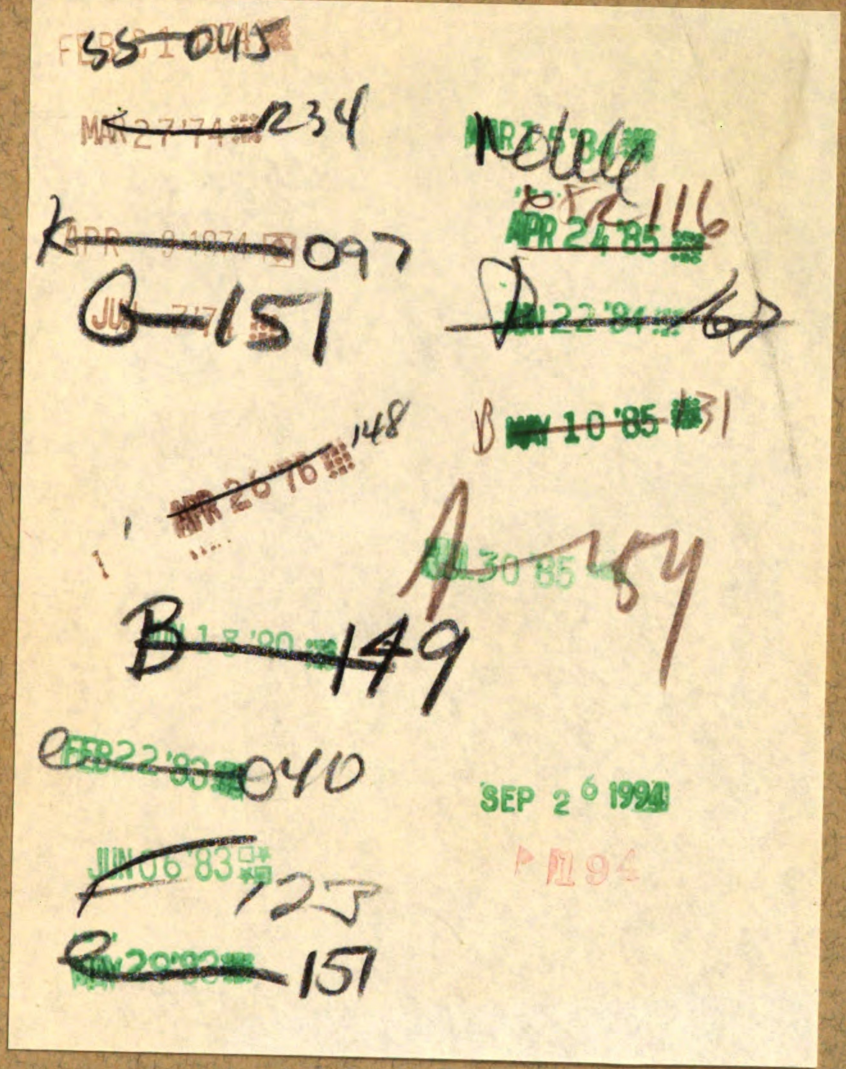
A SURVEY OF THE INDIGENOUS AND NATURALIZED, HERBACEOUS FLOWERING PLANTS, EXCLUSIVE OF THE GRASSES AND SEDGES, GROWING WITHIN A TEN MILE RADIUS OF THE MICHIGAN STATE COLLEGE

Thesis for the Degree of M. S.
MICHIGAN STATE COLLEGE

Richard Alden Giles

1941



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by

Richard Alden Giles

A THESIS

Submitted to the Graduate School of Michigan State College of Agriculture and Applied Science in partial fulfilment of the requirements for the degree of MASTER OF SCIENCE

Department of Botany
1941

THESIS

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INTRODUCTION

A study of the botanical literature dealing with the region around the Michigan State College reveals the rather interesting fact that we have, at present, only one list of the local flora, and that list is incorporated in a study of the state as a whole rather than being limited to this locality. I am referring to Dr. William J. Beal's Michigan Flora, published in 1904, in which he marked with an asterisk, "all plants which have been collected within ten miles of Lansing". Since that time, no other publications have been issued on the subject. Obviously, numerous changes have occurred in this area in the past thirty-five years, many of which have radically affected our flora. Just as certainly, there will be more changes in the years to come which will further modify the type of vegetation found here. Therefore, it was thought that a survey of the flora of this region, as it exists at present, along with some notes collected here in the past, might prove helpful. It will serve as a record of the prevalence of many of the species here now, so that increases or decreases in the frequency of their occurrence over a period of years may be determined.

The history of the work done on our local flora is somewhat meager. Perhaps the first worker in this area of whom we have much evidence was Frank L. Sleeper, who apparently did most of his work here in the decade from 1860 to 1870. He has deposited many specimens in the herbarium, indicating that he was quite active in this field. Though he appears to have made a considerable number of col-

lections, Sleeper never published a list of the species which he found here, so that the only record that we have of his work is the material that he has placed in the herbarium.

The period from 1870 to 1880 seems to have been one in which there was little activity in the collection and identification of the flora from this area. However, the last twenty years of that century saw a renewed interest in this work. Associated with the movement we find such men as Dr. William J. Beal, Dr. Charles F. Wheeler, and G. B. Hicks. All three have a number of their collections preserved in the college herbarium. About this same time, Dr. W. R. Kedzie, long associated with the chemistry department of the college, made a number of collections of plants growing in this vicinity. Many of these also have been deposited in the college herbarium.

In 1904, as we have indicated, Dr. Beal, with the assistance of Dr. Wheeler, published the second edition of Michigan Flora. Apparently this was not intended as a complete, or especially accurate, list for our area, for I have found numerous instances of plants collected before 1904, and labeled as growing in this locality, which were not included in that publication as having been collected here. Conversely, I have seen some notations in his list which I consider very questionable, as for instance, the inclusion of some plants which are far out of range here. The major aim of the work was apparently, as, of course, it should have been, to provide a flora for the state as a whole, and not one particularly for this region.

At about this same time, 1904 and 1905, Homer C. Skeels, a student here, made a rather intensive study of the local flora. Appar-

ently he was our most active collector, for I think it is no overstatement when I say that Skeels has more specimens of local plants in our herbarium than do any other two collectors taken together. Moreover, his work seems to have been done almost wholly in the two years mentioned above. However, he made no record of his study, other than his collections. As indicated by the labels on his specimens, Skeels was often accompanied in his collecting work by Miss Jennie Shaddick.

Since 1910, there have been a number of people doing some work with our local flora, though I believe that most of them have been more interested in the flora of the state as a whole. Among them we might mention Dr. H. T. Darlington, Dr. Ernst A. Bessey, Simon E. Wolff, Bertha E. Thompson, Henry Oosting, and several others whose names it would take too long to list here. Some of these have been especially interested in only one genus or family of plants, but have contributed considerably to our knowledge of the occurrence here of the particular group with which they were concerned. Most of the people who have worked here in the last few decades have been unable to deposit many specimens in the herbarium because of its crowded conditions. Hence, we have only a fragmentary record of their work, for in most cases they have limited themselves to adding only those species which are especially critical or rare here.

It can be seen quite readily from this brief history that only a very little concentrated work has been done on the flora of this vicinity. H. C. Skeels is seemingly the only one who has devoted himself primarily to a study of this area, all the others apparently

having sought wider fields for study. Dr. Beal, of course, did incorporate the scattered collections made here over the period of half a century into a list of the local flora, but as we have pointed out, his is not an altogether satisfactory list. It seemed to us, therefore, that a survey of the locality might prove to be a beneficial and interesting study.

As indicated in the title, this survey has definite limits, both as to area covered, and type of flora examined. I think that the limits of the latter are especially well defined in the title, so that they need but little further consideration here. Grasses and sedges have been eliminated because of the extreme technicality of the groups and because of their great numbers of species. It is obvious that they could not have been treated properly in the limited amount of time which I have had available for this study. Limited time has also forced me to eliminate the woody plants from this survey.

Since Dr. Beal chose the area within ten miles of Lansing for his list, it was decided to use the same limits in this work, though I am making it ten miles from the Michigan State College rather than from Lansing. This radius is taken as air-line distance. In certain instances, Grand Ledge for example, the boundaries have been somewhat exceeded, and in certain others there have been places included within these boundaries which I have not visited. On the whole, however, these limits have been rather rigidly adhered to.

Included within the limits just mentioned are portions of four counties: Eaton, Clinton, Ingham, and Shiawassee. By far the largest part of the area is included within Ingham and Clinton counties. Townships, or portions of townships, included are: Alaiedon, Aurelius,

Bath, Delhi, Delta, DeWitt, Lansing, Meridian, Olivet, Vevay, Victor, Watertown, Wheatfield, Williamston, Windsor, and Woodhull.

Physiographically, the region is one of rather low relief in the south, becoming more irregular and rugged in the north. However, the elevations show that, in general, the land slopes unnoticeably to the north, the average elevation at the southern limit of our range being approximately 900 feet, while at the northern border it is about 800 feet. This has caused most of our streams to flow in a more or less northerly direction. For the most part, these streams are sluggish, full of meanders, and usually bordered by rather wide, sandy flood-plains, though in some places these plains are quite muddy. There is only one stream of any considerable size, that one being the Grand River. In addition, we have three more of moderate size, those being the Looking Glass River, the Red Cedar River, and Sycamore Creek. Most of the others are too small to need mention here.

The area shows the effects of glaciation rather markedly. In the northern part we have the rough, irregular topography, and the boulder-covered soil of morainic country. In the southern part, however, we find the till plains, characteristically covered with boulder clay containing many erratics. In addition, there are great numbers of bogs, swamps, lakes and ponds, and sluggish streams, indicative of the poor drainage we expect to find in recently glaciated areas. Another rather interesting feature of glacial origin is the Mason Esker, composed largely of gravel deposited by water action at the time that this region was covered with ice. All of these features have an important effect on the type of vegetation which grows here.

In a survey such as this, one of the first problems that one has

to face is the location of the best places for collecting. As we have indicated in the preceeding paragraph, the variety of habitats in this area is quite great. If one is unfamiliar with the region in which he is to work, as I was at the beginning of this survey, it takes some time to find the best places in which to concentrate his activity. I do not mean by this that all of the area should not be covered by the survey. However, it is well known that certain localities are productive of greater numbers of species than others. These places should be watched more closely than those in which there are only a few species present. For example, I did not discover a marshy area north of Rose Lake until September of 1940. At that time I found a large number of species that I had not seen elsewhere in our area. This led me to believe that I might find a similar situation existing with regard to the spring and summer flora. Fortunately, I was able to revisit the marsh in the spring of 1941, and my expectations were borne out, for I found a number of interesting plants there which I had not seen at all, or but infrequently, elsewhere within our limits. Unfortunately, I cannot examine the summer flora of the marsh, for this list will have been finished before that time. Had I known where this particular spot was located before I started my survey, I am sure that I could have watched it more closely and probably found some species which are not listed as being seen here in the present list. This illustration indicates that a knowledge of the more interesting places in any area is of great value in a study of its flora. Therefore, I propose to list very briefly a few of the localities which I consider most interesting, and most productive from the standpoint of number of species.

I have already mentioned one of the best places that I have found for collecting, namely, the area just north of Rose Lake. It is located in the wild-life sanctuary maintained by the state, and is approximately one mile north of Rose Lake and just south of Clinton County Highway 454. There is a small pond here, known as Burke Lake, surrounded by an open, grassy marsh. The edge of the marsh tends to be of a quaking bog type. The open marsh gradually merges into a swampy area, largely covered with poison sumac. Bordering this swamp on two sides is an open woodland, mostly of an oak type. Farther east the swamp becomes an old tamarack bog. Still farther east, this gives way to a somewhat higher, dry, sandy area, used at present mostly for pasture. It can be seen from this brief description that there are a number of different habitats here, and it is little wonder that one can find so many species present. The fact that it is a wild-life sanctuary adds to its interest and value, for it has been largely undisturbed during the past few years, and it is expected that it will remain so as long as it is kept as a sanctuary. I strongly recommend it as one of the best places to study our flora.

Another place, somewhat similar in nature, is the region around Lost Lake, located about one mile southeast of Round Lake, between it and the Looking Glass River. Surrounding the lake is a floating bog with its rather interesting type of flora. This bog immediately merges on one side into a very wet, boggy, cold tamarack woods. In the surrounding area there is a considerable amount of open, grassy, very wet marsh, which gives way in places to somewhat higher, very sandy fields. These fields were found to be especially good for a study of species which prefer sandy habitats. In general, it is a hard place

to get around in, but a rather good place to study the flora.

If one is interested in studying the vegetation of sandy areas, there are several good places here in addition to those noted around Lost Lake and the marsh north of Rose Lake. Perhaps the best place is in Shiawassee County, near the eastern end of our range. There are a number of quite sandy places there.

Flood-plain studies are probably best undertaken along the Red Cedar River or Sycamore Creek. Both wooded and open places are present along both of these streams. The woodland flora of these flood-plains is particularly interesting.

Lake and pond flora is probably best represented in Lake Lansing and in Park Lake. The latter is particularly good for lake shore vegetation, especially on the northwest side of the lake. There is also a floating bog on the northwest side which has proved to be rather interesting as far as it has been possible to examine it. Round Lake has an interesting flora too, but I do not think that it is as good for this kind of study as either of the other two.

The beech-maple woodlands are best studied in the various college woodlots, all of which are located near the college, and are maintained by it. Too often the other woodlands of this type in our area are cleared of all undergrowth, and are being used as pasture. Various grasses have invaded these regions and have crowded out the typical woodland type of flora. In the college woodlots, on the other hand, this clearing has not taken place, and a more natural condition exists there.

Practically all of our railroads afford places for an interest-

ing study of their vegetation. I have seen a number of species which grow almost exclusively along the sides of the tracks. The Grand Trunk Railroad for several miles east of the college is particularly interesting, as is also a similar area in the vicinity of Trowbridge, just west of the college.

Grand Ledge is still another interesting place for studies of our flora. It is perhaps the most unusual of all the localities here, for it is the only case we have of a deep, rocky gorge. The depth of the gorge, and the steepness of its sides tend to keep the temperature lower than than in almost any other place in our area. In addition, the hours of sunlight per day are considerably reduced. These conditions tend to simulate those found farther north, and it is interesting to note that some of the species which we find at Grand Ledge are much more typical of the northern part of this state.

These few localities which we have just mentioned by no means exhaust the list of interesting places in which to botanize in our area. However, they are the ones which I have found especially valuable in this study.

It has been the purpose of this survey to indicate, in-so-far as a year's work would permit, both the number of species which occur here at present, and the number that has occurred here in the past, as indicated by the specimens deposited in the herbarium of the Michigan State College. In regard to both of these points, this survey must be considered somewhat incomplete, for it is obvious that one could not hope to find and record in one season, all, or nearly all, of the species which are growing here. It is equally obvious that collections have been made in the past which are now de-

posited in other herbaria of the state and country. While I have limited my examination of such plants to those contained in the herbarium of the college, I realize that it fails to give a complete picture of the flora as it existed here in the past. I do feel that it is complete as regards the examination of the specimens here at the college, however, though there are a few instances of various genera or species which were not in the collection at the time of this study, due, perhaps, to the fact that someone had them out for a detailed study of some limited group. In all such cases, I have noted the fact by listing under specimens examined, "none available in herbarium".

In addition to recording the number of species here, both now and in the past, I have attempted to give some notes on the habitats of these species, and on their time of flowering. Both of these factors are important in ecological studies, and it is hoped that they might prove useful should such studies ever be undertaken in this region.

It has also been my purpose in this work, to describe at least one location for each species. I have attempted to make these descriptions detailed enough so that anyone interested in finding any species listed would have no trouble in locating the spot where I noted it. This was not attempted in the case of our commonest species, however.

Lastly, I have attempted to give, as closely as possible, my opinion of the frequency of occurrence of each species. It was thought that such information might prove useful in the future, if someone wanted to know whether certain species were increasing or decreasing in number in this area. This information can also be used to some

extent in a comparison of the present distribution with that of the past, as listed in Beal's catalog. While he has no notes on the frequency of the various species in this particular area, we can judge that, if he did not list a plant as here in 1904, and that plant is noted as common in the present survey, the chances are that it has been spreading rapidly here during the last forty years. This might prove especially useful in the case of certain of our weeds.

In making this survey, I have spent one summer, and portions of one autumn and two spring seasons in field work. During the summer of 1940, I averaged four days per week in the field. During the autumn and spring of that year, the press of class work and other duties made it impossible to spend more than the equivalent of one full day per week in collecting. In the first few weeks of the spring of 1941, I also was able to spend approximately one day a week in the field. Obviously, this is too short a time to make full observations over an area as large as ours. However, I do think that it has given me a chance to record a fairly representative part of the flora.

In addition to the field work, I have examined all the specimens in the herbarium which are labeled as having been collected within the limits of this survey. In some cases, mistakes in identifications have been noted, and in such cases, the plants are listed here under their correct names. Because of the mistakes, it has seemed wiser not to include any reports of species collected here unless accompanied by specimens. As a result, there are no species recorded here which have not been personally examined. Questionable identifications have been checked by Dr. Darlington.

The nomenclature used is in accord with the International Rules

of Botanical Nomenclature. In all cases, I have used the most recently published names which I have been able to find. This means, of course, that some of the newer names, some only published within the last few months, have not stood the "test of time". However, it seemed to me that it is rather difficult to say just how long a name should be in use before it can be considered well enough established to be used in a list of this kind. Therefore, I have decided to bring the nomenclature as nearly up to the minute as possible. In cases where the names used differ from those of Gray's New Manual of Botany, edition 7, or of the Illustrated Flora of the Northern United States, Canada, and the British Possessions, edition 2, of Britton and Brown, the names used in these manuals have been included as synonyms.

A part of my procedure in this work has been outlined above. However, there are some phases which might well be considered in a little more detail.

It will be recalled that I have already said something about the amount of time available for field work. However, the methods used in the field were not outlined, so that it becomes necessary to say something on that subject here. I have had the use of an automobile which has meant that I could cover the majority of the area fairly well. Topographical maps, and suggestions of Dr. Darlington and Dr. Bessey have been used in efforts to locate the most interesting places for study, and other localities which looked at all promising from the many roads over which I have traveled in this work were investigated fully. My usual procedure was to list in a field notebook all the species seen in the field, with frequency and habitat notes for each. Those species which I did not recognize, or about which there was the

slightest doubt, were collected in a vasculum and brought back to my office for identification. Many of these specimens were pressed, and then examined at the end of the season when it was no longer possible to do field work, though it was thought best to attempt identification from fresh material as far as possible. Only a few of my specimens are included in the college herbarium because of its crowded condition.

As soon as a plant had been satisfactorily identified and checked, I entered its name on a file card, with the frequency and habitat notes which applied to it. Similar cards were made out for those species listed in my field notebook. These cards were then filed alphabetically according to genus and species. Any further notes obtained from later work were added on the cards of the species to which such information applied. A similar procedure was followed with regard to the specimens in the herbarium. Where specimens were noted both in the field and in the herbarium, the same card was used for both. Therefore, each card, at the end of the work, bore information as to when, where, and by whom the plant listed thereon had been collected in the past, plus the notes which I had obtained on it from field observations. This information was then readily available for use in writing the list which makes up the body of this work.

A comparison of the species listed in Beal's Michigan Flora with the present list is not summarized. Where such a comparison seemed at all significant, it was noted under the species concerned. The total number of species and varieties listed as having been found here is approximately 605, while those which I have seen during the past season number approximately 420. Beal has listed about 640 from this area, excluding those groups which we have specified in our title.

In conclusion, I should like to express my appreciation to Dr. H. T. Darlington for his help in locating some of the rarer species, for his aid in identifications and checking of identifications, for his notes and suggestions on the manuscript, and for his encouragement throughout the course of this work. I should also like to express my appreciation to Dr. Ernst A. Bessey for his help in outlining the history of the occurrence of some of our more recently introduced species, for his suggestions as to locations of some of the species listed here, and for reading over the manuscript.

A List of Abbreviations for the Names of Collectors of Herbarium Specimens.

A, Anonymous.

AND, Not known except by these three initials.

Ba, Barlow.

Bi, Bailey, Liberty H.

Bs, Bessey, Ernst A.

Cl, Cole, Leon J.

Co, Cochran, L. C.

CTN, Known only by these initials.

De, Dewey, L. and party.

Dr, Darlington, H. T.

Dv, Davis, C. A.

H, Hicks, G. H.

K, Kedzie, W. R.

L, Longyear, B. O.

N, Nichols.

O, Oosting, Henry.

P, Pelton, D. A.

Po, Porter, T. C.

R, Ret', J. W.

Rh, Known only from the initials Rh. B.

Ro, Robinson, Benjamin L.

Sh, Shaddick, Jennie

Sk, Skeels, Homer C.

Sl, Sleeper, Frank L.

St, Steele.

T, Thompson, Bertha E.

U, Uphof.

W, Known only from the initials W. H.

Wh, Wheeler, Charles F.

Wa, Walpole.

Wo, Wolff, Simon E.

Precise Locations of Certain of the Areas Mentioned in the Following List.

1. Bear Lake: a small lake between one and one-half and two miles due south of Trowbridge; it is in Lansing Township, T4N, R1W, Section 35; the lake is not shown on the topographical maps; Ingham County.

2. Dobie Lake: a small lake about three and one-half miles south and slightly east of Okemos; it is in Alaiedon Township, T3N, R1W, Section 10; Ingham County.

3. Kalamazoo Street Woodlot: now officially called the Red Cedar Woodlot; immediately northeast and southeast of the bridge where Kalamazoo Street crosses the Red Cedar River; Ingham County.

4. Lake Lansing: until recently called Pine Lake; it is located about four miles east and slightly north of East Lansing, and immediately north of Haslett; it lies in Meridian Township, T4N, R1W, Sections 2, 3, 10, 11; Ingham County.

5. Lost Lake: a small lake very appropriately named, for it is difficult to locate; it lies about one-half mile southeast of Round Lake, between it and the Looking Glass River; it is in Victor Township, T6N, R1W, Sections 33 and 28 (on the section line dividing these two sections); Clinton County.

6. Mud Lake: there are several lakes in this area bearing this name, but this refers to the one about one-half mile due south of Haslett; it lies in Meridian Township, T4N, R1W, Section 14; Ingham County.

7. New College Woodlot: officially known as the Toumey Woodlot; it lies approximately one and one-half miles south and slightly east of the college; it is in Meridian Township, T4N, R1W, along the middle of the eastern edge of Section 30; Ingham County.

8. Park Lake: a lake about three to three and one-half miles northeast of East Lansing; it is in Bath Township, T5N, R1W, Sections 28 and 29; Clinton County.

9. Pine Lake: see Lake Lansing.

10. Potter's Lake: a small lake approximately one mile east of Park Lake; it lies in Bath Township, T5N, R1W, Section 27; Clinton County.

11. River Woodlot: officially known as the Sanford Woodlot; it lies on the south bank of the Red Cedar River, just east of the college; Ingham County.

12. Rose Lake Sanctuary: this term is used to indicate only a very small part of the whole sanctuary; as used in the list this area lies in Bath Township, T5N, R1W, in the northeastern quarter of Section 24;

it is the area surrounding Burke Lake and includes the low ground from there to a point about one-half mile eastward; Clinton County.

13. Round Lake: a lake located about four miles due north of Bath; it is in Victor Township, T6N, R1W, Sections 28 and 29; Clinton County.

14. Sycamore Creek Flood Plain: as referred to in the list the flood plain consists of that area in the vicinity of the gravel pits in the Mason Esker, being about one mile south of the Mount Hope Cemetery; it is located in Lansing Township, T4N, R1W, Section 34, including nearly all of the flood plain within the borders of that section; Ingham County.

15. Trowbridge: the area in which the Pere Marquette and the Grand Trunk Railroads intersect just southwest of the college; Ingham County.

16. Woodlot 17: officially known as the Baker Woodlot; it lies between the Grand Trunk Railroad on the north and the Pere Marquette Railroad on the south, approximately one mile south of the college, and immediately east of Farm Lane Road; Ingham County.

It is suggested that the topographical maps of the United States Geological Survey are very helpful in locating these areas described above. The following quadrangles have been used: DeWitt, Laingsburg, Lansing, and Mason.

TYPHACEAE J. St. Hil. Cat-tail Family.

TYPHA (Tourn.) L. Cat-tail.

Typha latifolia L. Common Cat-tail.

Specimen examined: Sk, swamp south of coll., 6/16/94.

This species is common on the borders of our lakes, in swampy places, and in the low, wet places along some of our roadsides. It occurs throughout the area. Those found along the roadsides are more frequent to the south of the college, since there is more low, wet ground there.

SPARGANIACEAE Agardh Bur-reed Family.

SPARGANIUM (Tourn.) L. Bur-reed.

Sparganium eurycarpum Engelm. Giant Bur-reed. Broad-fruited Bur-reed.

Specimen examined: Sk, swamp south of Ag. Coll., 6/3/94.

This is the species of bur-reed which we find most commonly in this area. It occurs in very wet places throughout, varying from occasional to frequent in different localities. I have noted it as occasional in a swampy place beside Sand Hill Road south of the college, 6/1/40, and along the drain from Dobie Lake, 6/18/40. Mature fruits are needed for positive identification of most species of this genus, but this can be told in flower, for it is the only one we have which has two stigmas.

Sparganium chlorocarpum Rydb. var. acaule (Beeby) Fern.
Sparganium diversifolium var. acaule (Beeby) Fern. & Eames
Sparganium acaule (Beeby) Rybd.

Specimen examined: Cl, Pine Lake, 6/6/95.

The specimen noted above was labeled Sparganium simplex Hudson, but examination has shown that it should probably be referred here. The fruits are not as mature as they should be for a more positive identification, but on the basis of the material present it seems that it belongs here. I have noted the species as occasional along the drain from Mud Lake, 6/26/40. It was growing just in the edge of the water at that time. It may occur in other places in our area, but I have not seen it anywhere except along this drain.

POTAMOGETONACEAE Engelm. Pondweed Family.

POTAMOGETON (Tourn.) L. Pondweed.[1]

Potamogeton natans L. Common Floating Pondweed.
Specimen examined: none available in herbarium.
I have noted this species as frequent in Park Lake, 8/24/40. It probably occurs quite frequently in some of our other ponds and lakes. Beal lists it as here in 1904.

Potamogeton americanus Cham. & Schlecht Long-leaved Pondweed.
Potamogeton lonchites Tuckerm.
Specimen examined: K, Pine Lake, 7/27/95.
This species is found mostly in streams, though occasionally in ponds. I have not seen it here. It was here in 1904.

Potamogeton amplifolius Tuckerm. Large-leaved Pondweed.
Specimens examined: A, still water, Ag. Coll., 6/23/87; O, Pine Lake, Ingham Co., 7/22/26.
This is more typically a pond species, though occasionally occurring in the larger and slower streams. I have not seen it here. Beal lists it as here in 1904.

Potamogeton gramineus L. var. graminifolius Fries
Potamogeton heterophyllus of recent authors
Specimens examined: A, Lansing, no date; W, Pine Lake, 8/8/93.
I have not seen this species here. It should be looked for in either still or flowing water. Beal does not list it as here in 1904. When in ponds it prefers shallow water.

Potamogeton lucens L. Shining Pondweed.
Specimen examined: none available in herbarium.
I have noted this species as frequent to common in Park Lake, 8/24/40. It also occurs in Lake Lansing, and probably in many of the rest of our lakes. Beal lists it as here in 1904.

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1. I have not studied this genus in much detail as regards the occurrence of its species in this area. It is a highly technical group, and one which requires a great deal of study in order to be able to properly identify the various species. There will undoubtedly be a number of species which are here, but which have not been mentioned as having been noted during the past season's work. Their distribution in the area covered by this survey will have to be worked out at a later date. Only the commonest ones will be found in this list.

Potamogeton praelongus Wulfen White-stemmed Pondweed.
Specimen examined: none available in herbarium.
I have noted this species as frequent to common in both Park Lake and Lake Lansing. It grows in deeper water than many of the other species of this genus. Beal reports it for Pine Lake, Ingham Co., 1904.

Potamogeton zosteriformis Fern.
Potamogeton zosterifolius of Am. authors
Mem. Gray Herb. 3: 36-40. 1932.
Specimen examined: O, Pine Lake, no date.
I have not noted this species in our area, though Beal listed it as common here in 1904. It should be sought in ponds and lakes, flowering from June to August.

NAJADACEAE Lindl. Naiad Family.

NAJAS L. Naiad.

Najas flexilis (Willd.) Rostk. & Schmidt var. robusta Morong
Specimen examined: Bi, Park Lake, Clinton Co., 8/20/90.
Dr. Darlington informs me that this species is growing in Lake Lansing at present, but I have not seen it in this area. Its habitat is ponds. Beal lists it as here in 1904.

JUNCAGINACEAE Lindl. Arrow Grass Family.

SCHEUCHZERIA L.

Scheuchzeria palustris L. var. americana Fern.
Specimen examined: Sk, Towar's Swamp, Ag. Coll., 8/8/97.
I have not seen this plant here during the past season. It should be looked for in bogs, with cranberry and pitcher plants. Beal does not list it as here in 1904.

ALISMACEAE DC. Water-plantain Family.

ALISMA L. Water-plantain.

Alisma subcordatum Raf.
Alisma Plantago-aquatica of Gray, Man., ed. 7 and Britton and Brown, Illus. Flora, ed. 2, in part, not L.
Ark. f. Bot. 24A (7): 33-35. 1932.
Specimen examined: none available in herbarium.
I have noted this species as occasional along the Red Cedar River near the River Woodlot, 8/16/40. It also grows in the marshes on the east side of Lake Lansing, 8/20/40. It prefers very wet, muddy places,

usually growing in places where it is just out of water, but where it very probably is often partially submerged at some seasons.

SAGITTARIA L. Arrowhead.

Sagittaria latifolia Willd. Common Arrowhead.
Sagittaria variabilis Engelm.

Specimens examined: Sk, Pine Lake, Ingham Co., 7/8/95; Sl, Lansing, 7/17/67; K, Cedar River, 7/1/95.

I have found this species to be frequent to common in its habitat throughout this area. It seems to prefer muddy and very wet places. It is often found along ponds, and even more frequently along the muddy, low banks of our rivers. I have seen it in some cases growing in a roadside ditch which contained water at the time. I have noted it as particularly abundant near Potter's Lake, 6/20/40, and in a swamp between Round Lake and the Looking Glass River, 7/2/40. This species is very variable as regards its foliage characters, and I have made no attempt to follow some authors in naming these variations as forms.

Sagittaria cuneata Sheldon
Sagittaria arifolia Nutt.

Specimens examined: Wh, in Cedar River near Ag. Coll., 8/15/95; A, Ag. Coll., 6/24/87.

I doubt that this species grows in the Red Cedar River in our area at the present time, though it apparently once did. I have examined the river rather thoroughly and have not found this species there. It may occur along some of the other rivers or ponds, but I have not seen it.

Sagittaria graminea Michx.

Specimens examined: Bi, Pine Lake near Lansing, 7/28/88.

This species is usually found in shallow water near ponds and lakes. I have not seen it around any of our lakes or ponds though it may exist here.

HYDROCHARITACEAE Asch. Frog's Bit Family.

ANACHARIS Bab. & Planch. Waterweed.

Anacharis canadensis (Michx.) Planch. Canada Waterweed.
Elodea canadensis Michx.
Philotria canadensis (Michx.) Britt.

Specimen examined: none available in herbarium.

I have noted this species as abundant in Lake Lansing. It grows there in fairly shallow water on a more or less sandy bottom. I have not noted it in our other lakes though it may occur there.

VALLISNERIA (Micheli) L. Tape Grass.

Vallisneria americana Michx. Eel Grass. Wild Celery.
Vallisneria spiralis of Gray, Man., ed. 7 and Britton and Brown, Illus. Flora, ed. 2.
Rhodora 20: 108. 1918.

Specimen examined: none available in herbarium.

I have noted this species as frequent in the Looking Glass River near the west end of our range. It probably occurs in other ponds, lakes, and streams of this area as well, but I have noted it only from this location. I did not see it in flower. Beal has noted it as common in the Grand River and its tributaries.

ARACEAE Neck. Arum Family.

ACORUS L. Sweet Flag. Calamus.

Acorus Calamus L.

Specimen examined: none available in herbarium.

I have noted this species as occasional to frequent around the shores of Lake Lansing, 5/28/40. It was also noted as infrequent along the edge of the Looking Glass River southwest of Round Lake, 7/2/40. In both instances it was located in very wet situations where it was quite swampy. Deam notes that in Indiana it usually occurs in large quantities when present. This does not seem to apply in this region, for here the colonies which I have seen are not particularly large or dense. It is probably occasional in swampy places throughout the area.

SYMPLOCARPUS Salisb.

Symplocarpus foetidus (L.) Nutt. Skunk Cabbage.
Spathyema foetida (L.) Raf.

Specimens examined: Sk, bank of Red Cedar River, Ag. Coll., 4/14/95; A, Lansing, 1872.

This species is common in our low swampy places, usually in or near woods. It apparently requires about the same moisture as does the preceding species, but where that prefers open situations, this plant prefers more shade. I noted it in flower in the River Woodlot, 4/27/40, and at Grand Ledge 4/27/40. I found it in flower at Grand Ledge in 1941 a week earlier.

CALLA L. Water Arum.

Calla palustris L. Wild Calla.

Specimen examined: none available in herbarium.

I have noted this species as frequent at Bear Lake, 5/28/40. It was growing in moist situations among some low shrubs. There is a quaking bog around this lake, but this species grew back of the quaking part

of the bog, where the ground was a little drier and firmer. Beal lists it as occurring here in 1904.

ARISAEMA Martius Indian Turnip.

Arisaema Dracontium (L.) Schott Green Dragon. Dragon Root.
Specimens examined: Sl, Grand Ledge, 6/15/67; Sk, bank of Red Cedar River, Ag. Coll., 6/10/94; A, Lansing, 6/17/72.
I have noted this species in our area only once, though it is possible that it may be more frequent than that. I doubt that it can be considered more than occasional here, however. When I saw it, it was growing in the Kalamazoo Street Woodlot, in sandy soil, just within the edge of the woods. It flowers in June. It prefers the shade, and should be looked for in more or less open, but moist, woodlands.

Arisaema triphyllum (L.) Schott Jack-in-the-pulpit.
Indian Turnip.
Arisaema triphyllum (L.) Torr.
Specimens examined: Sl, Lansing, 5/31/66; A, Lansing, 1872.
This species is frequent to common in our moist, rich woodlands, preferring the beech-maple type of woods. I have found it in woods both on the flood plains of our rivers and on the higher ground in our area. It is frequent in both the River Woodlot and the Kalamazoo Street Woodlot, flowering mostly in May, about one month ahead of the preceeding species.

LEMNACEAE Dumort. Duckweed Family.

SPIRODELA Schleid.

Spirodela polyrhiza (L.) Schleid. Greater Duckweed.
Specimen examined: none available in herbarium.
This species is occasional in our ponds and slow streams. I have noted it at Lake Lansing in a cove on the east side of the lake, and on the west side of the lake near the shore, 5/28/40. It was also noted as frequent in the Looking Glass River east of Round Lake. I did not see it in flower.

LEMNA L. Duckweed. Duck's-meat.

Lemna minor L. Lesser Duckweed.
Specimen examined: none available in herbarium.
I have noted this species as occasional to frequent in this region in much the same habitats as the preceeding. It was noted in a stagnant pool near Trowbridge and on the east side of Lake Lansing. I have not seen it in flower here, and have not heard of its being collected in flower here for some time.

PONTEDERIACEAE Dumort. Pickerel-weed Family.

PONTEDERIA L. Pickerel-weed.

Pontederia cordata L. Common Pickerel-weed.

Specimens examined: Sk, Pine Lake, Ingham Co., 6/4/94; Sl, Lansing, 8/1/67; A, Lansing, 1871.

This species is common to frequent in our lakes and slow streams. It grows in mud along the edges of the water, usually with its base just in the water. I have noted it as very common at Lake Lansing, 8/20/40, at Park Lake 6/30/40, and along the Looking Glass River near the west end of the range, 7/20/40.

HETERANTHERA R. & P. Mud Plantain.

Heteranthera dubia (Jacq.) MacM. Water Star-grass.

Specimen examined: none available in herbarium.

I have noted this plant as occasional along the east side of Lake Lansing, 8/20/40. It was in flower at that time. The plant is very small and inconspicuous, and probably is often overlooked. It frequently grows in places which are difficult to get at, which may be another reason for overlooking it. At Lake Lansing it was growing in a colony, with some of the plants on the mud, almost entirely out of water, and others in water about one foot in depth. It could not have been approached from the landward side, and it was extremely difficult to get to it with a boat. I expect that it may occur in similar situations in some of the other lakes of the region, but I have not been able to discover it elsewhere.

JUNCACEAE Vent. Rush Family.

JUNCUS (Tourn.) L. Rush. Bog Rush.

Juncus effusus L. var. solutus Fern. & Wieg. Common Rush. Soft Rush.

Rhodora 12: 90. 1910.

Specimens examined: Sk, Towar's Swamp, Ag. Coll., 7/7/94; A, M.A.C., 6/22/87. All were checked by F. J. Hermann, May 1938.

This species has been noted as frequent in low, wet ground throughout most of our area. It has been found in low fields, along ditches, and occasionally in open woods. The prime requirement seems to be that it must have a good deal of water.

*Juncus Gerardi Loisel. Black Grass.

Specimen examined: Wh, introduced south of site of old botany laboratory, July 1892. Checked by F. J. Hermann, May 1938.

I have not seen this species here which is not odd considering that it is a coastal plain plant, where it is native in this country. It is introduced here, if present. So far as I am able to determine it no longer exists here.

Juncus Dudleyi Wieg. Slender Rush.

Specimen examined: A, Ag. Coll., 6/13/87.

I have not seen the species here, though I suspect that it is quite common. I have not studied this or the next genus as fully as I would have wished to, had I had the time. Therefore, it is to be expected that there are several species which are here but which are not included in this list. All of the specimens in the herbarium are included, however, and they would not seem to indicate a very frequent occurrence of many species in this area. This particular species should be sought in moist places which are more or less open.

LUZULA DC. Wood Rush.

Luzula carolinae S. Wats. var. saltuensis (Fern.) Fern.

Luzula saltuensis Fern.

Juncoides carolinae of Britton and Brown, Illus. Flora, ed. 2.

Juncoides pilosum of American authors.

Rhodora 40: 404. 1938.

Specimens examined: Wh, woods east of #7, 6/2/93; A, Lansing, 1871.

I have not seen this plant here, though it may well be here. Beal lists it as here in 1904. It should be sought in our woods, particularly where it is moist. It flowers in April and May. From my observations I suspect that it is present in the River Woodlot, but I have not collected it in flower there.

Luzula multiflora (Ehrh.) Lejeune

Luzula campestris var. multiflora (Ehrh.) Celak.

Luzula intermedia (Thuill) A. Nels.

Juncoides campestre of Britton and Brown, Illus. Flora, ed. 2.

Juncoides intermedia (Thuill) Rydb.

Rhodora 40: 83-84. 1938.

Specimen examined: A, Ag. Coll., 6/11/87.

This species is frequent in many of our woodlands. I have seen it in both dry and moist situations, but as far as I have been able to determine, it never occurs outside of wooded areas, though usually preferring the open type of woods. It seems to occur about equally commonly in oak and beech-maple habitats. It was noted in flower in the Park Lake region, 5/3/41, and was very common in woods around the Rose Lake Sanctuary, 5/3/41.

LILIACEAE Adans. Lily Family.

UVULARIA L. Bellwort. Merrybells.

Uvularia grandiflora J. E. Smith. Big Merrybells.

Uvularia perfoliata of the manuals, in part.

Jour. Arnold Arbor. 15: 28-42. 1934.

Specimens examined: A, Ag. Coll., 5/8/87; A, Lansing, 1871; Sh & Sk, woods north of Ag. Coll., 8/7/95.

Although Skeels' specimen is labeled Uvularia perfoliata L., I have

examined it and found it referable to this species. Typical U. perfoliata L. grows only in the Allegheny Mountains. I have found this species to be occasional to frequent in more or less open, moist woods of our area. I noted it in flower in the Kalamazoo Street Woodlot, 5/7/40, and in the River Woodlot, 5/25/40.

Uvularia sessilifolia L. Little Merrybells.
Oakesia sessilifolia (L.) Wats.
Specimen examined: Sl, Lansing, 5/30/67.
I have not seen this species in the area, though it may still be present here. If so, it is certainly infrequent. Beal does not list it as occurring here in 1904.

HEMEROCALLIS L. Day-lily.

*Hemerocallis fulva L. Tawny Day-lily.
Gentes Herbarum 2: 143-156. 1930.
Specimen examined: De, Park Lake, 7/10/88.
This species has been cultivated in the United States for a great many years. At present it is found quite frequently along roadsides and about old dwellings where it has become thoroughly established. It seems not to be particular about moisture requirements, for I have found it frequently, both along dry roadsides, and in the moist regions near some of our lakes. It is interesting to note that there is at present, on the east side of Park Lake, a rather extensive colony of this species. This is very probably the same one reported in 1888.

ALLIUM L. Wild Onion.

Allium canadense L. Wild Garlic. Meadow Garlic.
Specimen examined: A, Ag. Coll., 6/15/87.
I have seen this species here only once, though I suspect that it may occur more frequently. In June 1940, I found it in flower at the edge of the Kalamazoo Street Woodlot, growing in sandy soil. It was occasional there at that time.

LILIUM L. Lily.

Lilium michiganense Farwell
Bull. Torr. Bot. Club 42: 352-354. 1915.
Specimen examined: P, swamp, M.A.C., 7/2/94, fide Wh; Sk, C. & G. T. tracks east of Ag. Coll., 7/4/94.
This genus has been considerably revised since the above collections were made, and at that time this species had not been recognized. Therefore, they were identified as other species. On the basis of my examination of the specimens, I am referring them here. I have found this species to be quite frequent between the college spur track and the Grand Trunk Railroad tracks just south of the college. These lilies

were in full bloom on 6/12/40. They prefer low, wet, open ground.

