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## A Preliminary Report on the Flora of Southeastern Iowa - Part I

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## A Preliminary Report on the Flora of Southeastern Iowa—Part I

CHARLES L. GILLY AND MALCOM E. McDONALD

While the authors were undergraduate students in the Biology Department at Parsons College, a major part of their duties as departmental assistants was the preparation of a herbarium of southeastern Iowa plants. Extensive collections were made in Jefferson and Van Buren Counties, and some collecting was done in the neighboring counties. The project was begun in the spring of 1933 under the direction of the late Dr. Charles Carter, then Head of the Department of Biology at Parsons College. As originally planned, the scope of the project included the ten southeasternmost counties in the state, but only a few specimens were actually obtained by the authors in Davis, Keokuk, Lee, Louisa, Wapello and Washington Counties. The senior author terminated his field work in the autumn of 1936, but the junior author was able to make additional collections at intervals during the years 1937 to 1940. Supplemental collections were made in Jefferson County by both authors in the late summer of 1946.

At the time that plans for the herbarium of southeastern Iowa plants were initiated there were about 200 herbarium specimens in the Biology Department; these were mostly from Jefferson County, although a few specimens from Lacey-Keosauqua State Park in Van Buren County were included. At the present time there are about 4000 specimens in the Parsons College herbarium. Except for a collection of about 170 specimens presented to the herbarium by Mr. J. W. Dole of Fairfield, about 25 specimens donated by the late Mr. E. W. Graves of Bentonport, a set of 60 Indiana specimens contributed by Dr. J. C. Welty, 25 out-of-state grasses acquired by exchange from the Iowa Wesleyan College Department of Biology, and a few miscellaneous specimens contributed by various individuals, the remainder of the specimens in the herbarium were collected by the authors. In addition to the southeastern Iowa specimens, the herbarium also contains a series of approximately 300 specimens collected by the authors in Michigan during the late summer of 1934, approximately 200 specimens collected by the junior author in other parts of Iowa, and about 50 specimens from other states.

An integral part of the preparation of the southeastern Iowa herbarium was a search through the literature for references to plants collected in, or recorded from the ten-county area. Data obtained from 115 papers dealing with the flora of Iowa, after elimination of obviously erroneous reports, may be summarized by counties for species and well-marked varieties as follows: Davis—180; Des Moines—464; Henry—929; Jefferson—938; Keokuk—171; Lee—792; Louisa—288; Van Buren—755; Wapello—251; Washington—180; total for the ten-county area—1414. The foregoing figures, obviously, do not represent an accurate picture of the flora of southeastern Iowa but

they may be used as a comparative approximation of our present knowledge of the floras of these counties.

Several short papers, based on the plants in the Parsons College herbarium, have been published; authorship of these is as follows: Gilly (1937, 1938), Gilly and McDonald (1937) and McDonald (1938). Species erroneously reported, because of misidentifications of specimens, in those papers have been renamed in the present paper, which is presented in the form of an annotated catalogue of the southeastern Iowa specimens in the Parsons College herbarium. Part I of this paper includes the Pteridophytes, the single Gymnosperm, the Monocotyledons and the apetalous and polypetalous groups of Dicotyledons. Part II will contain the gamopetalous Dicotyledons and a complete bibliography for both sections of the paper.

The total number of species and well-marked varieties included in Part I of the present paper is 585; this total may be broken down, for individual counties from which specimens are reported, as follows: Des Moines (DM)—39; Henry (H)—28; Jefferson (J)—539; Lee (L)—7; Van Buren (V)—201; Wapello (W)—5. The letters in parentheses are used for county identification in the annotated list, and individual specimens from each county are cited by collection number, regardless of whether collected by one or the other, or both of the authors. Such procedure is feasible because only a single number series has been used in the entire herbarium. Duplicates of many of the specimens cited in the paper have been deposited in the herbarium of the Iowa State College Department of Botany.

