ait.) Pursh. Downy arrow-wood. Dryish open woods in Alpena and Cheboygan counties. Plentiful. Noticed in particular as abundant at Misery Bay near Alpena.

Viburnum cassinoides L. Withe-rod. In wet open ground from Bay County to St. Ignace. Common.

Viburnum lentago L. Nannyberry. In damp open woods and thickets from Bay County to St. Ignace and on Mackinac Island, Mackinac County. Plentiful.

Sambucus canadensis L. Common elder. In damp open ground from Bay County to St. Ignace, Mackinac County. Frequent.

Sambucus racemosa L. Red-berried elder. Damp open or shaded ground throughout. Common.

VALERIANACEAE. Valerian Family

Valeriana officinalis L. Garden heliotrope. Appears to be permanently established as an escape in open dry ground in Presque Isle and Cheboygan counties. Plentiful.

CUCURBITACEAE. Gourd Family

Echinocystis lobata (Michx.) T. & G. Wild balsam apple. Apparently an escape from Bay County to St. Ignace, Mackinac County. Frequent.

CAMPANULACEAE. Bluebell Family

Campanula rapunculoides L. Creeping bellflower. As an escape from Bay County to Mackinac Island, Mackinac County. Frequent.

Campanula rotundifolia L. Harebell. On dry and sandy open ground, especially near the Lake Huron shore. Common throughout.

Campanula aparinoides Pursh. Marsh bellflower. Wet grassy ground from Bay County to St. Ignace, Mackinac County. Frequent.

LOBELIACEAE. Lobelia Family

Lobelia kalmii L. Kalm's lobelia. In wet open ground from Bay County to Mackinac Island, Mackinac County. Plentiful.

COMPOSITAE. Composite Family

Eupatorium purpureum L. Joe-pye weed. Low open ground or often in damp open woods from Bay County to St. Ignace, Mackinac County. Frequent.

Eupatorium purpureum maculatum (L.) Darl. Spotted joe-pye weed. In marshy open places. Frequent throughout.

Eupatorium perfoliatum L. Boneset. Wet marshy open ground. Common throughout.

Liatris cylindracea Michx. Cylindric blazing star. Dry open ground. Plentiful on jack pine plains of Presque Isle, Montmorency, Oscoda and Ogemaw counties.

Liatris scariosa Willd. Large button snakeroot. Dry open ground from Bay County to Mackinaw City, Cheboygan County. Plentiful especially on jack pine plains.

Grindelia squarrosa (Pursh.) Dunal. Broad-leaved gum-plant. In dry open ground from Bay County to Mackinaw City. Frequent in fields and about cities and villages.

Solidago latifolia L. Broad-leaved goldenrod. Common in rich shaded ground from Bay County to Mackinac Island, Mackinac County. Plentiful.

Solidago hispida Muhl. Hairy goldenrod. In dry open or partially shaded ground from Bay County to Mackinac Island, Mackinac County. Plentiful.

Solidago randii (Porter.) Britton. Rand's goldenrod. Dry sandy ground, usually on or near the sandy beaches of Lake Huron from Alpena to St. Ignace, Mackinac County. Frequent.

Solidago racemosa gillmani (Gray) Fernald. Gillman's goldenrod. Sandy shore near Mackinaw City, Cheboygan County. Apparently infrequent. Perhaps overlooked.

Solidago uliginosa Nutt. Bog goldenrod. Bogs and wet marshy places from Bay County to St. Ignace, Mackinac County. Frequent. Often plentiful.

Solidago speciosa angustata T. & G. Slender goldenrod. In dry open ground from Bay County to Mackinaw City, Cheboygan County. Frequent.

Solidago juncea Ait. Early goldenrod. Dry open ground from Bay County to St. Ignace, Mackinac County. Frequent. Often plentiful.

Solidago rugosa Mill. Wrinkle-leaved goldenrod. Open dry ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Solidago nemoralis Ait. Gray goldenrod. Dry open ground throughout. Plentiful.

Solidago canadensis L. Canada goldenrod. Rich open or partially shaded ground from Bay County to St. Ignace, Mackinac County. Plentiful and often abundant.

Solidago altissima L. Tall goldenrod. Rich open ground from Bay County to St. Ignace, Mackinac County. Frequent. Often abundant.

Solidago serotina Ait. Late Goldenrod. Rich open or partially shaded ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Solidago ohioensis Riddell. Ohio goldenrod. Swamps and wet prairie-like ground from Bay County to St. Ignace, Mackinac County. Frequent. Often abundant.

Solidago houghtonii T. & G. Houghton's goldenrod. Dry sandy ground usually on or near sandy beach of Lake Huron. Noticed in particular near St. Ignace and on Bois Blanc Island, Mackinac County.

Solidago graminifolia (L.) Salisb. Bushy goldenrod. Moist open ground or in damp sand on or near sandy beaches of Lake Huron from Bay County to St. Ignace, Mackinac County. Plentiful.

Aster macrophyllus L. Large-leaved aster. Rich shaded ground. Abundant throughout.

Aster novae-angliae L. New England aster. In moist mostly open ground from Bay County to St. Ignace, Mackinac County. Apparently infrequent.

Aster sagittifolius Wedemeyer. Arrow-leaved aster. Dry open or partially shaded ground from Bay County to Mackinac Island, Mackinac County. Plentiful. Often abundant.

Aster lindleyanus T. & G. Lindley's aster. Common in open or slightly shaded ground from Presque Isle County to Mackinac Island, Mackinac County. Plentiful. Also near Alpena.

Aster laevis L. Smooth aster. Dry open or partially shaded ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Aster polyphyllus Willd. (*Aster faxoni* Porter). Faxon's aster. Gravelly open ground usually near beach on Bois Blanc Island. Frequent.

Aster lateriflorus (L.) Britton. Calico aster. Damp or dryish open or partially shaded ground. Frequent. Often plentiful throughout.

Aster tradescanti L. Tradescant's aster. In damp open or shaded ground from Bay County to Mackinac Island, Mackinac County. Plentiful. Often abundant.

Aster paniculatus Lam. Panicked aster. In damp or dryish open or partially shaded ground throughout. Frequent.

Aster salicifolius Ait. Willow aster. Low open ground near Mackinaw City, Cheboygan County. Apparently infrequent.

Aster junceus Ait. Rush aster. In marshy open ground from Bay County to St. Ignace, Mackinac County. Plentiful.

Aster longifolius Lam. Long-leaved aster. Low damp ground on Bois Blanc Island. Plentiful.

Aster puniceus L. Red-stalk aster. Wet open or partially shaded ground from Bay County to St. Ignace, Mackinac County. Frequent.

Aster umbellatus Mill. Tall flat-top white aster. Moist partially shaded ground from Bay County to St. Ignace, Mackinac County. Frequent. Often plentiful.

Aster ptarmicoides T. & G. Upland white aster. Dry level ground on jack pine plains north of Rose City, Ogemaw County. Plentiful.

Erigeron pulchellus Michx. Robin's plantain. Mostly open dryish ground, Bay County. Frequent.

Erigeron philadelphicus L. Philadelphia fleabane. Field daisy. Damp open ground. Frequent throughout.

Erigeron annuus (L.) Pers. Sweet scabious. Usually in rich open or partially shaded ground. Plentiful throughout. Often a weed in pastures and hay fields.

Erigeron ramosus (Wait.) BSP. Daisy fleabane. Dry open ground along roads, in fields and pastures. Frequent throughout.

Erigeron canadensis L. Horse-weed. About cities and villages, in pastures, and on open burned over ground. Frequent throughout. Appearing as if introduced.

Antennaria canadensis Greene. Canadian cat's-foot. In dry open or partially shaded ground. Frequent throughout.

Antennaria fallax Greene. Tall cat's-foot. Rich open or shaded ground from Bay County to Mackinac Island, Mackinac County. Plentiful.

Antennaria nodioica Greene. Smaller cat's-foot. Damp open or partially shaded ground from Bay County to Mackinac Island, Mackinac County. Frequent.

Antennaria neglecta Greene. Field cat's-foot. In open or shaded ground from Bay County to Mackinac Island. Plentiful. Often abundant.

Antennaria petaloidea Fernald. Common cat's-foot. In dry open or partially shaded ground from Bay County to St. Ignace, Mackinac County. Plentiful. Often abundant.

Anaphalis margaritacea (L.) B. & H. Pearly everlasting. Dry open or partially shaded ground from Bay County to Mackinac Island, Mackinac County. Frequent. Often abundant.

Gnaphalium polycephalum Michx. Common everlasting. From Bay County to St. Ignace in fields and open ground. Apparently infrequent.

Gnaphalium decurrens Ives. Clammy everlasting. Dry open ground from Bay County to St. Ignace, Mackinac County. Apparently infrequent.

Gnaphalium uliginosum L. Low cudweed. Damp or dry open ground throughout. Frequent.

Inula helenium L. Elecampane. Noticed along roads near Pinconning in Bay County. Plentiful. Not noticed farther north.

Iva xanthifolia Nutt. Burweed marsh elder. In waste places of cities and villages. Infrequent. Noticed in particular at Alpena and Mackinaw City.

Ambrosia trifida L. Great ragweed. Waste places of cities and villages and about dwellings. Occasional throughout.

Ambrosia artemisiifolia L. Common ragweed. Occasional throughout as a weed, especially in cities and villages.

Ambrosia psilostachya DC. Western ragweed. Becoming frequent throughout as a weed in cities and villages and about dwellings.

Xanthium canadense Mill. American cocklebur. Occasional in waste places of cities. Noticed in particular at Alpena and Cheboygan.

Rudbeckia hirta L. Yellow daisy. Black-eyed-susan. In dry open ground throughout, but apparently infrequent.

Helianthus occidentalis Riddell. Few-leaved sunflower. Jack pine plains south of Mio, Oscoda County. Plentiful in one locality.

Helianthus divaricatus L. Woodland sunflower. Jack pine plains near Mio, Oscoda County, and Rose City, Ogemaw County.

Helianthus tuberosus L. Jerusalem artichoke. Well established in old field at Misery Bay near Alpena.

Coreopsis lanceolata L. Lance-leaved tickseed. First noticed in sandy open ground near Lake Huron shore at Alpena. Common from there to St. Ignace and on Mackinac Island. Flowers yellow, beautiful.

Bidens frondosa L. Beggar-ticks. Damp open ground from Bay County to St. Ignace. Seldom plentiful.

Bidens comosa (Gray) Wiegand. Leafy-bracted tickseed. Rich ground and damp sandy shores from Bay County to St. Ignace, Mackinac County. Plentiful.

Bidens connata Muhl. Swamp beggar-ticks. Wet open places from Bay County to St. Ignace. Frequent.

Bidens cernua L. Stick-tight. Wet open places throughout. Frequent.

Achillea millefolium L. Common yarrow. A weed about cities and villages throughout. Apparently infrequent.

Anthemis cotula L. May-weed. Only as a weed about cities and villages. Not plentiful.

Chrysanthemum leucanthemum pinnatifidum Lecoq & Lamotte. Ox-eye-daisy. From Bay County to St. Ignace, Mackinac County. A pernicious weed in Cheboygan County.

Chrysanthemum parthenium (L.) Bernh. Common feverfew. Waste places of cities and villages. Apparently not a permanent escape.

Chrysanthemum balsamita tanacetoides Boiss. Costmary. Well established throughout as an escape, usually in dry open ground, along roads and in old fields. Frequent.

Tanacetum vulgare L. Common tansy. Roadsides and about cities and villages as an escape throughout. Frequent.

Tanacetum huronense Nutt. Lake Huron tansy. On and near sandy beach of Lake Huron from Alpena to St. Ignace. Plentiful. Often abundant.

Artemisia caudata Michx. Tall wormwood. Sandy beaches of Lake Huron throughout, and often in open sandy ground and on sandy ridges in the interior. Plentiful.

Artemisia abrotanum L. Southernwood. Persisting near Alpena in dry open ground. Apparently infrequent.

Artemisia pontica L. Roman wormwood. Along roads near Mio, Oscoda County. Apparently infrequent.

Artemisia stelleriana Bess. Beach wormwood. Sandy open ground as a permanent escape from Bay County to St. Ignace. Often on sand dunes.

Artemisia biennis Willd. Biennial wormwood. Dry or damp open ground in and about cities and villages. Frequent.

Artemisia absinthium L. Wormwood. Dry open ground about cities and villages. Frequent.

Petasites palmatus (Ait.) Gray. Palmate-leaf sweet coltsfoot. In rich open or shaded ground from Bay County to St. Ignace and on Mackinac Island, Mackinac County. Frequent and often plentiful.

Erechtites hieracifolia (L.) Raf. Fireweed. Usually in rich open or shaded ground and noticed from Bay County to St. Ignace, Mackinac County. Frequent. Abundant on burnt over ground.

Senecio vulgaris L. Common groundsel. Noticed as abundant about the village of Mackinac Island, Mackinac County.

Senecio aureus L. Golden ragwort. In wet and marshy open or shaded ground throughout. Frequent. Often plentiful.

Senecio balsamitae Muhl. Balsam groundsel. In dry open or shaded ground, mostly on or near sandy beach of Lake Huron. Frequent throughout.

Arctium minus Bernh. Common burdock. Cities, villages and generally in cultivated grounds. Often in open woods, like a native plant. Plentiful.

Cirsium lanceolatum (L.) Hill. Common thistle. Roadsides and in cultivated grounds. Not abundant or prominent anywhere.

Cirsium pitcheri (Torr.) T. & G. Pitcher's thistle. On sandy beach of Lake Huron from Arenac County to St. Ignace and on Mackinac Island. Plentiful.

Cirsium discolor (Muhl.) Spreng. Field thistle. In dryish open or shaded ground. Occasional throughout.

Cirsium muticum Michx. Swamp thistle. In swampy open or slightly shaded ground throughout. Frequent.

Cirsium arvense (L.) Scop. Canada thistle. Common in Bay County. Occasional from Arenac County to Alcona County. Abundant from Alpena to Mackinaw City and on Mackinac Island.