Lilium philadelphicum L. var. andinum (Nutt.) Ker. Western Lily.
Lilium umbellatum Pursh
Specimen examined: A, Lansing, 1872.
I have not seen this species here. Deam gives the habitat as "in wet prairies or in similar habitats". This would not seem to apply very well to the regions in this vicinity. Dr. Beal indicates that it occurs in this area, but then adds, "There is some doubt about the presence of this plant in Michigan".

ERYTHRONIUM L. Trout lily.

Erythronium albidum Nutt. White Trout Lily.
Specimens examined: A, Lansing, 1872; Sk, woods north of the Ag. Coll., 4/22/94.
This species is infrequent in our area. I have seen it only along the flood plain of the Red Cedar River near the Pere Marquette Railroad bridge west of Trowbridge. It was in full bloom 4/29/41. Deam says that where found it is likely to occur in dense colonies, but in this area it seems to be very much scattered. It prefers rather open places with more or less sandy soil.

Erythronium americanum Ker. Common Trout Lily.
Erythronium angustatum Raf.
Erythronium bracteatum Bigel.
Specimens examined: Cl, northeast of Terrace, woods, 4/24/95; Sk, woods north of Ag. Coll., 4/17/94; A, Lansing, 1871.
This species is very common in the woods throughout the area. It seems especially to like the beech-maple type of woodland, and prefers a rich soil. It was in full flower in the New College Woodlot, 5/4/40.

ASPARAGUS (Tourn.) L.

*Asparagus officinalis L. Garden Asparagus.
Specimens examined: Sk, banks of the Red Cedar River, Ag. Coll., 5/30/94; Cl, Ag. Coll., near the river, 7/13/95.
I have found this species to be an occasional escape along old fence-rows, in old fields, and rarely along roadsides. It is infrequent in the Kalamazoo Street Woodlot along the river flats. It is difficult to say whether or not this species ever becomes established well enough to warrant inclusion as a part of our flora. In several of the places where it was found it looked as though it must have persisted there for several years. However, one year's study is not enough to say definitely one way or the other.

SMILACINA Desf. False Solomon's Seal.

Smilacina racemosa (L.) Desf. var. typica Fern. False Solomon's Seal.
Convallaria racemosa L.
Vagnera racemosa (L.) Morong
Rhodora 40: 406. 1938.

Specimens examined: Sk, woods north of Ag. Coll., 5/6/94; Cl, Ag. Coll., northeast of Terrace, woods, 5/26/95.

I have noted this species as frequent to common in nearly all of our woodlands, especially where it is fairly moist. It occurs frequently in the River Woodlot, in Woodlot 17, and in the Kalamazoo Street Woodlot. The flowering period is mid-May to mid-June. Fernald has recognized two varieties of Smilacina racemosa (L.) Desf.

Smilacina stellata (L.) Desf. Starry False Solomon's Seal.
Convallaria stellata L.
Vagnera stellata (L.) Morong

Specimens examined: Sk, woods north of Ag. Coll., 5/6/94, and 7/5/95.

I have found this species to be common in the woodlands of most of our range. It occurs in the same habitats as the preceeding species and the two are often found growing together. The flowering period is also about the same as for the preceeding, though tending to be a little earlier.

Smilacina trifolia (L.) Desf. Three-leaved Solomon's Seal.
Convallaria trifolia L.
Vagnera trifolia (L.) Morong

Specimens examined: Sk, Towar's Swamp, Ag. Coll., 5/27/94, and 7/7/95.

I have not seen the species in this area, though it seems reasonable to expect it here in our swamps. If it is present, it is very much less frequent than the other species of the genus. Beal lists it as occurring here in 1904. Many of our swamps have been drained since that time, and it may be that the species has disappeared.

MAIANTHEMUM (Weber in) Wiggers

Maianthemum canadense Desf. Two-leaved Solomon's Seal. False Lily-of-the-Valley.
Unifolium canadense (Desf.) Greene
Maianthemum canadense forma trifolium (Farw.) Vict. in part.
Smilacina bifolia var. canadensis Gray
Minn. Studies in Plant Sci. 5: 429-444. 1927.
Rhodora 16: 211. 1914.

Specimens examined: Sl, Lansing, 6/3/66; Sk, woods north of Ag. Coll., 5/21/94; A, Lansing, 1872.

I have found this species to be frequent to common in our moist woodlands. It blooms in May and early June.

POLYGONATUM (Tourn.) Hill Solomon's Seal.[1]

Polygonatum pubescens (Willd.) Pursh Smaller Solomon's Seal.
Polygonatum biflorum of recent authors, not Ell.
Salamonia biflora (Walt.) Britt.

Specimen examined: Sk, woods north of Ag. Coll., 5/21/94.

The specimen noted above has been referred to this species by Miss Ruth Peck who is writing a monograph on the genus. Skeels had labeled it as Polygonatum biflorum (Walt.) Ell. I have found the species to be common in our woodlands throughout the area. It is typically a woodland plant, but seemingly can grow in sandy soil as well as in rich, for it is found frequently along the sandy river flats in woods as well as in the richer woods of our higher levels. It flowers in May, and I have noted it in fruit in both the River Woodlot and the Kalamazoo Street Woodlot, 6/25/40.

Polygonatum biflorum (Walt.) Ell. Smooth Solomon's Seal.
Polygonatum commutatum (R. & S.) Dietr.
Salamonia commutata (R. & S.) Britt.

Specimens examined: none in herbarium.

This is undoubtedly a species complex, but since it has not been thoroughly worked out as yet, I am referring all plants of the complex to this species. It is occasional in the Kalamazoo Street Woodlot. It was flowering there 6/17/40. Apparently it prefers a moist, river-bank habitat, with a certain amount of shade from shrubs and trees. Although I have not seen this species in other parts of our area, it may grow along several of our other rivers, and should be looked for there.

MEDEOLA (Gronov.) L.

Medeola virginiana L. Indian Cucumber Root.

Specimens examined: Sk, woods south of Ag. Coll., 6/13/95.

I have not seen this species in our area, though there seem to be a few habitats that should be suitable for it. It usually prefers wooded and shaded ravines. Beal lists it as present here in 1904.

TRILLIUM L. Birthroot. Wake Robin.

Trillium grandiflorum (Michx.) Salisb. Large-flowered Trillium.

Specimens examined: Sk, woods north of Ag. Coll., 7/29/94; Sk, woods

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1. Bull. Torr. Bot. Club 42: 247-257. 1915.
Bull. Torr. Bot. Club 44: 117-126. 1917.
Am. Midland Nat. 10: 385-400. 1927.

south of Ag. Coll., 6/26/95; A, Lansing, 1872; St, woods near Ag. Coll., 1894.

This is our commonest Trillium. It grows in nearly all of the moist woodlands of the area, preferring the beech-maple type, however. I have found it in flower from the first week in May throughout the rest of the month. It is especially plentiful in the River Woodlot, the Kalamazoo Street Woodlot, and Woodlot 17. This species is found occasionally with some or all of the floral members reverted to foliage leaves.

Trillium cernuum L. var. macranthum Eames & Wiegand Purple Anther Trillium.
Rhodora 25: 191. 1923.

Specimens examined: Sl, Lansing, 5/24/67; Sk, woods south of Ag. Coll., 5/30/95.

I have noted this species as occasional in Woodlot 17, 5/24/40. It is a typical woodland species, and prefers quite moist regions. The specimens above were labeled as the species, but it has been shown that the species itself grows only east of the Allegheny Mountains, and this is evidently the variety.

Trillium Gleasoni Fern.
Trillium declinatum (Gray) Gleason
Rhodora 34: 21. 1932.

Specimen examined: A, Lansing, 1872.

I have found this species to be frequent in the Kalamazoo Street Woodlot, 5/16/40. It may well occur in other localities in the area, for it is not readily distinguished from some of our other Trilliums at first glance, and it grows in the same localities with them. The herbarium specimen examined had been labeled Trillium erectum L., and this is a common error, for the manuals make the distinction in part on the basis of the horizontal position of the peduncles. This species may have the peduncles declined, horizontal, or erect. Reports for species in this genus should be ignored, for much recent work has led to a good many changes, as is indicated in this and the preceding species.

SMILAX (Tourn.) L. Green Brier. Cat Brier.

Smilax herbacea L. Smooth Carrion-flower.
Bull. Torr. Bot. Club 43: 409-421. 1916.

Specimen examined: None in herbarium.

I have found this species to be occasional in Woodlot 17, 7/12/40. It was in fruit at this time. It is a woodland plant, and seems to like moist places. It probably occurs in other woodlands of our area.

Smilax herbacea var. lasioneura (Hook.) A. DC.
Smilax ecirrhata of manuals and recent authors, in part.
Bull. Torr. Bot. Club 43: 409-421. 1916.

Specimen examined: Sk, banks of Red Cedar River, Ag. Coll., 4/14/95 and 5/30/94.

Skeels identified this as Smilax herbacea L., which it definitely

is not. Later a note was made by someone else, no name given, referring it to S. ecirrhata. My diagnosis places it as this variety. If one were to follow Gray's Manual, 7th edition, it would be classified as S. ecirrhata without doubt. This variety seems to have the same habitat as the species. I have noted this variety as occasional in woods along the banks of the Grand River southeast of Dimondale, 5/10/41. It was also noted in woods on the flood plain of Sycamore Creek, about a half mile south of the gravel pits, 5/10/41. This species, with the preceeding, make up the only two herbaceous plants we have in this genus. The other species are considered woody, and as such are not included here.

DIOSCOREACEAE Lindl. Yam Family.

DIOSCOREA (Plumier) L.

Dioscorea villosa L. Wild Yam Root.

Specimen examined: Sk, banks of the Red Cedar River, Ag. Coll., 7/6/94.

This species is infrequent to occasional in this region. Where present, it is usually found in moist situations, often along river banks or in low thickets along roadsides. It always grows in thickets where it has a chance to twine around other plants for support. I have noted it in De Witt township, along the northern boundary of Section 18, where the road crosses the Looking Glass River, 7/21/40, and in thickets along the roadsides near the Looking Glass River in Victor township, 7/16/40. It was also seen on the southwest side of Park Lake, 8/23/40.

IRIDACEAE Lindl. Iris Family.

IRIS (Tourn.) L.

Iris virginica L. var. Shrevei (Small) E. Anderson

Iris versicolor, in part, of Gray, Man., ed. 7 and Britton and Brown, Illus. Flora, ed. 2.

Ann. Mo. Bot. Gard. 23: 469. 1936.

Specimens examined: A, Lansing, 1877; Sk, swamp south of Ag. Coll., 6/3/94.

This species is rather frequent throughout nearly the whole area in swamps and other wet places. It requires open places, however, and is rarely, if ever, found in wooded areas. I have noted it as frequent along the swampy drain from Potter's Lake, 6/20/40, and also along the Looking Glass River near Round Lake, 7/2/40. It is occasional in swampy, low areas along roadsides throughout.

SISYRINCHIUM L. Blue-eyed Grass.

Sisyrinchium albidum Raf.

Specimen examined: CTN, along M. C. R.R. north of Chandler's Marsh, 7/01.

I have failed to note this species in the area, though I see no reason why it should not exist here. Deam says that it prefers a slightly acid, sandy soil, in full sunshine, and is most frequent in prairie habitats. Beal lists it as here in 1904.

Sisyrinchium graminoides Bickn.

Sisyrinchium gramineum Curtis

Specimen examined: Bl, near the Reform School, marsh, 7/4/92.

I have found this species as occasional on the edges of the marshes near the Looking Glass River, west of Round Lake, 7/2/40 and 7/13/40. It was also frequent along the Looking Glass River in Victor township, Section 34, east of Round Lake. Seemingly it prefers a partly sandy, moist soil. It is never found right in the marshes, however, and often occurs in regions which are somewhat wooded. The flowering period is mid-June to early July.

ORCHIDACEAE Lindl. Orchid Family.

CYPRIPEDIUM L. Lady's Slipper.

Cypripedium reginae Walt. Showy Lady's Slipper.

Cypripedium hirsutum Mill., not of Britton and Brown, Illus. Flora, ed. 2.

Cypripedium spectabile Salisb.

Specimen examined: Cl, swamp, G. T. R.R., 6/18/95.

This species is infrequent, if present at all. It seems reasonable to expect that it may still exist in some of our very wet woods and swamps. However, drainage of many of the former swamps has helped to eliminate it from the area. I have not seen it here.

Cypripedium acaule Ait. Pink Lady's Slipper.

Fissipes acaulis (Ait.) Small

Specimens examined: Sk, Towar's Swamp, Ag. Coll., 5/27/94; Cl, Towar's Swamp, Ag. Coll., 5/26/95 and 6/30/95.

This species also prefers wet places. It should be sought in and around sphagnum bogs. I found it to be frequent around Bear Lake, 5/28/40, but have seen it nowhere else in the area. It, too, is undoubtedly disappearing, due in part, at least, to indiscriminate picking by the public.

ORCHIS (Tourn.) L.

Orchis spectabilis L. Showy Orchis.

Galeorchis spectabilis (L.) Rydb.

Specimen examined: Sk, woods north of Ag. Coll., 5/11/94.

This species should be sought in rich woods, in deep leaf mold. We have few such localities in this area at present, and I would not be surprised if this orchid has disappeared from the region. If present, it is certainly very rare.

HABENARIA Willd. Rein Orchis. Fringed Orchis.

Habenaria viridis (L.) R. Br. var. bracteata (Muhl.) Gray
Satyr Orchid. Long-bracted Orchis.
Habenaria bracteata (Willd.) R. Br.
Coeloglossum bracteatum (Willd.) Parl.

Specimen examined: Sk, woods north of Ag. Coll., 5/6/94.

This species should be looked for in moist woods and thickets. I have not seen it in this area. It is not so rare as some of our other orchids, though it undoubtedly is becoming less frequent. Beal lists it as occurring here in 1904.

Habenaria dilatata (Pursh) Gray Tall White Bog Orchis.
Limnorchis dilatata (Pursh) Rydb.

Specimens examined: Sk, tamarack swamp east of Ag. Coll., 6/17/94; Sh & Sk, tamarack swamp near Pine Lake, 6/27/97.

The first location noted above no longer has a swamp, and the second has been searched without avail. It is possible that a search of all swamps at the proper season might yield it, but this is impossible in one season's work. This may help to explain the apparent dearth of orchid reports in this survey. It usually takes many seasons to locate any considerable number of the rare species. This orchis is a bog-loving type.

Habenaria orbiculata (Pursh) Torr. Large Round-leaved Orchis.
Lysias orbiculata (Pursh) Rydb.

Specimen examined: Sk, College woods, Ag. Coll., 6/16/94.

I have not seen this plant here. The species prefers rich woods, though there is a disagreement among authors as to just which type of woods is preferred. Possibly it is present here, though Deam says it is one of the rarest of their orchids in Indiana. This collection is a little earlier than the usual flowering period, July-August. Beal lists it as present in 1904.

Habenaria Hookeri Torr. Hooker's Orchis.
Lysias Hookeriana (Gray) Rydb.

Specimen examined: A, woods south of college, 6/14/66.

I have found two plants of this species growing in the woods at the edge of a tiny swamp about one mile southeast of Park Lake. I have seen no indications of it anywhere else in the area. It flowers from June to September.

Habenaria ciliaris (L.) R. Br. Yellow Fringed Orchis.
Blephariglottis ciliaris (L.) Rydb.

Specimens examined: Sk, Towar's Swamp, Ag. Coll., 7/15/94 and 8/7/95; Bi, near Lansing, cold swamp, 9/1/85.

I have not seen this species here. It prefers sphagnum bogs, flowering in July and August.

Habenaria lacera (Michx.) Lodd. Green Fringed Orchis.
Blephariglottis lacera (Michx.) Farw.

Specimen examined: Sk, Towar's Swamp, Ag. Coll., 6/27/94.

This is another species which I have not observed here. As in the preceeding cases, it is difficult to say whether or not it still grows in this area. It should be looked for in open swamps and wet woods, and is in flower from July through August.

Habenaria leucophaea (Nutt.) Gray Prairie White Fringed Orchis.
Blephariglottis leucophaea (Nutt.) Farw.

Specimens examined: Sl, Lansing, 5/12/67; Sk, Pine Lake, 7/4/94; A, Park Lake, marsh, 7/4/64; Co, Park Lake, Clinton Co., 7/2/33.

This species should be looked for in moist open meadows, flowering in June and July. The east side of Lake Lansing seems like a locality where it might be found. I have not seen it anywhere in the area. Dr. Darlington tells me that a few plants can often be found near Park Lake, and that in several instances photographers have come from the east to photograph it here.

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

Specimens examined: A, Lansing, 1871; Sk, tamarack swamp east of college, 7/4/94.

This is the commonest species of the genus, and should be looked for in wet, open meadows and swamps. I have not seen it here. The blooming period is July and August.

POGONIA Juss.

Pogonia ophioglossoides (L.) Ker. Rose Pogonia.

Specimens examined: A, Lansing, 1864; Sk, Towar's Swamp, Ag. Coll., 6/27/94.

This is another species which prefers open, sphagnum bogs and wet meadows. It is one of the more common orchids and should be found here. The flowering period is June and July. I have not seen it here during the past season.

ARETHUSA (Gronov.) L.

Arethusa bulbosa L. Arethusa.

Specimens examined: Sl, Lansing, 6/22/67; A, Ag. Coll., 6/9/87.

This is a rare species which apparently has grown here in the past and may still be here. Localities as given on the herbarium specimens are vague, so that one cannot revisit those places now. This plant prefers bogs and sphagnum swamps. It flowers in May and June.

EPIPACTIS Swartz

*Epipactis latifolia (Huds.) All. Broad-leaved Epipactis.
Serapias Helleborine L.

Specimen examined: none in herbarium.

I have been able to find no report of the occurrence of this species in the state of Michigan prior to 1940. However, on 8/16/40, a small colony was discovered on the bank of the Red Cedar River near the entrance to the River Woodlot, on the grounds of the Michigan State College. There were two plants in flower at that time, and two more were seen in fruit. This small colony was located beside the pathway along the river bank, growing among some tall grasses and weeds. A specimen has been deposited in the herbarium of the Michigan State College. This species is said to have been introduced into this country at a very early date, and it has been spreading westward very gradually since that time. This location is rather near the western limit of its range at the present time.

SPIRANTHES Richard Ladies' Tresses.

Spiranthes cernua (L.) Richard Nodding Ladies' Tresses.
Ibidium cernuum (L.) House

Specimen examined: S1, Lansing, 9/15/66.

I have noted this species as occasional to frequent in the low, open ground along the Grand Trunk Railroad tracks south of the college. The colony contained some plants in flower, 9/17/40, but most of the plants were still in bud. It very probably occurs in other, similar habitats of our area.

GOODYERA R. Br.

Goodyera pubescens R. Br. Downy Rattlesnake Plantain.
Peramium pubescens (Willd.) MacM.
Epipactis pubescens (Willd.) A. A. Eaton

Specimens examined: S1, Lansing, 8/5/67; C1, M.A.C., northeast of Terrace, woods, 9/23/94; Sk, woods north of Ag. Coll., 9/23/94; H, woods near M.A.C., 8/91.

This is a dry woodland species which I have not seen here. It seems likely that it may still exist here, however, in some of the more isolated woods of the region where the public has not had a chance to destroy it as yet. The number of collections would suggest that it must have been quite frequent at one time. The flowering period is during August and September.

CALOPOGON R. Br.

Calopogon pulchellus (Salisb.) R. Br. Grass-pink Orchid.
Limodorum tuberosum L., in part.

Specimen examined: Sk, Towar's Swamp, Ag. Coll., 6/17/94.

I have found this species but once in this area. It was noted as

being infrequent on the west side of Park Lake, where it was growing along the shore of the lake in very wet ground, more or less grassy and open. It was in full flower 6/30/40.

CORALLORRHIZA (Haller) Chatelain Coral-root.

Corallorrhiza maculata Raf. Large Spotted Coral-root.
Corallorrhiza multiflora Nutt.

Specimen examined: H, woods near M.A.C., 8/92.

I have noted this species as occasional in Woodlot 17, where it grows in the beech-maple type of woodland. It was found in deep leaf mold, and was in a locality where Epifagus virginiana (L.) Bart. was common. It flowers in August.

LIPARIS Richard Twayblade

Liparis Loeselii (L.) Richard Fen Orchis.

Specimens examined: Sk, swamp east of Ag. Coll., 6/2/95; A, Park Lake, 8/7/88; Cl, M.A.C., swamp, 6/30/95; Cl, M.A.C., G. T. R.R., 6/14/96.

This species prefers open, boggy ground. It blossoms in June and July. Though I have visited the areas mentioned in the collections above several times, I have not seen the species growing here.

APLECTRUM (Nutt.) Torr. Putty-root.

Aplectrum hyemale (Muhl.) Torr. Adam and Eve. Putty-root.

Specimens examined: Sk, woods north of Ag. Coll., 6/3/94; A, Lansing, 1871.

This is another species frequenting dry woods. I have not seen it here, but suspect from reports that it probably is still here in some of our wooded localities. It flowers in May and June.

SAURURACEAE Lindl. Lizard's Tail Family.

SAURURUS (Plum.) L. Lizard's Tail.

Saururus cernuus L. Common Lizard's Tail.

Specimen examined: Cl, M.A.C., river, 6/29/95.

I have found this species to be common along both the Red Cedar and the Looking Glass Rivers. It grows in the mud, and is often partly submerged, though not always so. It was in full flower along the Looking Glass River, east of Round Lake, 7/16/40.

MORACEAE Lindl. Mulberry Family.

CANNABIS (Tourn.) L. Hemp.

*Cannabis sativa L. Common Hemp.
Specimen examined: A, Lansing, 1871.
This species is one that was commonly cultivated in olden times for its fiber. It is also the source of the narcotic marihuana, and as such is forbidden in Michigan. This law has resulted in decreasing its numbers tremendously. At present, I doubt that very much exists in our area. Several other plants are sometimes confused with this one by the public, among which is the rough-fruited cinquefoil, Potentilla recta L., which is very common. The drug plant is a dwarf form of this hemp. The plant will grow on all kinds of soil in the open.

URTICACEAE Reichenb. Nettle Family.

URTICA (Tourn.) L. Nettle.

Urtica procera Muhl. in Willd. Tall Nettle.
Urtica gracilis of authors.
Specimen examined: Bl, Ag. Coll., 8/18/70.
This species is frequent to common in its habitat throughout the area. I have noted it as common in low places along the roadsides in Bath and Victor Townships, 7/16/40, and at the edge of Woodlot 17 in a fairly low area, 7/12/40. It seems to prefer low, fairly moist ground, and more or less open situations. It has often been confused with U. dioica L., which is an introduced plant found sparingly escaped in the eastern part of this country.

LAPORTEA Gaud. Wood Nettle.

Laportea canadensis (L.) Gaud. Wood Nettle. Canada Nettle.
Urticastrum divaricatum (L.) Ktze.
Specimen examined: none in herbarium.
This species is quite common along the Red Cedar River, in the low, wooded areas of the flood plain, both near the college and downstream from it. I noted it in flower 8/23/40, but I believe that many specimens were in flower several weeks before that time. It probably occurs also along the Looking Glass River, though I have not seen it there.

PILEA Lindl. Clearweed.

Pilea pumila (L.) Gray Clearweed. Richweed.
Specimen examined: A, Pine Lake, 8/20/87.

I have noted this species as occasional in the New College Woods, 8/26/40. This is a typical place for it to grow, since it prefers cool, shaded woods with fairly rich soil.

BOEHMERIA Jacq. False Nettle.

Boehmeria cylindrica (L.) Sw. Wild Nettle. False Nettle.
Specimens examined: Sk, tamarack swamp east of Ag. Coll., 6/30/94; Sh & Sk, Pine Lake, 8/8/95.
I have noted this species as occasional to frequent on the shores of Lake Lansing, 8/20/40. It was also quite frequent in the woodlands along the Red Cedar River below the college, 8/23/40. It apparently grows in more or less open woods, though in some cases it is equally at home in fairly open situations. This plant requires quite moist situations, however.

SANTALACEAE R. Br. Sandalwood Family.

COMANDRA Nutt. Bastard Toadflax.

Comandra Richardsiana Fern. Richard's Bastard Toadflax.
Comandra umbellata, in part, of Britton and Brown, Illus. Flora, ed. 2.
Specimen examined: Sk, woods north of Ag. Coll., 5/11/94.
I have noted this species as being common along the Park Lake Road, 5/25/40. It was also noted as common along the Pere Marquette Railroad tracks west of Trowbridge in dry soil, 5/20/41. It was frequent along most of the roadsides of the area in June and July, its flowering period being mostly in May and June. Seemingly, this plant prefers more or less gravelly soil, varying to somewhat sandy. It prefers open situations, and is usually found on slopes where it is fairly dry. It is a typical roadside plant. Fernald has separated this species from C. umbellata (L.) Nutt., and I am following him in this, though the distinctions may not be great enough to validate this as a species. According to Fernald, typical C. umbellata grows only in the area east of the Allegheny Mountains.

ARISTOLOCHIACEAE Blume Birthwort Family.

ASARUM (Tourn.) L. Wild Ginger.

Asarum reflexum Bickn. Curly Wild Ginger.
Asarum canadense var. reflexum (Bickn.) Rob.
Specimens examined: P, near M.A.C., 5/27/87; Wh, low woods near M.A.C., 5/14/99; Sk, woods north of Ag. Coll., 6/24/95; K, Dr. Beal's Woods, M.A.C., 6/16/95.
I have noted this species as frequent in the Kalamazoo Street Woods,

5/15/40. It also occurs in some of the other woods of the area, but is by no means present in all. It seems to prefer a rather moist soil, with a good cover of leaf mold. This species was included under A. canadense as a variety in Gray's Manual, edition 7. A. canadense, as it is now understood, includes the variety A. canadense var. acuminatum Ashe, and is closer to it than to this variety.

POLYGONACEAE Lindl. Buckwheat Family.

RUMEX L. Dock. Sorrel.

*Rumex Acetosella L. Field Sorrel. Sheep Sorrel.
Specimens examined: Sk, lawn of Ag. Coll., 5/27/94; R, college campus, Ag. Coll., 5/29/94; N, Ag. Coll., no date.
I have noted this species as frequent in poor soil throughout the area. It was common in the college fields near the spur track, and in the fields along the drain from Dobie Lake, 6/18/40. It is an introduced weed, which has become very common in some areas where the soil is poor. It is always found in the open.

Rumex altissimus Wood Pale Dock.
Specimen examined: A, Lansing, 6/16/87.
I have not observed this species here, though it would certainly not be surprising to find it in some of the low, moist localities of the area. It should be looked for in those habitats.

Rumex verticillatus L.
Specimen examined: none in herbarium.
I have noted this species as occasional to frequent in two places along the Looking Glass River. One locality was along the river, southeast of Round Lake, 7/17/40, and the other was along the same river at the western edge of the range, 7/20/40. It was also noted as occasional in the Rose Lake Sanctuary in a swampy region. It prefers wet places, and is usually in thickets rather than out in the open.

Rumex Brittanica L. Great Water Dock.
Specimen examined: Sk, Chandler's Marsh, Ag. Coll., 8/26/94.
This species is occasional to frequent in the marshes and swamps of the region, blossoming mostly in August.

*Rumex crispus L. Curly Dock. Yellow Dock.
Specimens examined: Sk, banks of Red Cedar River, Ag. Coll., 6/10/94; A, Lansing, 1871.
This species seems to be more or less frequent in the waste places throughout the area. It was noted as occasional in the lawn of the college, 6/21/40, and as common along the drain from Mud Lake, 6/26/40.

*Rumex obtusifolius L. Bitter Dock. Blunt-leaved Dock.
Specimens examined: A, Lansing, 6/15/87; Sk, lawn of Ag. Coll., 7/15/94.

I have noted this species as frequent along many of the roadsides of the region, particularly south of the college. The earliest that I have noted it in flower here was 6/18/40.

POLYGONUM (Tourn.) L. Knotweed. Smartweed.[1]

Polygonum erectum L. Erect Knot Grass.
Specimens examined: Sk, lawn of Ag. Coll., 9/2/94; A, Lansing, 6/22/87.
Formerly this species has been said to occur about dwellings, in waste places, etc. However, Deam notes that, with one exception, all of his specimens were collected in moist open woodland. I have not found it here, so am unable to say from experience.

Polygonum aviculare L. Common Knotweed.
Specimen examined: Sk, lawn of Ag. Coll., 10/6/94.
I have found this species to be one of our commonest weeds in the lawns of the campus. It survives all sorts of hardships such as drought and being walked upon, and even seems to flourish under the treatment. It remains in flower nearly all summer.

Polygonum tenue Michx. Slender Knotgrass.
Specimen examined: Wh, south shore of Pine Lake, 8/20/92.
I have not seen this species in our area. The location given is a little odd for this plant, for it usually prefers dry, sterile soil, rather than the moist regions which surround Lake Lansing (Pine Lake). It is often found growing where few, if any, other plants occur.

Polygonum natans A. Eaton forma genuinum Stanford Water Persicaria.
Persicaria amphibia (L.) S. F. Gray
Persicaria fluitans (Eaton) Greene
Polygonum amphibium L.
Polygonum amphibium var. aquaticum Willd.
Rhodora 27: 156-166. 1925.

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1. This genus is still in a somewhat confused state. Many workers have been trying to make forms, varieties, and even new species on the basis of characters such as leaf shape, pubescence, and type of base. These do not seem valid to me, for I find that many of the species are highly variable as regards these characters. Others of the more recent workers have lumped some of these old forms, varieties, and species together, reducing the number of species to some extent. Obviously, with the genus in such an unsettled state, and with the limited time available for its study in this survey, there are bound to be some omissions of species or varieties which are present here, and perhaps commonly so. Their determination will have to await further investigation by others.

Specimen examined: none in herbarium.

I have noted this form twice in this area. It was noted as occasional along the shores of Round Lake, 7/2/40, and frequent in a ditch filled with water about one half mile northwest of the Capitol City Airport, 7/20/40. In both cases it was in full flower. The plant was growing in water in both localities, but was firmly rooted in the mud. Beal lists it as here in 1904.

Polygonum natans forma Hartwrightii (Gray) Stanford Hartwright's Persicaria.

Polygonum amphibium var. Hartwrightii (Gray) Bissell
Persicaria ammophila Greene
Persicaria carictorum Nieuwl.
Persicaria Hartwrightii (Gray) Greene

Specimens examined: Sk, swamp northeast of Ag. Coll., 9/11/94; Bl, no location, 1895.

I have not seen this form in our area. It is usually found in sedge marshes and along the edges of lakes. Very often it is extremely difficult to separate from the preceeding form.

Polygonum pennsylvanicum L. var. genuinum Fern.

Persicaria pennsylvanica (L.) Small, in part.
Rhodora 19: 70-73. 1917.
Rhodora 27: 173-184. 1925.

Specimen examined: A, Lansing, 8/25/87.

This species has been divided into two varieties by Fernald, and Stanford has named a form of one of those. I have not found any of them here so am not able to say which occur here, though I have reason to suspect that some of them may be fairly frequent. The herbarium specimen is undoubtedly referable to this variety. It has been known to grow to a height of something over seven feet, with branches of an equal length. It should be looked for in low grounds in open situations.

Polygonum lapathifolium L. Dock-leaved Persicaria.

Persicaria lapathifolia (L.) Small
Polygonum incarnatum of authors.

Specimens examined: Sk, Pine Lake, 8/26/94; A, Lansing, 8/25/87; A, Lansing, 8/27/87.

I have noted this species as frequent at Lake Lansing, where it was growing in the mud at the edge of the water. It was in flower 8/20/40.

*Polygonum tomentosum Schrank

Persicaria tomentosa (Schrank) Bicknell

Specimen examined: none in herbarium.

I have noted this species in our area only once. It was noted as occasional in a low, more or less swampy area near the Pere Marquette Railroad tracks southwest of Trowbridge, 9/17/40. Deam, in his Flora of Indiana, notes that he has found this species once in that state. It was growing on railroad ballast, and he has regarded it as a "waif". It is difficult to say whether or not that is the situation

with regard to the note which I have made concerning it. More than one year's study is necessary to say definitely as to its establishment here, and its status as a part of our flora.

Polygonum punctatum Ell. Water Smartweed.
Polygonum acre HBK. and var. leptostachyum Meisn.
Persicaria punctata (Ell.) Small
Rhodora 29: 77-87. 1927.

Specimens examined: Sk, roadside north of Ag. Coll., 9/2/94; Wh, swampy place by roadside, 3/4 mile north of college, 9/3/94.

I have not seen this species here, though from all reports I am quite certain that it grows here, and perhaps in considerable numbers. It should be looked for in wet, open places.

*Polygonum Persicaria L. Lady's Thumb.
Persicaria Persicaria (L.) Small

Specimen examined: Dr, East Lansing, 7/3/16.

This is probably our commonest Polygonum. It grows in fields, along roadsides and occasionally along the edges of woodlands. It seems to prefer damp places, and even mucky soils, but is certainly not limited to them. I noted it in flower first, 7/16/40, when it was very abundant in a fallow field just north of Bath.

*Polygonum orientale L. Prince's Plume.

Specimen examined: none in herbarium.

I have found this species only once in this area. It was growing in a waste place beside the road just east of Park Lake. The species was once much used in gardens and this may be a recent escape from that source. It is difficult to say whether it has established itself permanently enough there to warrant inclusion as a part of our flora. More study of the colony will have to be made from year to year before any definite conclusion may be reached. Some of the plants were about five feet tall when I saw them.

Polygonum virginianum L. Virginia Knotweed.
Tovara virginiana (L.) Raf.

Specimens examined: Sk, banks of Red Cedar River, Ag. Coll., 9/23/94; A, Lansing, 1871.

This species is restricted to the woodland areas, and prefers fairly moist soil there. It is frequent to common in nearly all of the woodlands of our area. I have noted it as common in both Woodlot 17, 8/17/40, and in the River Woodlot, 8/16/40.

Polygonum sagittatum L. Arrow-leaved Tear-thumb.
Tracaulon sagittatum (L.) Small

Specimens examined: A, Lansing, 1871; A, Grand Ledge, 9/13/87.

This species is common in the Rose Lake Sanctuary, where it grows in the marginal areas of the swamp. It likes wet conditions, and more or less open places. It was in fruit there, 9/23/40.

*Polygonum Convolvulus L. Black Bindweed.
Tiniaria Convolvulus (L.) Webb & Moq.
Specimens examined: Sk, C. & G. track near Ag. Coll., 6/7/94; Sk, roadside west of Ag. Coll., 9/2/94.
I have not seen this species here, but all reports indicate that it is probably quite frequent along some of our roadside thickets and fence rows.

Polygonum scandens L. Climbing False Buckwheat.
Tiniaria scandens (L.) Small
Polygonum dumetorum var. scandens Gray
Specimens examined: A, Lansing, 9/20/87; A, Lansing, 9/21/87.
I have noted this species as occasional to frequent in the thickets along the college railroad spur track. It was in fruit on 9/16/40. This plant prefers thickets where it can twine around other plants for support.

FAGOPYRUM (Tourn.) Gaertn.

*Fagopyrum esculentum Moench Buckwheat.
Fagopyrum Fagopyrum (L.) Karst.
Specimen examined: A, Lansing, 1871.
I have noted this species growing along fence rows beside the drain from Mud Lake. The adjoining field was planted to grass, and I do not know how long since it has been planted to buckwheat. Therefore, it is somewhat difficult to determine its state of establishment there. It was noted in flower on 6/26/40.

*Fagopyrum tartaricum (L.) Gaertn. Indian Wheat.
Specimens examined: B, farm exp. plots, M.A.C., 8/7/02; A, Lansing, 7/2/87, and 8/25/87.
Dr. Beal's collection is probably a cultivated plant, and if so, should be excluded. I am including it because I have no proof that it might not have been an escape in those plots. The other collection is also uncertain. This species is an occasional escape, but is certainly not very common. I have not seen it here.

CHENOPODIACEAE Dumort. Goosefoot Family.

CHENOPODIUM (Tourn.) L.

Chenopodium capitatum (L.) Ascherson Strawberry Blite.
Blitum capitatum L.
Specimens examined: Bl, Grand Ledge, northwest of Lansing, 8/27/no year; A, Lansing, 5/24/87.
This species is growing at Grand Ledge in land which has been rather recently cleared of brush. It was occasional there 7/4/40. It prefers a rather light soil. I have no notes of its occurrence anywhere else in the area.

Chenopodium glaucum L. ssp. eu-glaucum Aellen Oak-leaved Goosefoot.
Chenopodium glaucum L. of the manuals.
Rep. spec. nov. regn. veget. 26: 45. 1929.
Specimen examined: A, Lansing, 5/30/87.
I have not seen this species in the area. It should be looked for, however, in waste places throughout the region.

Chenopodium album L. Lamb's Quarters. Pigweed.
Specimen examined: Sk, roadside north of Ag. Coll., 8/8/94.
This species is very common in waste places, gardens, and in most open places throughout the area. I first noted it in flower, 6/26/40. Until recently most authors have considered this to be an introduced species, but newer studies have shown that there are some races which are apparently native.

Chenopodium gigantospermum Aellen Maple-leaved Goosefoot.
Chenopodium hybridum of American authors, not L.
Specimen examined: Sk, lawn of Ag. Coll., 9/21/94.
This species is occasional to frequent about Lansing and East Lansing in waste places. It is said to occur in open woods and fallow fields, but I have not observed it there. It was in flower 8/22/40.

SALSOLA L. Saltwort. Russian Thistle.

*Salsola pestifer A. Nelson Russian Thistle.
Salsola Kali L. var. tenuifolia G. F. W. Mey.
Salsola Kali var. Tragus of authors.
Salsola Tragus of authors, not L.
Specimen examined: none in herbarium.
I have noted this species twice in this area. It was frequent along a railroad track near the Lansing Water Department Property northwest of the city, and near the Grand River. I also have a note of its occasional occurrence on the Mason Esker near the gravel pits. It prefers dry, more or less sterile soil.

AMARANTHACEAE J. St. Hil. Amaranth Family.

AMARANTHUS (Tourn.) L.

*Amaranthus retroflexus L. Rough Pigweed.
Specimen examined: Sk, roadside north of Ag. Coll., 8/8/94.
This species is very common in gardens, waste places, and in some of our poorer lawns throughout. I collected it in flower on 8/19/40.

Amaranthus blitoides Wats. Prostrate Amaranth.
Specimen examined: Sk, Pine Lake, 9/9/94.
I have not seen this species in our area, but that is undoubtedly because I have not had the time to study this genus as thoroughly as I would like to. It likes moist situations in open places, and should

be looked for on muddy banks and gravelly bars of streams. However, it is also often found in cultivated fields, waste places, along roadsides, and on railroad ballast. Beal notes it as spreading rapidly along railroads. It is native farther west and might be considered introduced here.

Amaranthus graecizans L. Tumbleweed.
Specimen examined: Sk, roadside north of Ag. Coll., 8/8/94.
This species is very probably here, though I have not seen it. Beal noted its presence here in 1904. It prefers a dry, sandy soil.

ACNIDA L. Water Hemp.

Acnida altissima Riddell
Acnida tuberculata Moq.
N. Am. Flora 21: 122. 1917.
Specimens examined: A, Lansing, 1871; Wh, river bank, college grounds, 9/21/91; Sk, bank of Red Cedar River, Ag. Coll., 9/23/94; Wh, corn field north of river, 9/18/97.
The last specimen was not identified by Wheeler, but I have examined it and referred it to this species. This plant is frequent in the low places along the flood plain of the Red Cedar River southwest of the college. I noted it in flower there, 8/29/40. It is a species which prefers low ground.

Acnida subnuda (S. Wats.) Standley
Acnida tuberculata var. subnuda S. Wats.
Specimen examined: Bl, river bank, 1898.
This species is difficult to distinguish from the preceeding except on the basis of habit, this being decumbent or prostrate and the other erect. Size of seed and leaf shapes are other supporting characters. I have not seen it here. It should be sought in muddy places along the banks of our streams.

NYCTAGINACEAE Lindl. Four-o'clock Family.

OXYBAPHUS L'Her. Umbrella-wort.

Oxybaphus nyctagineus (Michx.) Sweet Heart-leaved Umbrella-wort.
Allionia nyctaginea Michx.
Specimen examined: Sk, C. & G. T. track, near Ag. Coll., 6/16/94.
I have noted this species as rather frequent along the Grand Trunk Railroad track east of the college, 6/26/40. It was growing in rather dry soil on the slopes of the roadbed. It is interesting to note that Skeels found it in the same place. Deam reports that in Indiana he has seen it only twice in situations other than on railroad ballast. This is near the eastern limit of its range, and it may be that it should be considered as introduced in this area. Its positions along the railroads would suggest that.

PHYTOLACCACEAE Lindl. Pokeweed Family.

PHYTOLACCA (Tourn.) L.

Phytolacca americana L. Common Pokeberry.
Phytolacca decandra L.

Specimens examined: Sk, bank of Red Cedar River, Ag. Coll., 8/25/94; A, Lansing, 1871.

I have found this species in many different habitats, though it grows more luxuriantly and in denser stands in very wet woods. There is quite an extensive colony of it near a small swampy pond in Woodlot 17, and though it grows throughout the woodlot, it forms a very dense colony around the edges of the pond. I have also noted it along the roadsides north of Park Lake where it was in flower on 8/14/40. It was also noted growing in waste places about the college and in East Lansing.

PORTULACACEAE Reichenb. Purslane Family.

CLAYTONIA (Gronov.) L. Spring Beauty.

Claytonia virginica L. Virginia Spring Beauty.

Specimens examined: AND, woods northeast of college farm, 4/30/65; Cl, M.A.C., east of no. 7, 4/28/95.

This species is common in most of our woodlands. It is equally abundant in the woodlands of the flood plains of our rivers, and in the richer and drier woodlands of some of the higher regions. I first noted it in flower in 1940 on 4/20, but in 1941 it was in flower some eight days earlier. Both notations were made in the Kalamazoo Street Woodlot where the species is quite frequent. It remains in flower until about the middle of May.

PORTULACA (Tourn.) L.

*Portulaca oleracea L. Common Purslane.

Specimen examined: Sk, campus, Ag. Coll., 8/27/94.

This species is occasional in gardens and in some waste places about the campus. I noted it in flower in the cultivated soil around some shrubbery at the college, 7/23/40.

*Portulaca grandiflora Hook. Garden Portulaca.

Specimen examined: A, grounds, college, 7/12/64.