The following nine species, included in this paper, are reported apparently for the first time in the state: *Marsilea quadrifolia* L.; *Lemna minima* Phillipi; *Celtis laevigata* Willd.; *Humulus japonicus* Sieb. & Zucc.; *Rumex triangulivalvis* (Danser) Rech. f.; *Lespedeza stipulacea* Maxim.; *Ludwigia palustris* (L.) Ell.; *Oenothera pilosella* Raf.; *Eulophus americanus* Nutt. These species are marked with an asterisk in the annotated list which follows.

Arrangement of the plant families in the annotated list is essentially that of the standard Engler and Prantl system of plant classification. Names used for individual species and varieties, in the main, are those currently recognized by the most recent students of the various families or genera included. Deam's "Flora of Indiana" (1940) and its several supplements, and Jones' "Flora of Illinois" (1945) have been used as general references, and individual recent papers have been consulted where necessary. The nomenclature of the grasses is essentially that of Hitchcock's "Manual of Grasses" (1935). No attempt has been made to include full synonymy for any species; such synonyms as are included, within brackets, are those names appearing in Cratty's "The Iowa Flora" (1933), the 7th edition of "Gray's New Manual of Botany" (1908), or particular recent papers commonly consulted for nomenclatural reference, when these differ from the names used in the present paper. Names of the 108 species or varieties which have been introduced or which have es-

caped from cultivation and become established are printed in capital letters; names of native species and varieties are printed in italics.

The specimens of several families have been examined and checked or identified by specialists or students of the particular groups; these are: Equisetaceae, the late Dr. J. H. Schaffner; Alismaceae, Mr. Harry C. Fink; Gramineae, Mr. Robert G. Brown; *Polygonum*, Mr. Carl C. Blickenstaff; Leguminosae, Dr. Duane Isely; Hypericaceae, Mr. D. D. Millspaugh. Acknowledgement of their courtesy and helpfulness is here made. All other plants have been recently checked or identified by the senior author.

The authors would like to acknowledge the many courtesies of all the individuals concerned in furthering our collection of plants in southeastern Iowa and in the preparation of this manuscript, but the length of such a list renders such a procedure impossible. However, thanks are particularly due the following persons: the late Dr. Charles Carter, whose aid and encouragement during and after our days of collecting was always freely and sympathetically given; Mr. J. W. Dole of Fairfield, Iowa, always a helpful and inspiring field companion; the members of the Charles Campbell family, whose farm home near Mt. Zion, Iowa, served as a base of operations for collecting in Van Buren County; Dr. F. W. Von Ohlen, present Head of the Parsons College Biology Department, who graciously permitted the temporary transfer of the entire southeastern Iowa herbarium to Iowa State College for study and the preparation of this paper; and Drs. J. C. Gilman and Ada Hayden of the Iowa State College Department of Botany for their helpful cooperation and for making the facilities of the herbarium available.

## ANNOTATED LIST OF SPECIES AND VARIETIES

### PTERIDOPHYTA

#### 1. OPHIOGLOSSACEAE (Adder's-tongue Family)

*Botrychium dissectum* Spreng. (V—1591, 3040).

*B. dissectum* Spreng., var. *obliquum* (Muhl.) Clute (V—1592, 3039).

*B. virginianum* (L.) Sw. (J—1798; V—391, 600, 789, 1870).

#### 2. OSMUNDACEAE (Royal Fern Family)

*Osmunda claytoniana* L. (J—437, 1022, 1023, 2729; V—1729, 1920).

#### 3. POLYPODIACEAE (Fern Family)

*Adiantum pedatum* L. (J—56, 440, 2024; V—188).

*Asplenium platyneuron* (L.) Oakes (J—3054; V—1594).

*Athyrium angustum* (Willd.) Presl. [*Asplenium filix-femina* of authors] (J—438, 439, 2025; V—1728).

*Camptosorus rhizophyllus* (L.) Link (V—1585).

*Cystopteris bulbifera* (L.) Bernh. (DM—221; H—571; J—2728; V—216).

*C. fragilis* (L.) Bernh. (DM—3493; H—560, 561; J—153, 204, 215, 415, 586; V—189, 236, 585, 2846). A few of the specimens appear to represent the rhizomatous var. *protrusa* Weatherby, or intermediates between that variety and the typical phase of the species.