Lapsana communis L. Nipple-wort. Mostly in shaded ground on Mackinac Island. Abundant in spots. Not noticed elsewhere.

Cichorium intybus L. Common chickory. Along roadsides and in cultivated grounds, but seldom plentiful. Noticed throughout.

Krigia virginica (L.) Willd. Carolina dwarf dandelion. In sandy open or slightly shaded ground in Arenac and Iosco counties, and noticed as far as Alpena. Often abundant.

Tragopogon porrifolius L. Salsify. In cities and villages and along railroads throughout. Frequent.

Tragopogon pratensis L. Goat's beard. In cities and villages and along railroads. Seldom plentiful.

Taraxacum officinale Weber. Common dandelion. Abundant in Bay County. Infrequent in Arenac and Iosco counties. More abundant from Alcona County to St. Ignace and on Mackinac Island.

Sonchus arvensis L. Field sow thistle. In cities and villages especially depot grounds. Frequent. Occasional in cultivated fields.

Sonchus oleraceus L. Common sow thistle. Gardens and in waste places of cities and villages throughout. Seldom plentiful.

Sonchus asper (L.) Hill. Spiny-leaved sow thistle. About cities and villages. Not noticed in uncultivated grounds.

Lactuca scariola integrata Gren. & Godr. Prickly lettuce. Throughout but apparently scarce.

Lactuca canadensis L. Wild lettuce. In open or partially shaded ground. Frequent throughout.

Lactuca spicata (Lam.) Hitchc. Tall blue lettuce. In rich open or partially shaded ground. Frequent throughout.

Prenanthes racemosa Michx. Glaucoous white lettuce. Damp open prairie-like ground near Cheboygan and St. Ignace. Apparently infrequent.

Prenanthes alba L. White lettuce. Noticed in rich open or shaded ground from Bay County to St. Ignace and Mackinac Island, Mackinac County. Frequent throughout.

Hieracium aurantiacum L. Orange hawkweed. First noticed about two miles north of Alpena. Very abundant and a pernicious weed from there to and in Presque Isle and Cheboygan counties. Reported as appearing there about ten years ago.

Hieracium venosum L. Rattlesnake-weed. Frequent in dry open or slightly shaded ground from Bay County to St. Ignace, Mackinac County.

Hieracium scabrum Michx. Rough hawkweed. Dry open ground from Bay County to St. Ignace, Mackinac County. Frequent throughout.

Hieracium canadense Michx. Canada hawkweed. Noticed in dry open ground from Bay County to St. Ignace, Mackinac County. Frequent throughout.

Hieracium umbellatum L. Narrow-leaved hawkweed. Dry open or partially shaded ground from Alpena to Mackinac Island, Mackinac County. Frequent.

OBSERVATIONS ON THE FLOWERING PLANTS, FERNS AND FERN ALLIES GROWING WILD IN SCHOOLCRAFT COUNTY AND VICINITY IN THE UPPER PENINSULA OF MICHIGAN IN 1915

During the season of 1915 a camp for general biological work was established on the bank of Manistique River, perhaps 22 or more miles northeast of the city of Manistique, at a place known as Floodwood, a very wild and uninhabited locality. It having been decided to examine also the wild plants of the region, the writer undertook the work. As the wild vegetation of Mackinac and Chippewa Counties had previously received some attention, it was thought best as far as time would permit, to connect the present with former work.

SCHOOLCRAFT COUNTY

This county is bounded on the south by Lake Michigan, east by Mackinac and Luce counties, north by Alger County, west by Alger County in part and by Delta County. It is from 36 to 40 miles north and south and from 30 to 36 miles east and west. Its Lake Michigan shore line is about 40 miles and its northern boundary is from less than 6 to 12 miles from the south shore of Lake Superior. Manistique, the county seat on Lake Michigan, is about 300 miles and the south shore of Lake Superior about 350 miles from the south state line. From the city of Detroit it is about 165 west and 200 miles north. The city of Manistique has a population of about 5,000, all other places being very small, and the county in general being sparsely settled. So far as the writer has been able to learn there is no available literature on the wild plants of this region.

GENERAL SURFACE CONDITIONS

The surface of the county is very irregular and much broken up into tamarack-black spruce swamps, cranberry marshes, large open wet and undrained areas, jack pine plains, sand ridges, and sand dunes, small spots and larger tracts of hardwoods. Comparatively speaking it is not a rocky country as is so generally supposed by those who have not visited the county. No rock outcropping in the county was noticed except limestone exposures along or near the Lake Michigan shore. White and Norway pines were formerly quite abundant in many places, but such tracts were mostly long ago lumbered, shrubs and small trees only now remaining. Very small areas of original pine are occasionally

seen. After the removal of the timber, the hardwood lands are being used successfully for farming purposes. There are large tracts of burned over ground which now are covered mostly with the wild red cherry, not generally with poplars and white birch as is so often the case in the Lower Peninsula. At present it generally appears throughout that if the country were left to itself, it would ultimately return to its former forest covering.

STREAMS AND SMALL LAKES

The Manistique River with its branches is the only stream of any importance, its source being Manistique Lake, lying between Luce County and the northwestern part of Mackinac County. It is a very winding and swift-running stream, evidently having changed its bed many times. Three interior lakes not far from the Lake Michigan shore, Indian Lake, McDonald Lake, and Gulliver Lake, are worthy of mention. Many smaller lakes and permanent ponds were noticed throughout the county.

SHORES AND BEACHES OF THE TWO GREAT LAKES

The shores of these lakes are from 40 to nearly 50 miles apart, on a straight north and south line. In many ways they are much alike, especially the sandy beaches, and have many like characteristic plants. Among those common on both shores may be mentioned: *Equisetum variegatum*, *Juniperus communis depressa*, *Juniperus horizontalis*, *Calamovilfa longifolia*, *Ammophila arenaria*, *Agropyron dasystachyum*, *Elymus canadensis*, *Scirpus occidentalis*, *Scirpus americanus*, *Smilacina stellata*, *Salix glaucophylla*, *Salix syrticola*, *Cakile edentula*, *Potentilla anserina*, *Lathyrus maritimus*, *Hudsonia tomentosa* (or the variety), *Solidago randii*, *Tanacetum huronense*, *Artemisia caudata*, *Cirsium pitcheri*.

PLANTS WORTHY OF SPECIAL MENTION

Beech, yellow birch, and sugar maple are the dominant trees of the hardwoods, mingled in various proportions. Scattered among these are large American elms, striped maple, white birch, mountain maple, ironwood, hemlock, balsam, red maple, and mountain ash. Tamarack, abundant throughout in tamarack-black spruce swamps, is being attacked and killed by the saw-fly, an insect pest from Europe. The black spruce of these swamps is usually small. White spruce is scattering and often being attacked by the dwarf mistletoe. White cedar is apparently scarce at the present time. Two species of oak, bur oak and swamp white oak, the latter often called locally "blue oak," were noticed as occasional along streams, and red oak, usually quite small, on open sandy ground and on sand dunes. Specimens of oak from Grand Island were sent to Prof. C. S. Sargent and he pronounced them to be *Quercus*

borealis Michx.f., northern red oak. Black ash is common along streams and in swampy places. Many small trees of green ash were noticed on borders of hardwoods; and red ash occurred along streams, being very abundant on the low banks of the Tahquamenon River in Luce County. The red maple is frequent in damp rich ground with other trees, where it is of fair size, but it is also as a shrub or small scraggy tree common on dry sandy ground and on sand dunes. The wild black cherry was observed throughout, but it is not plentiful. Various species of willows are abundant, but poplars are seldom plentiful. *Salix pellita* along the low banks of the Tahquamenon River in Luce County was of special interest. The balsam poplar is often large but seldom abundant. Very large juneberries were found in rich ground with other trees not far from the Lake Michigan shore in the western part of Mackinac County.

GROUND TRAVERSED

About 35 days were spent in the field, from June 24 to July 9 and from September 4 to 25, 1915. From St. Ignace in Mackinac County, the shore of Lake Michigan was followed westerly as near as was possible with horse and rig to Naubinway within about 20 miles of the western line of Schoolcraft County, the rest of the way by rail to the city of Manistique. Most of the time of the June trip was spent in the vicinity of the city of Manistique and at the camp near Floodwood. The vicinity of Floodwood was very wild and there was little to indicate near or even remote civilization except forest devastation. A large black bear was killed by Joseph Richey not far from the camp; porcupines appeared to be plentiful and deer abundant. In September a trip was made with a livery rig from Newberry in Luce County to Deer Park on the south shore of Lake Superior, down the Tahquamenon River by launch to the upper falls, from Seney in Schoolcraft County north to Grand Marais on the south shore of Lake Superior in Alger County and then to Munising and Grand Island in the same county where some investigation was also made. By far the most beautiful place the writer has yet seen on the Great Lakes is Grand Island and vicinity.

WIDE RANGE OF SOME OF THE SHRUBS AND TREES

The following appear to be common, or at least occasional, from the south line of the State to the south shore of Lake Superior: *Larix laricina*, *Salix lucida*, *Salix longifolia*, *Salix pedicellaris*, *Salix petiolaris*, *Salix humilis*, *Salix candida*, *Populus tremuloides*, *Populus grandidentata*, *Populus balsamifera*, *Ostrya virginiana*, *Betula lutea*, *Alnus incana*, *Fagus grandifolia*, *Quercus macrocarpa*, *Quercus rubra*, *Ulmus americana*, *Amelanchier laevis* Wiegand, *Crataegus punctata*, *Prunus serotina*, *Prunus pennsylvanica*, *Prunus virginiana*, *Rubus idaeus aculeatissimus*, *Pyrus*

arbutifolia atropurpurea, *Rhus glabra*, *Rhus toxicodendron*, *Ilex verticillata*, *Acer spicatum*, *Acer saccharum*, *Acer rubrum*, *Rhamnus alnifolia*, *Tilia americana*, *Cornus circinata*, *Cornus stolonifera*, *Cornus alternifolia*, *Fraxinus nigra*, *Fraxinus pennsylvanica*, *Fraxinus pennsylvanica lanceolata*, *Viburnum opulus americanum*, *Viburnum cassinoides*, *Viburnum lentago*, *Sambucus canadensis*, and *Sambucus racemosa*. Very many species of herbaceous plants extend over the same range.

The natural order and nomenclature, as given in Gray's New Manual of Botany, Illustrated, have generally been followed unless otherwise stated.

The writer is much indebted to Prof. A. S. Hitchcock and Agnes Chase of the United States Department of Agriculture for an examination and determination of the grasses, and to K. K. Mackenzie of New York City for an examination of all species of *Cyperaceae* and many other plants. In the genus *Carex*, Mr. Mackenzie's determinations and names have been strictly followed.

If any of these names at present are not found in the two manuals now commonly used, they will soon appear in the forthcoming North American Flora. When the scientific names of Gray's "New Manual of Botany" differ from those in Britton and Brown's "Illustrated Flora," Second Edition, the latter are given in parentheses, except in the genus *Carex*.

ANNOTATED LIST

POLYPODIACEAE. Fern Family

Polypodium vulgare L. Common polypody. Said to be common in the Upper Peninsula but not yet noticed in Schoolcraft County.

Phegopteris polypodioides Fée. (*Dryopteris phegopteris* (L.) C. Chr.). Long beech-fern. Shaded banks and damp rich woods. Common and often abundant. Fronds triangular.

Phegopteris dryopteris (L.) Fée. (*Dryopteris dryopteris* (L.) Britton). Oak fern. Rich shaded ground especially in hardwoods. Fronds ternate. Plentiful.

Adiantum pedatum L. Maidenhair. Rich shaded ground especially in hardwoods. Frequent. Noticed in particular in woods near Indian Lake.

Pteris aquilina L. (*Pteridium aquilinum* (L.) Kuhn.). Common brake. Almost everywhere in dry or damp, open or shaded ground. One of the most common and abundant plants throughout.

Cryptogramma stelleri (Gmel.) Prantl. Slender cliff-brake. At the Pictured Rocks in Alger County. Noticed by the late G. H. Hicks.

Asplenium filix-femina (L.) Bernh. (*Athyrium filix-foemina* (L.) Roth.). Lady fern. Female fern. Moist shaded ground. Frequent throughout.

Aspidium thelypteris (L.) Sw. (*Dryopteris thelypteris* (L.) A. Gray). Marsh shield-fern. Open marshy ground or damp shaded places. Common and often abundant throughout.

Aspidium noveboracense (L.) Sw. (*Dryopteris noveboracensis* (L.) A. Gray). New York fern. Rich open hardwoods. Abundant in beech-maple-birch woods along the Tahquamenon River in Luce and Chippewa Counties.

Aspidium cristatum (L.) Sw. (*Dryopteris cristata* (L.) A. Gray). Crested shield-fern. In damp and swampy places. Frequent.

Aspidium spinulosum (O. F. Müller) Sw. (*Dryopteris spinulosa* (Muell.) Kuntze). Spinulose shield-fern. Common in hardwoods throughout. In general appearance much like but generally smaller than the following.

Aspidium spinulosum intermedium (Muhl.) DC. (*Dryopteris intermedia* (Muhl.) Gray). American shield-fern. In damp rich shaded ground and frequent. Much like the preceding but usually larger.

Cystopteris bulbifera (L.) Bernh. (*Filix bulbifera* (L.) Underw.) Bulblet cystopteris. In damp shaded ground. Frequent.

Onclea sensibilis L. Sensitive fern. In moist open or shaded ground. Often abundant.

Onclea struthiopteris (L.) Hoffm. (*Matteuccia struthiopteris* (L.) Todaro). Ostrich fern. Usually in shaded alluvial ground and hence very abundant along shaded banks of streams. One of the best of our native ferns for cultivation. Grows best in shade and needs plenty of water.

OSMUNDACEAE. Flowering Fern Family

Osmunda regalis L. Royal fern. Flowering fern. Wet open or partially shaded ground. Often abundant.

Osmunda claytoniana L. Clayton's fern. Interrupted fern. Damp open or partially shaded ground throughout. Fine specimens noticed.