I hesitate in including this species on the basis of the specimen above. It is difficult to say whether or not it was cultivated. It may exist in the area as an escape, but I certainly have not seen it. I would tend to the belief that it is not a part of our flora at present. Beal does not list it as occurring here in 1904.

CARYOPHYLLACEAE Reichenb. Pink Family.

STELLARIA L. Chickweed. Stitchwort.

*Stellaria graminea L. Lesser Stitchwort.
Alsine graminea (L.) Britt.

Specimen examined: A, east of Prof. Bailey's house, Ag. Coll., 7/3/88.

This is an introduced species which grows in grassy places. I have not seen it in this area. Beal lists it as occurring here in 1904. It flowers during late June and early July.

Stellaria longifolia Muhl. Long-leaved Stitchwort.
Alsine longifolia (Muhl.) Britt.

Specimens examined: Sk, woods south of Ag. Coll., 6/6/95; Sk, woods north of Ag. Coll., 5/27/94; Dr, woods near Dimondale, Michigan, 6/28/16; A, Lansing, 1871; Wh, shore of Pine Lake, 6/20/00.

This is a species which likes moist woodlands. It is undoubtedly present here, though I have not noted it during this past summer. The number of specimens collected, however, would indicate that it was probably once quite common here. It is infrequent to rare in Indiana, however, and may be becoming more so here. The flowering period is late May and June. Wheeler's specimen was unidentified, but I am referring it here.

*Stellaria media (L.) Cyrill. Common Chickweed.
Alsine media L.

Specimen examined: Sk, college lawn, 5/3/94.

This plant is very frequent in all our lawns, and in many of the waste places about our towns. It is occasional in or along the edges of some of our woodlands, where not too much of the sunlight is shut off by trees. I have also noted it on some of the grassy banks at Grand Ledge. This species was the first of our herbaceous plants to flower in both 1940 (4/6) and 1941 (4/2).

CERASTIUM L. Mouse-ear Chickweed.

*Cerastium vulgatum L. var. hirsutum Fries Common Mouse-ear Chickweed.
Cerastium vulgatum L., in part.
Rhodora 22: 169-179. 1920.

Specimen examined: Sk, bank of Red Cedar River, 5/25/94.

This species is frequent in the lawns and waste places of our area. It seems to prefer more or less dry, open places. It flowers from May through July. I have noted it on the campus, 7/12/40.

Cerastium arvense L. Field Chickweed.
Bartonia 12: 3-12. 1930.
Rhodora 22: 169-179. 1920.

Specimens examined: Sk, college lawn, 5/27/94; A, Lansing, 1871.

Reports would seem to indicate that this species is in the area

now, and it seems logical to expect it here. However, I have not happened to see it. The habitat probably varies somewhat as regards moisture, for some authors say that this plant prefers moist places, while others say it is found in dry situations. It can be said, however, that it should be sought for in open places. It flowers from May to July.

*Cerastium viscosum L. Mouse-ear Chickweed.
Specimens examined: A, Lansing, 6/24/87; A, Lansing, 1871.
I have not seen this species here. The second specimen listed above was labeled as C. vulgatum L., but I have examined it and referred it to this species where it evidently belongs. It should be looked for in grassy places.

ARENARIA L. Sandwort.

*Arenaria serpyllifolia L. Thyme-leaved Sandwort.
Specimen examined: A, Lansing, 5/23/86.
I have noted this species in the college lawn in a very sandy place where there were few other plants growing. It apparently prefers open, sandy areas, and should be looked for in such localities throughout this area.

SPERGULA L. Spurrey.

*Spergula arvensis L. Corn Spurrey.
Specimen examined: A, Lansing, 1887.
This species may be found in this area, though I have not seen it here. It should be sought in fields, and I have not investigated those areas as much as I should like to have done.

AGROSTEMMA L. Corn Cockle.

*Agrostemma Githago L. Corn Cockle.
Specimen examined: Sk, college wheat field, 6/16/94.
This plant is occasional to common in cultivated fields and along railroad tracks. I have noted it as occasional in fields, both cultivated and non-cultivated, in the southern part of Bath Township, becoming frequent locally. It was in bloom on 6/20/40. I have also noted it as occasional along the Grand Trunk Railroad tracks east of the college, and in the fields bordering the tracks. It was in full bloom there, 6/26/40.

SILENE L. Catchfly.

*Silene Cucubalus Wibel Bladder Catchfly.
Silene latifolia (Mill.) Britten & Rendle
Silene inflata Sm.
Specimens examined: A, Lansing, 1887; Bl & wh, in field planted

with orchard grass from France, 6/15/97.

This species has not been seen in this area during the past summer. So far as I know, it is not present now. However, it is an introduced plant, and as such is likely to appear here at almost any time. Beal does not list it as occurring here in 1904 in spite of his collection noted above. Apparently the colony from which his collection was made did not persist. It should be sought in fields and along roadsides.

Silene antirrhina L. Sleepy Catchfly.

Specimens examined: Sk, field north of college, 6/10/94; A, Park Lake, 7/10/88.

I have seen this species growing in sandy fields near Lost Lake, 5/17/41, at which time it was in bud. I have not seen it elsewhere in this area, though I suspect that it may be occasional to frequent in habitats similar to that noted above throughout.

*Silene noctiflora L. Night-flowering Catchfly.

Specimens examined: A, Lansing, 1871, 1883, and 1887; Sk, roadside north of Ag. Coll., 8/8/94.

This species is much more common than the preceeding. I have noted it as frequent along most of our roadsides. It is also frequent in some of our fields. It prefers open situations where it can get plenty of sunlight, though, peculiarly enough, the flowers open at night. I have found it quite frequent along our railroads. It was first noted in flower along a roadside just south of the college, 6/17/40, and it was in full flower throughout most of the area a few days later.

LYCHNIS (Tourn.) L. Campion.

*Lychnis Flos-cuculi L. Ragged Robin.

Specimen examined: A, farm plots, Lansing, 6/9/85.

This species is one which was once much cultivated in the gardens of this country. I have no doubt but that this is an escape from that source. I include it here only as a matter of record, for I do not feel that it has been proven to be established here so that it can truly be considered a part of our flora. I have not seen it here, and Beal does not list it as occurring here in 1904.

*Lychnis alba Mill. Evening Campion.

Specimen examined: Wh, crimson clover field on college farm, 6/24/97.

I have noted this species as frequent along roadsides throughout, and along the railroads of the area. It has much the same habitat as Silene noctiflora L. with which it is often confused by the general public. I first found it in flower along some of the roads south of the college, 6/17/40 and 5/28/41, and noted it as still in flower along the Grand Trunk Railroad tracks east of the college, 8/14/40.

DIANTHUS L. Pink.

*Dianthus deltoides L. Maiden Pink.
Specimen examined: A, Lansing, no date.
This is another of those species which are doubtfully included here. I have not seen it here, and am somewhat doubtful concerning its establishment in the area. Beal does not list it as occurring here in 1904. If present, it should be found in dry, open places.

SAPONARIA L.

*Saponaria officinalis L. Bouncing Bet. Soapwort.
Specimen examined: Sk, roadside east of college, 8/26/94.
I have noted this species as frequent along the roadsides in Victor Township, 7/13/40, and common along the roadsides in Bath Township, 7/16/40. Roadsides are its favorite habitat, though it occurs in many other similar places where the soil is fairly dry. It is always in open situations. It occurs to some extent throughout the area, but is more common in the northern part, probably because it is drier there.

NYMPHAEACEAE DC. Water Lily Family.

BRASENIA Schreb. Water Shield.

Brasenia Schreberi Gmel. Water Shield.
Brasenia peltata Pursh
Brasenia purpurea (Michx.) Casp.
Specimen examined: none available in herbarium.
This species is frequent to common in Park Lake. It grows in water which is three to five feet deep. I found it in flower, 8/24/40.

NYMPHAEA (Tourn.) L. Water Lily.

Nymphaea tuberosa Paine Magnolia Water Lily.
Castalia tuberosa (Paine) Greene
Specimens examined: Sk, Pine Lake, 6/4/94; A, Lansing, 1868.
Neither of the specimens examined was labeled as this species. I have examined them, however, and feel that they should be referred here. This species is often confused with Nymphaea odorata Ait., which I think does not occur here. I have noted this species as being very common in a shallow pond just northwest of the Grand Trunk Railroad bridge over the Red Cedar River east of the college. It was in full flower 6/26/40, and the pond was so densely covered with this species and Nuphar advena Ait., that the water was scarcely visible at any point. It is also very common in both Park Lake and Lake Lansing. In general it may be said to be common in all of our lakes and ponds.

NUPHAR Smith Yellow Pond Lily. Spatter-dock.

Nuphar advena Ait. Cow Lily. Yellow Spatter-dock.
Nymphaea advena Ait.
Rhodora 39: 407-409. 1937.

Specimen examined: none available in herbarium.

This species is common in the lakes, ponds, swamps, and even pools of water along the roadsides throughout the area. It rarely occurs, however, in any places where there is not usually water present throughout the year. I noted it in bud, almost ready to bloom, 5/11/40, along the drain from Potter's Lake. It was in blossom throughout June in all the area, and through some of July.

RANUNCULACEAE Juss. Crowfoot Family.

HYDRASTIS Ellis Orange-root. Yellow Puccoon.

Hydrastis canadensis L. Golden Seal.

Specimens examined: Sl, Lansing, 5/15/67; A, Lansing, 1867; Wh, woods east of #7, 6/2/93.

I have noted this species as occasional in Woodlot 17 in rich, moist woods. I have not seen it in any other part of the area. I think that it is quite likely that this species has been mostly exterminated from our region by people who have collected it for the drug which it produces. I noted it in flower 5/24/40.

CALTHA (Rupp.) L. Marsh Marigold.

Caltha palustris L. Marsh Marigold.

Specimen examined: none in herbarium.

This species is quite frequent in some of our low, wet places throughout the area. It always grows in the open, and is usually found along brooks, ditches, etc. where they flow through fields. It is also quite frequent along the edges of some of our swamps. It is common along the Pere Marquette Railroad tracks west of Trowbridge. It was in full flower there 5/8/40. This species is often called cowslip. It is also frequent at Grand Ledge along the bottom of the ravine there.

ISOPYRUM L.

Isopyrum biternatum (Raf.) T. & G. False Rue Anemone.

Specimens examined: Sk, woods north of college, 5/4/94; A, Lansing, 1865.

This species is very common in the Kalamazoo Street Woodlot, where it is so plentiful that the floor of the woods there appears almost wholly white while it is at the peak of its bloom in the spring. It grows there in a somewhat sandy, woods soil such as is commonly

found in the wooded portions of our flood plains. I have not noticed it in any such frequency in any other part of the area. The dates when I first found it in flower were 4/26/40 and 4/12/41.

COPTIS Salisb. Goldthread.

Coptis groenlandica (Oeder) Fern. Goldthread.
Coptis trifolia of Gray, Man., ed. 7 and Britton & Brown, Illus. Flora, ed. 2.
Rhodora 31: 136-142. 1929.

Specimens examined: Sl, Lansing, 5/22/67; Sk, Towar's Swamp, 6/10/94; A, Lansing, 5/22/[illegible]6.

I have not seen this species in the area though there are some places left where the habitat seems suited to it. The plant prefers bogs and swamps, or is sometimes found along the sides of brooks in wet woods. It is a species which does not grow out in the open very much. Deam indicates that it is always found in sphagnum, but my experience has been that it very often occurs in wet places that contain no sphagnum whatever. I feel, then, that it is a species that should be found here.

ACTAEA L. Baneberry.

Actaea pachypoda Ell. White Baneberry.
Actaea alba (L.) Mill.
Rhodora 42: 260. 1940.

Specimen examined: A, Lansing, 1864.

This species is frequent in most of our woodlands, particularly those of the beech-maple type. It prefers richer woods than those usually found along the flood plains of our rivers, however. Fruiting specimens are necessary for positive identification. I have noted this species in fruit in the River Woodlot, 9/18/40, and in Woodlot 17, 9/4/40.

Actaea rubra (Ait.) Willd. Red Baneberry.

Specimens examined: Sk, woods north of Ag. Coll., 5/6/94; A, Lansing, 1865.

This species occurs in the same habitats as the preceeding. It is much less frequent, however. I have seen it in Woodlot 17, 5/25/40, and in the ravine at Grand Ledge.

AQUILEGIA (Tourn.) L. Columbine.

Aquilegia canadensis L. Wild Columbine. American Columbine.

Specimens examined: Sk, woods north of Ag. Coll., 5/27/94 and 7/5/95 (fruit); Sl, Lansing, 6/2/66; A, Lansing, 1865.

The habitat of this species is somewhat variable. I have found it in moist woods, (Woodlot 17), along the banks of the Red Cedar River, on railroad ballast, (Grand Trunk Railroad east of the college), and along roadsides north of Park Lake. It was in flower throughout the

latter part of June.

ANEMONE (Tourn.) L. Anemone.

Anemone quinquefolia L. var. interior Fern. Wood Anemone. Rhodora 37: 260. 1935.

Specimens examined: K, woods near M.A.C., 1895; AHD, Coll. Farm, 4/26/85; A, Lansing, 1862; Sl, Lansing, 5/15/67; Sk, woods north of Ag. Coll., 4/22/94; Cl, M.A.C., 5/5/95.

This species is fairly frequent in our woodlands throughout. I have seen it in both moist and dry places, and in both a beech-maple and an oak type of woodland. It has a short blossoming period, rarely more than two weeks, and may easily be missed if one is not continually watching for it. I did not see it at all in 1940, but in 1941 it was seen in flower in most of our woodlands for about two weeks. I noted it as frequent along the banks of the Red Cedar River at the edge of the River Woodlot, 5/1/41, on the slopes of an oak ridge southeast of Park Lake, 5/3/41, along the bluffs of Sycamore Creek, 5/10/41, and at the entrance to Woodlot 17, 5/13/41.

Anemone canadensis L. Meadow Anemone.

Specimens examined: Sl, Lansing, 6/22/67; Dr, East Lansing, 6/19/16; Sk, bank of Red Cedar River, 6/16/94.

For the most part I have found this species in the open. However, I did note it as frequent in the Kalamazoo Street Woodlot, 6/20/40. It is frequently found in low places along the roadsides throughout, but particularly south of the college, where more such areas exist. I have also noted it in low places along the Grand Trunk Railroad tracks east of the college, 6/26/40. It was noted in flower throughout the month of June.

Anemone cylindrica Gray Candle Anemone. Long-fruited Anemone.

Specimen examined: A, top of hill, west of Pine Lake, 7/3/88.

I have not seen this species in the area. The location noted on the herbarium specimen is a good one for this plant, for it prefers a very sandy habitat. Usually it likes dry situations, but it is occasionally found in moist places. It flowers from May to July.

Anemone virginiana L. Tall Anemone.

Specimens examined: Sk, woods north of Ag. Coll., 9/23/94; Sk, bank of Red Cedar River, 7/6/94.

I have noted this species as occasional in a low, roadside thicket south of the Looking Glass River, 7/13/40. It was also noted as frequent in wet places in thickets along the roadsides throughout most of Bath and Victor Townships, 7/16/40. It apparently prefers more or less moisture, and some shade.

ANEMONELLA Spach

Anemonella thalictroides (L.) Spach Rue Anemone.
Syndesmon thalictroides (L.) Hoffmg.

Specimens examined: Sk, woods northeast of college, 4/29/94; A, Ag. Coll., 6/19/87.

I have not seen this species here. It should be sought in wooded areas, particularly wooded slopes where the drainage is good.

HEPATICA (Rupp.) Hill Hepatica. Liverleaf.

Hepatica acutiloba DC. Sharp-lobed Liverleaf. Sharp-lobed Hepatica.

Specimens examined: Wh, woods northeast of college, 5/14/93; Sk, woods north of Ag. Coll., 4/17/94; A, Lansing, 1859.

This is by far the more common one of our two hepaticas. It grows only in woodlands, though those woodlands may sometimes be quite dry. However, I believe that it prefers moist situations. I have noted it as common in the River Woodlot, 4/15/40 and 4/12/41, frequent on the west slope of the Mason Esker near the gravel pits, 4/16/40, and in the ravine at Grand Ledge, 4/19/41. It occurs in many similar places throughout the area.

Hepatica americana (DC.) Ker. Round-lobed Liverleaf.
Round-lobed Hepatica.
Hepatica triloba of Gray, Man., ed. 7.
Hepatica Hepatica (L.) Karst.
Rhodora 19: 45-46. 1917.

Specimens examined: Bl & Wh, west of Okemos, 5/25/90; Sk, woods south of Ag. Coll., 5/29/94; K, Cedar River bank near Trowbridge, 1895.

I have found this species only twice. It was frequent in an open woods near the Walnut Hills Golf Course, 5/4/40, and occasional to frequent in an open woods on the Sycamore Creek flood plain near the Mason Esker. Both this and the preceeding species grow in the same general area, but were not found growing together in any one spot. Deam says that this species prefers a little more acid soil than does the other one in this genus. I have not noted that tendency, but it might explain why we don't find this hepatica so often as we do the other. It is one of the very first of our spring flowers, tending to appear the latter part of April and the first part of May.

RANUNCULUS (Tourn.) L. Crowfoot. Buttercup.

Ranunculus flabellaris Raf. Yellow Water Crowfoot.
Ranunculus delphinifolius Torr.

Specimens examined: Bl & Wh, near Park Lake, 5/15/90; Wh, floating on pools near railroad tracks south of college, 7/12/90; Wh, bottom of dried-up pool north of college, 9/7/94.

I have found this species in pools in several places throughout the area. I have noted it as occasional in the drain from Potter's Lake, in more or less stagnant water. It is frequent in a pool beside Park Lake Road not far from its junction with Lake Lansing Road. I also have noted it in a swamp between the Looking Glass River and Round Lake. I found it in flower throughout May. It prefers shallow pools and ditches where there is almost no movement of water.

Ranunculus longirostris Godr. Stiff Water Crowfoot.
Ranunculus circinatus of authors.
Batrachium circinatum of manuals.
Rhodora 38: 42-46. 1936.

Specimen examined: Wh, Pine Lake, 6/20/00.

I have noted this species as occasional in the ditch draining Mud Lake, 6/26/40. It probably occurs elsewhere in the area, but I have not seen it. Its habitat may be said to be ponds and slow streams.

Ranunculus abortivus L. Small-flowered Crowfoot.

Specimens examined: A, Lansing, 1865; Sl, Lansing, 5/12/66; Cl, M.A.C., along river, 5/2/95; Sk, woods north of Ag. Coll., 4/19/94.

This is one of our first buttercups to appear in the spring. It is frequent throughout most of the area in moist places at the edge of woods, or along roadsides. It seems to like open situations, but requires a certain amount of shade, such as might be obtained in a field near the edge of some woods. I have noted it along Park Lake Road, 5/25/40.

Ranunculus sceleratus L. Cursed Buttercup. Ditch Crowfoot.

Specimen examined: A, Lansing, no date.

I have found this species once, along the drain from Mud Lake, 6/26/40. It was growing in an open situation there, right at the edge of the water. I did not see it anywhere else in the area. Beal reports it here in 1904.

*Ranunculus bulbosus L. Bulbous Buttercup.

Specimen examined: Sk, the Delta, Ag. Coll., 5/25/94.

I have not seen this species in the area, though reports indicate that it is probably here. I do not know where the Delta, referred to above, is located so could not check to see whether it was still growing there. It whould be sought in fields, flowering from May to July. If here, it is undoubtedly infrequent. Beal does not list it as here in 1904.

Ranunculus recurvatus Poir. Hooked Crowfoot. Hooked Buttercup.

Specimens examined: A, Lansing, 1866; Sk, woods north of Ag. Coll., 5/25/94; Cl, M.A.C., 6/5/95; Sl, Lansing, 5/23/66.

This species is a woodland species, occasional to frequent in the moist woods of most of our area. I noted it in fruit in Woodlot 17, 7/12/40.

*Ranunculus acris L. Tall Crowfoot. Tall Buttercup.

Specimen examined: Sk, C. & G. T. R.R., east of college, 6/16/94.

I have collected this species from the same location cited by Skeels above. This seems to be a typical habitat for it. It likes fairly dry situations and is often found in fields. The species is more frequent in the eastern part of the country than here. Beal lists it as present here in 1904, and says that at that time it was infrequent in the state but gradually spreading.

Ranunculus fascicularis Muhl. Tufted Buttercup. Early Buttercup.

Specimen examined: VM, junction of M-78 and Lake Lansing Road, 5/12/39.

I have not seen this species, but the specimen examined above would indicate that it is here. Reports lead me to believe that it is probably frequent. It usually prefers a dry, sandy situation. The flowering period is April and May.

Ranunculus pennsylvanicus L.f. Pennsylvania Buttercup. Bristly Crowfoot.

Specimens examined: Sh & Sk, Pine Lake, 8/8/95; Cl, M.A.C., roadside north, 8/3/95.

This species is occasional in wet places throughout our area. I noted it in moist places in Woodlot 17, 7/12/40, and along the Looking Glass River southeast of Round Lake, 7/16/40. In both instances there was an abundance of moisture present, but the former situation had a good deal of shade, while the latter was more in the open.

Ranunculus hispidus Michx. Bristly Buttercup.

Specimen examined: K, swamp north of M.A.C., 1891.

This and the next species intergrade, and from my experience there seems to be no constant character which will serve to separate them. Some forms are apparently not referable wholly to either one or the other. The herbarium specimen noted above is a typical example. It seems to be closer to R. hispidus, and I am referring it here. However it has some characters which might put it with R. septentrionalis. It might be better to put both of these species under one species complex which is highly variable. I have noted one specimen which is undoubtedly typical of R. hispidus, growing along the ditch which drains Mud Lake, 6/26/40.

Ranunculus septentrionalis Poir. Swamp Buttercup.

Specimens examined: Sk, woods near Ag. Coll., 4/19/94 and 5/2/95; A, Lansing, 1871; A, Lansing 1872; Cl, northeast of Terrace, woods, M.A.C.. 5/5/95.

This last named specimen was referred to this species by Cole, and later referred to the preceeding species by an anonymous worker. I am referring it here. I have noted a typical plant of this species growing in the Kalamazoo Street Woodlot, 5/22/40, and along the flood plain of Sycamore Creek this species was frequent, 4/28/41. It prefers wet woods. If we put this and the preceeding species into one species complex, that complex may be said to be frequent in moist places throughout most of our area.

THALICTRUM (Tourn.) L. Meadow Rue.

Thalictrum dioicum L. Early Meadow Rue.

Specimens examined: Wh, bank of Red Cedar River, 6/2/93, (fruit); A, Lansing, 1864; Sk, woods south of Ag. Coll., 5/30/95; Sk, banks of Red Cedar River, 5/3/94.

This species is common at Grand Ledge, both in the ravine and along the Grand River. I noted it in blossom there, 4/19/41. It was in fruit 5/20/40. I have also noted it as frequent on the Mason Esker and adjacent flood plain of Sycamore Creek, 4/28/41. The blossoming period is April and May.

Thalictrum dasycarpum Fisch. & Lall. Purple Meadow Rue.

Specimen examined: Sk, bank of Red Cedar River, 6/16/94.

This species is frequent to common throughout the area. It is found both in open woods and in open places, but is usually found in moist to wet places. I have noted it in both the River Woodlot and the Kalamazoo Street Woodlot, 6/25/40. I also noted it along the Grand Trunk Railroad tracks east of the college, growing in a low, wet area, 6/26/40. I have also seen it along our fence rows during the summer.

BERBERIDACEAE T. & G. Barberry Family.

PODOPHYLLUM L. May Apple. Mandrake.

Podophyllum peltatum L. Common May Apple.

Specimens examined: A, Lansing, 1883; Wh, north of hospital, M.A.C., 6/12/99; Sk, woods north of Ag. Coll., 5/21/94.

I noted this species as frequent to common along most of our roadsides, 5/25/40. It also grows in moist soil near Lake Lansing and in the River Woodlot, flowering there, 5/18/40. Its habitat seems somewhat varied, as may be judged by the notations above. The manuals say that it is a woodland species, but my experience here has been that it is equally as frequent along our roadsides and fence rows. It is possible that the plants have persisted in these places since the region was wooded, but if so, they have been living outside the woodlands for a great number of years.

CAULOPHYLLUM Michx. Blue Cohosh.

Caulophyllum thalictroides (L.) Michx. Pappoose Root.

Specimens examined: Cl, M.A.C., northeast of Terrace, woods, 5/5/95 and 10/7/94; A, Lansing, 1871.

This species is more or less frequent in our rich, moist woodlands throughout. It seems to prefer the beech-maple type. I noted it in flower in the River Woodlot and Woodlot 17, 5/25/40. It was also seen in the woods on the sides of the Mason Esker, 4/28/41.

PAPAVERACEAE B. Juss. Poppy Family.

SANGUINARIA (Dill.) L. Bloodroot.

Sanguinaria canadensis L. Bloodroot.

Specimens examined: Sk, woods north of Ag. Coll., 4/17/94; K, M.A.C., rich, bushy woods, no date.

I have noted this species as abundant along the Grand and tributary rivers at Grand Ledge in woods soil. It is frequent in the Kalamazoo Street Woodlot, and occasional in many of our other woodlands. It is primarily a woodland species, preferring moist, rich soil. I found it in bloom first 4/19/40, and 4/12/41.

CHELIDONIUM (Tourn.) L. Celandine.

*Chelidonium majus L. Celandine.

Specimens examined: A, Lansing, 8/23/86; Sk, Arboretum at Ag. Coll., 6/12/95.

This species was once cultivated fairly extensively, partly for its medicinal qualities, and partly for ornamental purposes. In many places it has escaped and become established. The plant prefers a rich soil, and where escaped is often found in rich woods. I have noted a small colony of it growing among some shrubs on the south side of Morrill Hall on the campus, and in a grove just east of Mary Mayo Hall. Dr. Darlington has informed me that both these colonies have persisted there for a number of years, so that I believe we can consider them well enough established to be included as a part of our flora. This species flowers mostly in May and June.

FUMARIACEAE DC. Fumitory Family.

DICENTRA Bernh.

Dicentra canadensis (Goldie) Walp. Squirrel Corn.
Bicuculla canadensis (Goldie) Millsp.

Specimens examined: Sk, woods near river, Ag. Coll., 4/22/94; Sl, Lansing, 5/10/67; Wh, woods east of #7, 5/17/93.

This species is frequent to common in most of our woodlands, particularly those of the beech-maple type. It prefers a fairly moist, rich soil. It is not so common as the next species, though oftentimes growing with it. I noted it in flower in the Kalamazoo Street Woodlot, 5/7/40 and 4/19/41.

Dicentra Cucullaria (L.) Bernh. Dutchman's Breeches.
Bicuculla Cucullaria (L.) Millsp.

Specimens examined: A, Lansing, 1870; Sl, Lansing, 5/5/67; Sk, woods near river, Ag. Coll., 4/22/94.

This species occurs in the same habitats as the preceeding, but is more common. It is common in the ravine at Grand Ledge, and I

have noted it in flower in the Kalamazoo Street Woodlot at the same time as the preceeding species.

CRUCIFERAE B. Juss. Mustard Family.

LEPIDIUM (Tourn.) L. Pepperwort. Peppergrass.

*Lepidium campestre (L.) R. Br. Field Peppergrass.
Specimens examined: Wh, Botany Garden, 6/3/95; Bl & Wh, #14, in orchard grass imported from France, 6/15/97.
This is not a common species here, and I have found it only once. At Trowbridge it was frequent along the edges of a plowed field, 5/23/40. It will be interesting to see whether it remains there from year to year as it will do if it is thoroughly established. The notation of Beal and Wheeler gives some idea as to how it may have been introduced into this area. Beal does not list it here in 1904, however.

Lepidium virginicum L. Wild Peppergrass.
Specimen examined: Sk, college lawn, 6/16/94.
This species was noted as common in the lawns of the campus, 7/11/40. It was also quite frequent, and even common in places, in waste areas around our towns and cities. Seemingly it will grow almost anywhere except in very wet places or in wooded regions.

*Lepidium densiflorum Schrad. var. typicum Thellung Apetalous Peppergrass.
Lepidium apetalum Willd.
Mitth. Mus. Univ. Zurich 28: 1-340. 1906.
Specimens examined: Sk, college lawn, 5/30/94; R, college campus, 6/4/94; Sk, field north of Ag. Coll., 10/28/94; Bl, east road in #5, M.A.C., 5/15/99.
This species is even more common than the preceeding in the waste places about our towns and cities. It is also common along our roadsides. I have also found it to be occasional along the banks of the drain from Mud Lake. It flowers throughout much of the summer, but I have noted it particularly in June.

THLASPI (Tourn.) L. Penny Cress.

Thlaspi arvense L. Field Penny Cress. Mithridate Mustard.
Specimens examined: Sk, south of Wells Hall, 5/3/94; Sk, campus, 6/13/95; A, Lansing, 1887.
I have noted a dense stand of this species in a field along the Grand Trunk Railroad tracks east of the college, 6/26/40. It also occurs less frequently in waste places around the campus. By the end of June it is wholly fruiting, the flowering period being somewhat earlier. It prefers fairly dry, open places. Deam says that in Indiana it is found principally along railroads.

SISYMBRIUM (Tourn.) L. Hedge Mustard.

*Sisymbrium officinale (L.) Scop. Hairy-pod Hedge Mustard.
Erysimum officinale in part, of Britton and Brown, Illus. Flora, ed. 2.
Specimen examined: A, Lansing, 1865.
I have not seen this species here though its variety which has smooth pods is common. It should be sought in dry, open places, such as waste areas, along roadsides, on railroad ballast, etc.

*Sisymbrium officinale var. leiocarpum DC. Smooth-pod Hedge Mustard.
Erysimum officinale in part, of Britton and Brown, Illus. Flora, ed 2.
Specimen examined: R, college campus, 6/4/94.
I have noted this species as occasional along the roadsides north of Bath, 7/16/40, in dry, open situations. I have also seen it occasionally in waste places around East Lansing. It seemingly prefers dry situations, with little or no shade.

*Sisymbrium altissimum L. Tumble Mustard.
Norta altissima (L.) Britt.
Specimen examined: none in herbarium.
This species is occasional in dry places of our area. I have noted it along the Grand Trunk Railroad east of the college, 6/26/40, and along the roadsides north of Park Lake, 6/22/40. It prefers open and dry situations.

BRASSICA (Tourn.) L. Mustard. Turnip.

*Brassica campestris L. Field Mustard.
Specimen examined: A, Lansing, 6/3/87.
This species probably occurs in fields throughout the area. I have noted it in the fields here at the college, at the edges of the Kalamazoo Street Woodlot, and along the drain from Mud Lake. It was in flower throughout the month of June. It prefers open situations.

*Brassica juncea (L.) Cosson Indian Mustard.
Specimen examined: Sk, C. & G.T. tracks, near college, 7/7/94.
I have not noticed this species in the area. It should be sought in open situations along roadsides and in old fields.

*Brassica nigra (L.) Koch Black Mustard.
Specimen examined: Sk, along C. and G.T. tracks, 9/21/94.
I have noted this species growing along the sandy roadsides north of Park Lake. It was occasional to frequent there, and was in full flower, 8/14/40. Like most crucifers it prefers open situations and a fairly dry, sandy soil.

*Brassica kaber (DC.) Wheeler var. pinnatifida (Stokes) Wheeler
Charlock.
Brassica arvensis (L.) Ktze.
Sinapis arvensis L.
Rhodora 40: 306-308. 1938.

Specimens examined: Sk, along C. & G.T. tracks, 7/4/94; Wh, Pine Lake, 6/20/00.

This is our most common Brassica. It grows in fields, along roadsides and in waste places. I have noted it in flower along the drain from Dobie Lake, 6/18/40. It was very frequent along the sides of Evergreen Avenue, East Lansing, 6/20/40, and was noted as frequent to occasional along our roadsides and railroads a week later.

BARBAREA R. Br. Winter Cress.

*Barbarea vulgaris R. Br. Common Winter Cress. Yellow Rocket.
Including Barbarea stricta Andrz. of Gray, Man., ed. 7 and Britton and Brown, Illus. Flora, ed. 2, not Andrz.; also Barbarea vulgaris var. longisiliquosa Carion.
Rhodora 11: 139. 1909.
Jour. Bot. 54: 202. 1916.
Jour. Bot. 57: 304. 1919.

Specimen examined: none in herbarium.

This has recently become one of our commonest crucifers. In the spring (May) it is common to see the fields which appear almost solid yellow due to the numbers of these blossoms. It occurs in open situations almost everywhere. Beal did not list it as occurring in this area in 1904. In 1917, however, Dr. Ernst A. Bessey wrote a bulletin calling attention to the fact that it was becoming a very bad weed in the state. It certainly occurs here in great numbers at present.

RORIPPA Scop. Water Cress.

Rorippa islandica var. Fernaldiana Butters & Abbe Yellow Water Cress.
Rorippa palustris (L.) Bess. var. glabrata (Lunell) Vict.
Radicula palustris (L.) Moench
Rhodora 42: 28. 1940.

Specimen examined: none in herbarium.

This species seems to grow more or less frequently in wet places throughout the area. I have found it in roadside ditches in Bath and Victor Townships, 7/16/40, along the Looking Glass River near Round Lake, 7/2/40, and along a ditch from Mud Lake, 6/26/40. Most of my notes are from plants that have grown in open situations.

Rorippa islandica var. hispida (Desv.) Butters and Abbe
Hispid Yellow Water Cress.
Rorippa palustris var. hispida (Desv.) Rydb.
Radicula hispida (Desv.) Britt.
Rhodora 42: 26. 1940.

Specimen examined: Sk, Chandler's Marsh, 10/10/94.

I have noted this species several times in the area, usually in somewhat wetter conditions than those in which the preceeding species was found. This species was noted as occasional on the shores of Lake

Lansing, 8/20/40, and in a very wet pasture along the Red Cedar River, southwest of the college, 9/16/40.

NASTURTIUM R. Br. True Water Cress.

*Nasturtium officinale R. Br. True Water Cress.
Radicula Nasturtium-aquaticum Britten & Rendle
Sisymbrium Nasturtium-aquaticum L.

Specimens examined: A, Beal and Carpenter's Woods, Lansing, 1886; Sk, brook in botanical garden, 7/7/94.

I have not seen this species in this area. It was originally cultivated in some parts of this country, and may have escaped around here. If so, I have not found it. I suspect that Skeel's notation above was from a cultivated plant.

ARMORACIA Gaertn. Horseradish.

*Armoracia rusticana Gaertn. Horseradish.
Radicula Armoracia (L.) Rob.
Armoracia Armoracia (L.) Britt.

Specimens examined: Dr, Ingham Co., roadside, 6/28/16; Sk, roadside north of Ag. Coll., 5/27/94.

This is the species which is so often cultivated. The notations above are undoubtedly of escapes. I have not seen the species in the area, however. It should be sought along roadsides and along the banks of streams.

CARDAMINE (Tourn.) L. Bitter Cress.

Cardamine bulbosa (Schreb.) BSP. Spring Cress.

Specimens examined: Sk, woods north of Ag. Coll., 4/17/94; K, Cedar River Flats, 1895; A, Lansing, 1871, 1887.

This species seems to prefer very wet flood plain regions, particularly where there is a good deal of sand. It usually occurs in open woods there, though sometimes it is found in the open. I have noted it along the Red Cedar River flats south of the Grand Trunk Railroad bridge near Lansing. It was frequent here and was in flower, 5/23/40. It is also occasional to frequent in both the Kalamazoo Street Woodlot and the River Woodlot. I found it in flower in both of those, 6/25/40. It flowers some two or three weeks after the next species, from which it is separated with some difficulty.

Cardamine Douglasii (Torr.) Britt. Purple Cress.
Cardamine bulbosa var. purpurea (Torr.) BSP.

Specimens examined: A, Lansing, 1865; K, woods near Ag. Coll., 1895; Sk, woods north of Ag. Coll., 4/14/94.

This species is more common than the last, and seemingly prefers a little drier and less sandy habitat, though this is not a strict rule. I have never found it outside the woods. I have collected it in the Kalamazoo Street Woodlot where it was in full bloom, 5/7/40, 4/12/41, and 4/19/41. It was found in the New College Woodlot, 5/4/40. It is common in both of these places as well as in many of the other wood-

lands of this area. Comparison of the flowering period, as shown by the dates above, with that of the preceeding species will show how much earlier this one comes into bloom. It very often has passed out of bloom before the Cardamine bulbosa starts its flowering.

Cardamine pratensis L. var. palustris Wimm. & Grab. Cuckoo Flower.

Cardamine pratensis L.
Rhodora 22: 14. 1920.

Specimen examined: none in herbarium.

This species is more or less frequent here in our bogs. I noted it as occasional in an open bog near Potter's Lake, 5/11/40. However, it was quite frequent in the Rose Lake Sanctuary, 5/3/41, and in the swamps and marshes around Park Lake, 5/17/41. It was also noted as common in the open marshes around Lost Lake, 5/17/41. My observations seem to indicate that this species prefers a very moist and usually mostly open habitat, though sometimes it may be found in slightly shaded places.

Cardamine pennsylvanica Muhl. Pennsylvania Bitter Cress.

Specimen examined: Wh, College Woods, wet places, 6/1/00; Wh, low woods northwest of the college, 6/6/95; Sk, banks of Red Cedar River, 5/30/95.

I have noted this species as frequent to common in roadside ditches in Shiawassee County near the eastern edge of our range, 5/25/41. It was also noted in the same region growing along some of the drains in the fields. Though some authors record it as preferring wet woods, I have never seen it growing anywhere but in the open. Skeels' collection noted above was labeled Cardamine hirsuta L., but I have examined it and referred it here. Beal does not list it as here in 1904, which seems a little strange in view of the records noted above.

DENTARIA (Tourn.) L. Toothwort. Pepper-root.

Dentaria laciniata Muhl. Cut Toothwort.

Specimens examined: Wh, woods east of #7, 6/2/93; Sk, woods north of Ag. Coll., 5/24/95, 4/22/94; K, woods north of M.A.C., no date.

This species is common in most of our woods. It prefers a fairly rich soil, and some shade. I have noted it as frequent in the Kalamazoo Street Woodlot, 5/4/40 and 4/29/41. It is also quite common along the flood plains of Sycamore Creek near the Mason Esker, and in the New College Woodlot. The leaves are quite variable, and sometimes are not much cut.

Dentaria diphylla Michx. Crinkleroot.

Specimens examined: H, woods north of college grounds, 5/16/93; Sk, woods north of Ag. Coll., 5/2/94.

I have noted this species only at Grand Ledge, where it is frequent in the ravine. It was in flower, 5/14/40, and nearly so, 4/19/41. From my previous experience with this species, I should say that it preferred a rich type of woodland, usually somewhat rocky, often occurring in ravines. Apparently it likes quite moist conditions. Here, it should be looked for along the banks of streams in woods.

CAPSELLA Medic. Shepherd's Purse.

*Capsella Bursa-pastoris (L.) Medic.
Bursa Bursa-pastoris (L.) Britt.

Specimens examined: R, campus, 6/2; A, Lansing, 1871; Bl, M.A.C., 9/29/91; K, M.A.C., campus, 1894.

This species grows in abundance in open places almost everywhere. It blossoms from the very early spring to the time that the frosts come in the fall. In 1941 it was already fruiting 4/5/41, on the lawns of the campus. It likes open places, and I am inclined to think that it grows in fairly dry situations more frequently than in moist places.

CAMELINA Crantz False Flax.

*Camelina microcarpa Andrz.

Specimens examined: A, Mason, 1905; Wh, near Okemos Station on D. L. & N. R.R., 5/27/95; Wh, M.A.C., 6/00; L, Mason, 5/12/94.

This species is occasional to frequent in open places throughout. It seems to prefer fairly dry situations, though I have found it growing along the banks of the drain from Mud Lake, 6/26/40. I have noted it along the roadside, Park Lake Road, 5/25/40, and along the edges of a recently plowed field at Trowbridge, 5/23/40.

DRABA (Dill.) L.

*Draba verna L. Whitlow Grass.

Specimens examined: A, Arboretum, Lansing, 5/22/86, 1887.

This species is frequent in sunny, open places, especially on grassy banks. It is found frequently in lawns and along the banks of some of our railroads. I have noted it in flower as early as April 6 on the campus. There is a rather large and dense colony of it near the forestry cabin across the river from the college.

DESCURAINIA Webb. & Barth.

*Descurainia pinnata subsp. brachycarpa (Richardson) Detling
Sisymbrium canescens var. brachycarpon (Richardson) Wats.
Sophia pinnata (Walt.) Howell
Descurainia brachycarpa (Richardson) O. E. Schulz
Am. Midland Nat. 22: 509. 1939.

Specimen examined: N, Ag. Coll., no date.

I have not seen this species in our area. It is said to prefer sandy situations, and is often found on railroad ballast in those regions where it occurs. It should be sought along some of our railroad embankments. The species is very variable.

ARABIS L. Rock Cress.

Arabis pycnocarpa Hopkins var. adpressipilis Hopkins
Arabis hirsuta in part, of authors.
Rhodora 39: 117-118. 1937.

Specimen examined: Sk, banks of Red Cedar River, Ag. Coll., 6/6/95.
I have not seen this species here. Deam says it grows in "sandy soil in alluvial bottoms, in crevices of rocks, and on the rocky slopes and high banks of streams". Gray says it is found on "gravelly shores and calcareous banks". The flowering period is May and June. Beal lists it as here in 1904. However, it seems to me that it is very probably infrequent, if here at all, now, at least in part because we have very few regions here which are typical of its habitat.

Arabis dentata T. & G. Toothed Rock Cress.
Specimen examined: none in herbarium.
I have noted this species only once in this area, and understand from reports that it is rare here. I found it along the edges of a plowed field at Trowbridge where it was occasional, 5/23/40. This habitat is a little unusual for this species according to most authors, for it is most often found in moist situations along the banks of streams, and in wooded areas. This may mean that it will not, or has not become established in this location, though it had an appearance of being fairly well established at the time that I found it. Beal lists it as here in 1904.

Arabis laevigata (Muhl.) Poir. Smooth Rock Cress.
Specimens examined: Sk, bank of Red Cedar River, Ag. Coll., 5/24/94; Dr, East Lansing, 6/24/16.
I have seen this species along the banks of the Grand River southeast of Dimondale, 5/10/41. It was growing in a wooded and moist habitat. Seemingly, this habitat is a typical one for the species. It probably occurs in similar situations along some of our other rivers.