- Dryopteris hexagonoptera* (Michx.) C. Chr. [*Phegopteris hexagonoptera* (Michx.) Feé] (DM—2822, from Flint Hills State Park).  
*D. spinulosa* (O. F. Muell.) Watt. [*Aspidium spinulosum* (O. F. Muell.) Sw.] (V—1588).  
*Onoclea sensibilis* L. (J—292).  
*Pellaea atropurpurea* (L.) Link (V—344, 1581, both from bluffs in Lacey-Keosauqua State Park).  
*P. glabella* Mett. (DM—3479; V—1582, 2005).  
*Polystichum acrostichoides* (Michx.) Schott (J—436; V—1304).  
*Pteridium latiusculum* (Desv.) Hieron. [*Pteris aquilina* of authors, not of L.] (J—2591).  
*Woodsia obtusa* (Spreng.) Torr. (J—2060).

4. MARSILEACEAE (Water-clover Family)

- \**MARSILEA QUADRIFOLIA* L. (V—3840). This plant is persistent and aggressive in a pond on the Charles Campbell farm near Mt. Zion; apparently this is the first report of the species for the state.

5. EQUISETACEAE (Horsetail Family)<sup>1/</sup>

- Equisetum arvense* L. (J—32, 222, 389, 390, 421, 729, 1518, 1634; V—787, 1860).  
*E. hyemale* L., var. *intermedium* A. A. Eaton (V—790).  
*E. kansanum* Schaffner (J—725, 1803; V—1871).  
*E. praealtum* Raf. [*E. hyemale* L., var. *robustum* (A. Br.) A. A. Eaton; *E. robustum* A. Br.] (J—1934, 2653, 3756; V—272, 595, 1861).

GYMNOSPERMAE

6. PINACEAE (Pine Family)

- Juniperus virginiana* L. (J—1598, 2723, 3064, 3845; V—1296, 1724, 1946). Some of the specimens seem to approach var. *crebra* Fern. & Griscom.

ANGIOSPERMAE—Monocotyledoneae

7. TYPHACEAE (Cat-tail Family)

- Typha latifolia* L. (J—619, 2047, 3979, 3982). Specimens 3979 and 3982 were growing in different parts of the same stone quarry; 3979 is typical of the species but 3982 is narrow-leaved and exhibits certain characters of *T. angustifolia* L.

8. SPARGANIACEAE (Bur-reed Family)

- Sparganium eurycarpum* Engelm. (J—361, 626).

9. POTAMOGETONACEAE (Pondweed Family)

- Potamogeton diversifolius* Raf. [*P. dimorphus* Raf.] (J—947, 2782).  
*P. nodosus* Poir. [*P. americanus* Cham. & Schlecht.] (J—1003, 2111, 2761).

10. ALISMACEAE (Water-plantain Family)<sup>2/</sup>

- Alisma subcordatum* Raf. [*A. plantago-aquatica* of most American authors, not of L.] (J—945).  
*Lophotocarpus calycinus* (Engelm.) J. G. Sm. (J—890, 3933).

1/ The majority of the specimens of this family were identified by the late Dr. J. H. Schaffner, then Head of the University of Ohio Department of Botany, in March of 1936.

2/ The specimens of this family were checked and identified by Mr. Harry C. Pink, of the Department of Botany, Iowa State College.

*Sagittaria latifolia* L. (J—364, 635, 645, 946, 1486, 2026, 3894, 3940, 3974).

*S. rigida* Pursh [*S. heterophylla* Pursh] (J—360, 632, 2460, 2939).

#### 11. GRAMINEAE (Grass Family)\*

**AGROPYRON REPENS** (L.) Beauv. (J—671, 896, 2693, 2896). The report of *A. subsecundum* from Jefferson Co. by Gilly and McDonald (1937) was based on a misidentification of a specimen of this species.

*A. smithii* Rydb. (J—614, 2738).

**AGROSTIS ALBA** L. (J—643, 987, 1949, 2639, 3907; V—792, 1862).

*A. hymenalis* (Walt.) B.S.P. (J—408, 509, 3526, 3885).

*A. perennans* (Walt.) Tuckerm. (J—1234, 3857).

*Alopecurus carolinianus* Walt. (J—317, 426, 2480).