Osmunda cinnamomea L. Cinnamon fern. In damp open or partially shaded ground throughout. Often plentiful.

OPHIOGLOSSACEAE. Adder's Tongue Family

Botrychium obliquum Muhl. Ternate grape-fern. Occasional throughout in open or partially shaded ground. Abundant at Manistique in one place on ground made up of sawdust and bark.

Botrychium virginianum (L.) Sw. Rattlesnake fern. Frequent throughout in rich shaded ground.

EQUISETACEAE. Horsetail Family

Equisetum arvense L. Common horsetail. Common in open or partially shaded ground and often acting as a sand binder on sandy shores and along railway embankments.

Equisetum sylvaticum L. Wood horsetail. Common in damp shaded ground.

Equisetum fluviatile L. Swamp horsetail. In very wet and muddy open ground or often in shallow water. Common and often abundant.

Equisetum hyemale L. Common scouring rush. In dry open ground and often on sides and crests of sand dunes acting as a fairly efficient sand binder. Noticed in particular east of Manistique on large dunes. See Britton & Brown's "Illustrated Flora," Second Edition, Volume I, page 41.

Equisetum variegatum Schleich. Varigated equisetum. Frequent along the sandy beaches of Lake Michigan and Lake Superior.

Equisetum scirpoides Michx. Sedge-like equisetum. In dryish open or shaded places, but easily overlooked. Frequent.

LYCOPODIACEAE. Club Moss Family

Lycopodium lucidulum Michx. Shining club-moss. In damp shaded ground. Frequent.

Lycopodium inundatum L. Bog club-moss. In damp sandy open ground. Noticed in particular as abundant near Manistique, not far from the Lake Michigan shore.

Lycopodium annotinum L. Stiff club-moss. Usually in shade. Often very abundant in hardwoods. A vine-like evergreen plant.

Lycopodium clavatum L. Common club-moss. Running pine. Dryish open woods and often very abundant. Noticed in particular as very abundant on the farm of W. T. S. Cornell near Hiawatha. A beautiful vine-like plant, extensively creeping.

Lycopodium obscurum L. Ground pine. Plentiful in rich woods. Appearing like a small pine shrub and much resembling the following.

Lycopodium obscurum dendroideum (Michx.) D. C. Eaton. Tree-like ground pine. In rich woods and apparently the more common form. The difference between these two forms seems very obscure.

Lycopodium complanatum L. Trailing Christmas-green. In dry sandy ground and usually among pines. Often abundant.

Lycopodium tristachyum Pursh. Festoon club-moss. In dry sandy open or partially shaded ground. Abundant in spots. Cornell.

SELAGINELLACEAE. Selaginella Family

Selaginella apus (L.) Spring. Creeping selaginella. In low damp open or partially shaded places. Often abundant. A very pretty little moss-like plant.

TAXACEAE. Yew Family

Taxus canadensis Marsh. American yew. Ground hemlock. In tamarack-black spruce swamps and often very abundant in hardwoods.

PINACEAE. Pine Family

Pinus strobus L. White pine. Formerly abundant in many localities as at present indicated by stumps. A very few clumps of large trees left. Small trees noticed throughout.

Pinus banksiana Lamb. Jack pine. Plentiful on what are called jack pine plains, consisting of very dry sandy localities of flat or rolling ground. Noticed also in sphagnum swamps. Usually a small scraggy tree, occasionally large and straight enough for lumber.

Pinus sylvestris L. Scotch pine. Occasionally planted. Noticed in particular on the sandy beach of Grand Island in Alger County where it appears to be thriving.

Pinus resinosa Ait. Red pine. Norway pine. Formerly abundant on dry sandy land. Has been extensively cut for lumber and only a few small tracts now left. Small trees common throughout.

Larix laricina (Du Roi) Koch. Tamarack. Abundant in "tamarack swamps" and occasional on dry land. Usually small and mixed with black spruce. It is being killed by attacks of the saw-fly, an insect pest from Europe. Shrubs plentiful throughout.

Picea canadensis (Mill.) BSP. White spruce. Frequent on dryish high ground but never plentiful. Many large trees noticed on the banks of the Tahquamenon River in Luce County. Often attacked by the dwarf mistletoe as a parasite.

Picea mariana (Mill.) BSP. Black spruce. Common throughout with tamarack in what are often called tamarack-black spruce swamps. Usually the trees are small and often attacked by the dwarf mistletoe. Many botanists, foresters and cruisers distinguish a small short-leaved form and call it "swamp spruce," *Picea brevifolia* Peck.

Abies balsamea (L.) Mill. Balsam. Balsam fir. Usually in and on borders of hardwoods, occasional in swamps. Noticed throughout.

Tsuga canadensis (L.) Carr. Hemlock. In hardwoods, many scattering large trees noticed. Sometimes plentiful in spots and streaks, but seldom abundant.

Thuja occidentalis L. White cedar. Arbor vitae. Formerly quite abundant in "cedar swamps," but at present scarce on account of lumbering and forest fires. Occasional on poor sandy ground and in hardwoods. Small trees also common along lake shores.

Juniperus communis depressa Pursh. Low juniper. Often plentiful along the shores and sandy beaches of Lake Michigan and Lake Superior where it acts as an efficient sand binder. Occasional in other places in dry sandy ground.

Juniperus horizontalis Moench. Creeping juniper. Frequent and sometimes abundant along the sandy beaches and shores of Lake Michigan and Lake Superior where it often covers the ground and acts as an efficient sand binder. Occasional in swamps.

TYPHACEAE. Cat-tail Family

Typha latifolia L. Common cat-tail. Cat-tail flag. Common throughout in open swampy places.

SPARGANIACEAE. Bur-reed Family

Sparganium eurycarpum Engelm. Broad-fruited bur-reed. Borders of small lakes, ponds and streams. Abundant.

Sparganium diversifolium aceruleum (Beeby) Fernald & Eames. Stemless bur-reed. In very wet open swampy places. Often abundant.

NAJADACEAE. Pondweed Family

Potamogeton natans L. Common floating pondweed. In ponds, on borders of small lakes, on margins and in coves of streams. Often abundant.

Potamogeton epihydrus Raf. Nuttall's pondweed. In still or flowing water throughout. Often abundant.

Potamogeton amplifolius Tuckerm. Large-leaved pondweed. In ponds and slow streams throughout. Often plentiful.

Potamogeton heterophyllus Schreb. Various-leaved pondweed. In ponds and slow streams throughout. Frequent.

Potamogeton angustifolius Berchtold & Presl. Ziz's pondweed. In ponds and small lakes and on margins of slow streams throughout. Plentiful.

Potamogeton perfoliatus L. Clasping-leaved pondweed. In ponds and slow streams throughout. Often plentiful.

Potamogeton pusillus L. Small pondweed. In ponds and ditches. Common.

Potamogeton foliosus Raf. Leafy pondweed. In still and slow-flowing water throughout. Plentiful.

Potamogeton dimorphus Raf. Spiral pondweed. In still water and on borders of slow streams. Plentiful.

Najas flexilis (Willd.) Rostk. & Schmidt. Slender naias. In ponds and slow streams. Often abundant.

JUNCAGINACEAE. Arrow Grass Family

Scheuchzeria palustris L. Scheuchzeria. Open boggy places throughout. Noticed in particular near Vermilion in Chippewa County.

Triglochin maritima L. Sea-side arrow-grass. Marshy open places throughout. Plentiful.

Triglochin palustris L. Marsh arrow-grass. Usually in damp open sandy ground. Often abundant in damp sand along lake shores.

ALISMACEAE. Water-plantain Family

Sagittaria latifolia Willd. Broad-leaved arrow-head. In ditches, muddy places, shallow water about ponds, and along streams. Plentiful.

Alisma plantago-aquatica L. American water-plantain. In shallow water, muddy places, and along streams. Often abundant.

HYDROCHARITACEAE. Frog's-bit Family

Elodea canadensis Michx. Waterweed. In ditches, coves, ponds, small lakes and along slow streams. Often abundant.

Vallisneria spiralis L. Tape grass. Wild celery. In ponds and slow streams. Abundant. Said to be a fine duck food.

GRAMINEAE. Grass Family

Digitaria humifusa Pers. (*Syntherisma ischaemum* (Schreb.) (Nash)). Small crab-grass. Occasional on poor sandy ground, in cultivated fields and waste places. A weed but not very troublesome. Usually prostrate.

Digitaria sanguinalis (L.) Scop. (*Syntherisma sanguinale* (L.) Dulac.), Large crab-grass. Finger-grass. A miserable weed in cities and villages, gardens, fields and waste places.

Panicum capillare L. Old-witch grass. Usually preferring dry sandy ground. Common as a weed about cities and villages, in gardens, fields, and waste places.

Panicum depauperatum Muhl. Starved panic-grass. In dry open ground. Apparently infrequent.

Panicum subvillosum Ashe. Spreading panic-grass. Along or near sandy beaches of Lake Michigan and Lake Superior and on dry open ground throughout. Frequent.

Echinochloa crusgalli (L.) Beauv. Barnyard-grass. Summer-grass. Usually preferring damp cultivated grounds, but as a weed will be found in most all gardens, fields and waste places. Very variable.

Setaria glauca (L.) Beauv. (*Chaetochloa glauca* (L.) Scribn.). Yellow foxtail. Pigeon-grass. A common weed in almost all cultivated grounds. In general appearance much like the following.

Setaria viridis (L.) Beauv. (*Chaetochloa viridis* (L.) Scribn.). Green foxtail. Frequent in cultivated grounds and waste places. Much like the preceding in general appearance.

Cenchrus carolinianus Walt. Small bur-grass. Usually in dry sandy open ground and gradually becoming more frequent. A miserable weed with a cruel spiny bur and often called sand-bur.

Zizania palustris L. Indian rice. Wild rice. In ponds, small lakes and streams, apparently planted by sportsmen to attract ducks. Abundant in the Tahquamenon River in Luce County.

Phalaris arundinacea L. Reed canary-grass. In wet open ground. Common throughout.

Hierochloë odorata (L.) Wahlenb. (*Savastana odorata* (L.) Scribn.). Vanilla grass. Sweet-grass. Moist open or partially shaded ground near Seul Choix. Plentiful. Cornell. Also noticed near Rexton in Mackinac County. It emits a very sweet fragrance.

Milium effusum L. Tall millet-grass. Frequent throughout in rich woods.

Oryzopsis pungens (Torr.) Hitchc. Slender mountain rice. In dry and sterile open ground. Plentiful.

Oryzopsis asperifolia Michx. White-grained mountain rice. On borders, and in open spots of beech-maple-birch woods. Frequent.

Muhlenbergia racemosa (Michx.) BSP. Wild timothy. On low meadow-like ground and borders of marshes. Frequent.

Brachyelytrum erectum (Schreb.) Beauv. Bearded short-husk. Common throughout in hardwoods.

Phleum pratense L. Timothy. Common throughout, probably as an escape.

Sporobolus uniflorus (Muhl.) Scribn. & Merr. Late-flowering drop-seed. In damp open sandy ground west of Manistique. Abundant.

Agrostis alba L. Redtop. In damp open ground and often in damp sand. Common.

Agrostis hyemalis (Walt.) BSP. Rough hair-grass. Fool-hay. In dry or moist open or partially shaded ground. Abundant.

Agrostis perennans (Walt.) Tuckerm. Thin-grass. Upland bent-grass. Usually in damp rich shaded ground. Plentiful.

Calamovilfa longifolia (Hook.) Hack. Long-leaved reed-grass. On sand dunes and sandy beaches. Apparently seldom abundant in this region. When growing in abundance it is an efficient sand binder.

Calamagrostis canadensis (Michx.) Beauv. Blue-joint grass. Usually in wet open meadow-like ground. Often abundant and cut for hay.

Ammophila arenaria (L.) Link. Sea sand-reed. Sandy beaches of Lake Michigan and Lake Superior. Often abundant, when it is one of the most efficient sand binders known.

Deschampsia flexuosa (L.) Trin. Common hair-grass. Dry open ground throughout. Often plentiful.

Deschampsia caespitosa (L.) Beauv. Tufted hair-grass. Frequent in wet open ground. Noticed in particular in wet places on Bois Blanc Island in Mackinac County.

Avena sativa L. Common oat. Apparently escaping and persisting in waste places.

Danthonia spicata (L.) Beauv. Common wild oat-grass. In dry open sterile ground throughout. Plentiful.

Danthonia compressa Aust. Flattened wild oat-grass. Dry open ground near Floodwood. Plentiful.

Danthonia intermedia Vasey. Vasey's wild oat-grass. Dry open ground near Floodwood. Plentiful.

Phragmites communis Trin. Common reed-grass. Wet open places, borders of tamarack-black spruce swamps, and near lake shores. Seldom abundant.

Melica smithii (Porter) Vasey. (*Avena smithii* Porter). Smith's oat. Damp open woods. Apparently infrequent.

Melica striata (Michx.) Hitchc. (*Avena torreyi* Nash). Purple oat. Open woods. Apparently infrequent.

Dactylis glomerata L. Orchard grass. About cities and villages and in cultivated grounds. Frequent.

Poa annua L. Low spear-grass. In lawns and cultivated grounds. Common.

Poa compressa L. Canada blue-grass. English blue-grass. Usually in dry and sterile cultivated ground. Noticed as frequent on the sandy beach of Lake Michigan.

Poa nemoralis L. Wood meadow-grass. Dry open ground. Apparently infrequent.

Poa pratensis L. June grass. Kentucky blue-grass. The common grass of our lawns, fields, meadows, pastures, and open woodlands.

Poa trivialis L. Rough-stalked meadow-grass. Damp open ground near Floodwood. Apparently rare.

Glyceria canadensis (Michx.) Trin. (*Panicularia canadensis* (Michx.) Kuntze). Rattlesnake-grass. Wet boggy open places. Common and often abundant. A beautiful grass.

Glyceria nervata (Willd.) Trin. (*Panicularia nervata* (Willd.) Kuntze). Fowl meadow-grass. Low open or partially shaded ground. Common and often abundant.