Arabis glabra (L.) Bernh. Tower Mustard.
Specimens examined: Wh, #14, in orchard grass imported from France, 6/22/97; A, Lansing, 1887.
I have not seen this species here. It should be sought in fields, flowering from May to July. Beal reports it here in 1904, but adds that it is infrequent.

ERYSIMUM (Tourn.) L. Treacle Mustard.

Erysimum cheiranthoides L. Worm-seed Mustard.
Specimen examined: none in herbarium.
I have noted this species as occasional along the drain from Mud Lake, 6/26/40. This is a typical habitat for the species, for it likes mucky soil. I have also noted in some of the waste places about the college, growing in somewhat drier conditions, 7/23/40. Beal lists the plant as here in 1904.

ALYSSUM (Tourn.) L.

*Alyssum alyssoides L. Yellow Alyssum. Small Alyssum.
Specimens examined: Sk, college lawn, 5/6/94, campus, 5/30/95; A, Lansing, 1871; A, a weed in college lawn, 1887.

I have noted this species as frequent along the edge of a plowed field at Trowbridge, 5/23/40. It seemed to be fairly well established there at the time. This plant is likely to be found in waste places, and in fields throughout the area, though it is probably somewhat local in its distribution.

BERTEROA DC.

*Berteroa incana (L.) DC. Hoary Alyssum.
Specimens examined: Dr, Ingham Co., 7/6/16; Wh, farm plots, clover field, seed from Europe, 7/20/02.
This species has been noted as very common in fields and along roadsides, particularly in the Park Lake area, 6/20/40. It is also quite frequent in places on the lawns of the campus. Beal does not list it as occurring here in 1904, which would indicate that it certainly was not very common at that time. Since then it has been spreading rapidly and now is classed as a common weed. It likes fairly dry, open situations.

CAPPARIDACEAE Lindl. Caper Family.

CLEOME L.

*Cleome serrulata Pursh Stinking Clover. Pink Cleome.
Specimens examined: Sk, field north of Terrace, Ag. Coll., 9/2/94; Cl, south of Terrace, 9/2/94, and road north of Terrace, 6/22/95.
This species is native farther west, and very probably is introduced here. I have not seen it in the area, and if it became established here it has escaped my attention. I strongly suspect that the notations above are escapes from cultivation. The habitat is normally in dry, more or less saline soil.

POLANISIA Raf.

Polanisia graveolens Raf. Clammy Weed.
Specimens examined: Sk, back of greenhouse, 7/19/94; A, Lansing, 1887.
I have not seen this species here. It is certainly infrequent, if present at all. Beal does not list it as here in 1904. The plant usually grows in very sandy soil, on the banks or bars of streams. Many wild plats of the state were formerly grown in the botanical garden, and I suspect that Skeels' notation is from one of those.

SARRACENIACEAE La Pyl Pitcher-plant Family.

SARRACENIA (Tourn.) L.

Sarracenia purpurea L. Common Pitcher-plant.
Specimens examined: Sk, Towar's Swamp, 4/27/94; Cl, M.A.C., swamp

on G. T. R.R., 6/18/95; Sh & Sk, Towar's Swamp, 8/7/95.

I have seen this species only once. It was frequent along the edges of Bear Lake, 5/28/40, in flower 7/6/40. Its frequency there leads me to believe that it is probably frequent in several of our sphagnum bogs in this area, some of which I have not visited. It likes plenty of moisture, and is usually found at the edges of such bogs associated with low shrubs.

DROSERACEAE S. F. Gray Sundew Family.

DROSERA L. Sundew.

Drosera rotundifolia L. Round-leaved Sundew.

Specimens examined: Cl, Towar's Swamp, 8/3/95; Bl, B. Sloane's Swamp, 1886; Sk, Towar's Swamp, 7/22/94.

I have noted this species but once in this area, though it may occur more often in our sphagnum bogs. There are some of these bogs which I have not seen. It was frequent at Bear Lake, growing in the same sort of situations as did the pitcher plants mentioned above. I have not seen it in flower here.

CRASSULACEAE DC. Orpine Family.

PENTHORUM L. Ditch Stonecrop.

Penthorum sedoides L. Ditch Stonecrop.

Specimens examined: Cl, M.A.C., G. T. R.R., 9/9/94; Sk, banks of Red Cedar River, Ag. Coll., 9/21/94; Sh & Sk, swamp north of Ag. Coll., 8/7/95.

This species is occasional to frequent in very wet places along the flood plains of some of our rivers. I have noted it along the Looking Glass River southeast of Round Lake, 7/16/40, and along the banks of the Red Cedar River east of the college in August. Its prime requirement is a plentiful supply of moisture. I have found it both in the open and in the woods, though it seemingly prefers a moderate amount of shade.

SAXIFRAGACEAE Dumort. Saxifrage Family.

SAXIFRAGA (Tourn.) L. Saxifrage.

Saxifraga pennsylvanica L. Swamp Saxifrage.

Specimen examined: Cl, northeast of Terrace, woods, 5/26/95.

This species is rather frequent in our open swamps. I have noted it as frequent in a swamp about one mile south of the gravel pits, along Sycamore Creek, 5/10/41. It was common in a swamp along the Grand Trunk Railroad tracks near the east end of our range, 5/24/41, and was frequent in swamps around Lost Lake, 5/17/41, and in swamps west

of Park Lake, 5/17/41. It is often associated with Senecio aureus L.

MITELLA (Tourn.) L. Miterwort.

Mitella diphylla L. Bishop's Cap.

Specimens examined: Sl, Lansing, 5/11/67; Cl, northeast of Terrace, M.A.C., 5/5/95; Sk, woods north of Ag. Coll., 5/2/94.

This species is frequent in most of our woodlands. It prefers a fair amount of moisture and a considerable amount of leaf mold. I have noted it as abundant at Grand Ledge in the ravine, 5/14/40. It also occurs in the River Woodlot and in the Kalamazoo Street Woodlot quite frequently. I saw it in flower there, 5/1/41.

PARNASSIA (Tourn.) L. Grass of Parnassus.

Parnassia glauca Raf.

Parnassia caroliniana of Gray, Man., ed. 7 and Britton & Brown, Illus. Flora, ed. 2, not Michx.

Bartonia 17: 18. 1935.

Specimen examined: none in herbarium.

I have seen this species only once, though it was quite frequent in that spot. It was found growing in the Rose Lake Sanctuary in a very wet meadow which surrounded a small pond. It was in flower, 9/28/40. Deam reports that in Indiana it is almost invariably associated with Lobelia Kalmii L., and this was found to be true here as well.

ROSACEAE B. Juss. Rose Family.

FRAGARIA (Tourn.) L. Strawberry.

Fragaria virginiana Duchesne Virginia Strawberry.

Specimens examined: A, M.A.C., 6/26/87; Cl, northeast of Terrace, (flower) 5/5/95; Cl, M.A.C., Grand Trunk, (fruit) 6/30/95; Sk, swamp east of Ag. Coll., 6/24/95.

This species is common along our roadsides, railroads and other dry places. It usually prefers dry situations, though occasionally it occurs in situations with a good deal of moisture. It is typically a plant of the open, almost never being found in woodlands. It was particularly abundant along the railroads south of the college, 5/8/40, and along the roads north of Park Lake.

POTENTILLA L. Cinquefoil.

Potentilla fruticosa L. Shrubby Cinquefoil.

Dasiphora fruticosa (L.) Rydb.

Specimen examined: none in herbarium.

This species is quite frequent in most of our more or less open swamps. It was frequent in the swamp along the drain from Potter's Lake, flowering there, 6/20/40. It is also fairly frequent in the

open swamp in the Rose Lake Sanctuary, though associated there with poison sumac. Beal noted it here in 1904.

Potentilla palustris (L.) Scop. Marsh Cinquefoil.
Comarum palustre L.
Rhodora 16: 5-11. 1914.
Specimen examined: Sk, Towar's Swamp, 7/7/94.
I have noted this species only once in this area. It was found growing practically in the water at Round Lake, 7/2/40, and was occasional or even infrequent there. It may occur near some of the other lakes or ponds of this region, but I have not seen it in spite of a good deal of search.

*Potentilla recta L.
Specimen examined: Wh, Botanical Garden, 7/25/92.
This species has become a frequent to common weed in our fields. I have noted it throughout the area. It also occurs along roadsides, and even in the edges of some of our woodlands. It was in flower first about the middle of June in 1940. It prefers open places, and is partial to fairly dry situations.

Potentilla monspeliensis L. Rough Cinquefoil.
Rhodora 28: 214. 1926.
Rhodora 32: 254. 1930.
Specimens examined: Sk, near Pine Lake, 7/4/94; A, Lansing, 1871.
This species is said to occur in almost all kinds of habitats. I have noted it most frequently in moist and open places. It was occasional to frequent along the ditch from Mud Lake, 6/26/40, and frequent in the ditches along the low roadsides in Bath and Victor Townships, 7/16/40.

Potentilla argentea L. Silvery Cinquefoil.
Specimen examined: Sk, college lawn, 5/30/94.
This species is probably more or less frequent to occasional throughout most of our area in dry, sandy places. I have noted it as occurring occasionally along the roadsides of Victor Township, 7/16/40.

Potentilla simplex Michx. var. typica Fern.
Potentilla canadensis L. of Gray, Man., ed. 7 and Britton & Brown, Illus. Flora, ed. 2, in the major part.
Rhodora 33: 180-191. 1931.
Specimens examined: A, Lansing, 6/22/87; Sk, along North Lansing Road, 5/24/94.
This is the species which is known here as common cinquefoil. I have noted it as frequent along the Grand Trunk Railroad near Trowbridge, 5/23/40, and as very common in sandy soil near the woods just northwest of Park Lake, 5/17/41. It was also noted as common along our roadsides throughout the area, flowering especially commonly in June. It seems to prefer dry, open situations. Typical Potentilla canadensis L. is usually found farther east.

WALDSTEINIA Willd.

Waldsteinia fragaroides (Michx.) Tratt. Barren Strawberry.
Specimens examined: A, Lansing, 5/25/87; Bl, Botanical Gardens, 5/22/05.
I have seen this species once in this area. It was growing in a more or less open woodland along the Grand River, east of Dimondale, 5/10/41. Dr. Darlington told me that he has seen it growing along the bluffs of the Red Cedar River near Okemos. I do not think that it is very frequent here, however. I believe that this species prefers rather moist places which are more or less shaded.

GEUM L. Avens.

Geum rivale L. Purple Avens. Water Avens.
Specimen examined: Sk, woods north of Ag. Coll., 5/21/94.
I have seen this species in our area but once. It was growing on the edge of an old tamarack bog in the Rose Lake Sanctuary, 5/25/41. It was not more than occasional there at that time, and I rather doubt that it ever becomes frequent in this area. It seems to prefer tamarack bogs in this section of the country, though my experience with it in other places has seemed to indicate that it is quite often found in wet, marshy places in the open. It probably was more frequent here formerly than at present, for many of our tamarack bogs have been drained during the past few decades.

Geum canadense Jacq. White Avens.
Specimens examined: A, Lansing, 6/24/87; Sk, woods north of Ag. Coll., 5/21/95; Sh & Sk, woods north of Ag. Coll., 8/7/95.
This species is frequent to common throughout most of our area in low places. It is usually found in woodlands or in thickets. I have noted it as common in Woodlot 17, 7/12/40, and have seen it quite frequently in roadside thickets in Bath and Victor Townships in mid-July. In all cases it was growing in low, moist ground.

Geum aleppicum Jacq. var. strictum (Ait.) Fern.
Geum strictum Ait.
Rhodora 37: 294. 1935.
Specimens examined: A, Lansing, 1883; Cl, Grand Ledge, 7/4/95; Sk, Towar's Swamp, 7/7/94.
This species is one which prefers very moist conditions. I have seen it only once. It was noted as occasional along the Looking Glass River near the western limits of our range. At that place it was growing in a low thicket. It was in flower, 7/20/40, though most of the plants in the colony were in fruit at that time.

Geum laciniatum Murr. var. trichocarpum Fern. Rough Avens.
Geum virginianum L. in part, of Gray, Man., ed. 7, and Britton & Brown, Illus. Flora, ed. 2.
Rhodora 25: 98-99. 1923.
Rhodora 37: 292-293. 1935.
Specimens examined: Dr, Ingham Co., 6/26/16; H, near Ag. Coll., July 1892.
I have noted this species as occasional in thickets along the drain

from Dobie Lake, 6/18/40, and in the River Woodlot, 6/24/40. It apparently needs a certain amount of shade, and prefers wet conditions.

AGRIMONIA (Tourn.) L. Agrimony.

Agrimonia gryposepala Wallr. Hairy Agrimony.

Specimen examined: Sk, near Pine Lake, 7/4/94.

I have noted this species as occasional to frequent, becoming common in places in the area. It is difficult to say just what its favorite habitat might be. I have found it along fairly dry roadsides in Victor Township, south of the Looking Glass River. I have also found it to be common in a very wet, swampy thicket in Woodlot 17, being associated there with Impatiens. I have also noted it as frequent in low, roadside thickets in both Bath and Victor Townships. Deam says that it is more commonly found in dry situations in Indiana. My experience here has been that it is more frequent in moist situations, especially in thickets. I have noted it in flower from 7/13/40 to 7/25/40, though it undoubtedly has a longer flowering period.

Agrimonia pubescens Wallr. Soft Agrimony.

Agrimonia mollis (T. & G.) Britt.

N. Am. Flora 22: 393. 1913.

Specimen examined: Dr, East Lansing, open clearing, 9/8/18.

I have not seen this species in this area, though reports indicate that it probably occurs here. Beal lists it as here in 1904. It should be sought in open woods which are more or less dry, though it may occasionally occur in clearings or along roadsides.

Agrimonia parviflora Ait. Small-flowered Agrimony.

Specimens examined: Wh, northwest of Howard Terrace, corner of woods, 8/5/92; Wh & H, Grand Ledge, 7/30/92.

This is another species which might well be found here, though I have not seen it. Beal does not report it as here in 1904, and he lists its distribution in the state as infrequent. It prefers more or less moist conditions, and is most apt to be found along streams. It should be sought along our streams and in some of our swamps.

SANGUISORBA (Rupp.) L. Burnet.

*Sanguisorba minor Scop. Garden Burnet.

Specimen examined: Wa, Ingham Co., 10/22/18.

This species has not been seen here in the past year. As its common name indicates, it is sometimes cultivated, and the collection noted above may be from a cultivated specimen. I am including it only on the basis that it might have been an escape. It would most likely be found in grassy places, if here at all. Beal does not record it as here in 1904.

LEGUMINOSAE Juss. Pea Family.

BAPTISIA Vent. False Indigo.

Baptisia tinctoria (L.) R. Br. var. crebra Fern. Yellow Wild Indigo.
Rhodora 39: 414-415. 1937.
Specimen examined: A, Lansing, 1867.
I have not seen the species in this area. The report noted above is nearly seventy-five years old, and there apparently have been no specimens collected here since that time, though Beal lists the plant as having been collected here in or previous to 1904. It may be that he is referring to the specimen noted above when he indicates that it was collected in this area. It apparently is partial to more or less dry places, and where found is usually in woods. It flowers from June to September.

LUPINUS (Tourn.) L. Lupine.

Lupinus perennis L. Wild Lupine.
Specimens examined: Sk, Park Lake, 6/2/95; Sk, field north of Ag. Coll., 5/21/94.
I have noted this species as occasional to frequent along the more or less dry roadsides north of Park Lake, which is a typical habitat for it. I noted it in fruit there 6/22/40. This year I noted it in flower in the same area, 5/17/41, and discovered it growing along a road through a pasture near Lost Lake, 5/17/41. This species remains in flower for a very short time, for when I first noted these colonies in flower, they were just beginning to open. However, when I revisited the region a week later, they had completely finished blossoming. It is probably occasional throughout our area in these roadside habitats.

MEDICAGO (Tourn.) L. Medick.

*Medicago sativa L. Alfalfa.
Specimen examined: A, Lansing, 6/8/87.
I have noted this species as an apparent escape along the roadsides throughout, 6/15/40. It was also common along the Grand Trunk Railroad east of the college, 6/26/40. It is very difficult to say, however, whether or not this species has become well enough established to list it as a true escape. There is a considerable amount of alfalfa planted in this region, and it is possible that some of the notations which I have are of plants which have gotten out of the fields in which they were first planted and are now existing there for a matter of only a few years. It is my personal opinion, however, that it is a true and frequent escape here.

*Medicago lupulina L. Black Medick.
Specimen examined: Sk, college lawn, 6/6/94.
This species is common throughout in lawns and waste places. I noted

it in flower on the lawns of the campus, 7/11/40. It is sometimes regarded as a weed.

MELILOTUS (Tourn.) L. Sweet Clover.

*Melilotus alba Desr. White Sweet Clover. White Melilot.
Specimen examined: Sk, college lawn, 7/19/94.
This plant is one of our commonest roadside species. I have also noted it along the drain from Mud Lake, 6/26/40, and along the Grand Trunk Railroad, 6/26/40. In both places it was very abundant. It apparently prefers a fairly dry soil and open situations. Beal notes that it was once sown along the roadsides as "pasture" for bees. This may explain some of its present abundance in those places.

*Melilotus officinalis (L.) Lam. Yellow Sweet Clover.
Specimen examined: A, street-car tracks, Lansing, 1895.
This species is found in about the same habitats as the preceeding, and is equally abundant. It is interesting to note that Beal reports this plant as rare in the state in 1904, while now it is one of the commonest of our plants of waste places. This plant flowers at about the same time as the preceeding.

TRIFOLIUM (Tourn.) L. Clover.

*Trifolium incarnatum L. Crimson Clover. Italian Clover.
Specimen examined: Sk, escaped to river bank, Ag. Coll., 6/6/95.
It seems very doubtful to me that this species has become established as an escape. The notation above is the only report I can find of its escape in this region. Beal does not list it as occurring in the state in 1904. At least, if it is here now, it is very infrequent.

*Trifolium pratense L. Red Clover.
Specimens examined: A, Lansing, 1869; Sk, college lawn, 6/16/94.
This is one of our more commonly cultivated species of clover. It has escaped throughout the area to roadsides and waste places, where it occurs in abundance. It prefers fairly dry, open places. I have noted it in flower throughout the summer.

*Trifolium repens L. White Clover.
Specimens examined: Sk, college lawn, 6/6/94; A, vicinity of Ag. Coll., 6/6/03.
I have noted this species as common along the roadsides north of Park Lake, and it undoubtedly occurs more or less commonly throughout the area. It was in flower at Park Lake, 6/22/40. It is like most of the rest of the clovers in habitat preference, growing chiefly in open places, along roadsides, and in fields.

*Trifolium hybridum L. Alsike Clover.
Specimen examined: Sk, college lawn, 6/16/94.
Like the red clover noted above, this species has been extensively

cultivated and is a common escape. It occurs in waste places, along roadsides, and in nearly all more or less open places where it is moderately dry throughout the area. It was noted in flower most extensively in June.

*Trifolium procumbens L. Low Hop Clover.
Specimens examined: K, river flats. M.A.C., 7/10/96, determined by Sk; Wh, college lawn, 6/30/94.
I have not seen this species in this area. It should be sought in much the same sort of situations as the rest of the clovers. Beal lists it as being here in 1904.

*Trifolium dubium Sibth. Little Hop Clover.
Specimens examined: Wh, campus, 6/21/97; Sk, college lawn, 6/15/94.
I have not noted this species in this area, though I rather think that it is probably here, and possibly in some numbers. Beal does not list it as occurring here in 1904, however. It should be sought in much the same places as the rest of the clovers, occurring in lawns in some places.

*Trifolium agrarium L. Yellow Hop Clover.
Specimen examined: none in herbarium.
This species has been noted as being frequent to common in fields, along roadsides and railroads, and beside ditches throughout the area.

TEPHROSIA Pers. Hairy Pea.

Tephrosia virginiana Pers. Goat's Rue. Catgut.
Cracca virginiana L.
Specimen examined: A, near Park Lake, 1864.
I have not seen this species here, and think that if it is here at all, it is certainly infrequent. It should be found in very sandy soil in open places, or occasionally in open woodland. The flowering period is June and July. It was not here in 1904 according to Beal.

ASTRAGALUS (Tourn.) L. Milk Vetch.

Astragalus neglectus (T. & G.) Sheldon
Astragalus Cooperi Gray
Specimens examined: Sk, hill south of Towar's Swamp, 6/24/95, and edge of Towar's Swamp, 7/7/94.
I have not seen this species here. Neither does Beal list it as here in 1904, nor even in the state at that time. The habitat is said to be cliffs and clayey banks, which does not agree especially well with the habitat note given above. Certainly it is rare if present.

DESMODIUM Desv. Tick Trefoil.

Desmodium nudiflorum (L.) DC.
Meibomia nudiflora (L.) Ktze.

Specimens examined: Sk, north of Towar's Swamp, 9/23/94; A, Ag. Coll., 7/14/87.

This species is apparently more or less frequent in most of our woodlands. I have noted it in flower in both Woodlot 17 and the River Woodlot during August. It prefers a fairly moist soil and woodland conditions.

Desmodium acuminatum (Michx.) DC.
Desmodium grandiflorum (Walt.) DC.
Meibomia grandiflora (Walt.) Ktze.

Specimens examined: Wh & H, Ag. Coll., 8/8/92; Sk, woods near Red Cedar River, 7/15/94; A, Lansing, 1871; Cl, Grand Ledge, 7/4/95.

This species has been noted as occasional along the river in the College Woodlot. It is also noted as frequent along the Red Cedar River southwest of the college, 9/16/40. This species is one which usually grows in woods, and it has been my experience here that it is most often found in moist, but not wet, woods.

Desmodium bracteosum (Michx.) DC.
Meibomia bracteosa (Michx.) Ktze.

Specimen examined: Wh & H, bank of Red Cedar River, 8/20/91.

I have not seen this species here, though I suspect from reports that it may be here. It is apparently usually found on oak land, though there seems to be some disagreement about its occurrence in the open, some authors saying that it prefers the open, and others that it is usually found in thickets.

Desmodium canadense (L.) DC. Showy Tick Trefoil.
Meibomia canadensis (L.) Ktze.

Specimen examined: Sk, bank of Red Cedar River, Ag. Coll., 8/25/94.

I have noted this species as occasional in roadside thickets north of Park Lake, 8/14/40. It was usually growing in fairly moist soil. This plant usually likes a habitat similar to this, or, according to some authors, is more frequently found in open woods.

Desmodium paniculatum (L.) DC. Panicled Tick Trefoil.
Meibomia paniculata (L.) Ktze.
Desmodium paniculatum var. angustifolium T. & G.

Specimen examined: Wh & H, Ag. Coll., 8/2/92.

I have not seen this species here though Beal reports it as frequent for the state in 1904. Deam also notes it as the most frequently found species of the genus in Indiana. It usually occurs in oak woods, or sometimes in clearings. It should be sought in these locations here.

Desmodium Dillenii Darl.
Meibomia Dilleni (Darl.) Ktze.

Specimen examined: Wh & H, Ag. Coll., 8/7/92.

This is another species which I have not recorded from this area. Beal reports it as frequent here in 1904, and it very probably is still here. It should be sought in oak woodlands, clearings, and occasionally on river flats. It usually prefers more or less dry situations.

Desmodium rigidum (Ell.) DC
Meibomia rigida (Ell.) Ktze.
Specimen examined: Wh, Pine Lake, 8/20/92.
I have not seen this species here. The members of this genus have not been studied as closely as I would have wished, and consequently I expect that there are several species of these Desmodiums which I have not reported, but which are here. This may be one of them, though Beal does not list it as here in 1904. Usually it is found in more or less open places in rather dry, sandy or gravelly soil.

LESPEDEZA Michx. Bush Clover.

Lespedeza capitata Michx.
Specimens examined: Sk, roadside north of Ag. Coll., 8/26/94; K, roadside near Pine Lake, 8/14/96.
I have not seen this species here. As in the case of the last genus, I expect that there are several of the species here which I have not seen. Beal lists it as common here in 1904, and other more recent reports lead me to suspect that it is probably here, and perhaps not too uncommon. It should be sought in dry, and very sandy soil.

Lespedeza hirta (L.) Hornem. Hairy Bush Clover.
Specimens examined: Sk, roadside north of Ag. Coll., 8/8/94; Bl, Grand Ledge, 8/27/70.
I have noted this species in dry, more or less sandy areas in this region. It was noted in flower, 9/2/40, on a dry roadside bank near Park Lake, and was in fruit in some open, very sandy fields east of the Rose Lake Sanctuary, 9/26/40.

Lespedeza virginica (L.) Britt. Slender Bush Clover.
Specimen examined: Wh & H, Ag. Coll. , 9/15/93.
I have failed to note this species in our area. I suspect that this is partly due to the fact that it, like the rest of this genus, flowers rather late in the season, and the press of class work kept me from the field at the time when it was most noticeable. Beal, however, does not list it as here in 1904. It should be sought in oak woods which are quite open, or on clayey slopes.

Lespedeza intermedia (Wats.) Britt.
Lespedeza frutescens (L.) Britt.
Rhodora 26: 31. 1924.
Rhodora 37: 265. 1935.
Specimens examined: Sk, woods north of Ag. Coll., 9/23/94; Wh & H, Ag. Coll., 9/5/92; Wh, hotel yard, north shore of Pine Lake, Clinton Co., 8/20/92; Bl, Grand Ledge, 8/27/70; A, Lansing, 9/9/87; AND & Wh, north of college farm, 8/8/65.
C rtainly the number of collections noted above would indicate that this plant is very probably here now. However, I have failed to see it this past summer. Beal lists it as here in 1904. It prefers dry situations in more or less open woods, according to most authors.

VICIA (Tourn.) L. Vetch. Tare.

*Vicia villosa Roth Hairy Vetch.
Specimen examined: A, chicken yard, M.A.C., 10/16/02.
This is a species which is sometimes sown as a forage crop and which occasionally escapes to roadsides. I have seen it as frequent to common along the railroad spur track to the college, 6/9/41. It was growing in fairly dry soil in open places. Beal does not list it as here in 1904. I doubt that it is very widespread in this area, possibly occurring in only this one locality. It seems to be fairly well established along the tracks.

Vicia caroliniana Walt. Carolina Vetch.
Specimens examined: Sk, Dr. Beal's Woods, 5/11/94; K, M.A.C. campus, 1895.
I have noted this species as frequent in fields and along the edges of the woods throughout most of the area. It was frequent at Grand Ledge, 5/14/40, and was likewise frequent in low, moist ground at the edge of some woods at the Rose Lake Sanctuary, 5/3/41. In both instances the plants were growing in fairly moist conditions, but I have seen it on slopes which were quite dry.

Vicia americana Muhl. American Vetch.
Specimen examined: none in herbarium.
I have noted this species but once, though it was frequent in that one locality. It was growing in moist places along the roadsides south of the Looking Glass River in Victor Township, 7/13/40. This is a typical habitat for it, and it may occur in similar places in other parts of the area. Beal has listed it as here in 1904.

LATHYRUS (Tourn.) L. Everlasting Pea.

Lathyrus ochroleucus Hook.
Specimens examined: Sk, Dr. Beal's Woods, 5/21/94; A, Lansing, 1871.
I have noted this species twice in this area. It was occasional to frequent along a dry roadside in Shiawassee County, just north of the Grand Trunk Railroad tracks, 5/24/41, growing in moderate shade. It was also noted in the oak woods at the Rose Lake Sanctuary, 5/24/41, where it was occasional to somewhat frequent. It probably is occasional in our area. Seemingly, it prefers dry places, often in oak woods, and often along roadsides. Beal lists it as here in 1904, but notes that it was infrequent.

*Lathyrus latifolius L. Everlasting Pea. Perennial Pea.
Specimen examined: none in herbarium.
I have noted this species but once in the area. However, it was so abundant that I believe that it warrants mention here. It was growing in great numbers along the railroad spur track to the college, flowering during most of June and July. Dr. Bessey has told me that it was sent to the experiment station here from Germany, about 1900 - 1905,

in order to test whether or not it could be grown sucessfully in this country. It escaped to its present location along the railroad tracks and has persisted there for the past forty years. It has become so well established that I think its inclusion as a part of the flora of this region is warranted. Beal did not note it in 1904, however.

Lathyrus palustris L. Marsh Pea.

Specimens examined: A, Lansing, 6/11/87; Sl, Grand Ledge, 6/15/67.

I have noted this species but once. It was infrequent along the edges of Round Lake, growing there on the edges of a floating bog. It may occur in some of the other lakes of the area, but if so, I have not seen it. It was in flower, 7/2/40.

Lathyrus palustris var. myrtifolius (Muhl.) Gray Myrtle-leaved Marsh Pea.

Specimens examined: Sk, near Pine Lake, 7/4/94; Wh, shore of Pine Lake, 6/20/00.

This variety is said to intergrade with the species. After examining the two specimens noted above, I am inclined to agree with this statement. It is extremely difficult to say definitely that they are the variety and not the species. However, they seem more nearly referable here to me. I have not noticed the variety in this area. Beal does not include it as here in 1904.

AMPHICARPA Ell. Hog Peanut.

Amphicarpa bracteata (L.) Fern.
Amphicarpa monoica (L.) Ell.
Falcata comosa (L.) Ktze. of Am. authors.

Specimens examined: Wh, near Ag. Coll., no date; A, Lansing, 6/13/87; Wh & H, Ag. Coll., 8/8/92; K, roadside north of M.A.C., high, dry ground, 8/29/96.

This species is more or less frequent in thickets throughout the area. I have noted it as frequent in thickets along the roadsides north of Park Lake, 8/14/40, and in thickets along the Red Cedar River near the college, 8/16/40. I have seen it most frequently in moist situations. Kedzie's notation above indicates, however, that it may occur in dry situations as well.

APIOS (Boerh.) Ludwig Ground Nut.

Apios americana Medic. Ground Nut. Wild Bean.
Apios tuberosa Moench
Glycine Apios L.

Specimen examined: Sk, banks of Red Cedar River, 8/25/94.

I have not noted this plant in our area. Beal reports it as common here in 1904, however. It should be sought in low thickets along streams or roadsides, flowering from July to September.

GERANIACEAE J. St. Hil. Geranium Family.

GERANIUM (Tourn.) L. Cranesbill.

Geranium maculatum L. Wild Cranesbill. Wild Geranium.
Specimens examined: A, Lansing, 1864; Sk, woods north of Ag. Coll., 5/9/94; Sk, woods south of Ag. Coll., 6/5/95, fruit.
This species is quite frequent throughout the area, flowering mostly in May. I have found it most commonly in moist woods, but it is also quite frequent along our railroads. It is especially common in the Kalamazoo Street Woodlot.

*Geranium pusillum Burm. f.
Specimen examined: none in herbarium.
This species is quite common in the lawns of the campus. I have failed to not it anywhere else in the area, however. It flowers considerably later than the preceeding species. I have noted it in full flower, 7/12/40, and it was in flower for at least a month thereafter. Lawns are a typical habitat for the species.

ERODIUM L'Her. Storksbill.

*Erodium cicutarium (L.) L'Her.
Specimen examined: A, Lansing, 5/30/87.
I am extremely skeptical about including this species in this list. It is an introduced plant which occasionally may seem to escape from cultivation. There is another specimen in the herbarium which was collected from the Botany Garden by Wheeler. The collector of the specimen noted above was very indefinite about his place of collection, and it may have been that he found it in cultivation. I have not seen it here.

OXALIDACEAE Lindl. Wood Sorrel Family.

OXALIS L. Wood Sorrel.

Oxalis stricta L. var. piletocarpa Wieg.
Specimens examined: A, Grand Ledge, 6/26/90; Sk, college lawn, 5/27/94.
I am not reporting any sorrels because the genus has been reworked since the manuals which I used in identification were issued, and I did not see the newer work until too late to determine which species grow here. I have, however, examined those specimens which are in the herbarium in the light of the newer work, and am indicating the places to which I have referred them. I am convinced that we have both this species and the following one growing in this area, and quite possibly one or two others, but I do not feel justified in including them here

until I have had an opportunity to examine them more closely.

Since writing the above, I have had a chance to examine a few plants of this genus. This species was noted as occasional along the edges of fallow fields near Lost Lake, 5/17/41.

Oxalis europaea Jordan forma cymosa (Small) Wieg.
Oxalis corniculata of Gray, Man., ed. 7, not L., in part.
Rhodora 27: 113-130; 133-139. 1925.

Specimens examined: A, Grand Ledge, 6/26/90; A, Lansing, 1871.

For a discussion of this species in this area, see note under the preceeding. I think that this is our common woodland species, but do not feel justified in including it until I have had a chance to check it again.

LINACEAE Dumort. Flax Family.

LINUM (Tourn.) L. Flax.

*Linum usitatissimum L. Common Flax.

Specimen examined: Sk, C. & G. T. R.R. track east of Ag. Coll., 7/4/94.

This is another species which is included here with some hesitation. Deam says that in Indiana it has not been known to persist for more than one year whenever it has been found as an escape. If this is so, it cannot be included in this list of established species in this area. I have not seen it anywhere in the area, so cannot say from personal observation. Beal does not list it as here in 1904.

Linum virginianum L.

Specimen examined: A, Lansing, 1864.

I have failed to note this species here. Beal reports it as here in 1904, but speaks of it as infrequent. It should be sought in dry woods and barren places.

POLYGALACEAE Reichenb. Milkwort Family.

POLYGALA (Tourn.) L. Milkwort.

Polygala paucifolia Willd. Fringed Polygala. Flowering Wintergreen.

Specimens examined: A, Lansing, 1862; Sl, Bath, 4/24/68.

I have seen this species twice in this area. It was frequent in moist, but somewhat sandy glades, in the woods just northwest of Park Lake, 5/17/41. I have also noted it as occasional in woods at the edge of a swamp at the Rose Lake Sanctuary, 5/3/41. It is probably occasional to somewhat frequent here in more or less sandy woods.

Polygala Senega L. Seneca Snakeroot.

Specimens examined: A, Lansing, 1862; Sk, near Towar's Swamp, 7/7/94.

I have not seen this species in this area. Dr. Darlington has told me that it grows at Lake Lansing, but I have searched that area several times without seeing it there. It is usually found in wooded areas along streams or around lakes, though Gray's Manual reports its habitat as "rocky soil". It flowers a little later than the preceeding species, usually in June and July.

Polygala sanguinea L.

Polygala viridescens L.

Specimen examined: Wh & H, Lansing, 9/27/90.

I have not seen this species in this area. Beal reports it here in 1904. Seemingly this plant is rather local in its occurrence, though most authors agree that it is often abundant where found at all. It seems to prefer sandy, and usually moist soil and should be looked for in those habitats.

EUPHORBIACEAE J. St. Hil. Spurge Family.

ACALYPHA L. Three-seeded Mercury.

Acalypha rhomboidea Raf.

Acalypha virginica of recent authors, not L.

Rhodora 29: 193-200. 1927.

Rhodora 39: 14-16. 1937.

Specimens examined: A, Lansing, 1871; Sk, bank of Red Cedar River near Ag. Coll., 9/23/94.

This species is more or less frequent in fairly dry places in our area. I have noted it as occasional along the top of the Pere Marquette Railroad embankment west of Trowbridge, 9/16/40. It was also frequent in waste places about the Botany Building on the campus, 10/21/40.

EUPHORBIA L. Spurge.

Euphorbia glyptosperma Engelm.

Chamaesyce glyptosperma (Engelm.) Small

Specimens examined: Wh, along railroad tracks south of college, first appearance in vicinity, 8/6/00; A, Botany Garden, not cultivated, 9/21/06.

Both of these specimens were labeled as Euphorbia serpyllifolia Pers. After examining them carefully, however, I think that they more properly belong with this species. I have found the species to be occasional along the bed of the railroad spur track to the college. It was in fruit in September. This may be the same colony noted by Wheeler still persisting here. I have not seen it elsewhere in the area, though I see no reason to suppose that it may not be here.

Euphorbia maculata L. Nodding Spurge.
Euphorbia Preslii (Guss.) Arth.
Euphorbia nutans Lag.
Chamaesyce Lansingii Millsp.
Contr. Gray Herb. 127: 74. 1939.

Specimens examined: A, Lansing, Aug./1888; Sk, bank of Red Cedar River near Ag. Coll., 10/11/94.

I have noted this species as occasional along the roadbed of the Grand Trunk Railroad south of the college, 8/14/40, and as frequent along the college spur track, 9/16/40. I have also noted it as frequent along the roadbed of the railroad which runs near the Lansing City Water and Light property, northwest of the city, 10/5/41. It apparently has a preference for dry places, and is most often found along railroads.

Euphorbia vermiculata Raf.
Euphorbia hirsuta (Torr.) Wieg.
Euphorbia Rafinesquii Greene
Chamaesyce Rafinesquii (Greene) Small

Specimen examined: Wh, along C. & G. T. R.R., 7/14/94.

There is some doubt about the proper identification of the specimen noted above. It was collected in too young a stage to be certain of its identification. However, I am referring it here, as it seems to be closer to this than to any other species. Wheeler identified it as Euphorbia humistrata Engelm., which I feel is incorrect. I have not seen the species in our area. It should be sought in dry and often sandy places, often occurring along railroads.

Euphorbia supina Raf.
Euphorbia maculata of authors
Chamaesyce maculata (L.) Small
Contr. Gray Herb. 127: 76. 1939.

Specimens examined: A, Lansing, 7/7/87; Sk, lawn of Ag. Coll., 9/2/94.

This species is quite common in the lawns of this region. I noted it in fruit in the lawns of the campus, 8/23/40. It probably also occurs in other open places which are more or less dry, throughout the area.

Euphorbia corollata L. Flowering Spurge.
Tithymalopsis corollata (L.) Kl. & Garcke

Specimens examined: Cl, M.A.C., 6/29/95; Sk, roadside north of Ag. Coll., 8/8/94.

This species is frequent along our roadsides and railroads throughout the area. It usually prefers the drier habitats. I have noted it as frequent along the Grand Trunk Railroad tracks east of the college, 6/26/40, and as very common along the roadsides in Bath and Victor Townships, 7/16/40. It is less frequent in the southern part of the area.

*Euphorbia Esula L. Leafy Spurge.
Euphorbia virgata Wald. & Kit.
Tithymalus Esula (L.) Hill

Specimens examined: N, Ag. Coll., no date; A, road north of grounds

near Parmalee Place, Lansing, 5/18/86.

I have seen this species once in a fairly dense colony in a dry place along the Park Lake roadside, about a mile south of its junction with Lake Lansing Road. It seems to be well established there.

*Euphorbia Cyparissias L.
Tithymalus Cyparissias (L.) Hill

Specimens examined: A, on lawn, Lansing, 6/8/87, and 5/17/87; R, college campus, 5/29/94.

I have seen this species only once in this area. I found one rather dense colony growing on a roadside cut north of Park Lake. The soil was a sandy gravel, well drained. The plants were in full flower, 6/22/40.

LIMNANTHACEAE Lindl. False Mermaid Family.

FLOERKEA Willd. False Mermaid.

Floerkea prosperpinacoides Willd.

Specimen examined: A, Lansing, 5/12/87.

I have not seen this species here. Beal reports it as here in 1904, saying that it is not rare, but is often overlooked. It should be sought in shaded, wet places along our streams and in our marshes. It flowers from April to June.

BALSAMINACEAE Lindl. Touch-me-not Family.

IMPATIENS (Rivin.) L.

Impatiens biflora Walt. Spotted Touch-me-not.

Specimens examined: A, bank of brook, college farm, Aug., 1863; A, Lansing, 1871; Sk, woods near river, Ag. Coll., 7/15/94.

This species is more or less common in moist regions throughout this area. I have noted it both in open places and in more or less open woods, flowering in July and August. It is especially common in a swampy area near the west end of Woodlot 17.

Impatiens pallida Nutt. Pale Touch-me-not.

Specimen examined: none in herbarium.

This species is much less frequent than the preceeding. It usually grows in much the same kind of habitat. It was frequent at Grand Ledge in more or less open situations, 8/20/40, and was frequent along the banks of the Red Cedar River just west of the Sewage Disposal Plant, 8/23/40. I have not seen it elsewhere, but am of the opinion that it probably can be found along the banks of some of our other streams.

MALVACEAE Neck. Mallow Family.

MALVA (Tourn.) L. Mallow.

*Malva neglecta Wallr.
Malva rotundifolia of authors, not L.
Rhodora 39: 98-99. 1937.
Specimens examined: R, college campus, 5/29/94; Sl, Lansing, W. D. place, 7/15/66; Sk, college lawn, 5/25/94; A, Lansing, 1871.
This species is common throughout in lawns, waste places and similar habitats. I have noted it in flower as early as 5/8/41, and it flowers throughout the summer.

*Malva moschata L. Musk Mallow.
Specimen examined: A, Lansing, 1871.
I have noted this species as occasional along a dry roadside in the southwestern part of Victor Township, near the Bath Township line. I have not noted it anywhere else in the area. It apparently prefers dry, open situations. It was in flower, 7/2/40.

*Malva Alcea L. European Mallow.
Specimens examined: A, Lansing, 7/7/87; Sk, roadside east of Ag. Coll., 7/8/94.
This is another species which is included in this list with a good deal of hesitation. It was once much cultivated in flower gardens and may have escaped. I doubt that it has become well enough established to be considered a part of our flora. I have not seen it here. Beal lists it as here in 1904 with the comment, "Adventive at the Agricultural College".

HIBISCUS L. Rose Mallow.

Hibiscus Moscheutos L. Common Rose Mallow.
Specimen examined: A, Lansing, 8/22/87.
I have not seen this species in this area. It should be sought along the borders of our streams, around the edges of our lakes, and perhaps in some of our roadside ditches. It usually likes a soil with a fairly high organic content. It is a plant which likes a good deal of moisture. The flowering period is from July to September. Beal does not list it as here in 1904.

HYPERICACEAE Lindl. St. John's-wort Family.

HYPERICUM (Tourn.) L. St. John's-wort.

*Hypericum perforatum L. Common St. John's-wort.
Specimens examined: Cl, M.A.C., 6/30/95; Sk, roadside east of Ag. Coll., 6/30/94.
This species is frequent to occasional along most of our roadsides

in this area. I have noted it as most frequent along the roadsides southwest of the city of Lansing. It is frequent along the Grand Trunk Railroad east of the college, and along the Pere Marquette Railroad just south of Woodlot 17. I first noted it in flower, 6/26/40, and it was still in bloom a month later. It prefers a more or less dry soil and open situations.