*Andropogon furcatus* Muhl. (J—1247, 2115, 2902).

*A. scoparius* Michx. (J—2903).

*Aristida basiramea* Engelm. (H—2967; V—3708).

*A. oligantha* Michx. (J—2090, 2165, 2704, 3413, 3821; V—2828).

**AVENA SATIVA** L. (J—688, escaped from cultivation).

*Brachyelytrum erectum* (Schieb.) Beauv. (J—2640; V—793, 1969).

**BROMUS INERMIS** Leyss. (J—1859, 2155, 2692).

**B. JAPONICUS** Thunb. (J—532, 2590).

*B. latiglumis* (Shear.) Hitchc. (J—3835, 3879).

*B. purgans* L. (DM—2806, 3476, 3490; H—572; J—547, 937, 1925, 2624; V—593, 1865, 1971).

**B. SECALINUS** L. (J—531, 549, 1805, 2606, 2613).

**B. TECTORUM** L. (J—472). Plants of this species are frequently misidentified and reported as *Avena fatua* L.

*Calamagrostis canadensis* (Michx.) Beauv. (J—621, 644).

*Cenchrus pauciflorus* Benth. [*C. longispinus* (Hackel.) Fern.; *C. carolinianus* Walt.; *C. tribuloides* L., in part] (J—1006, 1804, 2049).

*Cinna arundinacea* L. (DM—2807; J—1122, 3844).

**DACTYLIS GLOMERATA** L. (J—398, 535, 935).

*Danthonia spiciflora* (L.) Beauv. (J—2643).

*Digitaria filiformis* (L.) Koel. (H—2964; J—3042).

**D. SANGUINALIS** (L.) Scop. (J—1113, 2670, 2694, 2695, 2698).

**ECHINOCHLOA CRUSGALLI** (L.) Beauv. (J—966, 2109). These specimens approach the so-called var. *mitis* (Pursh.) Peterm.

**E. PUNGENS** (Poir.) Rydb. (J—1008, 1114, 1205, 2074, 2777, 3822).

**ELEUSINE INDICA** (L.) Gaertn. (J—2638).

*Elymus canadensis* L. (J—948, 2124, 2429, 2696).

*E. canadensis* L., var. *brachystachyus* (Scribn. & Ball) Farw. (J—830).

**E. Villosus** Muhl. [*E. striatus* Willd.] (DM—3477; J—1002, 2625, 3349; V—1972, 1991, 2001).

*E. virginicus* L. (J—1834, 1899, 2117, 2624, 3419; V—1964).

*E. virginicus* L., var. *intermedius* (Vasey) Bush (J—969, 2108, 2714).

*Eragrostis capillaris* (L.) Nees (J—2944, 2991).

**E. CILIANENSIS** (All.) Link (J—1104, 2671; V—794).

*E. hypnoides* (Lam.) B.S.P. (J—970, 2110).

*E. pilosa* (L.) Beauv. (J—962, 993, 2050, 2622, 2636, 2745).

*E. spectabilis* (Pursh) Steud. (J—3556, 3780; V—1200).

**FESTUCA ELATIOR** L. (J—533, 2587).

*F. obtusa* Biehler. (DM—3475; H—552; J—546, 936, 1924, 2030, 2543; V—1864).

**F. RUBRA** L. (J—1668, 1669).

*Glyceria septentrionalis* Hitchc. (J—359, 912, 2755, 2778).

3/ The specimens of this family were identified and checked by Mr. Robert G. Brown, of the Department of Botany, Iowa State College. A few additional nomenclatural changes have been suggested by Dr. R. W. Pohl, of the same department.