Glyceria grandis Wats. (*Panicularia grandis* (S. Wats.) Nash). Reed meadow-grass. Low banks of streams, ditches and wet meadow-like ground. Frequent.

Festuca octoflora Walt. Slender fescue-grass. In dry sterile open ground. Frequent.

Festuca ovina L. Sheep's fescue. In open dry ground. Frequent.

Festuca elatior L. Meadow-fescue. In an open dryish place near Floodwood. Apparently infrequent.

Festuca nutans Spreng. Nodding fescue-grass. Sandy beach of Lake Michigan near Manistique. Apparently infrequent.

Bromus secalinus L. Common chess. About cities and villages and in cultivated grounds. Frequent.

Bromus ciliatus L. Fringed brome-grass. Open moist woods and banks of streams. Frequent.

Bromus pumpellianus melicoides Shear. Pumpelly's melic-like brome grass. A western form plentiful on the sandy beach at Mackinaw City in Cheboygan County. It will probably be found in the Northern Peninsula.

Agropyron repens (L.) Beauv. Quack-grass. Common as a weed in cities and villages and cultivated grounds.

Agropyron dasystachyum (Hook.) Scribn. Northern wheat-grass. Sandy beaches of Lake Michigan and Lake Superior. When abundant it is a good sand binder.

Agropyrum tenerum Vasey. Slender wheat-grass. On the sandy beach of Grand Island near Munising in Alger County. Plentiful. Perhaps the identification is doubtful.

Agropyron caninum (L.) Beauv. Awned wheat-grass. Open dryish ground on Grand Island near Munising in Alger County. Plentiful.

Secale cereale L. Common rye. Escaping from cultivation and apparently persisting in cities, villages and cultivated grounds.

Hordeum jubatum L. Squirrel-tail grass. Plentiful in cities and villages and occasional in damp meadow-like ground.

Elymus virginicus L. Virginia wild rye. Plentiful along low shaded banks of streams and in damp open woods.

Elymus canadensis L. Nodding wild rye. Sandy beaches of Lake Michigan and Lake Superior. Frequent. Acts as a good sand binder.

Hystrix patula Moench. Bottle-brush grass. Frequent in beech-maple-birch woods.

CYPERACEAE. Sedge Family

Dulichium arundinaceum (L.) Britton. Dulichium. Wet open swampy places and on borders of ponds. Often abundant.

Eleocharis palustris (L.) R. & S. Creeping spike-rush. Wet meadow-like ground and often in shallow water. Common.

Eleocharis palustris vicens Bailey. Large spike-rush. Margins of ponds and small lakes and usually in shallow water. Often abundant.

Eleocharis acicularis (L.) R. & S. Needle spike-rush. Wet and muddy places about ponds, small lakes, and along low banks of slow streams. Often abundant.

Eleocharis tenuis (Willd.) Schultes. Slender spike-rush. Wet open meadow-like ground. Abundant.

Scirpus pauciflorus Lightf. Few-flowered club-rush. Wet open calcareous ground near Lake Michigan shore. Often abundant.

Scirpus caespitosus L. Tufted club-rush. Deer-hair. Wet boggy open ground on margin of a tamarack-black spruce swamp south of Shingleton. Plentiful.

Scirpus hudsonianus (Michx.) Fernald. (*Eriophorum alpinum* L.). Alpine cotton-grass. Wet open marshy ground. Often abundant.

Scirpus americanus Pers. Three-square. Borders of ponds, small lakes and streams. Plentiful.

Scirpus validus Vahl. Great bulrush. Margins of ponds and streams. Plentiful.

Scirpus occidentalis (Wats.) Chase. Vicid great bulrush. Wet boggy places and in shallow water about ponds, small lakes, bays of the Great Lakes and along streams. Abundant.

Scirpus atrovirens Muhl. Dark-green bulrush. In marshy open places and swamps. Common.

Scirpus cyperinus pelius Fernald. Wool grass. In wet open prairie-like ground. Common.

Scirpus atrocinctus Fernald. Dark wool-grass. Wet open or partially shaded ground. Frequent.

Scirpus atrocinctus brachypodus Fernald. Clustered wool-grass. Damp open or partially shaded ground. Frequent.

Eriophorum callitrix Cham. Hare's-tail. Open bogs. Common.

Eriophorum gracile Roth. Slender cotton-grass. Swamps and open boggy places. Frequent.

Eriophorum tenellum Nutt. Rough cotton-grass. Open wet and swampy places. Frequent.

Eriophorum angustifolium Roth. Tall cotton-grass. Very wet boggy places and often growing in water. Noticed as plentiful near Floodwood.

Eriophorum viridi-carinatum (Engelm.) Fernald. Thin-leaved cotton grass. Borders of, and open spots in, tamarack-black spruce swamps. Common.

Eriophorum virginicum L. Virginia cotton-grass. Open bogs and very wet meadow-like ground. Common.

Rynchospora fusca (L.) Ait.f. Brown beaked-rush. Damp prairie-like or open boggy ground near Manistique. Plentiful. Prof. C. A. Davis, 1905.

Rynchospora alba (L.) Vahl. White beaked-rush. Wet boggy open ground. Often abundant.

Cladium mariscoides (Muhl.) Torr. (*Mariscus mariscoides* (Muhl.) Kuntze). Twig-rush. Bogs, wet open marshy places and wet shores. Often abundant.

Carex crawfordii Fernald. Crawford's sedge. Dryish open ground. Plentiful.

Carex albolutescens Schwein. Greenish-white sedge. Damp or dryish open ground near Manistique. Plentiful.

Carex normalis Mackenzie. (*C. mirabilis* Dewey). Larger straw sedge. Dryish open or partially shaded ground. Frequent.

Carex tenera Dewey. Straw sedge. Frequent in dryish open or partially shaded ground.

Carex bebbii Olney. Bebb's sedge. Low open ground. Frequent.

Carex aenea Fernald. Fernald's hay-sedge. Dryish open or partially shaded ground. Frequent and often plentiful.

Carex cephalantha (Bailey) Bicknell. (*C. stellulata cephalantha* (Bailey) Fernald). Larger prickly sedge. Low open ground near Floodwood. Plentiful.

Carex leersii angustata (Carey) Mackenzie. (*C. stellulata angustata* Carey). Tapering sedge. Low open ground at Floodwood. Plentiful.

Carex sterilis Willd. (*C. scirpoides* Schk.). Prickly sedge. Damp open ground near Manistique. Plentiful.

Carex interior Bailey. Inland sedge. Damp or wet open ground. Plentiful throughout.

Carex arcta Boott. Northern clustered sedge. In damp woods at Floodwood. Frequent.

Carex canescens L. Silvery sedge. Wet open places about tamarack-black spruce swamps. Plentiful.

Carex brunnescens Poir. Brownish sedge. Dryish shaded ground at Floodwood. Plentiful.

Carex bromoides Schkuhr. Brome-like sedge. Frequent in damp woods.

Carex deweyana Schwein. Dewey's sedge. Beech-maple-birch-woods. Plentiful.

Carex trisperma Dewey. Three-fruited sedge. Plentiful in tamarack-black spruce swamps.

Carex dispersa Dewey. (*C. tenella* Schkuhr.). Soft-leaved sedge. In damp woods, especially in and about tamarack-black spruce swamps. Plentiful.

Carex diandra Schrank. Lesser paniced sedge. Bogs and damp open places at Floodwood. Plentiful.

Carex stipata Muhl. Awl-fruited sedge. Very wet open places. Common throughout.

Carex sartwellii Dewey. Sartwell's sedge. Very wet open boggy places near Manistique. Plentiful.

Carex crinita Lam. Fringed sedge. Wet open or partially shaded ground. Common throughout.

Carex gynandra Schwein. (*C. crinita gynandra* (Schwein.) Schwein. & Torr.). Nodding sedge. Wet-open or partially shaded ground near Manistique. Frequent.

Carex aquatilis substricta Kükenthal. Northern water sedge. In very wet open ground throughout. Common.

Carex stricta Lam. Tussock sedge. Very wet open or partially shaded ground forming dense bunches or tussocks.

Carex strictior Dewey. Stiff sedge. Open marshy ground near Floodwood. Frequent. Much resembling the preceding but not forming large tufts or tussocks.

Carex aurea Nutt. Golden-fruited sedge. Damp open ground, usually in grassy places. Common.

Carex hassei Bailey. Hasse's sedge. On the damp gravelly beach of Lake Michigan near Manistique. By some authors considered the same as *C. bicolor* All.

Carex pauciflora Lightf. Few-flowered sedge. In open spots of tamarack-black spruce swamps in sphagnum. Often very abundant.

Carex leptalea Wahlenb. Bristle-stalked sedge. In bogs and swamps. Abundant throughout.

Carex buxbaumii Wahl. (*C. polygama* Schkuhr.). Brown sedge. Common in boggy open places.

Carex gracillima Schwein. Graceful sedge. Common in hardwoods.

Carex tonsa (Fernald) Bicknell. (*C. umbellata tonsa* Fernald). Deep green sedge. On high fixed sand ridges near Floodwood. Apparently infrequent.

Carex pennsylvanica Lam. Pennsylvania sedge. Dry sandy open ground. Common throughout.

Carex paupercula Michx. Bog sedge. Frequent in open bogs throughout. Noticed in particular about Floodwood.

Carex leptoneura Fernald. (*C. laxiflora leptoneura* Fernald). Two-edged sedge. Rich shaded ground. Plentiful throughout.

Carex flava L. Yellow sedge. Wet open marshy ground. Often abundant.

Carex cryptolepis Mackenzie. ("*C. flava rectirostra* Gaudin"). Smaller yellow sedge. Marshy open ground. Frequent.

Carex oederi Retz. Green sedge. Damp open sandy ground near Lake Michigan shore. Abundant.

Carex capillaris elongata Olney. Tall hair-like sedge. In wet shaded ground near Manistique. Plentiful.

Carex arcata Boott. Drooping wood-sedge. In hardwoods. Frequent throughout.

Carex flexuosa Muhl. (*C. debilis rudgei* Bailey). Slender-stalked sedge. Frequent in hardwoods about Floodwood.

Carex scabrata Schwein. Rough sedge. Damp open or partially shaded ground on Grand Island in Alger County. Plentiful.

Carex lasiocarpa Ehrh. (*C. filiformis* Good). Slender sedge. In bogs and often in shallow water. Abundant.

Carex oligosperma Michx. Few-seeded sedge. Open bogs throughout. Often abundant.

Carex lacustris Willd. (*C. riparia* Muhl.). Lake-bank sedge. In swamps about Floodwood. Plentiful.

Carex pseudo-cyperus L. Cyperus-like sedge. Wet open ground throughout. Frequent.

Carex hystericina Muhl. Porcupine sedge. Wet boggy open ground. Often abundant.

Carex retrorsa Schwein. Retrorse sedge. Wet open or partially shaded ground. Plentiful throughout.

Carex lupulina Muhl. Hop sedge. Swamps and wet woods. Common.

Carex intumescens Rudge. Bladder sedge. Wet open or partially shaded ground. Common throughout.

Carex monile Tuckerm (*C. vesicaria monile* (Tuckerm.) Fernald). Necklace sedge. Open wet places at Floodwood. Plentiful.

Carex tuckermanni Dewey. Tuckerman's sedge. Rich open ground. Plentiful throughout.

ARACEAE. Arum Family.

Arisaema triphyllum (L.) Schott. Indian turnip. Jack-in-the-pulpit. Rich woods, especially hardwoods. Common.

Calla palustris L. Wild calla. In ditches and very wet boggy places. Often abundant.

Acorus calamus L. Sweet flag. On borders of slow streams. Frequent.

LEMNACEAE. Duckweed Family

Lemna minor L. Lesser duckweed. Often covering stagnant water in ditches, on and near margins of ponds, small lakes and slow streams. Abundant. Appearing like a green scum on water.

PONTEDERIACEAE. Pickerel-weed Family

Pontederia cordata L. Pickerel-weed. In ponds, small lakes, coves, bays and on margins of slow streams. Noticed in particular along the Tahquamenon River in Luce County. Plentiful.

JUNCACEAE. Rush Family

Juncus bufonius L. Toad rush. Damp open ground, often in wet sand and on roadsides. Abundant.

Juncus tenuis Willd. Slender rush. Damp fields, open places and roadsides. Common.

Juncus greenei Oakes & Tuckerm. Greene's rush. In wet sand near Manistique. Plentiful. Prof. C. A. Davis, 1905.

Juncus balticus littoralis Engelm. Baltic rush. Damp open ground and on sandy beaches, where it is an efficient sand binder. Abundant.

Juncus effusus L. Common rush. Soft rush. Wet open ground. Common.

Juncus brachycephalus (Engelm.) Buchenau. Small-headed rush. Wet shores of Lake Michigan and in open marshy places. Plentiful.

Juncus brevicaudatus (Engelm.) Fernald. Narrow-panicled rush. Wet and muddy places about ponds, small lakes and along low banks of slow streams. Plentiful.

Juncus canadensis J. Gay. Canada rush. Open marshy places. Frequent.

Juncus nodosus L. Knotted rush. Damp gravelly places along and near Lake Michigan shore. Often abundant.

LILIACEAE. Lily Family

Tofieldia glutinosa (Michx.) Pers. Glutinous tofieldia. Damp open prairie-like ground. Plentiful.

Zygadenus chloranthus Richards. (*Anticlea elegans* (Pursh) Rydb.). Glaucous zygadenus. Sand dunes and sandy beaches of Lake Michigan near Manistique. Often plentiful.

Allium tricoccum Ait. Wild leek. In hardwoods and often abundant. Cornell.

Lilium philadelphicum andinum (Nutt.) Ker. (*L. umbellatum* Pursh). Western red lily. Rich partially shaded and open dryish sandy ground. Frequent.

Erythronium albidum Nutt. White adder's-tongue. Rich usually shaded ground. Frequent. Cornell.