Hypericum punctatum Lam. Spotted St. John's-wort.
Specimens examined: A, Lansing, 1868; A, near railroad, Ag. Coll., 7/15/87.
I have noted this species as occasional in the ditches along the roadsides south of the college, 9/2/40. It is a plant which apparently prefers moister situations than the preceeding, though I have not seen it frequently enough to be certain whether or not this is a feature that is always likely to hold true. Gray's Manual, however, notes that its habitat is damp places, which seems to bear out my observations.

Hypericum majus (Gray) Britt.
Specimen examined: Sk, roadside north of Ag. Coll., 9/2/94.
This species, if present here at all, is undoubtedly infrequent. Beal lists it as here in 1904. It prefers open places, and the authorities differ on its moisture requirements, some saying that it grows in both wet and dry soil, and others maintaining that it prefers the moister places. It usually flowers during July and August. I have not seen it here, so cannot say from observation.

Hypericum canadense L. Canada St. John's-wort.
Specimens examined: Wh, Ag. Coll., 8/19/91; Wh & H, Lansing, 8/27/90.
I have not seen this species in the area. It is almost undoubtedly rare here, if present at all. Though Beal lists it as here in 1904, he says that it is infrequent. Deam calls it very rare in Indiana. It should be sought in about the same situations as the preceeding, with which it is often confused. It flowers from July to September.

Hypericum mutilum L. Dwarf St. John's-wort.
Specimen examined: A, Lansing, 1887.
Though I have not found this species in this area, I think that it probably occurs here. It should be sought along the banks of streams and ponds, in roadside ditches, and in other open and moist situations. It flowers in July and August. Beal lists it as common here in 1904.

Hypericum virginicum L. Marsh St. John's-wort.
Specimens examined: A, Lansing, 1868; Sk, near Pine Lake, 8/26/94.
I have noted this species as quite common around the edges of Lake Lansing, 8/20/40. This is a typical habitat for the plant, as it prefers wet, open situations.

CISTACEAE Lindl. Rockrose Family.

HELIANTHEMUM (Tourn.) Mill. Rockrose.

Helianthemum canadense (L.) Michx. Frost Weed.
Crocanthemum canadense (L.) Britt.

Specimens examined: Wh & H, Ag. Coll., 1894; A, north of Pine Lake, 7/3/88; A, Pine Lake, 1897; Wh, light soil near Park Lake, 7/6/00.

I have not seen this species here, though the reports noted above would suggest that it used to be found here quite frequently. Beal also lists it as frequent in 1904. It prefers a dry, sandy soil, sometimes occurring in the open, but more frequently found in open, oak woods.

LECHEA (Kalm.) L. Pinweed.

Lechea villosa Ell. Large Pinweed. Hairy Pinweed.

Specimen examined: A, Lansing, 1887.

I have found this species in this area but once. However, it was very common there. It was growing in a dry, very sandy field just east of the Rose Lake Sanctuary. When I noted it in the middle of September, it was in fruit. I suspect that it may occur in similar habitats in other parts of the area.

VIOLACEAE DC. Violet Family.

HYBANTHUS Jacq. Green Violet.

Hybanthus concolor (Forst.) Spreng. Green Violet.

Specimens examined: A, Lansing, 1883; A, Lansing, 1872; Wh & H, bank of Red Cedar River, 6/6/87.

I have seen this species only once in this area. It was growing in the River Woodlot, 5/14/41, near the west end of the woods. At that time there were a number of plants in the colony. The inconspicuous flowers make this plant one that may easily escape the notice of those who pass by. However, I rather doubt that it grows elsewhere in our area. It is a plant preferring fairly moist soil in a beech-maple type of woodland.

VIOLA (Tourn.) L. Violet. Heart's-ease.

Viola pedata L. Bird-foot Violet.
Viola pedata var. concolor Holm.

Specimen examined: none in herbarium.

This species prefers more or less open woods, and usually somewhat dry situations. I have noted it as frequent in an open oak woods southeast of Park Lake, growing on the slopes of low hills there. It

was in flower 5/3/41. It is possible that these plants might be considered to be the variety linearilobа DC. They have some of the characters of the species and some of the variety. It would seem to me that the varietal distinction is not too valid, and I am including both the variety and the species here. It has been my observation, both here and elsewhere, that this species usually grows in fairly well-drained soil, as on slopes, in more or less open woods.

Viola palmata L. Palmate Violet.

Specimens examined: Sk, woods north of Ag. Coll., 4/29/94; Wh, woods north of hospital, infrequent, 6/8/99.

My examination does not lead me to believe that either of the two notations above should be referred to this species. However, Wheeler's specimen was checked by Miss Bertha Thompson in her work on the violets of Michigan and she referred it here. The plant has no flowers, and in view of the variability of leaf shape in our violets, I would certainly hesitate to include this as Viola palmata simply on the basis of the leaves. Skeels' specimen can be readily referred to another species as he has called it var. cucullata. I am of the opinion that it is more probably Viola papilionacea Pursh. I have not seen Viola palmata L. here in this area, though Beal lists it as here in 1904. It should be sought in the woodlands during the early spring.

Viola papilionacea Pursh Butterfly Violet.

Specimens examined: Wh, low ground north of college in woods, 5/14/99; Wh, low, rich woods near college, 6/8/99; T, Hog's Back near M.A.C., July, 1919.

Again I cannot be sure of Miss Thompson's specimen, for it has no flowers. However, I am including it here since she was an authority on the violets of this region. I have noted this species as occasional to frequent in moist places in woodlands and along roadsides throughout the area. In some localities it is the commonest of our blue violets. I first noted it in flower, 4/19/41 at Grand Ledge in the ravine there. I have also noted quite dense colonies of it along the roadsides northeast of Park Lake, 5/3/41.

Viola sororia Willd. Common Blue Violet.

Specimens examined: A, Lansing, 1872; fide Bs; Wh, side-hill on clay near M.A.C., 5/14/99; Wh, wet woods near college, 5/14/99, fide Bs; Wh, low woods northeast of Terrace, 5/14/99, fide Bs; T, Palm Woods at M.A.C., 4/8/19; T, Angel's Woods north of M.A.C., 4/12/19; Wh, woods north of college, 4/8/00; Wh, north of college, August, 1890, fide Bs; Wh, under Scotch Pine north of Library, 5/23/02; Cl, M.A.C., river bank, 4/2/95, fide Bs.

This is another of our commonest blue violets, though I think it is not so common as some people would have it, for I believe that many mistake several of our other blue violets for it. It grows in nearly all kinds of habitats. I have found it in fields, in woods, along roadsides and along river banks. It is fairly common along the Red Cedar River, particularly in the vicinity of the Kalamazoo Street Woodlot. I have seen it in blossom from early April to late in May, both in 1940 and 1941. It very much resembles Viola papilionacea Pursh, and some

prefer to call the latter a glabrous form or variety of it.

Viola subsagittata Greene Arrow-leaf Violet.

Specimen examined: Wh, along M. C. R.R. north of Chandler's Marsh, 6/7/01.

According to Miss Thompson, Ezra Brainerd, the great violet expert, has examined this specimen and referred it here. I have not seen this species in the area. I am not familiar with the species and can find no reference to it in the manuals. Therefore, I am unprepared to say what its habitat may be.

Viola pallens (Banks) Brainerd Sweet White Violet.

Specimens examined: A, Towar's Swamp, 5/20/86; K, near M.A.C., 1895; Sk, swamp south of Ag. Coll., 4/29/94.

The last two specimens noted above were labeled Viola blanda Willd. by their collectors, but careful examination has shown that they should more properly be referred here. I have not seen this species in this area, though I do not doubt its existence here. It should be sought in tamarack swamps and in other very wet areas. It usually blossoms quite early in the spring.

Viola blanda Willd. Sweet White Violet.

Specimen examined: Wh, woods northeast of college, 5/14/93.

I have not seen this species in this area, though the plant which I have referred to the next species shows some of the characteristics usually shown by this violet. Several specimens in the herbarium have been labeled as this species, but all except this one seem to me to be referable to other groups. This violet should also be sought in swamps. It also blossoms quite early.

Viola incognita Brainerd var. Forbesii Brainerd Sweet White Violet.

Specimens examined: T, woodland along the road near Towar's Swamp, 5/9/19; A, Lansing, 1872.

This species has been seen once, in a very swampy and somewhat shaded location in the Rose Lake Sanctuary. It was in blossom there, 5/3/41. Like the other white violets, it likes wet and more or less shaded situations.

Viola eriocarpa Schwein. Smooth Yellow Violet.
Viola scabriuscula Schwein.

Specimens examined: Wh, woods northeast of Terrace, 6/9/00; Cl, north of Terrace, woods, M.A.C., 6/2/95; Wh, woods south of Grand Trunk Railroad, 5/20/98; Wh, near M.A.C., 6/9/00; T, Ingham Co., 1919.

This and the next species are very difficult to tell apart. The common name of this violet is quite misleading for it quite often is fully as hairy as the next species. I am of the opinion that this species is by far the more common of the two in this area. It is usually found in moist, and often rich, woods. I have noted it in nearly all of the woodlands of the area as frequent to common wherever there was plenty of shade and moisture. It is in blossom, according to my notes, from mid-April to late in May.

Viola pubescens Ait. Downy Yellow Violet.

Specimens examined: A, Lansing, 1865; K, woods near M.A.C., 1895; Wh, woods north of Terrace, 6/15/00; Wh, east of #7, 5/23/93; Sk, Dr. Beal's Woods, 4/29/94; Wh, near college, 1898.

There is some doubt about the identification of the last two specimens. However I think that they are probably more readily referable to this than to the preceeding species. I have noted the species as occasional in woods of the area, occurring in much the same habitat as the preceeding, but far less frequent. The only place that I have observed it as at all frequent was in a woodland along the Grand River southeast of Dimondale, 5/10/41, and even there it was not nearly so common as Viola eriocarpa.

Viola canadensis L. Canada Violet.

Specimens examined: Bl, M.A.C., May, 1905; Cl, M.A.C., east of #7, 6/5/95; Sk, woods north of Ag. Coll., 4/29/94.

This is probably our most common violet in beech and maple woods. Though it is not the first violet to blossom in the spring, I have noted it as early as 5/5/41, and 5/7/40. It continues blooming after most of our other flowers have gone in the autumn. I noted it in the autumn of 1940 blossoming late in November after our first heavy snowfall. It likes a fairly good supply of moisture and quite a bit of shade. It also prefers a rather rich soil. I have rarely seen it outside a beech-maple woods.

*Viola arvensis Murr. Field Pansy.

Specimen examined: Wh, near Experiment Station barn, 7/9/02.

I have not seen this species, nor have I heard of its presence in the area within the past decade, and Beal does not list it as occurring here in 1904. If here, it is likely to be found in old fields that are quite open and fairly dry.

Viola striata Ait. Striped Violet. Cream Violet.

Specimens examined: Sk, woods north of college, 4/4/94; K, near M.A.C., 1895; A, Lansing, 1865.

This species is more or less frequent along our streams and in other more or less moist places throughout. I have never noted it as common in any locality, though it is usually frequent in those places where it grows. I have found it both in the woods and in the open. However, it is more frequently found in the former habitat. I have noted it along the flood plain of Sycamore Creek near the gravel pits, 4/28/41, and in the woods along the Red Cedar River near Lansing, 5/23/40. In both places it was frequent.

Viola conspersa Reichenb. Dog Violet.

Specimens examined: Sk, woods north of college, 4/14/94; Wh, north of M.A.C., 4/8/00, fide Bs; T, woodland near Towar's Swamp, 4/9/19; Cl, northeast of Terrace, woods, M.A.C., 5/5/95, fide Bs; AND, north of college farm, no date, fide Bs.

This species is frequent in our wet woodlands throughout the area. I have noted it as frequent in a swampy locality about a mile southeast of Park Lake, 5/3/41, and as common in the Rose Lake Sanctuary

in very wet, rich soil, 5/3/41.

Viola rostrata Pursh Long-spurred Violet.
Specimens examined: Bl, woods near M.A.C., 5/20/05; Bl, clay land, 5/1/05; Sl, Lansing, 5/6/67; Sk, woods near river, 4/29/94; K, woods near M.A.C., 1895.
This species is occasional to frequent in our moist woodlands. I have rarely seen it outside wooded places. It was frequent at Grand Ledge, 5/14/40, and at Lake Lansing in the woods there, 5/25/40. It also occurs occasionally in both the River Woodlot and Woodlot 17.

LYTHRACEAE Lindl. Loosestrife Family.

LYTHRUM L. Loosestrife.

Lythrum alatum Pursh Winged Lythrum.
Specimen examined: Sk, along C. & G. T. R.R., on college farm, 7/7/94.
I have found this species only along the Grand Trunk Railroad. It grows there in open and more or less wet situations. It was noted in flower along the railroad about two miles east of the college, 6/26/40, and in a swamp almost directly south of the college, but along the same railroad, 8/15/40. In both cases it was noted as only occasional. Beal does not list it as here in 1904.

Lathyrum Salicaria L. Purple Loosestrife.
Specimen examined: A, cultivated, M.A.C., 6/15/87.
This species is apparently a rather new introduction into this area. However, it is very common along the shores of Lake Lansing, where I saw it in flower, 8/20/40. It seems to be spreading rapidly from the looks of the places where it is now growing there. Beal does not list it as here in 1904, though it must be noted that it was cultivated here at the college as early as 1887. It prefers very wet, open places and may occur around the borders of some of our other lakes, though I have not seen it elsewhere in the area.

DECODON J. F. Gmel. Swamp Loosestrife.

Decodon verticillatus (L.) Ell. Water Willow.
Specimen examined: A, Lansing, 1868.
I have seen this species only once, though it may occur somewhat more frequently in this area. It was growing in the water near the edge of Bear Lake. At the times that I visited this locality, it was not in flower, but I am certain of its identification, and Dr. Darlington has checked my identification. I have included the recently named variety laevigatus T. & G. in this discussion because I do not know whether the plants at Bear Lake belong to the species or to the variety. I was not aware of the existence of the variety at the time that I collected the specimens, and since they were not in flower, I did not preserve them. The herbarium specimen is the variety.

ONAGRACEAE Dumort. Evening Primrose Family.

LUDWIGIA L. False Loosestrife.

Ludwigia palustris (l.) Ell. var. americana (DC.) Fern. Water Purslane.

Ludwigia palustris in part, of Gray, Man., ed. 7.

Isnardia palustris in part, of Britton and Brown, Illus. Flora, ed. 2.

Rhodora 37: 176-177. 1935.

Specimen examined: A, Lansing, no date.

I have not seen this species here, but Dr. Darlington informs me that it is probably in this area. It should be sought along the muddy borders of our streams, lakes and ponds.

EPILOBIUM L. Willow-herb.

Epilobium angustifolium L. Fire Weed. Great Willow-herb.

Chamaenerion angustifolium (L.) Scop.

Epilobium spicatum Lam.

Specimens examined: Cl, M.A.C., G. T. R.R., 6/18/95; Sh & Sk, Towar's Swamp, 8/7/95; Sl, Lansing, 7/12/67.

This species is frequent to common in recently cleared or burned places in this region. I have noted it as quite common also along the Grand Trunk Railroad east of the college in open situations where it was more or less moist, 6/26/40. It was very common on a piece of land that had recently been burned over, located northwest of the Capitol City Airport, 7/20/40. The land there was fairly moist.

Epilobium densum Raf.

Epilobium lineare Muhl.

Specimens examined: Wh, swamp north of college, 9/20/94; Wh, Towar's Swamp, 9/12/91; Wh, swamp near college, 9/20/94.

Wheeler's last specimen noted above was identified as Epilobium palustre L., but examination has shown that it is referable here. I have not seen the species in this area. Beal lists it as here in 1904, but adds that it is rare in the southern part of the state and infrequent in the central part. It should be sought in bogs and marshes which are more or less open.

Epilobium glandulosum Lehm. var. adenocaulon (Haussk.) Fern.

Epilobium adenocaulon Haussk.

Rhodora 20: 34. 1918.

Specimen examined: Cl, M.A.C., 6/30/95.

I have seen this species but twice in this area, once in the Kalamazoo Street Woodlot, 8/23/40, and the other time in Woodlot 17, 8/17/40. In both cases the plants were growing in very moist places. The species is infrequent to occasional. Beal does not list it as here in 1904.

OENOTHERA L. Evening Primrose.

Oenothera biennis L. Common Evening Primrose.

Specimen examined: Sk, bank of Red Cedar River, Ag. Coll., 7/22/94.

I am treating this species as it was treated in the older manuals. Work done in the past few decades has shown that this can no longer be regarded as a single species, but is probably composed of numerous separable and distinct species. However, the group is still in a somewat unsettled state, and I have decided not to attempt the newer classification of the group. Apparently there are many hybrids which make the complex much more difficult. Their proper identification cannot be attempted in a work of this kind where time is so limited and the work is more general. As so considered, I have noted this species as frequent to common in fields throughout this area. I have noted it in both dry and moist situations, its only requirement seemingly being plenty of light. I first noted it in flower along the roadsides in the northern part of Bath Township, 7/16/40.

CIRCAEA (Tourn.) L. Enchanter's Nightshade.

Circaea quadrisulcata (Maxim.) Franch. & Sav. var. canadensis (L.) Hara
Circaea latifolia Hill
Circaea lutetiana of authors, not L.
Rhodora 17: 222. 1915.
Rhodora 19: 87. 1917.
Rhodora 41: 386-387. 1939.

Specimens examined: Sk, woods north of college, Ag. Coll., 7/9/94; A, Lansing, 1871; Cl, Grand Ledge, 7/4/95.

I have noted this species as frequent to common in most of our moist woodlands. It was very common in Woodlot 17, flowering, 7/12/40. It was also quite frequent along the Looking Glass River southeast of Round Lake, 7/16/40. It prefers a moderately rich soil, more or less moisture, and a beech-maple type of woodland.

Circaea alpina L.

Specimens examined: A, Lansing, no date; Cl, Grand Ledge, 7/4/95; Sk, woods near river, Ag. Coll., 7/15/94.

I am not familiar with this plant from this region. However, I have seen it quite frequently in other places, and its habitat there leads me to believe that it is very infrequent here, if present at all, for there are very few such habitats here now. As I have seen it growing, this plant prefers very deep, cold woods. It frequently grows in moss on old logs and on rocks. Similar habitats seem to be almost completely lacking in this area, and I strongly suspect that this plant is infrequent here, or possibly no longer present at all. Beal lists it as here in 1904.

ARALIACEAE Vent. Ginseng Family.

ARALIA (Tourn.) L.

Aralia nudicaulis L. Wild Sarsaparilla.

Specimens examined: A, Lansing, 1865; Sk, woods near river, Ag. Coll., 5/21/94; Sh & Sk, woods, Ag. Coll., 7/31/96; Cl, northeast of Terrace, woods, 5/26/95.

I have noted this species but once in our area although I suspect that it is not especially infrequent here. It was noted in flower, 5/19/41, in a more or less moist thicket near the Pere Marquette Railroad just west of Trowbridge. I believe, however, from previous experience with the species, that its preferred habitat is in moist beech-maple woodlands.

Aralia hispida Vent. Bristly Sarsaparilla. Wild Elder.

Specimen examined: Wh & P, Ag. Coll., 7/7/87.

I have not seen this species in this area, nor have I heard any reports of its occurrence here. Beal reports it here in 1904 in a peat bog near the college. It usually is found in more or less sandy soil, which makes this report sound a little odd as regards habitat note. It flowers in June and July.

Aralia racemosa L. American Spikenard.

Specimen examined: A, Lansing, 1865.

I have seen this species but once in this area. It was growing beside the path along the slope at Grand Ledge in rather moist, somewhat shaded places. It was in fruit 8/30/40. I believe that it is now infrequent to rare in this area, possibly due to the fact that it was once much used for medicine. Beal reports it as frequent in 1904.

PANAX L. Ginseng.

Panax quinquefolium L. American Ginseng.

Specimens examined: Sk, college woods, 7/22/94; Sk, woods south of college, 6/26/95; A, Lansing, 5/19/87.

I have not seen this species in this area, and if it is present, I am sure that it is very rare. It is a plant which brings a large price in medicine and has been practically exterminated by collectors. Beal lists it as here in 1904, but serves notice of its decreasing abundance, even at that early date, when he says, "formerly in great abundance". If present it will probably be found in more or less deep, rich woods.

Panax trifolium L. Dwarf Ginseng. Ground Nut.

Specimens examined: Sk, woods north of college, 4/29/94; A, Lansing, 1865.

This species is occasional to frequent in many of our rich woodlands. It particularly favors the beech-maple type of woods, and likes the moister places in such woodlands. I have noted it as more or less frequent in the Kalamazoo Street Woods, 5/16/40, and as occasional in the River Woodlot, 5/1/41. In the latter instance it was in bud.

UMBELLIFERAE B. Juss. Parsley Family. Carrot Family.

HYDROCOTYLE (Tourn.) L. Water Pennywort.

Hydrocotyle umbellata L.
Specimen examined: A, Lansing, 8/20/87.
I have not seen this species in this area. However, I suspect from reports that it is not infrequent here in sandy places along some of our streams or beside our ponds and lakes.

SANICULA L. Sanicle. Black Snakeroot.

Sanicula marilandica L. Black Snakeroot.
Specimens examined: Sk, woods north of Ag. Coll., 6/3/94; Cl, M.A.C., north, 6/19/95; A, Lansing, 1871; A, Lansing, 6/3/87; Wh, woods #17, 6/9/98; Wh, college woods, M.A.C., 1901; Sk, bank of Red Cedar River, Ag. Coll., 6/3/95.
The last two specimens noted above were labeled as Sanicula canadensis L., but I have examined them and think that they should be more properly referred here. This species is quite frequent in the woodlands of our area. Beal and Deam seem to agree that the plant is usually found in oak woods, but it has been my experience that it is just as frequent in the beech-maple type. I have noted it as frequent to common in both the Kalamazoo Street and the River Woodlots, 6/26/40. I have seen it as occasional along moist roadsides in thickets south of the Looking Glass River in Victor Township, 7/13/40.

Sanicula trifoliata Bickn.
Specimen examined: Wh, woods, M.A.C., August, 1901.
This species seems to grow in much the same sorts of habitats as the preceeding. It usually occurs with about the same frequency as does the black snakeroot. I noted it in flower in the River Woodlot, 6/26/40. Beal does not mention it as here in 1904.

CHAEROPHYLLUM (Tourn.) L.

Chaerophyllum procumbens (L.) Crantz Chervil.
Specimens examined: Sk, bank of Red Cedar River, Ag. Coll., 5/21/95; Sk, woods south of race track, Lansing, 5/6/94; A, Lansing, 1865.
I have not seen this species here, though Beal notes it as here in 1904 and says that it is frequent in the Grand River Valley. It should be sought along the flood plains of our rivers, for it seemingly prefers those situations.

OSMORHIZA Raf. Sweet Cicely.

Osmorhiza Claytoni (Michx.) Clarke
Washingtonia Claytoni (Michx.) Britt.
Specimen examined: Sk, woods north of Ag. Coll., 6/17/94.

This species is more or less frequent in our woodlands, usually where it is moist, but not always so. I have noted it in both the Kalamazoo Street and River Woodlots as fairly frequent, 6/25/40.

Osmorhiza longistylis (Torr.) DC.
Washingtonia longistylis (Torr.) Britt.

Specimens examined: Sk, woods near river, Ag. Coll., 6/3/94; A, Lansing, 1865.

I have not seen this species here, though Dr. Darlington tells me that it is here in more or less the same kinds of habitats as the preceeding.

ERIGENIA Nutt. Harbinger-of-Spring.

Erigenia bulbosa (Michx.) Nutt.

Specimens examined: K, no location, no date; Sk, woods north of Ag. Coll., 4/22/94; Sl, Lansing, 4/10/67; A, Lansing, 1872.

This plant is one of the very first to flower in the spring, and well deserves its common name. It is usually about through flowering by the time that most of our spring flowers begin to appear. It is quite frequent in most of our woodlands, but is so small that it is frequently overlooked. I have never seen it outside of the woods, but it seems able to grow in both moist and dry situations. It appears to be most frequent in this area along the flood plains of our rivers. I have noted it as in flower in the Kalamazoo Street Woodlot, 4/20/40, and 4/12/41. I noted it still in flower, 4/28/41, along the Sycamore Creek flood plain, but this is a little later than one usually finds it in blossom.

CONIUM L. Poison Hemlock.

*Conium maculatum L. Poison Hemlock.

Specimen examined: none in herbarium.

I have noted this species as occasional to frequent along the drain from Mud Lake, 6/26/40. I think that it probably occurs in similar places throughout most of the area, though I have no notes of its occurrence elsewhere. Beal lists it as here in 1904, though he comments that it is infrequent in the central part of the state. I think that the lack of any specimens from the area in the herbarium is no real indication of the rarity of this species, for I believe that it must have been collected here several times in the past several decades.

ZIZIA Koch

Zizia aurea (L.) Koch Golden Alexanders.

Specimen examined: none in herbarium.

This species is frequent to occasional along our roadsides, in fields and along railroads throughout the area. I have noted it along

the roadsides, Park Lake Road, 6/20/40. It occurs occasionally along the Grand Trunk Railroad east of the college, 6/26/40.

AEGOPODIUM L. Goutweed.

*Aegopodium Podagraria L.

Specimen examined: A, Lansing, 6/15/87, fide Ro.

I have not seen this species here, and if present, it is undoubtedly only occasional. It is an introduced plant, rarely found this far west. It usual habitat is in waste places. Beal does not list the genus as being here in 1904.

CICUTA L. Water Hemlock.

Cicuta bulbifera L.

Specimen examined: A, Lansing, 8/20/87.

I have noted this species but once in this area. It was occasional to infrequent in very wet soil along the shores of Lake Lansing, 8/20/40. It likes a good deal of moisture, and this is a good habitat for it. It should be sought around the edges of some of our other lakes and ponds. Seemingly it prefers wetter places than does the next.

Cicuta maculata L. Spotted Cowbane. Musquash Root. Water Hemlock.

Specimen examined: none in herbarium.

This species is considerably more frequent than the preceeding. It was noted as common in the roadside ditches in Victor Township south of Round Lake, 7/16/40. It was also noted as frequent on low, moist but not wet, ground on the west side of Park Lake, 8/24/40. Beal notes it as common here in 1904. Seemingly it prefers moist, open habitats.

CRYPTOTAENIA DC. Honewort.

Cryptotaenia canadensis (L.) DC.
Deringa canadensis (L.) Ktze.

Specimen examined: Sk, bank of Red Cedar River, Ag. Coll., 6/3/94.

I have noted this species as frequent in moist to wet places in the Kalamazoo Street Woodlot, 6/17/40, and in similar situations in the River Woodlot, 8/23/40, in fruit. I expect that it could be found in similar places throughout the area, though I have not happened to note it elsewhere.

TAENIDIA Drude

Taenidia integerrima (L.) Drude

Specimens examined: Sk, bank of Red Cedar River, Ag. Coll., 6/3/94; Sh & Sk, woods north of college, 8/7/95; N, Ag. Coll., no date; A, Lansing, 5/17/87; A, Lansing, 1865.

This species is more or less frequent on the bluffs of our rivers, and along the banks of some of our roadsides. It was noted as in flower, and fairly frequent, on the bluff of the river behind Sarah Williams Hall, during the last week in May, 1940. I have also noted it as more or less frequent on the banks of roadsides in the Park Lake region, fruiting there in June. It seems to prefer more or less open places, though it can apparently stand some shade.

SIUM (Tourn.) L. Water Parsnip.

Sium suave Walt. Water Parsnip.
Sium cicutaefolium Schrank
Rhodora 17: 131. 1915.

Specimen examined: none in herbarium.

I have noted this species as frequent in a boggy, very wet locality in the east end of the Kalamazoo Street Woodlot, 8/23/40. Beal lists it as here in 1904. It may be more frequent in the area than I have suggested, but if so, I have not seen the other stations for it.

ANGELICA L. Angelica.

Angelica villosa (Walt.) BSP. Hairy Angelica.

Specimens examined: Sk, roadside north of Ag. Coll., 8/8/94; A, near college, 8/26/92; A, Lansing, 1865; A, Lansing, 8/27/87.

I have not seen this species here and I think it is very probably infrequent if present. Beal does not list it as here in 1904. It should be sought in more or less dry woods and on banks.

Angelica atropurpurea L. Purple Stem Angelica.

Specimens examined: Sk, bank of Red Cedar River, Ag. Coll., 6/16/94; Cl, Grand Ledge, 7/4/95; A, Lansing, 6/15/87.

This species is quite common throughout the area in wet ditches and thickets along our roadsides. It is particularly common along some of the roadsides in Bath and Victor Townships south of Round Lake. I have also seen it quite frequently along roadsides near the Looking Glass River at the west end of our range.

PASTINACA L. Parsnip.

*Pastinaca sativa L. Parsnip.

Specimens examined: A, escaped from cultivation, Lansing, 1887; A, Lansing, 1871.

I have not seen this species in the area, though I suspect that it may be present as an escape in some localities. Deam has recently reported it as a weed in many parts of Indiana. Beal notes it as here in 1904, though he says that it is infrequent in the state at that time.

HERACLEUM L. Cow Parsnip.

Heracleum lanatum Michx.
Specimens examined: Sk, woods north of Ag. Coll., 7/9/94; A, Lansing, 1865; A, Lansing, 6/16/87.
I have not seen this species in our area. Beal lists it as here in 1904. It should be sought in low, wet ground along roadsides and more especially along our streams and ponds.

DAUCUS (Tourn.) L. Carrot.

*Daucus Carota L. Wild Carrot.
Specimen examined: Sk, Okemos, 7/4/94.
This species was not listed by Beal as being here in 1904. Yet at the present time it is one of the commonest weeds in waste places. It is found throughout the area. There is a vacant lot two blocks east of Bogue Street in East Lansing which is nearly completely covered with these plants. As a rule, this species prefers open and more or less dry places.

ERICACEAE DC. Heath Family.

CHIMAPHILA Pursh Pipsissewa.

Chimaphila umbellata (L.) Bart. var. cisatlantica Blake
Chimaphila umbellata (L.) Nutt. of manuals in part.
Specimen examined: A, Lansing, 1875.
I have not seen this species in this area, and think it not more than occasional here if present at all. Beal reports it here in 1904, and says that it is common in the state in pine woods. Deam says that its habitat is oak woods, and Gray's Manual simply says that it is usually found in dry woods. Since we have almost no pine woods left, it should be sought here in more or less dry, oak woods.

PYROLA (Tourn.) L. Wintergreen.

Pyrola elliptica Nutt. Shin Leaf.
Specimens examined: Sl, Lansing, 7/7/67; A, Lansing, 1872; Sk, Pine Lake, 7/4/94.
I have not seen this species here, though I think that it may occur here. I have made it a practice to report only those species which I have seen in flower, so that I may be absolutely sure of their proper identification. I have seen none of the members of this genus in flower, and so cannot say, definitely, which species, if any, occur here. Beal reports it as common in the state in 1904, and lists it as present in this area. It is usually found in woods, often at the base of a slope near a swamp, and should be sought in those habitats.

Pyrola chlorantha Swartz

Specimen examined: A, Lansing, 1872.

I have not seen this species here, and doubt that it is here now. If present, it is probably quite rare. Beal does not report it here in 1904, though he does mention that it was once found near Alma. This species seems to prefer open woods and should be sought in such habitats, flowering in June and July.

Pyrola rotundifolia L. var. americana (Sweet) Fern.
Pyrola americana Sweet

Specimen examined: A, Lansing, 1872.

I have not seen this species here. I doubt that it is very frequent, if present at all. The genus has received some revision since Beal published his list in 1904, so I cannot say whether the plant was here at that time. It likes fairly moist soil in sandy woods.

Pyrola asarifolia Michx. var. incarnata (Fisch.) Fern.

Specimens examined: Sk, tamarack swamp east of Ag. Coll., 7/4/94; Sk, swamp near Okemos, 6/94; Sk, swamp east of Ag. Coll., 5/21/95; Cl, swamp, G. T. R.R., M.A.C., 6/18/95; A, G. T. R.R., M.A.C., 6/18/95.

All but the last of these specimens were labeled Pyrola rotundifolia var. incarnata, but I am referring them here. The last was labeled simply as Pyrola rotundifolia. I am of the opinion that it should be referred to this species. I have not seen this plant in this area. The swamp referred to by Skeels is no longer present, though one can still see where it once was. Since it is near the Grand Trunk Railroad tracks, I expect that the other notations were also from that swamp. If the species is to be found here today, it should be sought in the bogs of the area.

MONOTROPA L. Indian Pipe. Pine Sap.

Monotropa uniflora L. Indian Pipe. Corpse Plant.

Specimens examined: Sl, Lansing, 8/8/67; A, Lansing, 1871; Cl, Towar's Swamp, 7/18/95; Sk, Towar's Swamp, 6/30/94.

I have not seen this species in this area. From my previous experience with the plant, I should say that its preferred habitat is in pine or hemlock woods, especially where it is too dark for other herbaceous vegetation. Other authors, however, have noted its occurrence in deep woods of oak and other hardwoods. It apparently may be present in one locality in some abundance one year, and yet not occur there at all the next. Beal reports it here in 1904.

EPIGAEA L. Trailing Arbutus.

Epigaea repens L. Mayflower.

Specimen examined: A, Lansing, 1871.

Fernald has recently named a variety of this species, and as nearly as I can determine this specimen is more or less intermediate between the species and the variety, perhaps being closer to the variety. How-

ever, until I am able to study this distinction more carefully, I am leaving this specimen in the species as understood by the manuals. I have not seen the plant here, though I have noted it quite frequently somewhat north and east of this area. It grows in more or less sandy soil in woodlands, particularly where it is somewhat moist. Beal has noted it as here in 1904.

GAULTHERIA (Kalm.) L. Aromatic Wintergreen.

Gaultheria procumbens L. Checkerberry. Teaberry.
Specimens examined: Wh, Towar's Swamp, 6/28/90; A, Lansing, 1872; Sl, Lansing, 7/10/66; A, east of Pine Lake, 8/20/87.
I have not seen this species here, though Dr. Darlington tells me that it is present in this area in the vicinity of Park Lake. I have seen it outside the area in sandy woods, sometimes in moist places and sometimes in dry situations. It seems that it should be found in such habitats in this area.

CHIOGENES Salisb. Creeping Snowberry.

Chiogenes hispidula (L.) T. & G. Moxie Plum. Capillaire.
Specimens examined: Wh, Towar's Swamp, 6/10/02; A, Lansing, 1876; A, Lansing, 1883.
I have not seen this species here. If it is present here at all, I think that it is quite rare. It should be sought in peat bogs, flowering in May.

PRIMULACEAE Vent. Primrose Family.

PRIMULA L. Primrose. Cowslip.

Primula mistassinica Michx.
Specimens examined: Wh, Grand Ledge, 6/27/91, and 5/21/92.
This species occurs in only one place in this area. It is a plant more typical of regions much farther north, and so far as I have been able to determine, this is the only place in the south or central part of the state from which it has been reported. It was noted growing on the cliffs of the Grand River at Grand Ledge, directly across the river from the park there. The rocks there contain a good deal of lime which makes the spot a good habitat for this plant. It was in flower there 5/14/40.

SAMOLUS (Tourn.) L. Water Pimpernel.

Samolus pauciflorus Raf. Brooklime. Water Pimpernel.
Samolus floribundus HBK.
Specimens examined: Sk, bank of Red Cedar River, Ag. Coll., 7/15/94;

Bl, south of river on marsh, Ag. Coll., 8/70; A, Lansing, 1864; A, Lansing, 1871.

This species probably occurs along the banks of most of our larger streams. It prefers very wet, muddy places. I have noted it as occasional along the Looking Glass River southeast of Round Lake, 7/16/40, and as frequent in low places along the Red Cedar River, both at the college and west of it, 8/16/40.

LYSIMACHIA (Tourn.) L. Loosestrife.

*Lysimachia Nummularia L. Moneywort.

Specimens examined: none in herbarium.

I have noted this species as frequent in several places in this area. It grows both in open and in shaded places. I have also found it in habitats which are quite dry and in wet places. It would seem to me, however, that it is most frequently found in cool, shaded places in woods, usually where there is a fairly good supply of moisture present. There are several large patches of it in the Kalamazoo Street Woodlot. Beal does not list it as here in 1904.

Lysimachia thyrsiflora L. Tufted Loosestrife.

Naumbergia thyrsiflora (L.) Duby
Rhodora 22: 193. 1920.

Specimens examined: A, Lansing, 1864; A, Lansing, 6/9/87; Cl, M.A.C., 6/5/95.

I have not seen this species in our area. Beal, however, lists it as here in 1904, with the notation that it was common in the state at that time. Cole's specimen, noted above, indicates the plant's habitat, for it has attached to it a considerable amount of sphagnum. The plant is usually found in swamps, often growing in shallow water there. It should be sought in these habitats in this area.

Lysimachia quadrifolia L. Whorled Loosestrife.

Specimen examined: A, Lansing, 1864.

I have noted this species but once in this area, and there were only a few plants in that location. They were growing on a somewhat gravelly cut along the side of the road north of Park Lake, 6/22/40. Beal does not list the plant as here in 1904 and I do not believe that it is very frequent here at present. It usually prefers a somewhat sandy or gravelly soil and is more often found in dry places than in wet.

Lysimachia terrestris (L.) BSP.

Specimens examined: Sk, Pine Lake, 7/4/94; Sh & Sk, Pine Lake, 7/25/97; A, Ag. Coll., 10/1/89; A, Lansing, 1871.

This species is quite frequent along our streams and in our marshes throughout the area. It is very common along the Red Cedar River east of the college, where I noted it, 7/18/40. I have also noted it as occasional to frequent on the edges of a marsh located between the Looking Glass River and Round Lake, 7/18/40.

Lysimachia ciliata L. Fringed Loosestrife.
Steironema ciliatum (L.) Raf.
Rhodora 39: 438-442. 1937.

Specimens examined: Dr, East Lansing, 7/3/16; A, Lansing, 1871; Cl, M.A.C., along river east of #7, 6/29/95; Sk, bank of Red Cedar River, Ag. Coll., 7/22/94.

This species probably occurs quite frequently in the thickets of our area. I have noted it as frequent in thickets along the roadsides in Bath and Victor Townships, 7/16/40 and 7/13/40. It seems to prefer somewhat drier places than the preceeding species, but still is rarely found outside of low places where there is some moisture present.

TRIENTALIS L. Chickweed Wintergreen.

Trientalis borealis Raf. Star Flower.
Trientalis americana (Pers.) Pursh
Rhodora 11: 236. 1909.

Specimens examined: Sk, Towar's Swamp, 5/24/95, 5/27/94, and 6/24/95; Sl, Lansing, 6/6/66; A, Lansing, 1871; Cl, Towar's Swamp, 5/25/95.

This species is another which seems to prefer our wet, cold bogs. Like several other species noted in this list, I have found this plant growing in other parts of the country in cold, wet, more or less dark woods, often along brooks. Since such habitats seem to be scarce in our area, the plants which usually grow there are often to be found in shaded places in and around our bogs. I have noted this species as frequent to occasional in the bogs around Lost Lake, 5/17/41. It should be sought in similar habitats throughout.

GENTIANACEAE Dumort. Gentian Family.

GENTIANA (Tourn.) L. Gentian.

Gentiana crinita Froel. Fringed Gentian.

Specimen examined: A, Lansing, 1871.

I have seen this species in only one place in this area. It was growing in quite a large and dense colony on the banks of a road which runs just north of the Rose Lake Sanctuary, 9/23/40. This road is known as Clinton County Highway #454. This and the next species are rather easily confused unless studied rather closely. Seemingly, however, this grows in somewhat drier habitats than the next. I suspect from reports that it is quite rare in our area at the time. Beal reports it as here in 1904, but at that time Gentiana procera Holm. had not been separated from it, and it is the latter which is most frequent here now. Therefore, it is impossible to say which species he reported. I understand that this species is likely to be found in some numbers in a locality one year and yet be completely missing from that place the next. It would be interesting to see if that occurs in connection with the colony which I have reported.

Gentiana procera Holm Lesser Fringed Gentian.

Specimen examined: none in herbarium.

I have noted this species as common in an open, grassy swamp in the Rose Lake Sanctuary about a quarter of a mile from the location of the preceeding species, 9/25/40. I have not noted it anywhere else in our area, however. It may be found in some of our other swamps and marshes, and it should certainly be sought there. I did not get an opportunity to make a proper examination of other marshes at the time the gentians were in bloom, for they flower after the school year has started. Therefore, my reports are not necessarily a good indication of the frequency of this species in this area. I believe that it is much more frequent than the preceeding species, though it is far from one of our commonest plants.

Gentiana quinquefolia L.

Specimen examined: Sk, bank of Red Cedar River, Ag. Coll., 10/16/94.

I have not seen this species in this area, nor does Beal list it as here in 1904. Skeels' specimen, though rather poorly preserved, seems to be correctly identified. The fact that the gentians bloom after the season for most plants is over may explain the lack of more reports of their frequency.

Gentiana quinquefolia var. occidentalis (Gray) Hitchc.

Aloitis occidentalis Greene

Aloitis mesochora Greene

Specimen examined: A, Lansing, 1871.

I have not seen this species in this area, and Beal has not listed it as here in 1904. It should probably be sought in moist, open habitats. I expect that both this and the preceeding are infrequent if here at all.

Gentiana Andrewsii Griseb. Closed Gentian. Bottle Gentian.

Dasystephana Andrewsii (Griseb.) Small

Specimens examined: A, Lansing, 1871; Sk, Pine Lake, 9/9/94; A, Lansing, 1871.

The last specimen noted above was labeled Gentiana puberula Michx. but I have examined it and think it belongs here. I have noted this species as occasional along the Grand Trunk Railroad tracks south of the college, 9/16/40. It was growing in moist, or wet, open places there. It is probably more or less frequent in similar habitats throughout the area.

FRASERA Walt. American Colombo.

Frasera carolinensis Walt.

Specimen examined: none in herbarium.