- G. striata* (Lam.) Hitchc. [*G. nervata* (Willd.) Trin.] (J—490, 615, 911, 1842, 2715, 2988; V—1863).  
*HORDEUM JUBATUM* L. (J—465).  
*H. pusillum* Nutt. (J—459, 698, 1807; L—1761).  
*Hystrix patula* Moench (J—914).  
*Koeleria cristata* (L.) Pers. (J—529, 2626).  
*Leersia oryzoides* (L.) Sw. (J—2918; V—1185).  
*L. virginica* Willd. (J—2754, 3861; V—1141).  
*Leptoloma cognatum* (Schult.) Chase (H—2965; J—1935, 3026).  
*LOLIUM MULTIFLORUM* L. (J—2607).  
*L. PERENNE* L. (J—2669, 2870).  
*Melica nitens* (Scribn.) Nutt. (J—1873). Previously reported by Gilly and McDonald (1937) as *M. mutica* Walt.  
*Muhlenbergia frondosa* (Poir.) Fern. [*M. mexicana* of authors, not of (L.) Trin.] (J—2895, 2935).  
*M. schreberi* Gmel. (J—1204, 2744, 2973, 2989, 3427).  
*M. sobolifera* (Muhl.) Trin. (J—2642, 2946, 2992).  
*Panicum capillare* L. (J—2826).  
*P. clandestinum* L. (J—3517).  
*P. dichotomiflorum* Michx. (J—1245; V—2829).  
*P. implicatum* Scribn. [incl. *P. huachucae* Ashe]. (J—648, 995, 2029).  
The report of *P. tennesseense* from Jefferson County by Gilly and McDonald (1937) was based on specimen 995.  
*P. latifolium* L. (J—506, 2641; V—581).  
*P. scribnerianum* Nash (J—425, 2616, 3409, 3529, 3839; V—3746).  
*P. virgatum* L. (J—1024, 2716, 2774, 3428, 3779; V—1187).  
*Paspalum ciliatifolium* Michx., var. *stramineum* (Nash) Fern. (H—2966; J—2945, 3778, 3841).  
*Phalaris arundinacea* L. (J—3932).  
*P. CANARIENSIS* L. (J—2700, escaped from cultivation).  
*PHLEUM PRATENSE* L. (J—670).  
*POA COMPRESSA* L. (J—690, 1646, 1823, 1826, 2568, 2602, 2603, 2651, 3528, 3849).  
*P. PRATENSIS* L. (H—557; J—466, 517, 1827, 2601, 3527).  
*SECALE CEREALE* L. (J—402, 507, 2524, all escaped from cultivation).  
*SETARIA LUTESCENS* (Weigel) F. T. Hubb [*S. glauca* (L.) Beauv.] (J—696, 1395, 2048, 2089, 2735). The report of *S. geniculata* from Jefferson Co. by Gilly and McDonald (1937) was based on misidentified specimens of this species.  
*S. VERTICILLATA* (L.) Beauv. (J—988, 1057, 2016).  
*S. VIRIDIS* (L.) Beauv. (J—994, 1947).  
*Sorghastrum nutans* (L.) Nash (J—2143, 2878, 3559).  
*SORGHUM VULGARE* Pers. (J—2073, 2794, escaped from cultivation).  
*Spartina pectinata* Link [*S. michauxiana* Hitchc.; *S. cynosuroides* of authors, not of Roth.] (J—949, 2116, 2683, 3958).  
*Sphenopholis intermedia* (Rydb.) Rydb. (J—1872, 2623; V—579, 592).  
*S. obtusata* (Michx.) Scribn. (J—542).  
*Sporobolus asper* (Michx.) Kunth (J—2934, 3424, 3555).  
*S. clandestinus* (Spreng.) Hitchc. (H—2963; J—3027).  
*S. heterolepis* A. Gray (J—2897).  
*S. vaginaeflorus* (Torr.) Wood (J—2893, 2905, 2990, 3557).  
*Stipa spartea* Trin. (J—2615, 3525).  
*Triodia flava* (L.) Smyth [*Triodia flava* (L.) Hitchc.] (DM—2805; J—2747, 3041; V—1140).  
*TRITICUM AESTIVUM* L. (V—1923, escaped from cultivation).