Asparagus officinalis L. Garden asparagus. Occasional as an escape in dry sandy open ground.

Clintonia borealis (Ait.) Raf. Yellow clintonia. Tamarack-black spruce swamps and in hardwoods. Often very abundant.

Smilacina racemosa (L.) Desf. (*Vagnera racemosa* (L.) Morong.). False-spikenard. Rich open woods. Often plentiful.

Smilacina stellata (L.) Desf. (*Vagnera stellata* (L.) Morong.). Star-flowered Solomon's seal. Moist shaded ground and also in dry sandy open or shaded places. Often abundant.

Smilacina trifolia (L.) Desf. (*Vagnera trifolia* (L.) Morong.). Three-leaved Solomon's seal. Very wet open boggy places. Often abundant.

Maianthemum canadense Desf. (*Unifolium canadense* (Desf.) Greene). Wild lily-of-the-valley. Damp or dryish shaded ground. Abundant in hardwoods.

Streptopus amplexifolius (L.) DC. Claspingleaved twisted-stalk. Damp rich open or shaded ground. Often plentiful.

Polygonatum biflorum (Walt.) Ell. Small Solomon's seal. Frequent in hardwoods.

Medeola virginiana L. Indian cucumber-root. Rich open woods. Frequent.

Trillium grandiflorum (Michx.) Salisb. Large-flowered wake-robin. In hardwoods but seldom plentiful.

Trillium cernuum L. Nodding wake-robin. In hardwoods. Frequent.

IRIDACEAE. Iris Family

Iris versicolor L. Larger blue-flag. Damp open or shaded ground. Seldom abundant.

Sisyrinchium angustifolium Mill. Pointed blue-eyed grass. On and near the sandy beach of Lake Michigan. Apparently infrequent.

ORCHIDACEAE. Orchis Family

Cypripedium parviflorum Salisb. Smaller yellow lady's slipper. Damp rich or swampy shaded ground. Apparently not common.

Cypripedium parviflorum pubescens (Willd.) Knight. Larger yellow lady's slipper. Damp places in hardwoods. Frequent.

Cypripedium candidum Muhl. Small white lady's slipper. Swampy ground near Manistique. Plentiful. W. T. S. Cornell.

Cypripedium hirsutum Mill. (*C. reginae* Walt.). Showy lady's slipper. Swampy ground and margin of wet woods. Apparently infrequent.

Cypripedium acaule Ait. (*Fissipes acaulis* (Ait.) Small). Stemless lady's slipper. In tamarack-black spruce swamps or shaded sandy ground. Seldom abundant.

Habenaria bracteata (Willd.) R. Br. (*Coeloglossum bracteatum* (Willd.) Parl.). Long-bracted orchis. Frequent in hardwoods.

Habenaria hyperborea (L.) R. Br. (*Limnorchis hyperborea* (L.) Rydb.). Tall leafy green orchis. Frequent in open hardwoods.

Habenaria dilatata (Pursh) Gray. (*Limnorchis dilatata* (Pursh) Rydb.). Tall white bog orchis. Bogs and often in wet sand. Frequent and often plentiful.

Habenaria obtusata (Pursh) Richards. (*Lysiella obtusata* (Pursh) Richards). Small northern bog orchis. Tamarack-black spruce swamps and also in other very low wet shaded places. Apparently not common.

Habenaria hookeri Torr. (*Lysias hookeriana* (A. Gray) Rydb.). Hooker's orchis. Noticed as occasional in hardwoods.

Habenaria orbiculata (Pursh) Torr. (*Lysias orbiculata* (Pursh) Rydb.). Round-leaved orchis. Noticed in hardwoods. Apparently infrequent.

Habenaria macrophylla Goldie. Large round-leaved orchis. Rich shaded ground. Apparently infrequent.

Pogonia ophioglossoides (L.) Ker. Rose pogonia. In open boggy places. Frequent.

Calopogon pulchellus (Sw.) R. Br. (*Limodorum tuberosum* L.). Grass pink. Open boggy places. Often plentiful.

Arethusa bulbosa L. Arethusa. Wild pink. Very wet and boggy open places near tamarack-black spruce swamps. Never abundant.

Spiranthes gracilis (Bigel.) Beck. (*Ibidium gracile* (Bigel.) House). Slender ladies' tresses. Dry open ground near Manistique. Apparently infrequent. Very probably overlooked.

Spiranthes cernua (L.) Richard. (*Ibidium cernuum* (L.) House). Drooping ladies' tresses. Damp open ground. Abundant near Manistique in damp sand.

Epipactis tessellata (Lodd.) A. A. Eaton. (*Peramium tessellatum* (Lodd.) Heller). Checkered rattlesnake plantain. Occasional in open hardwoods.

Epipactis decipiens (Hook.) Ames. (*Peramium decipiens* (Hook.) Piper). Menzies' rattlesnake plantain. Dryish shaded ground. Frequent. Cornell.

Listera convallarioides (Sw.) Torr. (*Ophrys convallarioides* (Sw.) W. F. Wight). Broad-lipped twayblade. Very wet woods near Floodwood. Apparently infrequent. Very probably overlooked.

Corallorrhiza trifida Chatelain. (*C. corallorrhiza* (L.) Karst.). Early coral-root. Damp shaded places. Frequent.

Corallorrhiza maculata Raf. Large coral-root. Frequent in hardwoods.

Calypso bulbosa (L.) Oakes. (*Cytherea bulbosa* (L.) House). Calypso. Rich shaded ground. Occasional. W. T. S. Cornell.

SALICACEAE. Willow Family

Salix nigra Marsh. Black willow. Borders of damp woods and along streams as a small shrub. Frequent.

Salix lucida Muhl. Shining willow. Common in wet open ground.

Salix serissima (Bailey) Fernald. Autumn willow. Borders of tamarack-black spruce swamps, especially near Manistique. Plentiful. Cornell.

Salix alba L. White willow. Occasionally planted but apparently not spreading.

Salix longifolia Muhl. (*Salix interior* Rowlee). Sandbar willow. Along streams. Frequent.

Salix cordata Muhl. Heart-leaved willow. Frequent along streams.

Salix glaucophylla Bebb. Broad-leaved willow. On and near the sandy beaches of Lake Huron and Lake Superior. Frequent.

Salix syrticola Fernald. (*S. adenophylla* Hook.). Furry willow. On and near the sandy beaches of Lake Michigan and Lake Superior. Frequent.

Salix pedicellaris Pursh. Bog willow. Very wet and boggy places. Often abundant.

Salix discolor Muhl. Pussy willow. Low open ground and along banks of streams. Frequent.

Salix petiolaris Sm. Slender willow. In damp low ground. Often abundant.

Salix humilis Marsh. Prairie willow. Dry open ground. Often plentiful.

Salix rostrata Richards. (*S. bebbiana* Sarg.). Beaked willow. Dry or damp open ground. Plentiful.

Salix candida Flüggé. Hoary willow. Very wet or boggy open ground. Common.

Salix pellita Anders. Satiny willow. Along the low marshy banks of the Tahquamenon River in Luce County. Abundant.

Populus alba L. White poplar. Occasionally planted, but apparently not spreading.

Populus tremuloides Michx. American aspen. Throughout, but seldom abundant.

Populus grandidentata Michx. Large-toothed aspen. Rich woods with other trees. Never plentiful.

Populus balsamifera L. Balsam poplar. Trees often large and extend to the south shore of Lake Superior. Plentiful.

Populus deltoides Marsh. Cottonwood. A horticultural form called Carolina poplar, or large-leaved poplar, occasionally planted as an ornamental tree, but apparently not spreading.

Populus nigra italica Du Roi. Lombardy poplar. Occasionally planted but not spreading.

MYRICACEAE. Sweet Gale Family

Myrica gale L. Sweet gale. In very wet places, on borders of ponds and small lakes and along streams. Often very abundant.

Myrica asplenifolia L. (*Comptonia peregrina* (L.) Coulter). Sweet fern. Open dry sterile ground. Often very abundant.

JUGLANDACEAE. Walnut Family

Juglans cinerea L. Butternut. Reported as occasionally planted. Large native trees noticed on Bois Blanc Island in Mackinac County, very probably its northern limit in the eastern counties of the Upper Peninsula.

Juglans nigra L. Black walnut. Reported as frequently planted and said to thrive.

BETULACEAE. Birch Family

Corylus rostrata Ait. Beaked hazelnut. Dryish open or partially shaded ground. Common and often abundant.

Ostrya virginiana (Mill.) K. Koch. Ironwood. In hardwoods with other trees. Plentiful.

Betula lutea Michx.f. Yellow birch. One of the three principal trees of the hardwood forests. Common with beech and sugar maple. Large shaggy-barked ones often called "red birch." It extends to the south shore of Lake Superior.

Betula alba papyrifera (Marsh.) Spach. (*B. papyrifera* Marsh.). Paper birch. Canoe birch. White birch. Common in hardwoods and also along streams. Small trees and mere shrubs often abundant on burned over ground. It extends to the south shore of Lake Superior.

Betula pumila glandulifera Regel (*B. glandulifera* (Regel) Butler). Glandular low birch. Borders of tamarack-black spruce swamps, and in other swampy places. Often abundant.

Alnus crispa (Ait.) Pursh. (*A. alnobetula* (Ehrh.) K. Koch). Green alder. Mountain alder. Sand dunes near Manistique. Plentiful. Prof. C. A. Davis, 1905.

Alnus incana (L.) Moench. Speckled alder. In swamps, all wet low places and along streams. Very abundant.

FAGACEAE. Beech Family

Fagus grandifolia Ehrh. American beech. One of the three principal trees of the hardwood forests. Abundant with sugar maple and yellow birch. It extends to the south shore of Lake Superior.

Quercus macrocarpa Michx. Bur oak. Frequent along the Manistique River in Schoolcraft County and the Tahquamenon River in Luce County. In the lumber trade sold as white oak.

Quercus bicolor Willd. Swamp white oak. Occasional along the two rivers above mentioned. Known as blue oak in Schoolcraft County and in the lumber trade sold as white oak.

Quercus rubra L. Red oak. On dry sandy ground throughout, especially on jack pine plains. Often plentiful but seldom large.

URTICACEAE. Nettle Family

Ulmus fulva Michx. Slippery elm. Red elm. Reported as occasional in Schoolcraft County by W. T. S. Cornell and in Alger County by Thomas B. Wyman, forester at Munising. Not seen by the writer.

Ulmus americana L. American elm. White elm. Frequent throughout, and fine large trees noticed in hardwoods and along the large streams. It extends to the south shore of Lake Superior.

Cannabis sativa L. Hemp. Occasional about cities and villages as a weed.

Humulus lupulus L. Common hop. Occasionally escaping and persisting.

Urtica gracilis Ait. Slender nettle. Damp open or partially shaded ground. Frequent throughout.

Laportea canadensis (L.) Gaud. (*Urticastrum divaricatum* (L.) Kuntze). Wood nettle. Frequent in hardwoods.

SANTALACEAE. Sandalwood Family

Comandra richardsiana Fernald. Richards' comandra. Dry open or

partially shaded ground. Common. By some authors included in *C. umbellata* (L.) Nutt.

Comandra livida Richards. Northern comandra. In dry sterile open or shaded ground. Apparently infrequent.

LORANTHACEAE. Mistletoe Family

Arceuthobium pusillum Peck. (*Razoumofskyia pusilla* (Peck) Kuntze). Dwarf mistletoe. Parasitic on the twigs of white spruce and black spruce causing them to curl up into thick bunches, forming what are called "witches' brooms." Frequent.

POLYGONACEAE. Buckwheat Family

Rumex britannica L. Great water dock. In wet marshy places throughout. Common.

Rumex crispus L. Yellow dock. About cities and villages and in cultivated grounds. A miserable weed.

Rumex mexicanus Meisn. Willow-leaved dock. Sandy beaches of Lake Michigan and in dry open ground throughout. Frequent.

Rumex obtusifolius L. Bitter dock. Frequent in cities, villages, and cultivated grounds as a weed.

Rumex acetosella L. Field sorrel. Common in cultivated grounds.

Polygonum aviculare L. Knot-grass. Common about cities and villages, in lawns, gardens, and other cultivated grounds.

Polygonum erectum L. Erect knotweed. Mostly about cities and villages, and on roadsides as a weed. Frequent.

Polygonum lapathifolium L. (*Persicaria lapathifolia* (L.) S. F. Gray). Pale persicaria. In damp open ground. Noticed mostly as an occasional weed about cities and villages.

Polygonum amphibium L. (*Persicaria amphibia* (L.) S. F. Gray). Water persicaria. Margins of ponds, small lakes, and along low banks of streams. Plentiful.

Polygonum muhlenbergii (Meisn.) Wats. (*Persicaria muhlenbergii* (S. Wats.) Small.). Swamp persicaria. Marshy and swampy places, margins of ponds and along streams. Often in shallow water. Common.

Polygonum hydropiper L. (*Persicaria hydropiper* (L.) Opiz.) Smartweed. In damp open or partially shaded ground. Plentiful.

Polygonum acre HBK. (*Persicaria punctata* (Ell.) Small.). Water smartweed. Wet marshy ground and along low banks of streams and occasionally in shallow water. Plentiful.

Polygonum persicaria L. (*Persicaria persicaria* (L.) Small.) Lady's thumb. Usually in damp open places as a weed in cities and villages. Frequent.

Polygonum sagittatum L. (*Tracaulon sagittatum* (L.) Small.). Arrow-leaved tear-thumb. In damp open or partially shaded ground. Frequent.

Polygonum convolvulus L. (*Tiniaria convolvulus* (L.) Webb & Moq.). Black bindweed. As a frequent weed in gardens and other cultivated grounds.

Polygonum cilinode Michx. (*Tiniaria cilinodis* (Michx.) Small.) Fringed black bindweed. In dry sandy open ground. Noticed in particular as abundant on burned over sidehills south of Shingleton.

Polygonella articulata (L.) Meisn. Coast jointweed. Dry sandy open ground, especially on jack pine plains. Often abundant.