I have not seen this plant growing here. However, I know that it is present in this area, for a specimen was sent in to the department for identification, 6/24/40. The habitat was given as woods near Lansing. Dr. Darlington has informed me that he has seen it growing along the bluffs of the Red Cedar River near Okemos. I do not believe

that it is more than infrequent or perhaps even rare here at the present time. It seems to prefer dry woods, usually of the oak type.

MENYANTHES (Tourn.) L. Buckbean.

Menyanthes trifoliata L. var. minor Raf. Buckbean.
Menyanthes trifoliata L. of Am. authors
Rhodora 31: 195-198. 1929.

Specimens examined: Sk, Towar's Swamp, 6/10/94; Sk, Park Lake, 6/2/95.

I have seen this species only on the east side of Lake Lansing, 6/4/40. It was more or less frequent there, growing in very wet places. The habitat here is grassy, and the plants are sometimes difficult to see amid the tall grasses. I suspect that the species occurs in similar situations around some of our other lakes, though I have never seen it there.

APOCYNACEAE Lindl. Dogbane Family.

APOCYNUM (Tourn.) L. Dogbane. Indian Hemp.

Apocynum androsaemifolium L. Spreading Dogbane.

Specimens examined: Sk, roadside north of Ag. Coll., 7/7/94; Sl, Lansing, 7/7/67; AND, north of college farm, 6/14/no year; Dr, near Park Lake, 7/10/16; Cl, Grand Ledge, 7/4/95; Cl, M.A.C., roadside north, 8/3/95; A, Lansing, 1871.

I have noted this species quite frequently along roadsides, along railroads and in waste places. I have seen it growing in vacant lots here in East Lansing, as for example, in the lot on the southwest corner of Division and Ann Streets. When growing along roadsides, it usually occurs in dry thickets. Along the Grand Trunk Railroad east of the college, however, it was growing out in the open, though still in dry places. I first noted it in flower, 6/22/40, and its blooming period lasted for about two weeks.

Apocynum cannabinum L. var. pubescens (Mitchell) A. DC. Indian Hemp. Hemp Dogbane.
Ann. Mo. Bot. Gard. 17: 1-213. 1930.

Specimen examined: Cl, roadside north of Ag. Coll., 8/3/95.

I have not seen this variety here, nor do I know of anyone else who has seen it here. It probably grows in much the same kind of habitat as the preceeding and the next species.

Apocynum cannabinum L. var. glaberrimum A. DC. Indian Hemp. Hemp Dogbane.
Ann. Mo. Bot. Gard. 17: 1-213. 1930.

Specimens examined: A, Park Lake, 7/10/64; A, Lansing, 1871; Sk, roadside north of Ag. Coll., 8/8/94; Sh & Sk, woods north of Ag. Coll., 8/7/95; Cl, along river toward gate, M.A.C., 6/29/95; A, Lansing, 1871.

This variety is undoubtedly much more frequent than the preceeding.

However, this plant is not nearly so common as the spreading dogbane in this area. I have seen it growing with the latter along the Grand Trunk Railroad, 6/26/40, but it was only occasional there, while the spreading dogbane was frequent. Its habitat is mostly along roadsides and railroads.

ASCLEPIADACEAE Lindl. Milkweed Family.

ASCLEPIAS L. Milkweed.

Asclepias tuberosa L. Butterfly Weed. Pleurisy Root.
Specimens examined: A, Lansing, 1864; Sk, Pine Lake, 7/4/94; Cl, M.A.C., 6/30/95.
This species is rather frequent along our roadsides, particularly in the northern part of our area where the roadsides are generally drier. I first noted it in flower in Bath and Victor Townships, in dry, open places along the roads there, 7/2/40. It is quite common in fields and near the road in the vicinity of Park Lake.

Asclepias incarnata L. Swamp Milkweed.
Specimens examined: Sk, roadside north of Ag. Coll., 8/8/94; A, Lansing, 1860.
This species is quite frequent around some of our lakes. I have also noted it in low, wet places along roadsides and railroads. It is common at Park Lake on muddy shores, some of which can be reached only by boat. It was in flower there, 6/30/40. It was growing in swampy places along the Grand Trunk Railroad south of the college, 8/14/40, and in similar situations along Park Lake Road, 7/13/40.

Asclepias phytolaccoides Pursh Poke Milkweed.
Asclepias exaltata (L.) Muhl. of Britton & Brown, Illus. Flora, ed. 2.
Specimens examined: Sk, bank of Red Cedar River, Ag. Coll., 6/28/95; Sk, woods north of Ag. Coll., 9/23/94; Cl, roadside east of the college, 6/12/95; A, Lansing, 1871; A, south of river below college, 6/24/87.
I have not seen this species here, though I suspect that it may be here, perhaps in some numbers. It likes moist places and is usually found in woodlands, or more occasionally in thickets. It should be found in those habitats in this area. Beal lists it as here in 1904, though he notes the species as infrequent in the state.

Asclepias syriaca L. Common Milkweed. Silkweed.
Specimens examined: Sk, bank of Red Cedar River, Ag. Coll., 7/15/94; Sh & Sk, field north of Ag. Coll., 8/7/95; A, Lansing, 1871.
This is our commonest milkweed. It grows in fields, along roadsides and railroads, in waste places, and in almost all kinds of habitats where it is open and not too moist. I first saw it in flower, 6/26/40.

Asclepias purpurascens L. Purple Milkweed.
Specimens examined: A, Lansing, 1871; Sk, Towar's Swamp, 7/7/94; A,

Lansing, no date.

I have not seen this species here. It usually occurs in open woods, sometimes in wet places and sometimes in dry situations. Beal does not list it as here in 1904, and I am not sure whether it may be here now or not. If it is present, it undoubtedly is infrequent.

CYNANCHUM L.

*Cynanchum nigrum (L.) Pers. Black Swallow-wort.

Specimens examined: A, Lansing, 8/5/80; K, growing on prostrate pine, north of College Hall, 7/3/96.

I have noted this species as occasional to frequent at the edges of the River Woodlot. It was in fruit in October. I do not know whether it occurs elsewhere in the area, for I have seen it only in this one place. Beal lists it here in 1904 as "escaped from cultivation on College grounds".

CONVOLVULACEAE Vent. Morning Glory Family.

CUSCUTA (Tourn.) L. Dodder.

Cuscuta Gronovii Willd.
Cuscuta Gronovii var. vulvivaga Engelm.
Mem. Torrey Bot. Club 18: 113-331. 1932.

Specimens examined: A, Lansing, 9/85; A, Lansing, 1880; K, Red Cedar River, 8/10/95; Sk, bank of Red Cedar River, Ag. Coll., 8/25/94.

This genus is a very difficult and technical one. I have found this species growing mostly on Impatiens biflora Walt., with a few on Solidago, at Grand Ledge. It was growing at the very edge of the river in a more or less shady place. I have also seen it in the Kalamazoo Street Woodlot, in very moist places there, growing on Solidago and Aster. It was infrequent or occasional at this location, but was quite frequent at Grand Ledge. Beal reports several other species in this area and I suspect that he is correct. However, this is the only one that I have seen.

CONVOLVULUS (Tourn.) L. Bindweed.

Convolvulus spithamaeus L. Upright Bindweed.

Specimen examined: A, north of Pine Lake, 7/3/88.

I have not seen this species. It should be sought in dry places either in the open or in open woods, or sometimes in thickets. Beal does not report it here in 1904, but notes that it is local in this state in sandy fields.

Convolvulus sepium L. Hedge Bindweed.

Specimens examined: Sk, C. & G. T. R.R. track east of Ag. Coll., 7/4/94; Dr, along railroad tracks, Ingham Co., 6/19/16; A, Lansing, 1871.

I have noted this species as common in low, moist thickets near Mud Lake, 6/26/40, and along the drain from that lake, 6/26/40. I have also seen it frequently in moist ditches along the roadsides south of the Looking Glass River in Victor Township, 7/13/40. It prefers a moist habitat, and is usually found in thickets where it has other plants to twine around.

*Convolvulus arvensis L. Field Bindweed.

Specimen examined: Sk, C. & G. T. R.R., near Ag. Coll., 6/16/94.

This species is frequent to common in this area in waste places and along fence rows, roadsides and railroads. I have noted it as frequent along the Grand Trunk Railroad east of the college, 6/27/40, and also south of the college, 8/14/40. It prefers a drier habitat than does the preceeding.

POLEMONIACEAE DC. Phlox Family.

PHLOX L. Phlox.

Phlox divaricata L. Blue Phlox.

Specimens examined: Cl, northeast of Terrace, woods, 5/5/95; Bl, wild, near M.A.C., 4/13/05; Sk, woods north of Ag. Coll., 4/29/94; F, river bank east of college, 5/20/98, a white form; K, woods near M.A.C., 1895.

I have noted this species as one of our commonest spring flowers throughout the area. It seems to be a little more abundant in the woods along the flood plains of our streams, but may be found quite frequently in nearly all of our woods. I think it is much less frequent in oak woods, however, preferring the maple, beech, or elm type of woodland. It occurs very commonly in all of the woodlots near the college. The flowering period is throughout most of the month of May.

Phlox subulata L. Ground Pink. Moss Pink.

Specimen examined: none in herbarium.

I have seen this species only once in this area. It was growing in a small colony along a dry roadside at the cross-road near the headquarters of the Rose Lake Game Sanctuary. I strongly suspect that it had escaped there from a planting somewhere nearby, but I could not find any indications of where it had been cultivated. It was in flower there, 5/3/41.

HYDROPHYLLACEAE Lindl. Waterleaf Family.

HYDROPHYLLUM (Tourn.) L. Waterleaf.

Hydrophyllum appendiculatum Michx.

Specimens examined: A, Lansing, 1871; Cl, M.A.C., 5/26/95; Sk, woods near river, Ag. Coll., 6/17/94; Sk, woods north of Ag. Coll., 7/5/95;

Sk, woods near river, Ag. Coll., 6/3/94.
This species is frequent in most of the beech-maple woods of this area. It prefers a good deal of shad and a rather deep, rich soil. I have noted it as frequent in the Kalamazoo Street Woodlot and in the River Woodlot, flowering from about the last week in May to the third week in June.

Hydrophyllum canadense L.
Specimens examined: Sk, woods near river, Ag. Coll., 6/3/94; A, Lansing, 1871; A, Ag. Coll., 6/24/87.
This species has about the same distribution and habitat as the preceeding. The two species are often found growing in the same woods. It is possible that this plant may be slightly less frequent, though there seems to me to be very little difference in the frequency with which the two appear. They flower at about the same time. This species also occurs in both the Kalamazoo Street and River Woodlots. I have also seen it in the New College Woods.

Hydrophyllum virginianum L.
Specimens examined: Sk, bank of Red Cedar River, 5/31/95; A, Lansing, 1883.
This species seems to me to be somewhat less frequent than the two preceeding. However, it is far from rare, nor could it truly be called infrequent. Its habitat is much the same as for the preceeding though I think that it does not need quite such rich soil. It is also found more frequently in less shade than are the other two. My observations have been that this species is most frequently found in this area on the flood plains of our rivers. I have noted along the Grand River southeast of Dimondale growing in woods there. It is also present along the Red Cedar River below the college. The blossoming period is about the same as for the preceeding.

BORAGINACEAE Lindl. Borage Family.

CYNOGLOSSUM (Tourn.) L. Hound's Tongue.

*Cynoglossum officinale L. Common Hound's Tongue.
Specimens examined: Cl, road east of M.A.C., 6/5/95; Sk, road east of Ag. Coll., 6/5/95; Sk, lawn of Ag. Coll., 6/3/94.
This species is occasional to frequent in this area, becoming quite common in some localities. I have noted it as common in a pasture and in fields bordering the drain from Dobie Lake, 6/8/40, and 6/19/40. It was also frequent in a pasture which borders the drain from Mud Lake, 6/26/40. I believe that it occurs most commonly in rather dry places, though those places where I have seen it growing have never been far from water. It seems to prefer pastures where the other vegetation is kept down by grazing. To anyone who knows this plant, it will be obvious why the stock will not touch it.

LAPPULA (Rivin.) Moench Stickseed.

*Lappula echinata Gilib. European Stickseed.
Lappula Lappula (L.) Karst.
Specimens examined: Sk, C. & G. T. track, Ag. Coll., 7/4/94; A, Lansing, 1871 and 1872; Cl, M.A.C., north, 7/7/95.
I have seen this species but once in this area, though I suspect that it may occur more often than such a note would indicate. It was growing along the ditch which drains Dobie Lake in much the same sort of habitat as Cynoglossum noted above. However, it was a little nearer the water and seemingly requires a little more moisture. It was in flower, 6/19/40. It should be sought in pastures, waste places, and along roadsides throughout the area. It sometimes becomes a weed, though I have certainly seen no indication of it as such in this area.

HACKELIA Opiz Stickseed.

Hackelia virginiana (L.) I. M. Johnston.
Lappula virginiana (L.) Greene
Contr. Gray Herb. Harv. Univ. 70: 1-55. 1924.
Specimen examined: Sh & Sk, college woods, Ag. Coll., 8/9/95.
I have not seen this species here though reports seem to indicate that it may be here. It is a woodland plant, usually occurring in dry soil. It may also occur occasionally in thickets. It should be sought in these habitats.

SYMPHYTUM (Tourn.) L. Comfrey.

*Symphytum officinale L. Common Comfrey.
Specimen examined: A, Lansing, 1883.
I have not seen this species here. It was once much cultivated, and occasionally escaped from cultivation. It is doubtful whether it has ever become well enough established to be called a part of our flora. Since we have no way of telling whether the plant noted above was from an established colony or from a garden, I have thought it best to include it here.

MYOSOTIS (Rupp.) L. Forget-me-not.

Myosotis virginica (L.) BSP. Spring Scorpion Grass.
Specimen examined: Sk, Park Lake, 6/2/95.
I have seen this species only once in our area. It was growing in a fallow field, more or less sandy, in the vicinity of Lost Lake, 5/17/41. Beal lists it as here in 1904, collected by Wheeler on the shores of Park Lake, but adds that it is rare. I do not believe that it occurs very frequently here. Most authors list its preferred habitat as "dry banks". It flowers from April to July.

MERTENSIA Roth Lungwort. Bluebell.

Mertensia virginica (L.) Link Virginia Cowslip. Bluebells.
Mertensia virginica (L.) DC.
Ann. Mo. Bot. Gard. 24: 17-159. 1937.

Specimen examined: none in herbarium.

This plant is probably infrequent in this area, or at least very local. I have seen one small colony growing in the woods on the flood plain of Sycamore Creek a few hundred yards north of the end of the Mason Esker, 4/28/41. Beal does not list it as here in 1904, and notes that it is rare in the state at that time. It is a plant whose habitat is nearly always flood plains.

LITHOSPERMUM (Tourn.) L. Gromwell.

*Lithospermum arvense L. Corn Gromwell. Wheat Thief.

Specimens examined: A, Lansing, 5/11/87; Sk, fields south of Ag. Coll., 5/6/94.

I have noted this species in fallow fields south of the college, blossoming in May. I suspect that it is more or less frequent in other parts of the area also, though this is the only locality where I have observed it growing. Beal lists it as here in 1904, and mentions that it is common in the state. It prefers open places which are more or less dry.

Lithospermum canescens (Michx.) Lehm. Puccoon.

Specimens examined: Sk, Park Lake, 6/2/95; A, Lansing, 1871.

I have not seen this species in this area, and I do not know whether or not it is here at the present time. Beal lists it as here in 1904. It should be sought in dry, sandy places which are quite open. It usually flowers mostly in May.

Lithospermum croceum Fern. Hairy Puccoon.
Lithospermum Gmelini of Gray, Man., ed. 7.
Lithospermum carolinense of Britton & Brown, Illus. Flora, ed. 2.
Rhodora 37: 329. 1935.

Specimen examined: A, Lansing, 1871.

I have not seen this plant in our area, and think it is likely that it is quite rare if present at all. Beal reports it as here in 1904. Its preferred habitat is open, sandy fields.

VERBENACEAE J. St. Hil. Vervain Family.

VERBENA (Tourn.) L. Vervain.

Verbena urticaefolia L. White Vervain.
Rhodora 38: 441-443. 1936.

Specimens examined: A, Lansing, 1871; Sk, woods near river, Ag. Coll., 7/15/94.

A variety, leiocarpa Perry & Fern., has been recognized as distinct from this species. I strongly suspect that Skeels' collection noted above is that variety. However, more mature plants are necessary for proper identification. I did not know of this separation at the time these plants were in flower or fruit, and so I cannot say as to the distribution of the two plants in this area. It seems better, therefore, to include both under this heading in this list. The species, as thus defined, is occasional to frequent in this area. I have noted it as frequent in a pasture along the Red Cedar River west of the college, in a vacant lot on Ann Street, East Lansing, 8/19/40, and in the River Woodlot, 8/17/40. This gives some idea of the variation in the habitat of this species. The only places that I have not noted it are in very wet places and in very thick woods.

Verbena hastata L. Blue Vervain.

Specimens examined: A, Lansing, 1871; Cl, Grand Ledge, 7/4/95; Sk, tamarack swamp east of Ag. Coll., 6/30/94.

This species has about the same distribution in this area as does the preceeding. I believe, however, that it is rarely, if ever, found in woodlands, as is sometimes the case with the white vervain. I have noted it as frequent in fields along the roadsides in Bath and Victor Townships, 7/16/40, and in ditches along those roads. I have also seen it growing along the flood plain of the Looking Glass River southeast of Round Lake, 7/16/40. It also grows with the preceeding species in a pasture along the Red Cedar River below the college. Seemingly it prefers moderately moist places in the open.

LABIATAE B. Juss. Mint Family.

TEUCRIUM (Tourn.) L. Germander.

Teucrium canadense L. American Germander. Wood Sage.
Rhodora 35: 295. 1933.

Specimens examined: A, Lansing, 1871; Sk, bank of Red Cedar River, Ag. Coll., 9/23/94.

In the reference cited above, Fernald has revised this species and made a new variety. However, on the basis of the material which I had at hand, both from the herbarium and from my own observations in the field, I have been unable to separate the species and its variety by means of the characteristics which he lists. Therefore, I am including here both the species and the variety virginicum (L.) Eaton. It seems to be frequent to common in thickets along the Red Cedar River. I have noted it in such habitats near the River Woodlot, 8/16/40. Probably it also grows along some of our other rivers, but I have not seen it there.

SCUTELLARIA (Rivin.) L. Skullcap.

Scutellaria galericulata L. Marsh Skullcap.
Scutellaria epilobiifolia Hamilton

Specimens examined: Sk, Pine Lake, 7/4/94; A, Lansing, 1864; Cl, M.A.C., 6/30/95.

This is found in marshy and swampy places throughout our area. It is sometimes present in very wet roadside ditches, or in very wet places along our railroads. I have noted it as frequent in a swamp along the Grand Trunk Railroad south of the college, 8/14/40. I have also noted it as frequent on the shores of Lake Lansing, 8/20/40. It was common at Grand Ledge, 8/30/40.

Scutellaria lateriflora L. Mad-dog Skullcap.

Specimens examined: Sk, Ag. Coll., 9/21/94; AND, Coll. Farm, 8/7/65.

This species is frequent to common along our streams. It has much the same distribution as the preceeding species, and prefers much the same type of habitat, though I think usually growing a little more frequently in drier places than does the marsh skullcap. I have noted it in flower along the Red Cedar River near the college, 8/16/40, and along the Looking Glass River near the west end of our area, 7/20/40.

AGASTACHE Clayton Giant Hyssop.

Agastache nepetoides (L.) Ktze.

Specimen examined: none in herbarium.

I have noted this species but once in this area, and suspect that its distribution here is somewhat limited, though Beal lists it as occurring here in 1904. I noted it growing in a low, swampy spot in the Kalamazoo Street Woodlot, 8/23/40. This place is at the edge of the woods where it is more or less open.

NEPETA (Rivin.) L. Cat Mint.

*Nepeta Cataria L. Catnip.

Specimens examined: A, Lansing, 1871, 2 sheets; Sk, roadsides east of Ag. Coll., 7/4/94; Cl, Pine Lake, 6/30/95.

This species is frequent to common throughout the area. I have noted it as especially common along the railroad spur track to the college, 7/12/40. It also occurs along the roadsides in Bath and Victor Townships, growing in more or less moist places on the banks of the roadside ditches there, 7/16/40. Apparently it can grow in both moist and dry situations. It seems to prefer some shade, though it is rarely found in very densely shaded places. Another of its habitats is waste places about our towns and cities.

GLECOMA L.

*Glecoma hederacea L. var. parviflora (Benth.) House Ground Ivy. Gill-over-the-ground.
Rhodora 23: 289. 1921.

Specimen examined: none in herbarium.

This species is occasional to frequent in this area. It usually grows in lawns or along roadsides where the grass and other vegetation is rather low. I have never seen it in woodlands. It was in flower at Grand Ledge in grassy places in the ravine, 4/19/41, and in the lawns of the campus, 5/25/41, but it blossoms from then until late July or August.

PRUNELLA L. Self-heal.

Prunella vulgaris L. Heal All.

Specimen examined: none.

This species is occasional to frequent along our roadsides. I have noted a rather large colony of unusually large plants northwest of the Capitol City Airport. They were growing along the dry banks of a road running through a small woodland area. It grows both in open places and in open woodland, flowering throughout the summer.

LAMIUM (Tourn.) L. Dead Nettle.

*Lamium amplexicaule L. Henbit.

Specimens examined: A, Botany Garden, Lansing, 5/11/87; A, college grounds, 1885; A, Ag. Coll., no date; Sk, lawn of Ag. Coll., 5/3/94.

I have not seen this species in this area, though I am sure from reports that it is an oversight. Seemingly it should be found here, perhaps in some numbers. It grows in almost all kinds of habitat, but is most likely to be found in waste places, fields, gardens and pastures. It flowers from April to the time of the first frost in autumn.

*Lamium purpureum L. Purple Dead Nettle.

Specimen examined: none in herbarium.

Oddly enough, this species which is undoubtedly infrequent, or at best only occasional, in this area was seen, while the commoner species noted above, was missed. However, I have seen it only once, and I could find only one or two plants in that locality. It was in flower, 5/2/41, just inside the River Woodlot beside a pathway through the woods. It probably has somewhat the same habitat as the preceeding species, though most authors seem to be rather vague on this point.

LEONURUS L. Motherwort.

*Leomurus Cardiaca L. Common Motherwort.

Specimens examined: Sk, roadside east of Ag. Coll., 7/4/94; A, Lansing, 6/22/87.

This is a plant which is rather frequent in open places in this area. It was noted as quite common along the roadsides in Bath and Victor Townships, 7/16/40. I have also seen it along the railroad spur track to the college and in fields in Chandler's Marsh. It seems to prefer open places and is usually found where it is more or less dry.

STACHYS (Tourn.) L. Hedge Nettle.

Stachys tenuifolia Willd.
Stachys aspera var. glabra Gray

Specimens examined: Wh & H, Ag. Coll., 9/3/92; A, Lansing, 7/25/87.

I have noted this species as occasional along the banks of the Red Cedar River below the East Lansing Sewage Disposal Plant, 8/23/40. I have not seen it anywhere else in this area. In the locality where it was growing it was located in somewhat sandy soil in thickets at the edge of the river. I believe that this is a typical habitat for the plant. Beal lists it as here in 1904, adding that it is rare.

MONARDA L. Horse Mint. Bee Balm.

Monarda fistulosa L. Wild Bergamot.

Specimens examined: Sk, along C. & G. T. R.R. track, Ag. Coll., 7/4/94; A, Lansing, 1871; AND, north bank of river, College Farm, 7/26/65.

This is a frequent to common roadside plant in this area, especially in the northeastern section. South of the college it is still present, but less frequently so. It grows mostly in fields bordering the roads, and it has been my observation that it prefers drier situations, though it is not uncommon to find it in moist situations. It rarely grows anywhere except in the open. It was noted as common in Bath and Victor Townships, 7/16/40, at which time it was about at the beginning of its flowering period. It is also frequent to common along the spur track to the college.

BLEPHILIA Raf. Blephilia.

Blephilia hirsuta (Pursh) Benth. Wood Mint.

Specimen examined: Wh & H, Ag. Coll., 7/5/92.

I have seen this species only once in this area. It was growing on the edge of the Kalamazoo Street Woodlot, next to the fence, 8/23/40. There were only a few plants there at that time. I rather think that the species is infrequent in this area. It is almost wholly a woodland species according to most authors.

HEDEOMA Pers. Mock Pennyroyal.

Hedeoma pulegioides (L.)Pers. American Pennyroyal.

Specimens examined: Sk, woods northeast of Ag. Coll., 9/23/94; A, Pine Lake, 7/19/88.

I have not seen this species here, though reports indicate that it is almost certainly here. It should be sought in dry soil, particularly in dry, open woods..Beal lists it as here in 1904.

SATUREJA (Tourn.) L. Savory. Calamint.

Satureja vulgaris (L.) Fritsch Basil.
Specimen examined: Wh & H, Grand Ledge, 8/29/92.
I have seen this species but once. I noted it growing along a roadside northwest of the Capitol City Airport, 7/20/40. It was located in a thicket there near a roadside ditch which was half full of water. Beal reports it as here in 1904.

PYCNANTHEMUM Michx. Mountain Mint.

Pycnanthemum virginianum (L.) Durand & Jackson
Koellia virginiana MacM.
Specimens examined: Wh & H, Grand Ledge, 8/29/92; A, Lansing, 1864.
I have seen this species several times in this area, though I do not believe that it is more than occasional here at present. It was growing in roadside ditches southeast of Park Lake, 9/2/40, and in low, swampy, rather open ground in the Rose Lake Sanctuary, 9/23/40. In the latter locality it was fairly frequent. It seems to prefer low, wet places, usually more or less in the open. Beal does not list it as here in 1904, but does say that it is frequent in the central and southern part of the state.

THYMUS (Tourn.) L. Thyme.

*Thymus Serpyllum L. Creeping Thyme.
Specimens examined: A, Lansing, 1880; A, Lansing, 7/23/87.
I have not seen this species here, and have some doubts as to whether it has ever become established here. At any rate, I have seen no indication of its presence here now. Beal does not list it as here in 1904 and says that it has rarely escaped in the state. If present, it will be found in old fields and similar dry, open places, flowering in July and August.

LYCOPUS (Tourn.) L. Water Horehound.

Lycopus virginicus L. Bugle Weed.
Specimens examined: Sk, bank of Red Cedar River, Ag. Coll., 8/25/94; Wh, border of swamp north of college, 9/19/91.
This species has been noted as occasional along the shores of Lake Lansing, 8/20/40. It was growing in extremely wet, muddy places there. I have not seen it anywhere else in the area, and I do not think that it is more than occasional here at present. Beal does not list it as here in 1904.

Lycopus rubellus Moench

Specimen examined: none in herbarium.

I have noted this species growing occasionally along the banks of the Red Cedar River in the vicinity of the college. I understand that it is infrequent in this area, and I certainly have seen no evidence to the contrary. Beal does not list it as here in 1904. This habitat is typical.

Lycopus americanus Muhl.

Specimens examined: AND, west of Harrison's bridge, 8/2/65; A, Lansing, 1871, 2 sheets.

This species is fairly frequent throughout the area, growing mostly in muddy places along our rivers. I have noted it along the Looking Glass River southeast of Round Lake, 7/16/40, and along the Red Cedar River in the vicinity of the college, 8/17/40. I have noted it growing usually in more or less open situations, and less frequently in thickets.

MENTHA (Tourn.) L. Mint.

*Mentha spicata L. Spearmint.

Specimen examined: none in herbarium.

I have seen this species but once in this area. It was growing in one of the college fields south of the stadium (Macklin Field), 8/14/40. The ground there was quite low and wet. It is quite possible that this notation represents some plants which have persisted from a previous planting there, though I have seen no indication that this mint was ever planted there. There were only a few plants in the colony, and it may be that they have not become well enough established to warrant inclusion as a part of our flora. Study over a number of years will be necessary to determine that point.

*Mentha piperita L. Peppermint.

Specimens examined: Sk, Pine Lake, 9/26/94; A, roadsides and Botany Garden, Lansing, 8/20/87.

This species has escaped from mint fields to places a few hundred yards away, but I do not feel that it should be included here on that basis. However, I think that further observation may show that it has sometimes escaped to greater distances and has become established there and is spreading. Reports would indicate such a situation. So far as my observations are concerned, I have not seen it here.

*Mentha longifolia Huds. European Horse Mint.

Specimen examined: none in herbarium.

I have seen only one colony of this species. It was growing in a low, wet place in a field south of Macklin Field, 8/14/40, and there were a number of plants in the colony. It seemed fairly well established and I am including it here on that basis. I believe that it is infrequent to rare in this area. Beal does not list it as here in 1904.

Mentha arvensis L. Wild Mint.
Specimen examined: A, Lansing, 1864.
I am following Deam in his treatment of this species. He includes here the varieties canadensis (L.) Briquet, and glabrata (Benth.) Fern., pending a monographing of the genus. These varieties have always seemed to me to be invalid in that there are numerous intergrading forms. When treated in this manner, this species is frequent to common in most of this area. Its habitat is variable, though usually it seems to prefer a good supply of moisture. It was noted as quite common along the banks of the Red Cedar River near the college, 8/16/40, and along the spur track to the college, 8/14/40.

COLLINSONIA L. Horse Balm.

Collinsonia canadensis L. Rich-weed. Stone-root.
Specimens examined: Sk, woods near river, Ag. Coll., 9/21/94; A, Lansing, 1864.
This is a species which I think is occasional to frequent in most of our moist woods. I have seen it quite frequently in Woodlot 17 in and near a low area which is filled with water in the spring, but which is dry through most of the summer and autumn. It was in flower there, 8/17/40. I have also seen it in flower in several of the other woodlands near the college, growing in moist, rich soil. I have never seen it in a dry or open woods, though Deam says that it is found in dry woods in Indiana. It also seems to prefer the beech-maple type of woodland.

SOLANACEAE Pers. Nightshade Family.

PHYSALIS L. Ground Cherry.

*Physalis ixocarpa Brotero Tomatillo.
Specimen examined: Rh, vicinity of Ag. Coll., 10/02.
I have not seen this species and doubt very much that it occurs here at the present time. I am somewhat in doubt as to whether the specimen noted above should be included in this list. It was collected by a person of whom we know nothing, and it may be that he collected it from a cultivated area, for this species was once much grown in gardens. Beal does not list it as here in 1904 which is but two years after this collection was made. This would lead one to think that he did not consider this collection a valid part of our flora.

Physalis heterophylla Nees.
Specimens examined: Wh, Pine Lake, 7/91; A, Lansing, 1871; Sk, woods north of Ag. Coll., 7/9/94.
I have noted this species as occasional in sandy fields along the Grand Trunk Railroad tracks south of the college, 8/14/40. It was growing there along fence rows. Beal does not list it as here in 1904. Its usual habitat is in mostly open, sandy places.

SOLANUM (Tourn.) L. Nightshade.

*Solanum rostratum Dunal Buffalo Bur.

Specimens examined: Sk, Okemos, 9/9/94; A, Lansing 1871.

I beliseve that this species is here, though found only infrequently. It grows in rather dry, open places, often along railroads. Its occurrence along railroads is to be expected, for it is a plant which has been introduced here from the west. It apparently has not gotten a very good start in this area. Beal lists it as here in 1904.

Solanum nigrum L. Common Nightshade.

Specimen examined: A, Lansing, 1871.

This species is more or less frequent in this area, growing on the edges of our woodlands, in lawns and in waste places about our cities. I have noted it occasionally along the paths in both the River Woodlot, 8/16/40, and in Woodlot 17, 8/20/40. It is quite frequent in waste places about the college, where I noted it, 8/28/40. It prefers a fairly rich soil, a certain amount of shade, and is seldom found in places where there is much competition from other herbaceous plants.

Solanum Dulcamara L. Bittersweet. Bitter Nightshade.

Specimens examined: Cl, Pine Lake, 6/30/95; A, Park Lake, 7/10/88; Bl, vicinity of Ag. Coll., 9/5/02; A, Lansing, 1883; Sl, Grand Ledge, 6/15/67.

The manuals call this plant introduced. However, Deam says that its habitat and occurrence in Indiana lead him to believe that it is native there, and I am inclined to agree with him, and am calling the plant native here. It has been found here as far back as any of the collections in our herbarium were made, which is another point arguing for its inclusion as a native species. The plant is very common here in moist to very wet places, more frequently the latter. I have noted it as common in ditches along the roadsides south of the college, 6/17/40, along the drain from Dobie Lake, 6/19/40, along the drain from Mud Lake, 6/20/40, and around Park Lake, 6/22/40. In fact, there are very few swampy places where I have not seen it growing in some abundance. It rarely grows in the open, nor does it often grow in woods. It usually is found in thickets where it can climb over other plants.

DATURA L. Jimson Weed. Thorn Apple.

*Datura Stramonium L. Stramonium. Jimson Weed.
Datura Tatula L.

Specimen examined: A, Lansing, 8/88.

This species is occasional in waste ground in this area, particularly around East Lansing. I have noted it in vacant lots in East Lansing, 9/26/40. It is cultivated at the college for studies in genetics, and no doubt some of the specimens seen were escapes from that source. It may become a bad weed if permitted to grow in an area unmolested, though I have seen no large colonies of it in this area.

NICOTIANA (Tourn.) L. Tobacco.

*Nicotiana longiflora Cav.

Specimen examined: Sk, lawn of Ag. Coll., 8/25/94.

I strongly doubt that this species can be found in this area today. Gray's Manual, edition 7, says of it, "....is said to escape from cultivation". Skeels, who made the collection noted above, was a good collector and probably would not have collected a cultivated plant. However, I do regard this as an escape, either from the Botany Garden, where many plants of this nature were grown, or from test plots on the college farm. Moreover, I think it is an escape which did not persist for a very long time. If this is true, I do not think it should be included in a list of our flora. Beal does not list the species as present in the state in 1904.

SCROPHULARIACEAE Lindl. Figwort Family.

VERBASCUM (Bauhin) L. Mullein.

*Verbascum Blattaria L. Moth Mullein.

Specimens examined: AND, north of college farm, 7/27/65; A, Lansing, 1871; Sk, lawn of Ag. Coll., 7/8/94.

This is a species which is found occasionally along our dry roadsides throughout the area. It was growing along the roadsides near Woodlot 17, 7/12/40, and was frequent along the roadsides about a half mile south of this woodlot. It prefers fairly dry, open places.

*Verbascum Thapsus L. Common Mullein.

Specimens examined: Sk, C. & G. T. tracks, Ag. Coll., 6/3/94; A, Lansing, 1871.

This species is frequent to common throughout the area. It has been noted in fields, along roadsides and in pastures. It seems to me that its favorite habitat is in pastures, and that agrees with my observations of this plant in other areas where I have seen it growing. However, it grows quite frequently in most dry, open places.

LINARIA (Bauhin) L. Toadflax.

*Linaria vulgaris Hill Butter and Eggs. Ramsted.

Specimens examined: Bl, on C. & G. T. tracks east of depot, in several places, 8/1/98; A, Lansing, 1872; Sk, roadside south of Ag. Coll., 6/16/94.

This species is common in this area along roadsides, in old or fallow fields, in pastures and along railroads. It seems to prefer dry, open situations. It is particularly common along the roadsides south of the college. I first noted it in flower, 6/18/40, and it continued flowering throughout July and August.

Linaria canadensis (L.) Dumort.

Specimen examined: A, Lansing, 1872.

I have not seen this species in this area, though Beal has reported it as here in 1904. His report adds, however, that this plant is "infrequent or wanting" in southern and central Michigan. It may occur here, but if so, it is undoubtedly somewhat infrequent. It should be sought in very sandy fields.

COLLINSIA Nutt.

Collinsia verna Nutt. Blue-eyed Mary.

Specimens examined: AND, woods northeast of college farm, no date; Cl, river back of race track, M.A.C., 5/19/95; Sl, Lansing, 5/11/66; A, Lansing, 1871; Sk, woods north of race track, Lansing, 5/6/94; Sh & Sk, woods south of race track, Lansing, 5/30/97; K, Trowbridge, woods, Lansing, 1895.

I have not seen this species here, though I have searched the localities where it is reported to be growing at the present time. I rather doubt that it is more than occasional here at present. Dr. Darlington informs me that he has seen it growing rather recently along the flood plains of Sycamore Creek. Its habitat is usually along flood plains in woods, particularly beech-maple woods. The flowering period ranges from April to June, probably mostly in May.

SCROPHULARIA (Bauhin) L. Figwort.

Scrophularia marilandica L.

Specimens examined: A, Lansing, 1871; Sk, bank of Red Cedar River, Ag. Coll., 7/6/94.

I have noted this species as occasional along the banks of the Red Cedar River in the vicinity of the Kalamazoo Street Woodlot, 8/23/40. It was growing in more or less open situations, where it was fairly moist, but not wet. The colony was of moderate size. I have not seen it elsewhere in the area, though I suspect that it may be occasional here.

Scrophularia lanceolata Pursh

Scrophularia leporella Bickn.

Specimen examined: Dr, Ingham Co., 7/6/16.

I have seen this species but once in this area. It was noted as infrequent to occasional along the drain from Dobie Lake, 6/19/40. Its habitat was in pastures at the edges of thickets bordering the drain, in rather dry soil. Deam reports that in Indiana it usually occurs "in very sandy soil", but I have not found that to apply in this case. The soil here was rather clayey with some gravel mixed in. Beal does not report it as here in 1904, and I suspect that it is no more than occasional here now.

CHELONE (Tourn.) L. Turtlehead.

Chelone glabra L. var. linifolia Coleman
Cat. Fl. Pl. S. Mich. 27. 1874.

Specimens examined: U, swamp north of East Lansing, 8/12; Cl, south of River Woods, 9/2/94; A, Lansing, 8/22/87; Sk, Chandler's Marsh, 8/26/94.

This species is occasional to frequent throughout this area. All of the plants which I have seen seem to belong to this variety, and all of the herbarium specimens have been checked by F. W. Pennell, who has recently monographed the family. I have noted colonies along the wet, muddy shores of Lake Lansing, 8/20/40, and in wet places along the south edge of Woodlot 17, in the right-of-way of the Pere Marquette Railroad. In both localities it was quite frequent. I have also noted it growing along some of our streams and around the borders of several of our lakes.

PENSTEMON Mitchell Beard Tongue.

Penstemon Digitalis Nutt. Foxglove Penstemon.
Penstemon laevigatus var. Digitalis (Sweet) Gray of Gray, Man., ed. 7.
Penstemon Digitalis (Sweet) Nutt. of Britton & Brown, Illus. Flora, ed. 2.

Specimens examined: Dr, Ingham Co., 6/28/16; Wh, Robinson's meadow, probably introduced with grass seed, 7/92.

These specimens have also been checked by F. W. Pennell. I have noted the species as more or less frequent along our roadsides throughout most of the area. It was especially frequent along the fence rows of some of the college fields south of Woodlot 17, 6/16/40. I have also noted it as quite frequent along the roadsides north of Mason, 7/5/40. It does not seem to be quite so frequent in the northern half of our area, though still present. It prefers a moderately dry, open habitat, most frequently appearing along roadsides.

Penstemon hirsutus (L.) Willd.

Specimens examined: Cl, Hospital Road, M.A.C., 6/13/95; Sk, bank of Red Cedar River, Ag. Coll., 6/10/94; Wh & H, Ag. Coll., 8/20/91; A, Lansing, 1871.

These specimens have also been checked by Pennell. I have noted the species in this area less frequently than the preceeding. However, the colonies usually contain a fairly large number of plants where found. The plant is fairly frequent along the Grand Trunk Railroad east of the college. It was in flower, 6/26/40. I also noted it in flower and occurring rather frequently along the roadsides north of Mason, 7/5/40. It seems to prefer habitats similar to those of the preceeding species, though I have never seen the two growing together.

MIMULUS L. Monkey Flower.

Mimulus ringens L.
Specimen examined: Sk, woods near river, Ag. Coll., 7/15/94.
This species is frequent in this area, usually growing in wet places along streams, but sometimes occurring in roadsides ditches and in swamps. I have noted it as frequent along the banks of the Looking Glass River southeast of Round Lake, 7/16/40. It is almost common along the banks of the Red Cedar River near the college. I have seen it in swamps along the roadsides south of the college, occurring there occasionally, 7/25/40, and appearing quite frequently in the low places along the Grand Trunk Railroad both south and east of the college, 8/14/40. In 1939 I noted a pure white form of this species growing along the Red Cedar River at the college, but I did not see it again in 1940, though I searched for it several times. This species is reported growing in both open places and in woods, but I have rarely seen it in woods, while it is quite frequent in open or mostly open places.

LINDERNIA All.

Lindernia dubia (L.) Pennell var. typica Pennell
Ilysanthes dubia (L.) Barnh.
Ilysanthes attenuata (Muhl.) Small
Specimen examined: none in herbarium.
I have noted this species only once in our area. It was growing in the mud nearly at the water's edge, in the River Woodlot, 8/19/40. Beal lists it as here in 1904. I doubt that it is very frequent here, but it should be sought growing in muddy places along our streams and around our lakes.

VERONICA (Bauhin) L. Speedwell.

*Veronica serpyllifolia L. Thyme-leaved Speedwell.
Specimens examined: A, Lansing, 1872; Sk, lawn of Ag. Coll., 5/10/94.
I have not seen this species in this area though I believe that it is very probably here and I have simply failed to observe it. It should be sought in lawns, pastures and fallow fields.

*Veronica arvensis L. Corn Speedwell.
Specimens examined: A, Lansing, 1872; Sk, lawn of Ag. Coll., 5/22/94.
I have noted this species as rather frequent in our fields and lawns. It was in flower on the lawns of the campus, 5/4/41. A fallow field south of the Rose Lake Sanctuary was noted with great numbers of this species in it, 5/3/41. It grows in open places in fields, lawns and waste places.

*Veronica officinalis L. Common Speedwell.
Specimen examined: Wh, escape from Botany Garden, 6/26/94.
This species is included mostly for the record. I doubt that it is

here now. If it is, I am certain that it is infrequent to rare. Beal does not report it in this area in 1904, and says that it was scarce in the state at that time. It should be sought in open woods where it is fairly dry, probably occurring also in more open places. It flowers from May to August.

*Veronica Chamaedrys L. Germander Speedwell.

Specimen examined: A, lawn of college, 7/12/88.