CHENOPODIACEAE. Goosefoot Family

Cycloloma atriplicifolium (Spreng.) Coult. Winged pigweed. Sandy open ground. A weed in cities and villages and along railroads.

Chenopodium capitatum (L.) Asch. (*Blitum capitatum* L.). Strawberry blite. Dryish or damp open ground. Frequent throughout.

Chenopodium glaucum L. Oak-leaved goosefoot. Occasional as a weed in gardens and other cultivated grounds.

Chenopodium hybridum L. Maple-leaved goosefoot. Occasional in open woods, but more frequent in waste places and cultivated grounds as a weed.

Chenopodium album L. Lamb's quarters. Common pigweed. Common as a weed in streets, waste places and cultivated grounds.

Atriplex patula hastata (L.) Gray. Halberd-leaved orache. Frequent in waste places and cultivated grounds.

Corispermum hyssopifolium L. Bug-seed. Sandy open ground near Manistique. Prof. C. A. Davis, 1905.

Salsola kali tenuifolia G. F. W. Mey. (*Salsola pestifer* A. Nelson). Russian thistle. Noticed as occasional in cities, villages and cultivated grounds.

AMARANTHACEAE. Amaranth Family

Amaranthus retroflexus L. Green amaranth. Also often called red root and amaranth pigweed. Noticed only as a weed in waste places and cultivated grounds.

Amaranthus graecizans L. Tumble-weed. In waste place and cultivated grounds as a weed. Apparently not common.

Amaranthus blitoides Wats. Prostrate amaranth. In cultivated and waste grounds as a weed. Occasional but will probably become abundant.

CARYOPHYLLACEAE. Pink Family

Spergula arvensis L. Corn spurry. In sandy cultivated fields and waste places as a weed. Cornell.

Arenaria serpyllifolia L. Thyme-leaved sandwort. In dry sandy ground. Frequent as a weed in cities and villages.

Stellaria longipes laeta (Richards) Wats. Beach stitchwort. In drifting sand on the sandy beach of Lake Michigan in the western part of Mackinac County. Abundant. Plant low; flowers small, white.

Stellaria longifolia Muhl. (*Alsine longifolia* (Muhl.) Britton). Long-leaved stitchwort. Damp grassy open places. Frequent.

Stellaria graminea L. (*Alsine graminea* (L.) Britton). Lesser stitchwort. Covering sides and crests of sand dunes near Lake Michigan shore east of Manistique. Abundant.

Stellaria media (L.) Cyrill. (*Alsine media* L.). Common chickweed. A weed in gardens and waste places. Often abundant.

Cerastium vulgatum L. Larger mouse-ear chickweed. A common weed in cities, villages and cultivated grounds.

Agrostemma githago L. Cockle. Corn cockle. Frequent in grain fields and waste places.

Lychnis coronaria (L.) Desr. Mullein pink. Occasional on dryish open ground.

Lychnis alba Mill. White campion. Becoming common in cities and villages and often as a weed in cultivated fields.

Silene antirrhina L. Sleepy catchfly. Dryish open woods or in open sandy ground. Frequent.

Silene noctiflora L. Night-flowering catchfly. Noticed only as a weed in cultivated grounds. Apparently infrequent.

Silene latifolia (Mill.) Britten & Rendle. Bladder campion. In wates places, along railroads and in cultivated grounds. Frequent.

Saponaria officinalis L. Soapwort. Bouncing bet. Dry open sandy places, especially in and near cities and villages. Frequent.

Saponaria vaccaria L. (*Vaccaria vaccaria* (L.) Britton). Cow-herb. In and near cities and villages and along railroads. Infrequent.

PORTULACACEAE. Purslane Family

Claytonia caroliniana Michx. Carolina spring beauty. In rich shaded ground. Frequent. W. T. S. Cornell.

Portulaca oleracea L. Common purslane. Occasional in dry sandy cultivated grounds as a weed.

NYMPHAEACEAE. Water Lily Family

Nymphaea advena Ait. In still and stagnant water throughout. Often abundant.

Castalia odorata (Ait.) Woodville & Wood. Sweet-scented white water lily. Ponds, coves, borders of small lakes, and on margins of slow streams. Noticed in particular in the Tahquamenon River and Muskalonge Lake in Luce County.

Castalia tuberosa (Paine) Greene. Ponds, small lakes and borders of streams. Frequent.

Brasenia schreberi Gmel. Water shield. Frequent in still water of coves and ponds.

RANUNCULACEAE. Crowfoot Family

Ranunculus circinatus Sibth. (*Batrachium circinatum* (Sibth.) Rchb.). Stiff white water crowfoot. Frequent in the shallow water of ditches, ponds and slow streams.

Ranunculus sceleratus L. Cursed crowfoot. Celery-leaved crowfoot. In open wet places, bogs and ditches. Frequent.

Ranunculus abortivus L. Small-flowered crowfoot. Rich damp shaded ground. Frequent.

Ranunculus recurvatus Poir. Hooked crowfoot. Rich woods and open places. Frequent. W. T. S. Cornell.

Ranunculus septentrionalis Poir. Swamp buttercup. Usually in moist shaded ground. Frequent.

Ranunculus pennsylvanicus L.f. Bristly crowfoot. Frequent in open damp ground.

Ranunculus acris L. Tall crowfoot. In damp open or shaded ground. Frequent.

Thalictrum dioicum L. Early meadow rue. Frequent in rich open woods.

Thalictrum dasycarpum Fisch. & Lall. Tall meadow rue. Frequent in damp open or shaded ground.

Hepatica triloba Chaix. (*Hepatica hepatica* (L.) Karst.). Round-leaved liver-leaf. Rich open woods. Frequent.

Hepatica acutiloba DC. Sharp-lobed liver-leaf. Usually in beech-maple-birch woods. Frequent.

Anemone cylindrica Gray. Long-fruited anemone. Dry sandy open or partially shaded ground east of Manistique. Apparently infrequent.

Anemone virginiana L. Tall anemone. Frequent in open woods.

Anemone canadensis L. Canada anemone. Banks of streams and in open prairie-like ground. Frequent and often abundant.

Anemone quinquefolia L. Wood anemone. Wind-flower. Margins of woods and thickets. Frequent.

Clematis virginiana L. Virginia virgin's bower. Banks of small streams. Common.

Caltha palustris L. Marsh marigold. Open and shaded swampy places. Common.

Coptis trifolia (L.) Salisb. Goldthread. Damp usually shaded places and in tamarack-black spruce swamps. Abundant.

Aquilegia canadensis L. Wild columbine. Dryish open or partially shaded ground. Frequent.

Actaea rubra (Ait.) Willd. Red baneberry. In rich woods and thickets. Frequent.

Actaea rubra forma *neglecta* (Gillman) Robinson. White-fruited red haneberry. Frequent with the preceding. Fruit white, pedicels capillary.

Actaea alba (L.) Mill. White haneberry. Frequent in rich woods. pedicels not capillary, but thickened in fruit. Berries white.

BERBERIDACEAE. Barberry Family

Caulophyllum thalictroides (L.) Michx. Blue cohosh. In hardwoods near Indian Lake and at Floodwood. Apparently infrequent.

PAPAVERACEAE. Poppy Family

Sanguinaria canadensis L. Bloodroot. In open rich woods. Frequent.

FUMARIACEAE. Fumitory Family

Dicentra cucullaria (L.) Bernh. (*Bicuculla cucullaria* (L.) Millsp.). Dutchman's breeches. Rich woods. Frequent. Cornell.

Dicentra canadensis (Goldie) Walp. (*Bicuculla canadensis* (Goldie) Millsp.). Squirrel corn. Rich woods. Frequent.

Corydalis sempervirens (L.) Pers. (*Capnoides sempervirens* (L.) Bork.) Pale corydalis. Common and often abundant on burned over dry ground.

CRUCIFERAE. Mustard Family

Alyssum alyssoides L. Yellow alyssum. In dry open ground as a weed about cities and villages. Apparently not common.

Thlaspi arvense L. Field penny-cress. Occasional as a weed about cities and villages. Apparently infrequent.

Lepidium virginicum L. Wild peppergrass. A weed in waste places, gardens and on roadsides. Frequent. Much resembling the following.

Lepidium apetalum Willd. Apetalous peppergrass. In cities, villages, and cultivated grounds. Frequent. Described under *L. densiflorum* Schrad. in Britton and Brown's "Illustrated Flora", Second Edition, Vol. II, page 166.

Capsella bursa-pastoris (L.) Medic. (*Bursa bursa-pastoris* (L.) Britton). Shepherd's purse. A common weed in gardens, fields and waste places.

Camelina sativa (L.) Crantz. Gold-of-pleasure. False flax. Occasional in cities, villages and along railroads.

Cakile edentula (Bigel.) Hook. American sea rocket. Sandy beach of Lake Michigan. Frequent.

Brassica arvensis (L.) Ktze. (*Sinapis arvensis* L.). Common mustard. Charlock. A weed about cities and villages, and in cultivated grounds. Often too abundant.

Brassica nigra (L.) Koch. Black mustard. Occasional as a weed about cities and villages.

Sisymbrium officinale leiocarpum DC. Smooth-podded hedge-mustard. A weed about dwellings and in waste places. Frequent. The species with pubescent pods may yet be noticed.

Sisymbrium altissimum L. (*Norta altissima* (L.) Britton). Tumble mustard. In cities and villages as a weed. Often plentiful.

Erysimum cheiranthoides L. (*Cheirinia cheiranthoides* (L.) Link.). Worm-seed mustard. Mostly as a weed in cities and villages. Occasional in fields.

Radicula nasturtium-aquaticum (L.) Britton & Rendle. True water-cress. In brooks and ditches. Frequent.

Radicula palustris (L.) Moench. Marsh cress. Wet open places and often in shallow water. Frequent throughout.

Radicula armoracia (L.) Robinson. (*Armoracia armoracia* (L.) Britton). Horseradish. Escaping into moist places of cities and villages and persisting. Frequent.

Dentaria diphylla Michx. Crinkle-root. In hardwoods. Apparently infrequent.

Cardamine pennsylvanica Muhl. Pennsylvania bitter-cress. In very wet and open or shaded swampy places. Often abundant.

Arabis lyrata L. Lyre-leaved rock-cress. On and near the sandy beaches of Lake Michigan and Lake Superior. Often plentiful.

Arabis glabra (L.) Bernh. Tower mustard. Frequent in dry open places or in open woods.

SARRACENIACEAE. Pitcher-plant Family

Sarracenia purpurea L. Pitcher-plant. Common in tamarack-black spruce swamps.

DROSERACEAE. Sundew Family

Drosera rotundifolia L. Round-leaved sundew. Boggy open ground. Frequent.

CRASSULACEAE. Orpine Family

Sedum acre L. Mossy stonecrop. Dry open sandy ground in and near cities and villages. Sometimes covering the ground and abundant.

Sedum purpureum Tausch. (*Sedum triphyllum* (Haw.) S. F. Gray). Live-forever. Escaping from cultivation and persisting in various places. Frequent.

SAXIFRAGACEAE. Saxifrage Family

Saxifraga pennsylvanica L. (*Micranthes pennsylvanica* (L.) Haw.). Swamp saxifrage. On margins and in open spots of tamarack-black spruce swamps. Plentiful.

Mitella diphylla L. Two-leaved bishop's-cap. Damp rich woods and thickets. Frequent.

Mitella nuda L. Naked bishop's-cap. Damp rich shaded ground. Common.

Chrysosplenium americanum Schwein. Golden saxifrage. Cool wet open or shaded places. Often abundant.

Parnassia parviflora DC. Small-flowered grass-of-parnassus. In springy and wet meadow-like places. Abundant in spots. Noticed in particular near Munising, Alger County.

Parnassia caroliniana Michx. Carolina grass-of-parnassus. Common in wet swampy open or shaded places.

Ribes oxycanthoides calcicola Fernald. (*Grossularia hirtella* (Michx.) Spach.). Low wild gooseberry. Damp open or partially shaded ground. Plentiful.

Ribes floridum L'Hér. (*R. americanum* Mill.). Wild black currant. Damp open or shaded ground. Plentiful.

Ribes lacustre (Pers.) Poir. Swamp black currant. Cool damp shaded ground. Frequent.

Ribes prostratum L'Hér. (*R. glandulosum* Grauer.). Fetid currant. Skunk currant. Damp shaded ground, sometimes in the open. Frequent.

Ribes triste Pall. Swamp red currant. American red currant. Damp hardwoods. Frequent.

ROSACEAE. Rose Family

Physocarpus opulifolius (L.) Maxim. (*Opulaster opulifolius* (L.) Kuntze). Ninebark. Common along streams. Noticed as plentiful in crevices of limestone rock on Lake Michigan shore at Seul Choix.

Spiraea salicifolia L. Common meadow-sweet. In low mostly open ground. Common. Apparently *S. alba* DuRoi or *S. latifolia* (Ait.) Borkh. of some authors.

Spiraea tomentosa L. Hardhack. Steeple bush. Usually in low damp open ground. Common about Manistique. Cornell.

Pyrus malus L. (*Malus malus* (L.) Britton). Common apple. Noticed as frequent throughout in a wild state.

Pyrus arbutifolia atropurpurea (Britton) Robinson. (*Aronia atropurpurea* Britton). Purple-fruited choke-berry. Frequent in low swampy ground and often in shade. Ripe fruit claret colored to purplish black.

Pyrus melanocarpa (Michx.) Willd. (*Aronia melanocarpa* (Michx.)

Britton). Black choke-berry. Damp open places especially on margins of tamarack-black spruce swamps. Common especially about Manistique. Ripe fruit black.

Pyrus americana (Marsh) DC. (*Sorbus americana* Marsh). American mountain ash. Common on margins of woods. Often large, 50 feet high and more.

Amelanchier laevis Wiegand. Smooth-leaved juneberry. Borders of, and in, rich woods near Lake Michigan shore. Plentiful. Noticed in particular in the western part of Mackinac County, where many trees were 18 inches in diameter 4 feet from the ground and 50 feet high. See *Rhodora*, Vol. 14, page 158.

Crataegus punctata Jacq. Large-fruited thorn. Usually in damp open or partially shaded ground. Frequent throughout.

Crataegus douglasii Lindl. Douglas' thorn. (*C. brockwayae* Sarg.). Very probably to be found throughout in dry, damp, open or shaded ground. Noticed in particular on Grand Island in Alger County.

Fragaria virginiana Duchesne. Common strawberry. Common in both damp or dry open ground throughout.

Fragaria vesca americana Porter. (*F. americana* (Porter) Britton). American wood strawberry. In damp hardwoods and tamarack-black spruce swamps. Frequent.

Potentilla monspeliensis L. Rough cinquefoil. In open dry sandy ground throughout. Frequent as a roadside and field weed.

Potentilla argentea L. Silvery cinquefoil. Frequent in dry open ground.

Potentilla palustris (L.) Scop. (*Comarum palustre* L.). Marsh cinquefoil. Very wet and swampy open places. Common.

Potentilla fruticosa L. (*Dasiphora fruticosa* (L.) Rydb.). Shrubby cinquefoil. Wet or dry open ground. Often abundant.

Potentilla tridentata Ait. (*Sibbaldiopsis tridentata* (Soland.) Rydb.). Three-toothed cinquefoil. Dryish sandy or gravelly open or partially shaded ground throughout. Plentiful in spots.

Potentilla anserina L. (*Argentina anserina* (L.) Rydb.). Silver-weed. Usually in dry or damp open ground near Lake Michigan or Lake Superior shore. Often abundant.

Potentilla canadensis L. Common cinquefoil. Frequent in dry open ground.

Geum canadense Jacq. White avens. Frequent in and near hardwoods.

Geum strictum Ait. Yellow avens. Moist open ground. Plentiful.

Geum rivale L. Purple avens. Damp open or partially shaded ground. Frequent.

Rubus idaeus aculeatissimus (C. A. Mey) Regel & Tiling. (*R. strigosus*

Michx. of some authors). Wild red raspberry. Dry open or partially shaded ground. Abundant.

Rubus parviflorus Nutt. Salmon-berry. Usually in open woods. Often plentiful.

Rubus triflorus Richards. Dwarf raspberry. Damp open or shaded ground. Common.

Rubus allegheniensis Porter. Tall blackberry. Open places and burned over ground. Common.

Rubus canadensis L. Millspaugh's blackberry. Mostly borders of hardwoods and along streams. Plentiful. This is not the dewberry formerly having this scientific name, but an upright shrub.

Rubus nigricans Rydb. Bristly blackberry. In marshy and swampy ground. Often very abundant. A creeping or ascending shrub, resembling the dewberry, but with small insignificant fruit.

Rubus hispidus L. Running swamp blackberry. Tamarack-black spruce swamps. Often abundant.

Rubus villosus Ait. (*R. procumbens* Muhl.). Dewberry. Dry open ground. Often plentiful. Fruit large and palatable. Formerly having the scientific name of *Rubus canadensis* L.

Agrimonia gryposepala Wallr. Tall hairy agrimony. In hardwoods and thickets. Frequent.

Agrimonia striata Michx. Britton's agrimony. Damp open woods and along streams. Apparently infrequent. Noticed in particular near the upper falls of the Tahquamenon River in Luce County.

Rosa acicularis Lindl. Prickly rose. Dryish open or partially shaded ground. Frequent.

Rosa blanda Ait. Meadow rose. Dryish open ground. Often abundant on sandy beaches and sand dunes acting as an efficient sand binder. Sometimes afflicted by the gall-fly, *Rhodistes bicolor*.

Rosa rubiginosa L. Sweetbrier. Occasional on roadsides as an escape.

Prunus serotina Ehrh. (*Padus virginiana* (L.) Mill.). Wild black cherry. Occasional throughout. Apparently more frequent near Munising in Alger County.

Prunus virginiana L. (*Padus nana* (DuRoi) Roemer.). Choke cherry. In dry or damp ground. Common throughout.

Prunus pennsylvanica L.f. Wild red cherry. Open woods and clearings. Very abundant on burned over ground.

Prunus cuneata Raf. Appalachian cherry. Dryish sandy open ground. Often plentiful.

Prunus pumila L. Sand cherry. Plentiful on the sandy beaches of Lake Michigan and Lake Superior. Also often covering sand dunes. An efficient sand binder.

Prunus nigra Ait. Canada plum. Borders of woods and banks of

streams. Frequent. Noticed in particular near the Lake Michigan shore in the western part of Mackinac County.

LEGUMINOSAE. Pulse Family

Trifolium pratense L. Red clover. Roadsides, waste places and clearing. Frequent and thrifty. Our cultivated clover.

Trifolium repens L. White clover. Noticed as frequent throughout in cities, villages, pastures and on roadsides.

Trifolium hybridum L. Alsike clover. Roadsides, clearings and in waste places. Frequent throughout and thrifty.

Melilotus officinalis (L.) Lam. Yellow sweet clover. Waste places about cities and villages. Infrequent. Cornell.

Melilotus alba Desr. White sweet clover. Waste places and roadsides. Occasional. Cornell.

Medicago sativa L. Alfalfa. Occasional in cities and villages. Cornell.

Medicago lupulina L. Black medic. In cities and villages and about farm buildings. Frequent.

Vicia angustifolia (L.) Reichard. Smaller common vetch. Occasional about cities and villages and along railroads.

Vicia americana Muhl. American vetch. Moist or dryish open ground. Occasional. Noticed in particular near Rexton in the western part of Mackinac County.

Lathyrus maritimus (L.) Bigel. Beach pea. Sandy beaches of Lake Michigan and Lake Superior. Often plentiful. An efficient sand binder.

Lathyrus palustris linearifolius Ser. Winged marsh vetchling. Frequent in damp open places and margins of woods throughout.

Lathyrus ochroleucus Hook. Pale vetchling. Dryish shaded ground near Seul Choix. Apparently infrequent.

LINACEAE. Flax Family

Linum usitatissimum L. Common flax. Streets and depot grounds of cities and villages. Frequent.

OXALIDACEAE. Wood Sorrel Family

Oxalis acetosella L. Common wood sorrel. White wood sorrel. In hardwoods and low wet shaded ground. Often very abundant.

Oxalis stricta L. (*Xanthoxalis stricta* (L.) Small). Upright yellow wood sorrel. In cities and villages and along railroads. Apparently infrequent.

Oxalis corniculata L. (*Xanthoxalis corniculata* (L.) Small). Yellow

procumbent sorrel. As a weed about cities and villages, but apparently rare.

GERANIACEAE. Geranium Family

Geranium maculatum L. Wild crane's-bill. In hardwoods and along old roads. Seldom plentiful.

Geranium robertianum L. (*Robertiella robertiana* (L.) Hanks.). Herb robert. In damp woods and on sandy beaches of Lake Michigan. Not noticed as anywhere abundant.

Geranium bicknellii Britton. Bicknell's crane-bill. Clearings, open places, and burned over areas. Plentiful. W. T. S. Cornell.

POLYGALACEAE. Milkwort Family

Polygala paucifolia Willd. Fringed polygala. Dry shaded ground. Often plentiful. Cornell.

EUPHORBIACEAE. Spurge Family

Euphorbia glyptosperma Engelm. (*Chamaesyce glyptosperma* (Englm.) Small). Ridge-seeded spurge. Noticed as plentiful along railroads.

Euphorbia maculata L. (*Chamaesyce maculata* (L.) Small). Milk purslane. In cities, villages and on roadsides. Frequent.

CALLITRICHACEAE. Water Starwort Family

Callitriche palustris L. Vernal water-starwort. In mud or water of ponds, small lakes and sluggish streams. Often plentiful.

Callitriche autumnalis L. Autumnal water-starwort. Frequent in shallow still water of ponds, small lakes and streams. Noticed in particular in the Tahquamenon River in Luce County.

EMPETRACEAE. Crowberry Family

Empetrum nigrum L. Black crowberry. Noticed by G. H. Hicks near the Pictured Rocks and by Prof. C. A. Davis near Grand Marais in Alger County.

ANACARDIACEAE. Cashew Family

Rhus typhina L. (*R. hirta* (L.) Sudw.). Staghorn sumach. Usually not far from Lake Michigan shore in dry open or particularly shaded ground. Abundant in spots.

Rhus glabra L. Smooth sumach. Dryish open or partially shaded ground. Frequent throughout.

Rhus toxicodendron L. (*Toxicodendron radicans* (L.) Kuntze).

Poison ivy. In woods, dry sandy ground and on sandy beaches. Often plentiful. This shrub often becomes a vine and tree climber, when some authors give it the name of *Rhus toxicodendron radicans* (L.) Torr., climbing poison ivy.

AQUIFOLIACEAE. Holly Family

Ilex verticillata (L.) Gray. Black alder. Winterberry. In low open or partially shaded ground. Common.

Nemopanthes mucronata (L.) Trel. Mountain holly. In damp woods and swampy ground throughout. Often abundant. Known in Luce County as "buck-bush" or "buck-brush" from the fact that deer brouse it.

CELASTRACEAE. Staff Tree Family

Celastrus scandens L. Known as "bittersweet" in Michigan and western Ontario. Usually a vine climbing trees. Noticed west of Manistique and along the Manistique River at Germfask. Apparently infrequent. Cornell.

ACERACEAE. Maple Family

Acer pennsylvanicum L. Striped maple. On borders of, and in, rich woods throughout. Plentiful.

Acer spicatum Lam. Mountain maple. On borders of, and in, rich woods. Often abundant. A shrub or small tree. It is said deer brouse the tree heavily and strip off its bark and that elk formerly did the same.

Acer saccharum Marsh. Sugar maple. One of the three principal and dominant trees of the hardwoods. Abundant throughout.

Acer saccharinum L. Silver maple. Planted occasionally, but apparently not spreading.

Acer rubrum L. Red maple. Rich woods with other trees, where it is a fair sized tree, also common on dry sandy ground and even covering sand dunes, when it is small and scraggy. Reported that deer greedily brouse and peel the bark from the tree.

Acer negundo L. Box elder. Occasionally planted, but apparently not spreading.

BALSAMINACEAE. Touch-me-not Family

Impatiens biflora Walt. Spotted touch-me-not. Damp open or shaded ground. Abundant throughout.

RHAMNACEAE. Buckthorn Family

Rhamnus alnifolia L'Her. Alder-leaved buckthorn. Wet open or shaded ground throughout.

VITACEAE. Vine Family

Psedera vitacea (Kneer) Greenc. Grape-like virginia creeper. In rich woods and on banks of streams. A vine and tree climber. Frequent throughout.

Vitis vulpina L. Riverside grape. Plentiful on Round Island in Mackinac County. Not noticed elsewhere yet (1915) in the Upper Peninsula.

TILIACEAE. Linden Family

Tilia americana L. Occasional in hardwoods and reaching the south shore of Lake Superior. Trees often very large.

MALVACEAE. Mallow Family

Abutilon theophrasti Medic. (*A. abutilon* (L.) Rusby). Velvet-leaf. Occasional as a weed in gardens, waste places and fields.

Malva rotundifolia L. Common mallow. Cheeses. Plentiful as a weed in waste places and cultivated grounds.

Malva moschata L. Musk mallow. Noticed as a weed in fields and on roadsides west of Manistique.

HYPERICACEAE. St. John's-wort Family

Hypericum ascyron L. Great St. John's-wort. Damp open ground and on banks of small streams west of Manistique. Apparently infrequent.

Hypericum kalmianum L. Kalm's St. John's-wort. Usually in dry, sandy, open ground on and near the sandy beaches of Lake Michigan and Lake Superior. Often plentiful.

Hypericum ellipticum Hook. Pale St. John's-wort. Wet places, along streams and on wet sandy shores. Frequent.

Hypericum boreale (Britton) Bicknell. Northern St. John's-wort. Very wet boggy places and margins of ponds. Frequent.

Hypericum virginicum L. (*Triadenum virginicum* (L.) Raf.). Marsh St. John's-wort. Open marshy and swampy places. Frequent.

CISTACEAE. Rockrose Family

Helianthemum canadense (L?) Michx. (*Cracanthemum canadense* (L.) Britton). Long-branched frostweed. On sand dunes west of Manistique. Plentiful. Prof. C. A. Davis, 1905.

Hudsonia tomentosa Nutt. False heather. Sandy beaches of Lake Michigan and Lake Superior. Often abundant.

VIOLACEAE. Violet Family

Viola cucullata Ait. Marsh blue violet. Very wet open or partially shaded places. Common.

Viola nephrophylla Greene. Northern bog violet. Wet open or partially shaded ground throughout. Frequent.

Viola affinis LeConte. LeConte's violet. Moist meadow-like ground and in damp partially shaded places. Plentiful. W. T. S. Cornell.

Viola selkirkii Pursh. Great spurred violet. In hardwoods near Floodwood. Apparently infrequent. Very probably overlooked.

Viola lanceolata L. Lance-leaved violet. Moist or boggy and mostly open places. Abundant and much larger than in the Lower Peninsula.

Viola pallens (Banks) Brainerd. Northern white violet. Wet springy open or partially shaded places. Frequent.

Viola blanda Willd. Sweet white violet. Rich moist open or partially shaded ground. Frequent.

Viola incognita Brainerd. Large-leaved white violet. Margins of, and open places in, hardwoods. Common.

Viola renifolia A. Gray. Kidney-leaved violet. Damp places in hardwoods. Common.

Viola scabriuscula Schwein. (*V. eriocarpa* Schwein.). Smoothish yellow violet. Frequent in hardwoods.

Viola canadensis L. Canada violet. In hardwoods and often abundant.

Viola conspersa Reichenb. American dog violet. Low damp open or shaded ground. Often abundant.

THYMELAEACEAE. Mezereum Family

Dirca palustris L. Leatherwood. Moosewood. Damp rich open woods. Frequent in Schoolcraft County. Cornell. Also in Alger County. Thomas B. Wyman. Not noticed by the writer.