I have not seen this species here, though it may possibly be here. If so, it will be present as an escape from cultivation. Beal reports it as here in 1904. It should be sought in habitats similar to those of the preceeding, flowering in May and June.

Veronica scutellata L. Marsh Speedwell.

Specimens examined: A, Lansing, 1871, 2 specimens; Cl, Hospital Road, M.A.C., 6/19/95.

This species is more or less frequent in most of the swamps of our area and in some of our roadside ditches. It was noted as common in a roadside ditch containing water, about one and one half miles south of Round Lake, 7/13/40. and 7/16/40. It was also noted as common in a swampy area on the east side of the Kalamazoo Street Woodlot, 8/23/40. It prefers rather open places where there is a good deal of moisture present, and usually occurs in rather rich soil.

VERONICASTRUM (Heist.) Fabricius

Veronicastrum virginicum (L.) Farw. Culver's Physic.

Veronica virginica L.

Leptandra virginica (L.) Nutt.

Specimens examined: Sk, bank of Red Cedar River, Ag. Coll., 7/15/94; Wh, river bank above drawbridge, north side of M.A.C., 7/30/00. Cl, along river, M.A.C., 7/23/95; A, Lansing, 1871.

This species is more or less frequent throughout the area. I have noted it as frequent along the roadsides south of the Looking Glass River in Victor Township, 7/13/40, growing in fields. I have also noted it as common along the Red Cedar River at the college, 8/19/40, and below the college, 8/23/40. It seems not to be particular about moisture requirements, for I have found it in both wet and dry habitats. It rarely grows anywhere but in the open, however.

GERARDIA L. Gerardia.

Gerardia paupercula (Gray) Britt. var. borealis (Pennell) Pennell

Agalinis paupercula (Gray) Britt. var. borealis Pennell

Gerardia paupercula of the manuals, in part.

Proc. Acad. Nat. Sci. Phila. 81: 159. 1929.

Specimens examined: A, northeast of Pine Lake, 8/20/87; Sk, Pine Lake, 9/9/94.

Pennell has checked these specimens as he has done for all of the

others in this family. His annotation label bears the name Agalinis instead of Gerardia, but since that time he has published the name Gerardia as the correct one. I have seen this species occurring commonly around the shores of both Park Lake and Lake Lansing, 8/20/40 and 8/24/40, respectively. It was growing in open, grassy and very wet ground in both places. At Park Lake it was difficult to reach the plants, for they were growing on a floating bog which was very unstable. At Lake Lansing the plants may be found on the east side of the lake.

Gerardia tenuifolia Vahl var. parviflora Nutt.
Agalinis tenuifolia (Vahl) Raf. var. parviflora Nutt.

Specimen examined: A, Lansing, 1871.

As in the preceeding species, Pennell has examined this and put it in the genus Agalinis, but since then has placed it back in the genus Gerardia. I have not seen the species here, though it may occur here. It should be sought in somewhat moist places on the borders of our lakes and along our flood plains of our rivers, though it occasionally occurs in woodlands.

AUREOLARIA Raf.

Aureolaria flava (L.) Farw. var. typica Pennell Smooth False Foxglove.
Gerardia virginica in part of Gray, Man., ed. 7.
Dasystoma virginica in part, of Britton & Brown, Illus. Flora, ed. 2.

Specimens examined: Sk, roadside north of Ag. Coll., 8/8/94; K, roadside north of college, 7/27/95; A, Lansing, 1871.

I have not seen this species in this area. Beal lists it as here in 1904, giving its habitat as "oak woods". It should be sought in this habitat since it is thought to be parasitic on the roots of the various species of the white oak group.

Aureolaria virginica (L.) Farw. Downy False Foxglove.
Gerardia flava of Gray, Man., ed. 7.
Dasystoma flava of Britton & Brown, Illus. Flora, ed. 2.

Specimen examined: A, Lansing, 1864.

I have not seen this species here, though, as in the preceeding case, I suspect that it may be here. Beal reports it as here in 1904. It should be sought in habitats similar to the preceeding for it also is supposed to be parasitic on the roots of the white oaks.

CASTILLEJA Mutis Painted Cup.

Castilleja coccinea (L.) Spreng. Scarlet Painted Cup.

Specimen examined: Sl, Lansing, 6/1/67.

I have seen this striking plant but once in this area. It was noted as infrequent in a sandy area at the edge of a marsh near Lost Lake, 5/17/41. The soil was apparently fairly dry, though there probably

was a considerable amount of moisture present during most of the year since the locality was on the borders of a very wet, marshy area. I rather think that this species is infrequent in this area at present, though Beal lists it as here in 1904 with the notation that it was common in the state at that time.

PEDICULARIS (Bauhin) L. Lousewort.

Pedicularis canadensis L. Common Lousewort. Wood Betony.

Specimens examined: AND, river bank, maple grove, Ag. Coll., 5/8/65; A, Lansing, 1865; Sl, Lansing, 1868; Sk, woods south of Ag. Coll., 4/29/94; Sk, north of River Woods in swamp, 9/2/94; A, Lansing, 1887; Cl, M.A.C., 5/26/95.

This species is occasional to frequent in this area, growing in open places in woods, usually where the soil is somewhat sandy. I noted it in flower in an open woods near the road on the northeast side of Lake Lansing, June, 1940. It was not especially frequent there, however. I have seen it growing in quite large numbers at Park Lake, 5/17/41, in open glades in the woods on the northwest side of the lake. The soil here was rather moist as contrasted with that at Lake Lansing where it was quite dry. It was associated at Park Lake with rather large colonies of Polygala paucifolia Willd. Both yellow and red flowered forms were noted.

Pedicularis lanceolata Michx. Swamp Lousewort.

Specimens examined: Sk, swamp south of Ag. Coll., 9/2/94; Cl, swamp south of Ag. Coll., 9/2/94; A, Lansing, 1871.

I have seen this species in a swamp southeast of Park Lake, 9/2/40. I have not seen it anywhere else in the area, though I think it is probably present in other places. I do not think, however, that it is so frequent as the preceeding. This species is found growing in much wetter habitats than the preceeding. It blossoms rather late in the summer or in early autumn, while the preceeding species blossoms rather early in the spring.

OROBANCHACEAE Lindl. Broom-rape Family.

CONOPHOLIS Wallr. Squaw-root. Cancer-root.

Conopholis americana (L. f.) Wallr. Cancer-root.

Specimen examined: none in herbarium.

I have not seen this species in this area, but I am positive that it is here. A plant of this species was left here, 8/12/40, with the information that it had been found growing underneath some oak trees in one of the city parks in Lansing. I was not able to get either the name of the person who left the plant or the name of the park in which it was found. It is undoubtedly an infrequent to rare species in this area. Its usual habitat is in rather moist oak woods where there is a good cover of leaf mold and a good deal of shade.

EPIFAGUS Nutt. Beech-drops. Cancer-root.

Epifagus virginiana (L.) Bart. Beech-drops.

Specimens examined: A, Lansing, 1871; Sk, woods of Ag. Coll., 9/21/94; Wh, woods north of college under beech, 9/23/99; A, Grand Ledge, point of rocks, 9/9/65.

This species is more or less frequent in beech woods of this area. In Woodlot 17 it is a very common species, growing on the roots of nearly all of the beech trees in some sections. I noted it in flower there, 9/21/40. I have also noted it as frequent in the River Woodlot, 9/18/40, and in the woods bordering the swamp at the Rose Lake Sanctuary, 9/28/40. Since it is parasitic on the roots of beech, it always occurs in a beech type of woodland.

LENTIBULARIACEAE Lindl. Bladderwort Family.

UTRICULARIA L. Bladderwort.

Utricularia purpurea Walt. Purple Bladderwort.
Vesiculina purpurea (Walt.) Raf.

Specimen examined: none in herbarium.

I have noted this species as frequent to occasional in Park Lake, 6/30/40 and 8/25/40. It was in full bloom on the latter date. It is most abundant at the northwest end of the lake in the region of the floating bogs. It probably occurs in our other lakes also. I have not attempted to distinguish the species of this genus unless seen in flower, so that though a species may be present in one of our lakes, I do not record it unless seen in flower. This tends to make my notes of distribution incomplete but adds to the accuracy of the list as regards the proper identification of the species included.

Utricularia resupinata B. D. Greene
Lecticula resupinata (B. D. Greene) Barnhart

Specimens examined: K, Pine Lake, 7/27/95; A, east Pine Lake, 8/27/87; Sk, Pine Lake, 8/26/94; Sh & Sk, Pine Lake, 8/8/95; Cl, Pine Lake, 7/27/95.

I have not seen this species in this area, though I feel rather certain that it is here in Lake Lansing and probably in Park Lake. However, I apparently did not visit either of these two lakes during the time that it was in bloom and so have not recorded it as present. It grows in the margins of lakes and ponds, or sometimes in water up to a foot in depth. Beal reports it here on the borders of Pine Lake in 1904.

Utricularia cornuta Michx. Horned Bladderwort.
Stomoisia cornuta (Michx.) Raf.

Specimens examined: Cl, Pine Lake, 6/30/95; Sk, Pine Lake, 9/9/94; A, Pine Lake, 7/19/88.

I have not seen this species in this area, though it is probably still present on the borders of some of our lakes. The fact that many of our lakes are being developed for the summer trade means that many

of our water plants such as the Utricularias are being forced out, and this may be one that has suffered such a fate. However, Beal lists it as present in Pine Lake in 1904.

Utricularia gibba L. Humped Bladderwort.
Specimens examined: Sk, Pine Lake, 8/26/94; Sl, Bath, 6/14/68.
I have noted this species as frequent at Park Lake, 8/24/40. It grows there on bits of floating bog where it can be reached only with difficulty and with the aid of a boat. It is particularly frequent in the northwest part of the lake. I have not seen it in Lake Lansing, though it is probably there. Beal reports it as here in 1904 but notes it as rare in the state.

Utricularia intermedia Hayne
Specimens examined: Sk, Pine Lake, 7/4/94; Sh & Sk, Pine Lake, 7/25/97.
I have not seen this species here, though Dr. Darlington tells me that it is probably still present in our area. Beal, however, did not list it as present here in 1904. It probably is not very frequent, if present at all.

Utricularia macrorhiza LeConte Greater Bladderwort.
Utricularia vulgaris L. var. americana Gray
Specimens examined: Cl, Pine Lake, 7/12/95; Sl, Lansing, 6/7/66; Sk, Pine Lake, 7/4/94; Sh & Sk, Pine Lake, 7/25/97; Sk, Park Lake, 6/2/95.
This species is very common in Park Lake. It was noted in flower along the northwestern edge of the lake, 6/30/40 and 8/25/40. I rather think that it is also rather frequent in Lake Lansing, though I have not seen it in flower there. Beal lists it as here in 1904.

PHRYMACEAE Schauer Lopseed Family.

PHRYMA L. Lopseed.

Phryma Leptostachya L.
Specimens examined: Sk, woods near river, Ag. Coll., 7/15/94; A, near college, 1893.
I have noted this species only in the River Woodlot, 8/16/40 and 8/23/40. It seemingly is a species which prefers a beech-maple type of habitat where it is well shaded and fairly moist. I think that it may occur in other such woodlands in our area, though I doubt if it is ever more than occasional here. Beal lists it as here in 1904.

PLANTAGINACEAE Lindl. Plantain Family.

PLANTAGO (Tourn.) L. Plantain. Ribwort.

Plantago cordata Lam. Heart-leaved Plantain.
Specimens examined: A, Lansing, 5/22/86; A, Lansing, 5/5/87; Sk, Dr.

Beal's Woods, 6/16/94.

I have not seen this species in this area, nor do I think that it is very frequent here at the present time. Beal lists it as here in 1904 growing "along streams". Apparently it is most commonly found in moist places, often in woods, but sometimes out in the open. It should be sought in such places in our area.

Plantago major L. Common Plantain.

Specimen examined: Sk, swamp south of Ag. Coll., 9/21/94.

I have noted this species as occasional to somewhat frequent in this area. It is often confused with the next species which is very common here. I have seen this plant growing in waste places, in lawns and along our roadsides. Beal lists this plant as here in 1904 and says that it was common here at that time, at the same time noting that Plantago Rugelii Dcne. was frequent. It has been my experience that the latter is much more common here now.

Plantago Rugelii Dcne.

Specimens examined: Bl, vicinity of Ag. Coll., 1902; Cl, river bank toward gate, 6/28/95; A, Lansing, 1871; Sk, lawn of Ag. Coll., 7/7/94.

This species is very common here, becoming a troublesome weed in many lawns. I have noted it in lawns, in waste places, along roadsides and along railroads. It flowers mostly during July and August. It is by far the most common plantain that we have here.

*Plantago aristata Michx.

Specimen examined: Wh, adventive on college grounds, 7/29/91.

I have not seen this species in this area and I believe that if it is here now, it is infrequent. Gray's Manual, edition 7, gives the range as "dry plains and prairies, Ill. to La., and westw.; naturalized in sterile soil eastw. to the Atlantic". Therefore I am considering it introduced here, if present. Beal does not list it as here in 1904.

*Plantago lanceolata L. English Plantain. Buckhorn. Ripple Grass. Rib Grass.

Specimens examined: Sk, lawn of Ag. Coll., 6/16/94; Cl, campus, 7/13/95; N, Ag. Coll., no date; A, Lansing, 1871; A, Ag. Coll., 6/13/64; Wh, college lawn, 6/17/91.

This species has become very common here in our lawns and along our roadsides. I have also seen it in fields, in waste places, and along railroads. It seems to grow nearly everywhere that it is open. I have never seen it growing in woods. Like Plantago Rugelii Dcne., it often becomes a troublesome weed. I have noted it in flower from the latter part of June throughout the rest of the summer.

RUBIACEAE B. Juss. Madder Family.

MITCHELLA L. Partridge Berry.

Mitchella repens L. Partridge Berry.

Specimen examined: Sk, bank of Red Cedar River, Ag. Coll., 6/14/95.

I have seen this species but once in this area and think that it is infrequent here. It was noted growing near the edge of a swamp in the Rose Lake Sanctuary, 9/28/40, in a beech-maple type of woodland. I have looked for it in the spring of 1941 but have failed to find it again at the time that this is written. Beal reports it as here in 1904, listing it as common in the state at that time. I have not seen it in flower here.

GALIUM L. Bedstraw. Cleavers.

Galium circaezans Michx. var. hypomalacum Fern. Wild Liquorice.
Rhodora 39: 450. 1937.

Specimens examined: Dr, Ingham Co., woods, 7/16/16; Sk, bank of Red Cedar River, Ag. Coll., 7/4/94.

This species is probably occasional throughout the area in woodlands where it is fairly moist. I have noted it in the River Woodlot, 6/26/40, and in the woodland on the Lansing Light and Water Company property, 10/5/40.

Galium lanceolatum Torr. Wild Liquorice.

Specimens examined: A, Lansing, 6/15/87; Sk, woods near river, Ag. Coll., 7/4/94; Dr, Lot 17, College Woods, 6/18/16.

I have not seen this species in this area, though I believe that it may occur here, perhaps in some numbers. It should be sought in beech-maple woodlands where it is fairly dry. Beal lists it as here in 1904.

Galium boreale L. var. intermedium DC. Northern Bedstraw.
Rhodora 30: 106-110. 1928.

Specimens examined: Cl, east of #7, 6/29/95; Dr, East Lansing, 6/19/16; A, Lansing, 1871; AND, south of river, near swamp, 6/15/no year; Sk, bank of Red Cedar River, Ag. Coll., 6/18/94.

I am including all of the specimens noted above in this variety, though some of them seem to approach the other two varieties of this species in some respects. The distinction is made on the kind and amount of hairs on the fruit, and our specimens seem to show considerable gradation. Until I can get a chance to see more than printed descriptions of these varieties, however, I have decided to refer them here. I have noted this variety fairly frequently in this area along roadsides and railroads. Where the plant occurs it is usually found in rather dense colonies, which I think makes it appear more frequent in the area than is truly the case. I have noted it growing along the roadsides south of Round Lake in quite dry situations, 7/2/40. It was also noted as common along the Grand Trunk Railroad south and east of the college, also in quite dry places, 6/26/40. Its habitat in this area seems to be dry, open places.

*Galium Mollugo L. Wild Madder.

Specimen examined: Bl & Wh, #14, in orchard grass from France, 6/16/97.

I have not seen this species in this area, nor do I think that it still exists here. Beal seemingly was very much interested in collecting plants which had been introduced into this area, possibly in order

to have a record of them should any of the species later prove to spread and become troublesome weeds. I think that this specimen represents one of these collections, and that the plant has never been established here.

Galium Aparine L. Goose Grass. Cleavers.

Specimens examined: Sk, woods south of race track, Lansing, 5/10/94; A, M.A.C., 5/19/87.

I have noted this species as frequent to common in this area, growing both in open places and in woodlands, more frequently the latter. It was found growing along the drain from Mud Lake, 6/26/40. It was noted as quite frequent in Woodlot 17, 5/22/40, and common in the New College Woodlot, 5/5/41. It is probably our most common Galium.

Galium triflorum Michx. Sweet-scented Bedstraw.

Specimens examined: Sk, woods near river, Ag. Coll., 7/22/94; A, Ag. Coll., 7/19/87.

This species is probably occasional to frequent in our woodlands. I noted one specimen mostly in fruit but with a few flowers still present as late as 10/5/40. It was noted as occasional in the woods located on the Lansing City Water and Light Property. Its preferred habitat is moist woods.

Galium obtusum Bigel.

Galium tinctorium of Gray, Man., ed. 7 and Britton & Brown, Illus. Flora, ed. 2.

Rhodora 37: 443-445. 1935.

Specimens examined: Dr, East Lansing, along the Red Cedar River, 6/24/16; A, Lansing, 1872.

I have not seen this species in our area, though it may still be occasional here. It usually grows in low, wet woods. Beal does not list it as here in 1904.

Galium concinnum T. & G. Shining Bedstraw.

Specimen examined: Wh, Grand Ledge, 7/26/90.

I have not seen this species here, nor do I think that it is more than infrequent here at the present time. Beal lists it as here in 1904, but adds that it was rare in the state at that time. It should be sought in more or less dry woodlands.

Galium asprellum Michx. Rough Bedstraw.

Specimen examined: A, Lansing, 1871.

This species is probably frequent throughout the area in low, wet places. I have noted it as frequent to common in low, roadside thickets near the Looking Glass River at the west end of our range, 7/20/40. It also was noted as occurring in some abundance in a small, swampy, or springy area southeast of Park Lake, 9/21/40. The plant is usually found in regions where there are low thickets, where there are other plants for it to climb on.

Galium trifidum L. subsp. tinctorium (L.)
Galium tinctorium L.
Galium Claytoni Michx.
Rhodora 41: 388. 1939.

Specimen examined: Wh, swamp near Park Lake, 7/6/00.

I have not seen this species in this area, nor do I think it is more than occasional here. Beal does not list it as here in 1904. If present, the plants should be found in wet places, as in swampy woods and along drainage ditches.

Galium trifidum L. Small Bedstraw.

Specimens examined: Dr, Pine Lake, #265, no date; Sk, Pine Lake, 9/9/94.

I have seen this species along the shores and in the wet, grassy places around Lake Lansing, 8/20/40. It was noted as occasional there on the east side of the lake. I have not seen it elsewhere in the area, though it seems as though it should be present. Beal lists it as here in 1904. This plant is almost always found in very wet, more or less open places.

CAPRIFOLIACEAE Vent. Honeysuckle Family.

TRIOSTEUM L. Horse Gentian. Feverwort.

Triosteum perfoliatum L. Tinker's Weed. Wild Coffee.

Specimens examined: Wh & H, Ag. Coll., 9/4/92; A, Lansing, 1871, 2 specimens.

I have not seen this species in our area, though it is quite possible that it is still present here. It should be sought in woods, usually oak woods. There seems to be some disagreement among authors regarding the moisture requirements of this plant, some saying that it almost always occurs in dry soil, and others maintaining that it is usually found in moist places.

LINNAEA (Gronov.) L. Twin-flower.

Linnaea borealis L. var. americana (Forbes) Rehd.
Linnaea americana Forbes

Specimen examined: A, Lansing, 1872.

I have not seen this plant here during the past season, and I rather think that it is very rare here now, or perhaps not here at all. Beal listed it as here in 1904. Its habitat is in cold bogs, and it is more typically a northern plant, this region being near the southern limit of its range, though it has been found as far south as northern Indiana.

VALERIANA (Tourn.) L. Valerian.

Valeriana uliginosa (T. & G.) Rydb. Swamp Valerian.
Valeriana sylvatica of Gray, Man., ed. 6, not Banks
Specimen examined: Sk, swamp east of Ag. Coll., 6/10/95.
This is another species which is more typical of the country farther north. I have not seen it here, and it is undoubtedly rare here now. The location cited by Skeels is no longer a swamp, so that his station for the plant no longer exists. It is a plant which usually grows in tamarack swamps, and since we have a number of those in this area, it is possible that one might find the plant in one of them. It should be sought there.

DIPSACACEAE Lindl. Teasel Family.

DIPSACUS (Tourn.) L. Teasel.

*Dipsacus sylvestris Huds. Common Teasel.
Specimen examined: Sk, bank of Red Cedar River, Ag. Coll., 8/25/94.
This species has become very common in some parts of our area, particularly along the flood plain of the Red Cedar River. I have seen fields completely covered with dense stands of this plant. It seemingly is less frequent in other parts of our area. Beal lists it as here in 1904, but classes it as infrequent in the state at that time. Gray's Manual, edition 7, also notes it as "rather rare". Evidently it is a plant which is spreading rather rapidly.

CUCURBITACEAE B. Juss. Gourd Family.

ECHINOCYSTIS T. & G.

Echinocystis lobata (Michx.) T. & G. Wild Balsam-apple.
Micrampelis lobata (Michx.) Greene
Specimens examined: A, Lansing, 1868; Sl, Lansing, 8/3/66; Sk, bank of Red Cedar River, 8/25/94.
This species is frequent to common in our area. I have seen it most frequently along the flood plains of our rivers and creeks, but it also grows in low, wet, roadside thickets in many places here. I have noted it as occasional in thickets and swampy places along Park Lake Road, 8/11/40 and 8/14/40. It was noted as common along the Red Cedar River near Trowbridge, 8/12/40, and along the Looking Glass River, 8/10/40. It sometimes climbs to considerable heights in the trees along the flood plains.

CAMPANULACEAE B. Juss. Bluebell Family.

CAMPANULA (Tourn.) L. Bellflower.

Campanula americana L. Tall Bellflower.
Specimens examined: A, Lansing, 1871; Sl, Lansing, 7/16/66; Sk, woods near river, Ag. Coll., 7/15/94.
I have noted this species as occasional to frequent in our woodlands where it is moist. It was seen in Woodlot 17, 7/25/40, and was frequent in the River Woodlot, 8/16/40.

*Campanula rapunculoides L. False Rampion.
Specimen examined: none in herbarium.
This species was noted once in this area. It was growing along a roadside in the town of Bath near where the Michigan Central Railroad crosses the road. The plants were in dry soil on a grassy bank. They might have been introduced there by the railroad or they may have escaped from one of the houses nearby. Beal does not list it as here in 1904.

Campanula aparinoides Pursh Marsh Bellflower.
Specimens examined: A, Lansing, 1871; Cl, Pine Lake, 7/12/95.
I have seen this species rather frequently in wet, marshy places in our area. It was noted on the east side of Lake Lansing, 8/20/40, on the north side of Park Lake, 8/23/40, and in a grassy marsh in the Rose Lake Sanctuary, 9/23/40. In some places the flowers had a very light bluish tinge which became more apparent in drying. However, the habit and other features seemed to indicate that it was this species. It prefers very wet, grassy, open places.

Campanula rotundifolia L. Harebell.
Rhodora 36: 188-190. 1934.
Specimen examined: Wh, rocks, Grand Ledge, 7/90.
I have not seen this species here, and am of the opinion that it is very rare. It usually grows on the banks of streams, and often on rocky ledges. This species is rarely found this far inland, though the variety is frequently found in the interior.

Campanula rotundifolia var. intercedens (Witasek) Farw.
Specimens examined: A, Lansing, 1871; AND, bend of river, 8/2/65; Sk, bank of Red Cedar River, Ag. Coll., 8/25/94.
I have not seen this variety here, though I think, from the reports that I have had, that it is probably not rare in this area. It should be sought along the banks of our streams.

SPECULARIA (Heist.) Fabricius

Specularia perfoliata (L.) A. DC. Venus' Looking Glass.
Specimen examined: Wh, Dr. Nute's Farm, near Ag. Coll., 6/10/99.
I have not seen this species here, though I think it may be occasion-

al in our area. It should be sought in open, sandy or gravelly fields, and possibly along roadsides.

LOBELIACEAE Dumort. Lobelia Family.

LOBELIA (Plumier) L. Lobelia.

Lobelia cardinalis L. Cardinal Flower.

Specimens examined: Sl, Lansing, 9/3/66; AND, north of college farm, 7/28/65; Sk, bank of Red Cedar River, Ag. Coll., 8/25/94; A, Lansing, 1871.

This species is occasional to frequent throughout this area. It usually grows in muddy places along our rivers, and is usually found where there are trees enough present to give some shade. I have noted it as quite common along the Looking Glass River south of Round Lake, 9/2/40, where it gave a reddish hue to the banks of the river. It was also noted as frequent in the River Woodlot, 8/23/40.

Lobelia siphilitica L. Great Lobelia.

Specimens examined: A, Lansing 1876 and 1871; AND, north of college farm near river bank, 8/26/65; Cl, river woods, 9/2/94; U, College Woods, 8/12; Sk, bank of Red Cedar River, Ag. Coll., 8/25/94.

This species is common throughout our area in swamps, along river banks and in wet places generally. I have noted it as common along the banks of the Red Cedar River at the college, 8/17/40, and it was in blossom from then until mid-September.

Lobelia Kalmii L.

Specimens examined: Sk, Pine Lake, 9/9/94; A, north end of Pine Lake, 7/19/88.

I have noted this species but once in this area. It was growing in a very wet, grassy marsh in the Rose Lake Sanctuary, 9/28/40. I suspect that it may grow around Lake Lansing which has similar habitats, and perhaps also around parts of Park Lake, but I was unable to visit those places at the time when it might have been in bloom.

Lobelia inflata L. Indian Tobacco.

Specimens examined: Wh, roadside north of college, 9/24/94; Sk, roadside north of Ag. Coll., 9/2/94.

I have noted this species only at Grand Ledge, 8/30/40. It may occur in other parts of the area and should be sought in both fields and woods, usually where it is quite moist.

Lobelia spicata Lam. var. originalis McVaugh

Specimens examined: Dr, Pine Lake, woods, 7/19/16; A, Lansing, 1871.

I have not seen this species in this area, though I believe from reports that it is still here. It should be sought in oak woods, where it is sandy or gravelly.

COMPOSITAE Adans. Composite Family.

VERNONIA Schreb. Ironweed.

Vernonia missurica Raf.
Vernonia illinoensis Gleason
Vernonia altissima var. taeniotrichia Blake
Vernonia altissima var. grandiflora Gray
N. Am. Flora 33: 32-95. 1922.
Rhodora 35: 202. 1933.

Specimen examined: Bl, north of Park Lake, Clinton Co., 9/5/93.

I have noted this species but once here. It was growing in a more or less swampy depression about one and one half miles southeast of Park Lake, 9/2/40. This swampy area is very small and is surrounded by an oak ridge. I suspect that it may occur in other places here though I doubt that it ever becomes frequent. I cannot say as to the habitat of this species, for I have not seen it often enough. Seemingly, however, it is usually found in dry situations rather than in wet places.

EUPATORIUM (Tourn.) L. Thoroughwort.

Eupatorium maculatum L. Joe-Pye Weed.
Rhodora 22: 57-70. 1920.
Rhodora 39: 297-306. 1937.

Specimens examined: A, Lansing, 1871; Cl, M.A.C., river woods, 9/2/94; Sk, roadside north of Ag. Coll., 8/8/94.

This genus has been extensively revised, particularly in regard to the species listed in the manuals as Eupatorium purpureum L. The references given above may help to clear up the difficulties once encountered in its determination. Most of the plants of this group which are growing here seem to belong to this species. I have noted the species as common along the banks of the Red Cedar River, particularly near the college. I suspect that it also occurs along some of our other streams. It likes fairly moist situations, usually in thickets or semi-thickets. It was in flower along the Red Cedar, 8/19/40.

Eupatorium perfoliatum L. Boneset.

Specimens examined: A, Lansing, 1871; Sk, roadside north of Ag. Coll., 8/8/94.

Skeels' specimen noted above seems to me to be forma truncatum (Muhl.) Fassett. However all of the specimens of the plant that I have seen growing here are more readily referable to the species than to the form. I think it is wise, therefore, not to make a separate listing of the form. I have seen the species growing quite frequently in this area, usually in fairly moist soil, though not always so. It was noted as frequent along the railroad spur track to the college, 8/14/41. It usually prefers situations which are neither open nor heavily wooded, and as a result is often found in thickets and along the edges of woodlands.

Eupatorium rugosum Houtt. White Snakeroot.
Eupatorium urticaefolium Reichard
Rhodora 40: 293. 1938.

Specimens examined: Sk, bank of Red Cedar River, Ag. Coll., 9/21/94; A, Lansing, 1865; A, College Woods, 9/2/92.

This species has been noted as being more or less frequent in our area. It may be found in approximately the same habitats as the preceeding species, except that it seems to prefer a little more shade and is usually found more frequently in woodlands. I have noted it along the railroad spur track to the college, 8/14/40, growing near the preceeding species.

LIATRIS Schreb. Button Snakeroot.

Liatris cylindracea Michx.
Liatris cylindracea (Michx.) Ktze.

Specimen examined: Wh, north shore of Pine Lake, rare, 8/20/92.

I have not seen this species here, and think that Wheeler's notation that it was rare still holds good today. It should be sought in sandy areas, usually where it is quite dry.

Liatris spicata (L.) Willd. Blazing Star.
Liatris spicata (L.) Ktze.

Specimen examined: none in herbarium.

I have seen this species but once in our area. It was noted as occasional in an open, very wet meadow in the Rose Lake Sanctuary, 9/28/40. It was nearly through blossoming at that time. I do not think that it is very common here. Beal lists it as infrequent in 1904. Its preferred habitat is very wet, open places.

SOLIDAGO L. Goldenrod.[1]

Solidago bicolor L. White Goldenrod.

Specimens examined: Bl, roadside, in clay, north of college, 9/10/97; A, Lansing, 9/4/87.

I have not seen this species in our area, though it is apparently here if one may judge by the reports. I think that it is probably local here, if it is present. Beal reports it as here in 1904, apparent-

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1. This genus is a highly technical one, and one which needs a good deal more study than I have been able to devote to it. As a consequence I feel that the distribution notes are probably not nearly so complete as I could wish. In addition, a good many species are in flower rather late in the season, after course work has begun in the college. As a result it was impossible for me to get very complete records of their occurrence here. There are probably some species growing here which I did not note, due to the limited time available for field work during their flowering period.

ly based on the specimen noted above. It should be sought in more or less dry soil in oak woods.

Solidago caesia L. Wreath Goldenrod.

Specimen examined: Wh & H, Ag. Coll., 1892.

This species is frequent to common in some of our beech-maple type of woodlands, and possibly in some of the oak woods of the area. I have noted it as common in the River Woodlot from the last of August until frost, 1940. It was also noted as occasional along roadsides in somewhat shaded places, south of the college, 8/31/40, and as frequent in the woods located on the Lansing Water and Light Property, 10/5/40.

Solidago latifolia L. Broad-leaved Goldenrod.

Solidago flexicaulis L.

Specimens examined: Wh, burnt woods east of #6, near Ag. Coll., 7/20/96; A, Lansing, 9/9/87; Sk, roadside north of Ag. Coll., 9/21/94.

I have not seen this species here, though I feel almost certain that it is present in this area. It is a woodland species and should be sought in that sort of habitat. Beal lists it as frequent in the state in 1904 and I feel that it is probably not at all uncommon here now.

Solidago canadensis L.

Specimen examined: Sk, Chandler's Marsh, Ag. Coll., 8/26/94.

I have noted this species as frequent on the edges of a marsh in the Rose Lake Sanctuary, 9/26/40. It was growing in fairly dry soil, however. My specimen is identical with that collected by Skeels, and his has been relabeled at a later date as var. gilvocanescens Rydb. I feel, however, that it is more readily referable here. It probably occurs more frequently than my one note would make it appear, since I had so little time to study this genus. I do not know its habitat, though I suspect that the collection noted above was typical. Beal notes it as common and very variable in 1904.

Solidago juncea Ait. Early Goldenrod.

Specimens examined: Sk, roadside north of Ag. Coll., 8/8/94; A, Lansing, 8/27/87.

I have not seen this species in our area, though it is another which I believe that I should have found. Beal noted it as here in 1904. It prefers rather dry situations, usually in the open, and should be sought along roadsides, railroads, fence rows, and in fields. It is one of the earliest of our goldenrods.

Solidago gigantea Ait.

Solidago serotina Ait. var. gigantea (Ait.) Gray

Rhodora 41: 457-459. 1939.

Specimens examined: A, Lansing, 1871; A, Lansing, 8/4/80; A, Lansing, 8/27/87.

I have noted this species as rather frequent in the marsh at the Rose Lake Sanctuary, 9/28/40. This is a typical habitat for this plant, and I rather think that it may occur in similar places in other parts of our area. However, I have never seen it elsewhere. It usually likes rather wet places. Beal does not list it as here in 1904, though he does list the next variety. I think that possibly there may have been

some confusion between the two at that time, for I believe that it is more common here than the next, though seemingly both have been collected here.

Solidago gigantea Ait. var. leiophylla Fern.
Solidago serotina Ait.
Rhodora 41: 457. 1939.
Specimen examined: A, Lansing, 8/25/87.
I have not seen this variety in this area, though it could easily escape one's notice since it differs from the species only in having the lower side of the leaves slightly pilose along the veins. It is usually found in habitats similar to the preceeding except that it does not grow in quite such wet places.

Solidago altissima L. Tall Goldenrod.
Specimen examined: A, Lansing, 9/4/87, fide Wo.
I have not seen this species in this area, nor do I know whether or not it occurs here now. I suspect that it does, however. It is said that it is difficult to separate some forms of this species from Solidago canadensis var. gilvocanescens Rydb. This plant should be sought in rich soil, usually in the open.

Solidago patula Muhl. Rough-leaved Goldenrod.
Specimens examined: Wh & H, Ag. Coll., 1892; Wh, Turner's Swamp, southwest of the college, 8/30/90; A, Lansing, 1871, 2 specimens; A, swamp near college, 9/6/92.
I have seen this species several times in this area, and I believe that it is probably more or less frequent throughout. It was noted growing in a small swamp southeast of Park Lake, 9/28/40, and in a marsh in the Rose Lake Sanctuary, 9/23/40. In both instances it was frequent. Apparently it prefers a more or less open, wet habitat. Beal notes it as common along the borders of swamps in 1904.

Solidago ulmifolia Muhl. Elm-leaved Goldenrod.
Specimen examined: Sk, woods north of Ag. Coll., 10/7/94.
I have not seen this species here, though I have the feeling that it is present. Beal lists it as here in 1904, though he reports it as infrequent in the state at that time. It is typically a woodland species, usually preferring fairly dry woods.

Solidago rugosa Mill.
Solidago altissima of authors, not L.
Specimens examined: A, Lansing, 1871; Wh & H, Ag. Coll., 8/8/91.
I have noted this species as common in the marsh at the Rose Lake Sanctuary, 9/28/40, and as occasional in the woods at the border of the marsh there, 9/28/40. It was also noted as frequent in a small swamp southeast of Park Lake. I believe that it is more or less frequent in wet places throughout the area.

Solidago uliginosa Nutt.
Specimens examined: A, swamp near college, 8/27/92; Wh & H, Ag. Coll., 8/8/91.
I have noted this species as occasional in the open, grassy marsh

at the Rose Lake Sanctuary, 9/28/40. It may occur elsewhere in the area in similar habitats, but if so, I have not seen it. It is a species which prefers wet places, usually in the open.

Solidago speciosa Nutt.
Solidago rigiduscula of authors.
Solidago speciosa var. rigiduscula of authors.
Specimen examined: Wh & H, Park Lake, 9/9/91.
I have noted this species but once in the area, and I do not think it is very common here. It was noted growing on the sides of a slope in an open, oak woodland southeast of Park Lake, 9/17/40. This is a typical habitat for this species, and it should be sought in similar places in other parts of the area.

Solidago rigida L. Stiff Goldenrod.
Solidago rigida forma magna Clute
Specimen examined: none in herbarium.
I have seen this species but once in this area, but in that one locality it formed a dense, though somewhat limited colony. It was noted growing along the roadside at the Michigan Central Railroad crossing, about one mile southwest of Whitman Lake, 9/2/40. The ground there was quite dry and somewhat sandy. It should be sought along roadsides and railroads in dry places in other parts of our area, though I believe that it is infrequent here. Beal lists it as infrequent in the state in 1904, though he records it as occurring in our area.

Solidago Riddellii Frank
Specimens examined: A, Lansing, 1875; Wh & H, Park Lake, 9/28/91.
I have noted this species as frequent in the grassy marsh at the Rose Lake Sanctuary, 9/23/40 and 9/28/40. It is very wet in this marsh. It was noted that one of the specimens from the herbarium had sphagnum moss attached, indicating that it also must have been growing in a very wet place. Seemingly it prefers such localities. Beal notes it as here in 1904, but adds that it was rare in the state at that time.

Solidago graminifolia (L.) Salisb. var. Nuttallii (Greene) Fern.
Solidago hirtella (Greene) Bush
Euthamia hirtella Greene
Specimen examined: Sk, roadside north of Ag. Coll., 9/2/94.
I have noted this species as occasional along the roadsides south of the college, 8/31/40. I suspect that it probably occurs occasionally throughout our area, though I have not seen it in the northern section. It seems to prefer fairly moist soil, though sometimes growing in fairly dry situations. It should be sought along roadsides, particularly in low places, and where the soil is fairly rich.

BELLIS (Tourn.) L. Daisy.

*Bellis perennis L. True Daisy. European Daisy.
Specimen examined: none in herbarium.

I have seen this species only once here. It was noted growing in the lawn of the State Capitol Building at Lansing, 10/20/40. Seemingly it must be an escape there, though I could find no evidence of its cultivation anywhere in the vicinity. It seemed to be fairly well established there, but one should keep the colony under observation for several years before any definite conclusion may be reached on that point. Beal does not list it as being present in the state in 1904. However, there are two collections in the herbarium, indicating that it has been noted in Michigan before now. Wolff, in 1928, listed it as occasionally escaping to lawns in the state at that time.

ASTER (Tourn.) L. Aster. Frost-flower.[1]

Aster macrophyllus L. Big-leaved Aster.

Specimens examined: A, Lansing, 1865; Sk, roadside north of Ag. Coll., 9/2/94; Sk, woods north of Ag. Coll., 9/26/94.

This species has been noted as common in the River Woodlot, 8/23/40, and is very probably frequent to common in other woodlands of our area. It is a woodland species, rarely found in the open.

Aster azureus Lindl.

Specimen examined: Wh & H, Park Lake, 9/9/91.

I have noted this species as occasional in moist fields east of Park Lake, 9/3/40. I doubt that it is frequent in our area, though it might well be found occasionally throughout. It is usually found in the open. Beal notes it as here in 1904, but reports that it was infrequent in the state at that time.

Aster cordifolius L. Blue Wood Aster.

Specimens examined: H, woods near Ag. Coll., 9/24/92; Sk, roadside north of Ag. Coll., 9/21/94.

This is another common species in the River Woodlot. I noted it in flower there, 9/17/40. It is usually found in woodlands, though, as Skeels' collection shows, it is sometimes found along roadsides, probably in thickets. This species occurs throughout this area in woodlands, particularly those of the beech-maple type.

Aster sagittifolius Wedemeyer ex Willd.

Specimens examined: Sk, roadside south of Ag. Coll., 9/2/94; Wh, roadside near the college, 9/23/99.

I have not seen this species in this area, nor do I know whether or not it occurs here at the present time. Beal lists it as frequent in the state in 1904, and reports it from this area. It is most frequently found, according to most authors, in open, dry woods, and should be sought in such habitats here. Wheeler's specimen was labeled as var. urophyllus Lindl. I am not familiar enough with this plant to be sure of his identification, though it looked to me as though it were nearer the species than the variety. Therefore, I am leaving it here in this list.

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1. See note under Solidago, for it also applies here.

Aster novae-angliae L. New England Aster.

Specimens examined: Sk, Pine Lake, 9/9/94; A, Lansing, 1871.

This species is of fairly frequent occurrence in this area in moist, but not wet, places which are more or less open. It is one of our most beautiful wild asters. I have noted it covering a whole field just northeast of the city limits in East Lansing, 9/21/40. It was also noted in flower in a small swamp southeast of Park Lake, 9/2/40 and 9/21/40. It occurs throughout our area in similar habitats.

Aster laevis L. Smooth Aster.

Specimens examined: A, Lansing, 1871; Sk, bank of Red Cedar River, Ag. Coll., 8/25/94; Wh, roadside north of the college, clay, 9/24/97, fide Wo; Cl, M.A.C., northeast of Terrace, woods, 10/7/94.

I have noted this species as frequent to common in this area, usually in open and more or less dry places, but sometimes occurring in woodlands. I noted it in flower along the Grand Trunk and Pere Marquette Railroad tracks, 9/16/40, where it was abundant. I have also noted it as frequent in Woodlot 17, 9/21/40, in more or less open places near the edge of the woods.

Aster lucidulus (Gray) Wieg.

Aster puniceus var. lucidulus Gray of Gray, Man., ed. 7.
Rhodora 26: 4. 1924.

Specimen examined: A, Lansing, 9/21/87.

I have noted this species but once in this area, though it was fairly frequent in that one locality. It was noted growing in an open, grassy marsh in the Rose Lake Sanctuary, 9/26/40. This is apparently typical of its habitat, and it should be sought in similar places throughout the area. Beal lists it as here in 1904, adding that it was abundant in the state at that time.

Aster junceus Ait. Rush Aster.

Specimen examined: Sk, Chandler's Marsh, Ag. Coll., 8/26/94.

I have noted this species as frequent along the shores of Lake Lansing, 8/20/40. It probably grows in similar habitats in other localities in this area, but I have seen it only in the one place. Beal notes it as here in 1904, giving its habitat as "tamarack swamps". It definitely prefers wet habitats.

Aster paniculatus Lam. var. simplex (Willd.) Burgess
Rhodora 35: 32-34. 1933.

Specimens examined: A, Lansing, 1871, fide Wo; Wh & H, Park Lake, 9/9/91.

I have noted this species as frequent to occasional in moist to wet woods on the west side of Park Lake, 8/24/40. Beal did not list it as here in 1904. It is rather interesting to note that Wheeler and Hicks made their collection at Park Lake. It is possible that my notation might be from the same colony which has been persisting there for the last fifty years. I believe that the species is probably infrequent in this area.

Aster puniceus L. Purple-stemmed Aster.

Specimens examined: A, Lansing, 1871; Sk, Chandler's Marsh, Ag. Coll., 8/26/94.

This is one of our more common asters. I have noted it growing in wet places along the roadsides on Park Lake Road, 9/2/40, in a swamp southeast of Park Lake, 9/21/40, and in moist places throughout our area, 9/23/40. It could be called frequent here. It likes wet places which are open or semi-open.

Aster pilosus Willd. Heath Aster.

Aster ericoides var. villosus T. & G.

Aster ericoides of authors, not L.

Specimen examined: none in herbarium.

I have seen this species growing in sandy fields in the Rose Lake Sanctuary east of the marsh, 9/26/40. It was quite common there at that time, but I have not seen it elsewhere in the area. I understand that it prefers dry soils, but is more frequently found in clay soil than in sand. Beal does not list it as here in 1904.

Aster umbellatus Mill. Flat-topped Aster.

Doellingeria umbellata (Mill.) Nees.

Specimens examined: A, Lansing, 1871 and 1888; Sk, roadside north of Ag. Coll., 9/2/94.

This species is probably more or less frequent in this area. I have noted it as fairly frequent along roadsides in the Park Lake area, growing in moist places, 9/2/40. Beal has listed it as here in 1904.

Aster lateriflorus (L.) Britt. White Wood Aster.

Rhodora 30: 172-173. 1928.

Specimens examined: A, Lansing, 9/24/87, 1876, fide Wo, 1865, fide Wo, 1876, fide Wo; Wh, shore of Park Lake, 9/23/91, fide Wo; Wh, roadside near college, 9/23/99; Wh, bank of Red Cedar River, college grounds, 10/9/90, fide Wo; Sk, swamp northeast of Ag. Coll., 10/11/94, fide Wo; Sk, swamp northeast of Ag. Coll., 9/23/94.

I have noted this species as frequent to common in the River Woodlot, 9/17/40, and though I have not seen it elsewhere, I strongly suspect that it is frequent in this area. It is typically a woodland species. Beal has not listed it as here in 1904, though he notes that it was common in the state at that time.

ERIGERON L. Fleabane.

Erigeron canadensis L. Horse-weed. Canada Fleabane.

Leptilon canadense (L.) Britt.

Specimens examined: A, field near college, 8/26/92; Sk, roadside north of Ag. Coll., 8/8/94.

This species is occasional to frequent in this area in waste places, along roadsides, and most frequently in fallow fields. I have noted it in a fallow field near the Looking Glass River southwest of Round Lake, 9/2/40. It was also noted in several other fallow fields of the area, and along some of our roadsides, 8/29/40.

Erigeron pulchellus Michx. Robin's Plantain.
Specimens examined: Wh & H, Ag. Coll., 1891; A, Lansing, 1865 and 1871; AND, bend of river, 5/26/65.
I have not seen this species here, though I presume that it may be here. Beal has listed it as here in 1904, giving its habitat as "moist banks", and reporting it as frequent in the state at that time. I have seen one colony of plants which I suspect of being this species growing along the banks of the Grand River near Dimondale, 5/10/41, but since they were not in flower I hesitate to include that note here.

Erigeron philadelphicus L.
Specimens examined: Sk, bank of Red Cedar River, Ag. Coll., 6/6/94; N, Ag. Coll., 5/26/94; AND, bank of river, college farm, 5/15/65; A, Lansing, 1865.
This is one of our commonest species of this genus. It is frequent in nearly all our fields throughout the area. I have also seen it along roadsides and along railroad tracks. It was noted in flower from late May throughout the summer.

Erigeron ramosus (Walt.) BSP. Daisy Fleabane.
Specimens examined: A, Lansing, 6/5/87 and 6/26/87; Sk, bank of Red Cedar River, Ag. Coll., 6/16/94.
This is a species which is more or less frequent here. I have noted it in fields south of the college, 6/17/40. Unfortunately, I have not given this genus the attention it deserves, so I do not know the frequency of the species very thoroughly. Beal lists it as common here in 1904.

Erigeron annuus (L.) Pers. Sweet Scabious. Daisy Fleabane.
Specimens examined: A, Lansing, 1871; Sk, bank of Red Cedar River, Ag. Coll., 7/22/94.
I have not seen this species here, though I think that it is mostly due to oversight. I have not paid as much attention to this genus as I should and consequently, think that I simply have not noted the presence of this species, though it may be here. Reports would indicate that it may be here in some numbers. Beal lists it as common here in 1904. It should be sought in fields and along dry roadsides.

ANTENNARIA Gaertn. Pussy's Toes. Everlasting.

Antennaria neglecta Greene Everlasting.
Specimen examined: Wo, open, dry woods, stony soil, in sod, near Round Lake, Clinton Co., 5/2/27.
I have not seen this species here, though it may be present. Beal lists it as here in 1904. It is usually found in pastures or other localities with generally poor soil and little shade. It usually comes in where there is little competition from other plants. It should be sought in these habitats in this area.

Antennaria neodioica Greene Pussy's Toes.
Specimens examined: Wh, along M. C. R.R., north of Chandler's Marsh,

Erigeron pulchellus Michx. Robin's Plantain.
Specimens examined: Wh & H, Ag. Coll., 1891; A, Lansing, 1865 and 1871; AND, bend of river, 5/26/65.
I have not seen this species here, though I presume that it may be here. Beal has listed it as here in 1904, giving its habitat as "moist banks", and reporting it as frequent in the state at that time. I have seen one colony of plants which I suspect of being this species growing along the banks of the Grand River near Dimondale, 5/10/41, but since they were not in flower I hesitate to include that note here.

Erigeron philadelphicus L.
Specimens examined: Sk, bank of Red Cedar River, Ag. Coll., 6/6/94; N, Ag. Coll., 5/26/94; AND, bank of river, college farm, 5/15/65; A, Lansing, 1865.
This is one of our commonest species of this genus. It is frequent in nearly all our fields throughout the area. I have also seen it along roadsides and along railroad tracks. It was noted in flower from late May throughout the summer.

Erigeron ramosus (Walt.) BSP. Daisy Fleabane.
Specimens examined: A, Lansing, 6/5/87 and 6/26/87; Sk, bank of Red Cedar River, Ag. Coll., 6/16/94.
This is a species which is more or less frequent here. I have noted it in fields south of the college, 6/17/40. Unfortunately, I have not given this genus the attention it deserves, so I do not know the frequency of the species very thoroughly. Beal lists it as common here in 1904.

Erigeron annuus (L.) Pers. Sweet Scabious. Daisy Fleabane.
Specimens examined: A, Lansing, 1871; Sk, bank of Red Cedar River, Ag. Coll., 7/22/94.
I have not seen this species here, though I think that it is mostly due to oversight. I have not paid as much attention to this genus as I should and consequently, think that I simply have not noted the presence of this species, though it may be here. Reports would indicate that it may be here in some numbers. Beal lists it as common here in 1904. It should be sought in fields and along dry roadsides.

ANTENNARIA Gaertn. Pussy's Toes. Everlasting.

Antennaria neglecta Greene Everlasting.
Specimen examined: Wo, open, dry woods, stony soil, in sod, near Round Lake, Clinton Co., 5/2/27.
I have not seen this species here, though it may be present. Beal lists it as here in 1904. It is usually found in pastures or other localities with generally poor soil and little shade. It usually comes in where there is little competition from other plants. It should be sought in these habitats in this area.

Antennaria neodioica Greene Pussy's Toes.
Specimens examined: Wh, along M. C. R.R., north of Chandler's Marsh,

6/7/01, 2 sheets; Wh, roadside north of college, 5/14/98 and 6/12/98.
I have noted this species as occasional at Grand Ledge, 4/19/41. It was growing in dry soil at the edge of the woods near the top of the ravine. It probably occurs elsewhere in the area, though I have not seen it in any other locality. Beal does not report it here in 1904. Apparently it is a plant which prefers a dry habitat.

Antennaria fallax Greene Pussy's Toes.
Specimens examined: Sk, lawn of Ag. Coll., 5/3/94; A, Lansing, 5/17/87; Wh, north of Chandler's Marsh, along M. C. R.R., 6/7/01.
These specimens were all identified as Antennaria plantaginifolia (L.) Richards and checked as that species by S. E. Wolff in 1928. However, Wolff was using Britton and Brown, Illustrated Flora of North America, edition 2, and that fails to distinguish Antennaria fallax Greene. I have examined them and think they should be referred here. I have noted this species quite frequently in our area. It was noted growing quite abundantly on grassy slopes near the New College Woodlot, 5/5/41. It was also noted in some abundance along the slopes bordering the Grand Trunk Railroad tracks near the east end of our range, 5/24/41. I believe that it is our commonest Antennaria. I have not seen Antennaria plantaginifolia (L.) Richards here.

ANAPHALIS DC. Everlasting.

Anaphalis margaritacea (L.) Gray var. intercedens Hara Pearly Everlasting.
Anaphalis margaritacea (L.) Gray var. revoluta Suksd. f. arachnoidea Fern.
Rhodora 40: 219. 1938.
Rhodora 41: 319. 1939.
Specimen examined: A, Lansing, 1871.
I have not seen this species here, and I do not believe that it is at all common. Beal does not list it as here in 1904. It usually grows farther north than this. I have seen it in other parts of the country growing on dry hillsides, most frequently in open pastures. We have few such habitats, and I would not expect to find the plant here.

GNAPHALIUM L. Cudweed.

Gnaphalium obtusifolium L. Common Everlasting.
Gnaphalium polycephalum Michx.
Specimen examined: none in herbarium.
I have noted this species as frequent along the dry roadsides north of Rose Lake, 9/23/40. I think that it is likely that it occurs in other localities in this area also, though I have seen it in only this one place. Beal notes it as common in 1904.

Gnaphalium uliginosum L. Low Cudweed.
Specimens examined: Sk, woods northeast of Ag. Coll., 9/23/94; A, Lansing, 1871.
I have not seen this species here though Beal reports it as abundant

here in 1904. It should be sought along roadsides, particularly in dried out roadside ditches. It seems to prefer clay soils.

INULA L. Elecampane.

*Inula Helenium L. Elecampane.

Specimens examined: A, Lansing, 7/19/87; Sh & Sk, Pine Lake, 8/8/95.

I have noted this species as occasional along roadsides south of Meridian on the Meridian Road, 8/12/40. It may be occasional in other parts of the area, though I believe that it never becomes frequent. It is reputed to have medicinal qualities and is still grown for that purpose in some places. The colony noted above was possibly an escape from cultivation.

POLYMNIA L. Leafcup.

Polymnia canadensis L.

Specimens examined: Wh & H, Ag. Coll., 8/8/92; A, near the Ag. Coll., 1895; A, Lansing, 1883.

This species is occasional in our beech-maple woodlands, usually where it is quite moist and where there is rather dense shade. I have noted it in flower in the most shaded parts of the River Woodlot as early as 6/25/40. I have seen it in flower as late as 10/12/40. I think that it may be found in almost all of our beech-maple woods, but it is never frequent in any of them.

IVA L. Marsh Elder.

Iva xanthifolia Nutt.

Specimen examined: Wh & H, Ag. Coll., 9/9/93.

This species is undoubtedly very rare if present here at all. Beal notes a specimen collected in Keweenaw County, and states that in 1904, this station was the farthest east known for the species. It is more typical of the states to the west of us. It has been established eastward, however, in a few places, and this may be an introduction which persisted here for a few years. On the other hand, it may have been planted in the Botany Garden, and this specimen taken from there. I include it here with some doubt.

AMBROSIA (Tourn.) L. Ragweed.

Ambrosia trifida L. Great Ragweed.

Specimens examined: Sk, bank of Red Cedar River, Ag. Coll., 8/25/94; A, Lansing, 8/22/87.

This species is frequent to common along the flood plains of our streams. It sometimes occurs in other moist places, such as roadside ditches and ditches along the edges of fields, though it is rarely as frequent there as it is on the flood plains. I have noted it in flower along the Red Cedar River west of the college, 8/23/40. I have also

noted a form with entire leaves growing with the regular form. Gray's Manual, edition 7, calls this variety integrifolia (Muhl.) T. & G., but since it regularly occurs with the species, and since the species is somewhat variable in foliage characters, I am not making the distinction in this list. It may or may not have taxonomic significance.

Ambrosia elatior L. Common Ragweed. Roman Wormwood.
Ambrosia artemisiifolia L.
Ambrosia elatior var. artemisiifolia (L.) House
Rhodora 37: 184-185. 1935.
Am. Midland Nat. 17: 673-700. 1936.

Specimens examined: A, Lansing, 1871 and 8/22/87; Bl, M.A.C., 7/14/00; Sk, roadside north of Ag. Coll., 8/8/94.

This species is a very common weed in open places everywhere. It is found growing along roadsides, fence rows and railroads, in waste places about cities and towns and in fallow and cultivated fields. It is the species which is most commonly blamed for causing hay-fever. I first noted it in flower, 8/23/40.

XANTHIUM (Tourn.) L. Cocklebur.

Xanthium orientale L.

Specimens examined: Sk, bank of Red Cedar River, Ag. Coll., 4/14/95 and 8/25/94; A, Lansing, 1871.

I have regarded all of our forms of Xanthium that I have seen in the herbarium and in the field as a part of this species complex. Wiegand undertook a study of the genus and came to the conclusion that these forms were really all a part of one species which he called Xanthium orientale L. I am following him in this. The synonomy is too unsettled and confused to warrant listing it here. I have seen the species frequently along the rivers and streams of our area, usually in very wet places, sometimes in mud and sometimes in sand. It also occurs quite frequently in roadside ditches. It was noted growing along the Red Cedar River west of the college, 9/17/40, in full fruit.

HELIOPSIS Pers. Ox-eye.

Heliopsis helianthoides (L.) Sweet Sunflower Heliopsis.

Specimen examined: A, Lansing, 7/19/87, fide Wo.

I have not seen this species in our area, nor do I know whether or not it may be found here at present. Its habitat is said to be in more or less open and moist places, as along flood plains and in roadside ditches. It should be sought in those places. It flowers mostly in August.

RUDBECKIA L. Cone-flower.

Rudbeckia hirta L. Black-eyed Susan. Yellow Daisy.

Specimens examined: Sk, bank of Red Cedar River, Ag. Coll., 6/30/94; A, Lansing, 1871.

This species is occasional to frequent in our fields and along our roadsides, flowering mostly in June. It rarely occurs in dense colonies, but scattered plants are sometimes fairly frequent. It was first noted in flower along a roadside north of Park Lake, 6/22/40. I also have seen it in some numbers along the Grand Trunk Railroad tracks east of the college, 6/26/40. It prefers a moderately dry habitat where it is fairly open.

Rudbeckia laciniata L.

Specimen examined: Sk, bank of Red Cedar River, Ag. Coll., 9/21/94.

I have noted this species as common along the Red Cedar River, especially at the college. It blossoms in late summer. I believe that it also occurs along the banks of some of our other larger streams, though I have not happened to note it in flower along any of them. It is typically a flood plain plant.

HELIANTHUS L. Sunflower.

*Helianthus annuus L. Common Sunflower.

Specimen examined: none available in herbarium.

I have seen this species but once in this area. It was noted as an escape on the flood plain between the Red Cedar River and the Pere Marquette Railroad west of Trowbridge, 9/16/40. There were only a few plants there at the time, though they seemed to be fairly well established. However, the colony should be kept under observation for several years to determine that point very definitely. This species is cultivated quite frequently, so it might be expected that it should be found in other localities in this area. I have not seen it elsewhere, however.

Helianthus divaricatus L.

Specimen examined: none available in herbarium.

This is one of our commonest sunflowers. I have noted it as common along roadsides and fence rows in both Bath and Victor Townships, 7/16/40. It was also noted as common along a roadside north of Park Lake one month later, 8/14/40. Seemingly it likes fairly dry, open situations with a fairly light soil.

Helianthus giganteus L. Giant Sunflower.

Specimen examined: none available in herbarium.

This is another of our very common sunflowers. It is usually found in rather wet places, though not always so. I have noted it as fairly common along a roadside north of Park Lake, 8/24/40, growing in moist thickets. I have also seen it growing rather frequently in thickets around both Park Lake, 8/24/40, and Lake Lansing, 8/20/40. It is occasional in low places in the River Woodlot. The plant prefers some shade, and quite a good deal of moisture.

Helianthus hirsutus Raf.

Specimen examined: none available in herbarium.

I have seen this species but once, when it was growing along the dry roadsides in the Rose Lake section, 9/23/40. It apparently prefers a dry, more or less clay type of soil. Beal does not report it as here in 1904, and I think that it is probably not frequent here now.

Helianthus decapetalus L.

Specimen examined: none available in herbarium.

I have seen this species growing in the River Woodlot, 9/17/40, where it was quite common, though it is said to occur more frequently in an oak type of woodland. I have not seen it elsewhere in the area, though I think that it is undoubtedly here. Beal lists it as here in 1904.

BIDENS L. Bur Marigold.

Bidens cernua L. Stick-tight.

Specimens examined: Sk, bank of Red Cedar River, Ag. Coll., 9/21/94; A, Lansing, 9/21/87; Sk, Pine Lake, 9/9/94.

This species is frequent to common in our open swamps. I have noted it as common in the low, swampy area between the Grand Trunk and Pere Marquette Railroads west of Trowbridge, 9/16/40. It was also noted as common in the swamp at the Rose Lake Sanctuary, 9/23/40. It is a plant which requires a good deal of water and grows in very wet places.

Bidens comosa (Gray) Wieg.

Specimens examined: Sk, swamp northeast of Ag. Coll., 9/23/94; Wh, river bank, 9/21/91.

I have noted this species as frequent in the low, wet area between the Grand Trunk and Pere Marquette Railroads west of Trowbridge, 9/16/40. I have not seen it elsewhere in the area though it might well be here. Beal notes it as here in 1904, but adds that it was infrequent in the state at that time. It prefers a habitat very similar to that of the preceeding species.

Bidens connata Muhl. Swamp Beggar-ticks.

Specimen examined: none in herbarium.

I am including the recently separated variety petiolata (Nutt.) Farw., (Field Mus. Nat. Hist. Publ. Bot. Ser. 16: 257. 1937.) here, since I was not aware of the separation at the time that I made my field notes. Unfortunately I did not collect a specimen which I might use as a check. The species as thus defined, was noted as occasional to frequent along the shores of Lake Lansing, 8/20/40. This species usually grows on the sandy shores of lakes according to most authors. I have not seen it in any other localities in this area, though Beal lists it as common in 1904.

Bidens coronata (L.) Britt. Tickseed Sunflower.
Bidens trichosperma (Michx.) Britt.

Specimens examined: A, Lansing, 9/21/87; Sk, Chandler's Marsh, Ag.

Coll., 8/26/94; A, Lansing, 8/25/87 and 1871; Ba & Sk, roadside north of Ag. Coll., 8/8/97.

I have noted this species as occasional to frequent in this area, becoming common in some localities. It was noted as occasional in a small swamp southeast of Park Lake, 9/2/40, and as common in the low, swampy land between the Grand Trunk and Pere Marquette Railroads west of Trowbridge, 9/16/40. It prefers a wet, open habitat.

Bidens frondosa L. Beggar-ticks.

Specimen examined: none in herbarium.

This species is quite common in both the open, grassy marsh, and the more shaded swamp at the Rose Lake Sanctuary. It was noted in flower there, 9/26/40. Apparently this species prefers a moist to wet, open or semi-open habitat. I have not noted it in other parts of our area, though I suspect that it is probably present in other low areas, especially since it was so frequent here. Beal notes it as here in 1904, reporting that it sometimes becomes a bad weed in the state.

Bidens vulgata Greene Beggar-ticks. Stick-tight.

Specimen examined: none in herbarium.

I have noted this species as occasional to frequent along the banks of the Red Cedar River, 8/30/40. It may occur also along the banks of some of our other streams, though I have not noted it there. It is said to occur mostly in moist, waste places and in moist places along roadsides.

GALINSOGA R. & P.

*Galinsoga ciliata (Raf.) Blake Quickweed.
Galinsoga parviflora Cav. var. hispida DC.
Rhodora 24: 35. 1922.

Specimen examined: none in herbarium.

This is an introduced species which has been in the state only within the past half century. Beal lists it only from Detroit in 1904. I have noted it as quite frequent along the banks of the Red Cedar River on the campus, 9/21/40, and as a weed in the Botany Garden. I did not see it elsewhere in the area, and I presume that it probably is confined to this one locality here at the present time. It is quite possible that it was introduced with some of the cultivated plants in the garden. Seemingly, it has become established enough, and is spreading rapidly enough to warrant its inclusion in this list as a part of our flora, though further observations will be necessary to make certain of this point. Wolff reported it from Ingham County in 1925, but I have not seen his specimen. Since he worked here at the college, I strongly suspect that he may have seen it in the same locality in which I have noted it.

HELENIUM L. Sneezeweed.

Helenium autumnale L. Common Sneezeweed.

Specimen examined: Sk, bank of Red Cedar River, Ag. Coll., 8/25/94.

I have noted this species as fairly frequent along the banks of the Red Cedar River in the vicinity of the Beal Pinetum, 10/12/40. It may be growing in other parts of our area, but I have noted it in only this one place. The preferred habitat is along river banks. Beal reports it as common in 1904.

ANTHEMIS (Micheli) L. Chamomile.

*Anthemis Cotula L. Dog Fennel. May-weed.

Specimens examined: A, Lansing, 1871; Sk, lawn of Ag. Coll., 7/15/94.

This species is fairly common along roadsides, in fallow fields, in lawns, and along fence rows. I noted one farmyard, northwest of the Capitol City Airport, which appeared almost completely white with the blossoms of this plant. It blossoms throughout July and August. It prefers a dry, open habitat.

*Anthemis arvensis L. Corn Chamomile. Field Chamomile.

Specimen examined: none in herbarium.

I have seen this species in much the same places as the preceeding, though it is very much less frequent. I have seen it in blossom along our roadsides as early as 5/24/41. Apparently it blossoms almost a month earlier than the preceeding. Beal does not list it from this area in 1904, but Wolff has cited a specimen from Ingham County in 1914. It undoubtedly is becoming more frequent.

ACHILLEA (Vaill.) L. Yarrow.

Achillea Millefolium L. Common Yarrow. Milfoil.

Specimens examined: M.A.C., river, 6/29/95; A. Lansing, 1871.

This is one of our most common weeds in fields, roadsides, and waste places. It blossoms from about the middle of June throughout most of the rest of the summer. It has become a bad weed in some fields in this region. It seemingly can grow in both wet and dry places, but usually requires a good deal of sunlight, and is rarely found growing in the shade.

CHRYSANTHEMUM (Tourn.) L. Ox-eye Daisy.

*Chrysanthemum Leucanthemum L. var. pinnatifidum Lecoq & Lamotte White Weed. White Daisy. Marguerite.

Specimens examined: A, Lansing, 1872; Wh, introduced from France in seed of Dactylis, in field at Ag. Coll., 6/7/00; Sk, C. & G. T. R.R. track, Ag. Coll., 6/17/94; Cl, M.A.C., Grand Trunk Railroad, 6/18/95.

This is another species which is quite common here in fields and along roadsides and railroads. It blossoms mostly from the middle of June to the middle or last of July, sometimes a little longer. It is common enough so that it may be found in nearly all of our fields, and along nearly all of our roadsides and railroads. It seems to prefer fairly dry soil in open places.

TANACETUM (Tourn.) L. Tansy.

*Tanacetum vulgare L. Common Tansy.

Specimens examined: K, roadside north of college, 8/14/95; Sk, roadside north of Ag. Coll., 8/8/94.

I have not seen this species here, though it may be here as an escape. It was once cultivated for its medicinal properties, and seemingly it has some tendency to escape from gardens. It should be sought around old dwellings since it rarely spreads very far from its original place of cultivation. Beal reports it as here in 1904.

ARTEMISIA (Tourn.) L. Wormwood.

Artemisia biennis Willd. Biennial Wormwood.

Specimens examined: Sk, along C. & G. T. R.R., Ag. Coll., 9/21/94; A, Lansing, 8/25/87.

I have not seen this species here. I doubt that it is very frequent if it occurs at all. Beal lists it as here in 1904. It should be sought in dry places, particularly along railroads. It may be an introduced species in this area though it is native in states not very far from here.

ERECHTITES Raf. Fireweed.

Erechtites hieracifolia (L.) Raf.

Specimens examined: A, Lansing, 8/22/87 and 1871; Sk, bank of Red Cedar River, Ag. Coll., 9/21/94.

I have noted this species as very common at Grand Ledge on the sides of a recently cleared slope, 8/30/40. I have also found it in low ground along the Pere Marquette Railroad right-of-way west of Trowbridge, 9/16/40. In both places I believe that the area had been burned over in the spring of 1940. Seemingly this species prefers places that have been cleared or burned over fairly recently. Beal lists it as here in 1904.

SENECIO (Tourn.) L. Ragwort. Groundsel.

Senecio aureus L. Golden Ragwort.

Specimens examined: Cl, M.A.C., northeast of Terrace, 5/26/95; A, Lansing, 1871; Sk, woods north of Ag. Coll., 5/21/94.

This species is apparently frequent to common in our area. I have noted it in swampy places along Sycamore Creek about one mile south of the gravel pits, 5/10/41. It was also noted as common in swamps around both Park and Round Lakes, 5/17/41. Seemingly it prefers wet places where there is a fairly good amount of shade, though never occurring in tamarack bogs.

ARCTIUM L. Burdock.

Arctium minus (Hill) Bernh. Common Burdock.

Specimens examined: Sk, woods near river, Ag. Coll., 7/15/94; Bl, the common sort about the college, 8/30/04, 2 sheets; A, Lansing, 1872.

This species is quite common in roadside ditches, along fence rows and in waste places throughout our area. I believe that it prefers a moderately moist habitat, though I have seen it growing where it is quite dry. It is most commonly found growing in the open, but occasionally occurs in more or less open woods. I first noted it in flower in roadside ditches south of the college, 8/31/40.

CIRSIUM (Tourn.) Mill. Thistle.

*Cirsium vulgare (Savi) Airy-Shaw Bull Thistle.
Cirsium lanceolatum (L.) Hill
Carduus lanceolatus L.
Cnicus lanceolatus Willd.
Fedde Rept. Spec. Nov. 43: 302-315. 1938.

Specimen examined: Sk, Chandler's Marsh, 8/26/94.

This species is more or less frequent throughout the area. I have noted it as quite common along the banks of the Red Cedar River west of the college, 8/19/40. I have also noted it as frequent in fields north of Rose Lake, 9/28/40, and as occasional both at Grand Ledge, 8/30/40, and in Woodlot 17, 9/21/40. From this it can be readily seen that it grows in a variety of habitats, though I think that for the most part it may be said to prefer open places.

*Cirsium arvense (L.) Scop. Canada Thistle.
Carduus arvensis (L.) Robs.
Cnicus arvensis (L.) Hoffm.

Specimens examined: A, Lansing, 7/6/87; Wh, near hospital, 6/9/94.

This species has become a troublesome weed in some parts of this area. I have noted it as especially common along the drain from Mud Lake, 6/26/40, where it covered a very large area and was so dense that one could scarcely walk through it. I have also seen it as fairly common in some of our pastures, particularly where sheep are grazing. It prefers open places and is usually found where it is fairly dry, though it has been known to grow in almost all kinds of habitat except in deep woodland.

Cirsium muticum Michx. Swamp Thistle.
Carduus muticus (Michx.) Pers.
Cnicus muticus (Michx.) Pursh

Specimens examined: A, Ag. Coll., 7/19/87; A, Lansing, 8/20/87 and 1871; Sk, Chandler's Marsh, Ag. Coll., 8/26/94.

I have noted this species as frequent on the west side of Park Lake, 8/24/40, where it was growing at the edge of the woods, but in rather wet soil. I believe that it prefers wet places. I am not sure just how common it is here, though I rather think that it probably occurs in several other places in our area.

Cirsium altissimum (L.) Spreng. Tall Thistle.
Carduus altissimus L.
Cnicus altissimus (L.) Willd.

Specimens examined: A, Lansing, 8/24/87; Sk, banks of Red Cedar River, Ag. Coll., 8/25/94.

I have not seen this species in our area, and I do not think that it is frequent here. Beal lists it as here in 1904, but says that it was infrequent in the state at that time. Its habitat is variable, though probably it is more frequent in woodlands than in other places, and probably prefers a rather dry soil. It is difficult to say just where one should look for it.

LAPSANA L. Nipplewort.

*Lapsana communis L.

Specimen examined: Wh, under Austrian Pine near College Hall, new to college flora, 9/8/96.

I have not seen this species here and I do not think that it is at all common, if here at all. Beal does not list it as here except on the campus in 1904, and that is undoubtedly on the basis of the specimen noted above. It is an introduction which prefers fairly dry places, often occurring along roadsides. It should be sought in that habitat.

CHICORIUM (Tourn.) L. Chicory. Succory.

*Chicorium Intybus L. Common Chicory. Blue Sailors.

Specimen examined: none in herbarium.

This species is common along most of our roadsides, flowering from July to September, though in 1941 I saw it in flower as early as mid-June. It prefers dry places. There are a few places here where it seems to assume the role of a weed.

KRIGIA Schreb. Dwarf Dandelion.

Krigia biflora (Walt.) Blake Cynthia.
Krigia amplexicaulis Nutt.
Cynthia virginica (L.) D. Don

Specimens examined: A, Lansing, 1872 and 1887.

I suspect that this species may be occasional in this area, though I have seen it in but one locality here. It was growing along a dry roadside north of Park Lake, 6/22/40. Seemingly it has a number of habitats, though I cannot say from experience, having seen it here but once. Beal gives its habitat as "moist fields" and reports it as here in 1904.

PICRIS L.

*Picris hieracioides L.

Specimens examined: A, south of C. & G. T. R.R., in orchard grass, French seeds, Field 14, 9/16/96; Wh, #16, in orchard grass, seeds from France, 9/11/96; Wh, introduced with Dactylis from France, 6/7/00.

I do not believe that this species has persisted here to the present day. As may be readily seen, all the above collections were obviously made from introduced species which apparently persisted for a few years. I include it here with some doubt, for I do not think that it is a part of our flora at present.

TRAGOPOGON (Tourn.) L. Goat's Beard.

*Tragopogon porrifolius L. Vegetable Oyster. Salsify.

Specimen examined: Sk, roadside north of Ag. Coll., 9/23/94.

This species is occasional along our dry roadsides throughout. I have seen it along Park Lake Road, 6/20/40, and along the roadsides south of the college, 6/21/40. It also grows along the Grand Trunk Railroad east of the college. The flowers never stay open for a very long time, sometimes only for a few hours in the morning, so that it is often missed unless one looks closely.

*Tragopogon pratensis L. Goat's Beard.

Specimen examined: none in herbarium.

This species is found in about the same habitats as the preceeding, and often grows with it. However it occurs much more frequently than does Tragopogon porrifolius. I have noted it along the roadsides south of the college, 6/20/40, and along Park Lake Road, 6/20/40. I have seen it in flower as early as 5/28/41 along the roadsides south of the college.

TARAXACUM (Haller) Ludwig Dandelion.

*Taraxacum palustre (Lyons) Lam. & DC. var. vulgare (Lam.) Fern.
Common Dandelion.
Taraxacum officinale Weber
Leontodon Taraxacum L.
Rhodora 35: 369-386. 1933.

Specimens examined: Sk, lawn of Ag. Coll., 5/3/94; Bl, M.A.C., 4/27/99; R, college campus, 6/4/94.

This is one of our commonest weeds. I have seen it growing in nearly every sort of habitat, in wet places and in dry, in the open and in deep shade, in lawns and in woods. It is one of the first of our flowers to open in spring and one of the last to disappear in the fall. I have seen it in flower on the campus as early as 4/2/41, just as soon as the frost was out of the ground.

*Taraxacum laevigatum (Willd.) DC. Red-seeded Dandelion.
Taraxacum erythrospermum Andrz..
Leontodon erythrospermum (Andrz.) Britt.

Specimen examined: none in herbarium.

This species is frequent in this area, though not so common as is the preceeding species. It grows in much the same variety of habitats, however, though I have not seen it in woodlands. Dr. Bessey told me that he has observed that it is more likely to blossom earlier in the spring than our common dandelion, and then disappear during the hot weather of the summer, reappearing in blossom late in the fall, after the other species is nearly done flowering. I have found that he is quite correct in this. Our earliest dandelions on the campus are much more frequently found to be this species, and the same is true of the last ones to appear in the fall. Beal does not list this species as here in 1904.

SONCHUS (Tourn.) L. Sow Thistle.

*Sonchus arvensis L. Field Sow Thistle.

Specimen examined: A, Lansing, 1867.

I have noted this species as occasional along the roadsides south of the college, 8/30/40. Its habitat is said to be along roadsides and in fields. Beal lists it as here in 1904.

*Sonchus oleraceus L. Common Sow Thistle.

Specimen examined: none in herbarium.

I have noted this species but once in this area, though I think that it may occur here much more frequently than would be indicated by this note. It was growing in moist, fairly rich soil along a roadside northwest of the Capitol City Airport, 7/20/40. It is usually found, according to most authors, in waste places around dwellings, in fallow fields, and along roadsides. I have not examined the first two habitats especially closely, and it may be that I would have found this species to be much more frequent had I done so.

*Sonchus asper (L.) Hill Spiny-leaved Sow Thistle.

Specimens examined: A, wild garden, Ag. Coll., 7/19/87; Sk, roadside north of Ag. Coll., 8/8/94.

I believe that this is our commonest sow thistle here. I noted it as frequent along the roadsides near Dobie Lake, 8/12/40. It occurs in much the same habitats as the preceeding.

LACTUCA (Tourn.) L. Lettuce.

Lactuca canadensis L. var. typica Wieg. Wild Lettuce.

Specimen examined: Sk, roadside north of Ag. Coll., 8/8/94.

I have noted this species as frequent in the Kalamazoo Street Woodlot, 8/23/40. It is typically a woodland species, usually in more or less dry woodlands. I have not studied this genus very thoroughly, so I am not sure of the distribution here. I think, however, that it is probably occasional to frequent throughout. Beal lists it as frequent in 1904.

Lactuca hirsuta Muhl.
Rhodora 12: 145-146. 1910.
Specimen examined: A, Lansing, 1872.
I am at a loss to explain the presence of this specimen. This species is far out of range here, and I can only think that it may have been introduced here and never have become established. I have examined the specimen, and though it is labeled as Lactuca canadensis L., it undoubtedly should be referred here. I am including it only on the chance that it might have become established here. I am inclined to think, however, that it is not a part of our flora. Beal lists this species as here in 1904, but our manuals have not been treating the species correctly, and I think he made his note on the basis of identification by the manuals. The reference noted above gives good characters for the proper separation of this species from its allies.

Lactuca spicata (Lam.) Hitchc.
Specimens examined: A, Lansing, 8/27/87; Sk, roadside north of Ag. Coll., 9/2/94.
I have noted this species as more or less frequent in the Kalamazoo Street Woodlot, 8/23/40. I think that it probably is occasional to frequent throughout the area, though I have not seen it elsewhere. Its habitat is said to be moist places, both along roadsides and in open woods. Beal lists it as here in 1904.

CREPIS L. Hawk's Beard.

*Crepis tectorum L.
Specimen examined: Wh, near ice-house, 6/6/94.
I have not seen this species here, and I doubt very much that it is at all common, if it is present at all. It is an introduced plant which may or may not have become established here. It is usually found in fields, flowering from July to September.

*Crepis biennis L.
Specimens examined: Bl & Wh, #14, in orchard grass, seed from France, 6/15/97; A, in meadow seeded with orchard grass from France, 6/15/97; Wh, near C. & G. T. R.R., M.A.C., 6/7/00.
It is obvious how this species was introduced. However I do not think that it has persisted here. At least, I have not seen it here during the past season. Both Beal and Wheeler seemed to like to collect weeds which apparently came with the seed of some orchard grass from France, and I think in many cases made collections before it was determined whether or not the species was going to become established here. I believe that this is a case where the plant failed of establishment, and if this is true, it might better be omitted from this list. However, only one season's collecting is hardly enough to prove the point one way or the other, so I am leaving it in.

PRENANTHES (Vaill.) L. Rattlesnake-root.

Prenanthes alba L. White Lettuce. Rattlesnake-root.
Nabalus albus Hook.

Specimens examined: Bl, Chandler's Marsh, north of M.A.C., 9/8/03, fide Wo; Sk, Pine Lake, 9/9/94; A, Lansing, 1871 and 8/27/87.

I believe that this species is occasional in the woodlots of our area, particularly in moist, beech-maple woods. I noted it in Woodlot 17, 9/21/40. Beal notes it as common in 1904.

Prenanthes racemosa Michx.
Nabalus racemosus DC.

Specimens examined: A, Lansing, 9/2/85; Wh & H, Ag. Coll., 9/28/91.

I have noted this species as frequent, both in the swamp, and in the woods at the edge of the swamp, at the Rose Lake Sanctuary, 9/28/40. I have not seen it elsewhere in the area. Beal notes it as here in 1904, but says that it was rare at that time. Its preferred habitat is marshes.

HIERACIUM (Tourn.) L. Hawkweed.

Hieracium canadense Michx. Canada Hawkweed.

Specimens examined: A, Lansing, 1887; Sk, bank of Red Cedar River, Ag. Coll., 8/25/94.

I have not seen this species here, though I feel sure from reports that it should be found here. It should be sought in dry woods, particularly those of an oak type.

Hieracium venosum L. Rattlesnake-weed. Poor Robin's Plantain.

Specimens examined: Sk, roadside north of Ag. Coll., 7/7/94; Cl, M.A.C., near Towar's Swamp, 6/19/95; A, Lansing, 1864.

This is another species which I feel that I should have seen here but which I have failed to note. Beal lists it as here in 1904, giving its habitat as dry pine or oak woods.

Hieracium paniculatum L.

Specimens examined: A, Lansing, 9/4/87; Wh, Grand Ledge, 9/7/95.

I have not seen this species here. It is probably not very common if here at all. Like the preceeding, it is most often found in more or less dry, oak woods. Beal lists it as here in 1904, but adds that it was scarce at that time.

Hieracium scabrum Michx. Rough Hawkweed.

Specimens examined: Bl & Wh, Park Lake, 9/2/96, fide Wo; Wh & H, Ag. Coll., 1892, fide Wo; A, Lansing, 8/4/80.

I have noted this species as occasional along the roadsides southeast of Park Lake, 9/2/40, growing in more or less dry soil. It is said to occur quite frequently in dry, oak woods, and the collection noted above was not far from such a habitat. It may well occur in other places here, though I have seen it in only this one locality. Beal noted it as common here in 1904.

ADDENDA

The following are included here either because I found them too late to include in the preceding list, or because I had held them out for investigation beyond the time that the list had been made up.

CARYOPHYLLACEAE Reichenb. Pink Family.

ARENARIA L. Sandwort.

Arenaria lateriflora L.

Specimen examined: Dr, woods near Dimondale, Mich., 6/28/16.

I have seen this species but once in this area, though it was noted as being quite frequent there. It was growing in a woodland which borders the Grand River east of Dimondale. It seems likely that this may be the same locality reported by Dr. Darlington. I have not seen it elsewhere here, nor have I heard of its occurrence in any other locality in our range. It apparently prefers situations along river banks, particularly where there is a sandy or gravelly type of soil and a good deal of moisture. I believe that it prefers a moderate amount of shade. I noted it in flower, 5/10/41.

LEGUMINOSAE Juss. Pea Family.

VICIA (Tourn.) L. Vetch. Tare.

*Vicia tetrasperma (L.) Moench.

Specimen examined: A, in farm plots, 6/29/85.

I have not seen this species here, and it is my belief that it is not to be found in our area at present. Beal does not report it here in 1904. It would seem to me that this is another case of a plant which was introduced with some foreign seed shipment, and which survived for only a few years.

Vicia Cracca L. Cow Vetch.

Specimen examined: A, cultivated, Lansing, 1887.

Beal reports this species as rare in the state in 1904. Now, however, it seems to be fairly frequent in fields and waste places throughout our area. I have noted it in flower throughout a good deal of the summer, but especially in July. It prefers more or less dry, open places.

ERICACEAE DC. Heath Family.

MONOTROPA L. Indian Pipe. Pine Sap.

Monotropa Hypopitys L. var. rubra (Torr.) Farw.

Monotropa Hypopitys L. of Gray, Man., ed. 7.

Hypopitys lanuginosa (Michx.) Nutt. of Britton & Brown, Illus. Flora, ed. 2.

Specimens examined: Wh, oak woods north of hospital, M.A.C., 6/25/01; Wh, north of Terrace in oak woods, 6/20/01; Sk & Wh, Ag. Coll., 9/5/97.

I have not seen this species here, nor do I know of any recent reports for it. However, I see no reason why it should not be found here. It should be sought in rich woods, flowering throughout the summer.

BORAGINACEAE Lindl. Borage Family.

MYOSOTIS (Rupp.) L. Forget-me-not.

*Myosotis arvensis (L.) Hill.

Specimen examined: A, Lansing, 1883.

This sheet has not been identified except by myself. The plant is not in especially good condition for identification, but it seems to me that it is properly referable to this species. I have not seen it in our area, and Beal does not list it as here in 1904, though he does report it from Lapeer. It should be sought in open fields, flowering throughout most of the summer.

INDEX

Names of families are in capitals. Synonyms are indicated by asterisks.

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Giles

A survey of the indigenous and naturalized, herbaceous flowering plants, exclusive of the grasses and sedges, growing within a ten mile radius of the Michigan state college.