ELAEAGNACEAE. Oleaster Family

Shepherdia canadensis (L.) Nutt. (*Lepargyrea canadensis* (L.) Greene.). Canadian buffalo berry. Dry open or partially shaded ground. Frequent.

ONAGRACEAE. Evening Primrose Family

Epilobium angustifolium L. (*Chamaenerion angustifolium* (L.) Scop.) Great willow-herb. Fireweed. Dryish open or partially shaded ground. Abundant on burned over land.

Epilobium densum Raf. (*E. lineare* Muhl.). Linear-leaved willow-herb. Low open ground and often abundant.

Epilobium adenocaulon Haussk. Northern willow-herb. Rich damp open or partially shaded ground, throughout. Plentiful.

Oenothera biennis L. Common evening primrose. Dryish open ground and on sandy shores. Frequent.

Oenothera pumila L. (*Kneiffia pumila* (L.) Spach.). Small sun-drops. Dry open ground near Manistique. Apparently infrequent. Prof. C. A. Davis, 1905.

Circaea luteiana L. Enchanter's nightshade. Open hardwoods. Frequent.

Circaea alpina L. Smaller enchanter's nightshade. Damp places in hardwoods. Frequent and often plentiful.

HALORAGIDACEAE. Water Milfoil Family

Myriophyllum spicatum L. Spiked water milfoil. In stagnant water or on margins of slow streams. Apparently infrequent.

Hippuris vulgaris L. Mare's-tail. Ponds and slow streams. Frequent. Noticed in particular near Manistique in mud and shallow water of small streams.

ARALIACEAE. Ginseng Family

Aralia racemosa L. American spikenard. In rich woods and thickets. Frequent.

Aralia hispida Vent. Bristly sarsaparilla. In sandy open or partially shaded ground. Abundant on burned over areas.

Aralia nudicaulis L. Wild sarsaparilla. In hardwoods and generally in rich shaded ground. Often very abundant.

Panax quinquefolium L. Ginseng. Reported but not seen growing wild. At Rexton in the western part of Mackinac County, this and golden seal are successfully cultivated by Christian Hansen.

UMBELLIFERAE. Parsley Family

Sanicula marilandica L. Black snakeroot. Rich shaded ground. Plentiful.

Osmorhiza claytoni (Michx.) Clarke. (*Washingtonia claytoni* (Michx.) Britton). Woolly sweet-cicely. Common in hardwoods.

Osmorhiza longistylis (Torr.) DC. (*Washingtonia longistylis* (Torr.) Britton). Smoother sweet-cicely. In hardwoods throughout. Common.

Osmorhiza longistylis villicaulis Fernald. Hairy-stemmed sweet-cicely. Rich hardwoods near Lake Michigan shore. Apparently infrequent.

Osmorhiza divaricata Nutt. Western sweet-cicely. Occasional in hardwoods.

Conium maculatum L. Poison hemlock. Frequent in waste places about cities and villages.

Cicuta bulbifera L. Bulb-bearing water hemlock. Marshy and swampy open ground throughout. Often abundant. Root supposed to be very poisonous.

Carum carvi L. Caraway. Frequent as a weed about cities and villages.

Sium cicutaefolium Schrank. Hemlock water-parsnip. Wet swampy places and often in shallow water. Frequent.

Pastinaca sativa L. Wild parsnip. Frequent as an escape from cultivation to roadsides and waste places in cities and villages. Root not believed to be poisonous. The frequent fatal poisoning reported in the Lower Peninsula and credited to wild parsnip is very probably not this plant, but the tuberous roots of *Cicuta maculata* L., which have an aromatic odor, a pleasant sweetish taste like the roots of sweet cicely and are very poisonous, no remedy being yet known. This latter is usually known as "water hemlock," "beaver poison" and other common names, and has not yet (1915) been noticed by the writer in the Upper Peninsula.

Heraclium lanatum Michx. Cow-parsnip. Damp open or partially shaded ground. Frequent.

Angelica atropurpurea L. Purple-stemmed angelica. Damp open ground near Seul Choix, where it was plentiful. Not noticed elsewhere.

Daucus carota L. Wild carrot. Waste places and cultivated grounds. Apparently not yet abundant.

CORNACEAE. Dogwood Family

Cornus canadensis L. (*Chamaepericlymenum canadense* (L.) Asch. & Graebn.). Low cornel. Dwarf cornel. Dryish or damp shaded ground especially in hardwoods. Often very abundant, fairly carpeting the ground.

Cornus circinata L'Her. (*C. rugosa* Lam.). Round-leaved cornel. Sandy open or partially shaded ground. Plentiful.

Cornus amomum Mill. Silky cornel. Sand dunes near Lake Michigan west of Manistique. Plentiful.

Cornus stolonifera Michx. Red-osier dogwood. Wet ground throughout. Frequent.

Cornus alternifolia L.f. Alternate-leaved cornel. Frequent on margins of hardwoods and along banks of streams.

ERICACEAE. Heath Family

Chimaphila umbellata (L.) Nutt. Prince's pine. Pipsissewa. Dry shaded ground, usually in coniferous woods. Plentiful.

Moneses uniflora (L.) Gray. One-flowered pyrola. Damp rich woods near Floodwood. Apparently infrequent. Perhaps overlooked.

Pyrola secunda L. One-sided wintergreen. Plentiful in rich woods throughout.

Pyrola elliptica Nutt. Shin-leaf. Dryish woods. Apparently infrequent. Cornell.

Pyrola asarifolia Michx. Liver-leaf wintergreen. Damp open woods and swampy places. Plentiful.

Pyrola asarifolia incarnata (Fisch.) Fernald. (*P. uliginosa* Torr.). Bog wintergreen. In damp woods and boggy places. Frequent.

Monotropa uniflora L. Indian pipe. Rich dryish or damp open woods. Often plentiful. Cornell.

Pterospora andromedea Nutt. Pine drops. Among pines. Apparently rare. Cornell.

Ledum groenlandicum Oeder. Labrador tea. Bogs throughout. One of the dominant bog shrubs.

Kalmia polifolia Wang. Pale laurel. Open bogs. Often plentiful. Cornell.

Andromeda glaucophylla Link. Bog rosemary. In open bogs and one of the dominant bog shrubs.

Chamaedaphne calyculata (L.) Moench. Leather-leaf. Common and often abundant in open bogs throughout.

Epigaea repens L. Trailing arbutus. Mayflower. Open or shaded dry sandy ground. Common throughout.

Gaultheria procumbens L. Wintergreen. Dry open or shaded sandy ground or even in sphagnum of tamarack-black spruce swamps. Very abundant throughout.

Arctostaphylos uva-ursi (L.) Spreng. (*Uva-ursi uva-ursi* (L.) Britton). Red bearberry. Open or partially shaded dry sandy ground, especially near shores and even on sand dunes, where it acts as an efficient sand binder.

Chiogenes hispidula (L.) T. & G. Creeping snowberry. Bogs especially on borders of, and in, tamarack-black spruce swamps. Often abundant.

Gaylussacia baccata (Wang.) C. Koch. Black huckleberry. Usually in dry open or shaded ground, but sometimes in swamps. Common.

Vaccinium pennsylvanicum Lam. (*V. angustifolium* Ait.). Low sweet blueberry. Usually in dry open sandy ground and very abundant throughout.

Vaccinium pennsylvanicum nigrum Wood. (*V. nigrum* (Wood) Britton). Low black blueberry. Frequent, growing in patches with the preceding. Berries very black, otherwise much like the preceding in general appearance.

Vaccinium canadense Kalm. Sour-top. Canada blueberry. Mostly on dry open sandy ground, but occasionally found in bogs and swamps.

The fruit of this and the two preceding is gathered and sold as "blueberries."

Vaccinium membranaceum Dougl. Thin-leaved bilberry. Usually in rich shaded ground, sometimes in damp shaded sand. Frequent. Locally called rabbit berry. Fruit large, black, rather tart, but delicious.

Vaccinium ovalifolium Sm. Oval-leaved bilberry. Usually in rich shaded ground, often growing with the preceding. Frequent. Berries blue, large but smaller than the preceding, slightly tart but delicious. Often locally called "myrtilloid berry" or "myrtilloid huckleberry."

Vaccinium oxycoccos L. (*Oxycoccus oxycoccos* (L.) MacM.). Small cranberry. In open or shaded swamps and often growing in sphagnum. Plentiful.

Vaccinium macrocarpon Ait. (*Oxycoccus macrocarpus* (Ait.) Pursh.). American cranberry. Abundant in what are called cranberry marshes.

PRIMULACEAE. Primrose Family

Primula mistassinica Michx. Dwarf Canadian primrose. Damp open ground and often abundant.

Lysimachia terrestris (L.) BSP. Bulb-bearing loosestrife. Low wet and usually open ground throughout. Common.

Lysimachia thyrsiflora L. (*Naumburgia thyrsiflora* (L.) Duby.). Tufted loosestrife. In wet open ground and shallow water. Common.

Trientalis americana (Pers.) Pursh. Starflower. Damp rich woods and thickets. Common.

OLEACEAE. Olive Family

Fraxinus pennsylvanica Marsh. Red ash. Occasional throughout. One large tree in the city of Manistique. Abundant along the Tahquamenon River in Luce County.

Fraxinus pennsylvanica lanceolata (Borkh.) Sarg. (*F. viridis* Michx.). Green ash. In rich ground and along streams and said to be frequent in Alger County. Thomas B. Wyman.

Fraxinus nigra Marsh. Black ash. Swamps and low banks of streams throughout. Common.

GENTIANACEAE. Gentian Family

Gentiana procera Holm. Smaller fringed gentian. Moist open ground mostly near shores in this region. Usually small and abundant.

Gentiana andrewsii Griseb. (*Dasystephana andrewsii* (Griseb.) Small). Closed gentian. Moist open or partially shaded ground. Apparently infrequent.

Gentiana linearis latifolia Gray. (*Dasystephana grayi* (Kusnezow) Britton). Gray's gentian. Damp sandy open or partially shaded ground throughout. Often plentiful. This has been noticed mostly in damp sandy ground near the shores of the three Great Lakes.

Halenia deflexa (Sm.) Griseb. Spurred gentian. In hardwoods and often abundant.

Menyanthes trifoliata L. Buckbean. Open bogs and often in shallow water. Plentiful.

APOCYNACEAE. Dogbane Family

Apocynum androsaemifolium L. Spreading dogbane. Dryish ground on borders of woods. Plentiful.

Apocynum cannabinum hypericifolium (Ait.) Gray. (*A. sibiricum* Jacq.). Claspingleaved dogbane. Damp or marshy mostly open ground and on banks of streams. Plentiful.

ASCLEPIADACEAE. Milkweed Family

Asclepias incarnata L. Swamp milkweed. Swampy and usually open ground throughout. Abundant in marshy ground on and near the low banks of the Tahquamenon River in Luce County.

Asclepias syriaca L. Common milkweed. Observed by W. T. S. Cornell near Manistique. Apparently rare.

CONVOLVULACEAE. Convolvulus Family

Convolvulus spithameus L. Low bindweed. Open or partially shaded dry sandy ground. Plentiful throughout.

Convolvulus sepium L. Hedge bindweed. Moist open ground and along streams. Apparently infrequent.

Convolvulus arvensis L. Small bindweed. Field bindweed. In waste places and along railroads. A weed that will become more and more frequent.

BORAGINACEAE. Borage Family

Cynoglossum officinale L. Common hound's-tongue. Frequent in waste places and on roadsides.

Lappula echinata Gilibert. (*Lappula lappula* (L.) Karst.). European stickseed. Waste places, roadsides and in cultivated grounds. Frequent.

Lithospermum officinale L. Common gromwell. Frequent in cities, villages and on roadsides.

Lithospermum qmelini (Michx.) Hitchc. (*L. carolinense* (Walt.) MacM.). Hairy puceon. In open sandy ground and on sandy beaches east of Manistique. Plentiful.

Echium vulgare L. Blue-weed. Occasional as a weed in cities and villages. Cornell.

VERBENACEAE. Vervain Family

Verbena hastata L. Blue vervain. Damp open ground. Apparently infrequent.

LABIATAE. Mint Family

Scutellaria lateriflora L. Mad-dog skullcap. Damp shaded ground. Frequent.

Scutellaria galericulata L. Hooded willow-herb. Wet open ground. Frequent.

Marrubium vulgare L. Common horehound. Waste places in cities and villages and about farm dwellings. Frequent.

Nepeta cataria L. Catnip. As a weed about dwellings, in gardens and fields. Frequent.

Nepeta hederacea (L.) Trevisan. (*Glechoma hederacea* L.). Ground ivy. Waste places of cities and villages and often a vicious lawn weed. Frequent and well distributed.

Prunella vulgaris L. Self-heal. Cities, villages, roadsides and open woods. Apparently infrequent.

Galeopsis tetrahit L. Common hemp-nettle. Fields, roadsides and waste places. A frequent weed.

Leonurus cardiaca L. Motherwort. A frequent weed about dwellings, in gardens and waste places.

Stachys palustris L. Hedge nettle. Wound-wort. Wet open ground. Often abundant.

Monarda fistulosa L. Wild bergamot. Damp woods near Seul Choix, where it is plentiful.

Monarda mollis L. Pale wild bergamot. Frequent in dry open ground.

Satureja glabra (Nutt.) Fernald. (*Clinopodium glabrum* Nutt.). Low calamint. Noticed in damp sandy open ground near Lake Michigan beach. A small sweet-smelling plant with small pretty pink flowers and often mistaken for a species of pennyroyal.

Satureja vulgaris (L.) Fritsch. (*Clinopodium vulgare* L.). Field basil. Dry open or partially shaded ground. Frequent.

Lycopus uniflorus Michx. Northern bugleweed. Frequent throughout in low and usually shaded ground.

Lycopus americanus Muhl. Cut-leaved water horehound. Damp open or shaded ground. Common.

Mentha arvensis canadensis (L.) Briquet. (*M. canadensis* L.). American wild mint. Damp rich open or shaded ground throughout. Common.