12. CYPERACEAE (Sedge Family)<sup>4/</sup>

- Carex amphibola* Steud., var. *turgida* Fern. [*C. grisea* of authors, not of Wahl.] (J—2518).  
*C. annectens* (Bickn.) Bickn., var. *xanthocarpa* (Bickn.) Wieg. [*C. brachyglossa* Mackenz.] (J—315, 618).  
*C. blanda* Dewey (DM—3472; J—372, 519, 2498, 2584).  
*C. brevior* (Dewey) Mackenz. (J—520, 2517; V—1867).  
*C. buxbaumii* Wahl. (J—276).  
*C. cephalophora* Muhl. (J—374).  
*C. crinita* Lam. (J—1821).  
*C. cristatella* Britt. (J—639).  
*C. davisii* Schw. & Torr. (J—291, 640, 2028; V—1869).  
*C. festucacea* Schkuhr (H—2953).  
*C. gravida* L. H. Bailey (DM—3471; J—380, 2493, 2519, 2522, 2585).  
*C. grayii* Carey (J—435, 1838, 2065).  
*C. lacustris* Willd. (J—396).  
*C. lasiocarpa* Ehrh., var. *latifolia* (Böckl.) Gilly [*C. lanuginosa* Michx.] (J—278, 297, 322, 371).  
*C. lupulina* Muhl. (J—810, 931, 981).  
*C. lurida* Wahl. (J—2752).  
*C. meadii* Dewey (J—1790, 2494, 2495).  
*C. molesta* Mackenz. (J—311).  
*C. muhlenbergii* Schkuhr (J—294, 1793, 2582).  
*C. muskingumensis* Schwein. (J—808, 2093).  
*C. normalis* Mackenz. (J—2681).  
*C. pennsylvanica* Lam. (J—154, 239, 2479; V—190).  
*C. pennsylvanica* Lam., var. *digyna* Böckl. [*C. heliophila* Mackenz.] (J—217).  
*C. rosea* Schkuhr ex Willd., var. *pusilla* Peck ex Howe [*C. rosea* of authors, in part; *C. convoluta* Mackenz.] (J—368, 2500, 2556, 2559, 2581).  
*C. scoparia* Schkuhr (J—381).  
*C. shortiana* Dewey (J—387; V—1868).  
*C. sprengelii* Dewey (J—2471).  
*C. squarrosa* L. (J—1857, 2064, 3877; V—602).  
*C. stipata* Muhl. (J—1820).  
*C. stricta* Lam. (J—34, 538, 2554).  
*C. suberecta* (Olney) Britt. (J—536, 1825).  
*C. typhina* Michx. (J—633, 2064).  
*C. vulpinoidea* Michx. (J—343, 2593).  
*Cyperus aristatus* Rottb. [*C. inflexus* Muhl.] (J—1225).  
*C. erythrorhizos* Muhl. (J—1207, 1208, 2101).  
*C. esculentus* L. (J—1224, 2762, 2929, 2948, 2974; V—2837, 2842).  
*C. filiculmis* Vahl (H—2970; J—3781).  
*C. rivularis* Kunth (J—2726).  
*C. schweinitzii* Torr. (H—2971; J—1007, 1951, 2690, 3771, 3906).  
*C. strigosus* L. (J—838, 2699, 2712, 2725, 2741, 2783, 2827, 2873, 2928, 2936; V—1186, 2839, 2840).  
*Eleocharis atropurpurea* (Retz.) Kunth (J—1206).  
*E. calva* Torr. (J—295).  
*E. macrostachya* Britt. (J—748).  
*E. obtusa* (Willd.) Schultes (J—1079, 1223, 2749).  
*E. obtusa* (Willd.) Schultes, var. *engelmanni* (Steud.) Gilly (J—3523).  
*E. tenuis* (Willd.) Schultes (J—370).  
*Scirpus americanus* Pers. (J—700; V—1866).  
*S. atrovirens* Muhl. (J—636, 924, 979; V—2004).  
*S. cyperinus* (L.) Kunth (J—961, 2062).

<sup>4/</sup> Nomenclature of this family is in agreement with that used in a recent paper by Gilly (1946).



- S. heterochaetus* Chase (J—385).  
*S. lineatus* Michx. (J—522, 930; V—1874, 2003).

13. ARACEAE (Arum Family)

- ACORUS CALAMUS* L. (J—330).  
*Arisaema atrorubens* (Ait.) Blume [*A. triphyllum* of authors, not of (L.) Schott] (J—94, 148, 225, 1419, 1442, 1525; V—2854).  
*A. dracontium* (L.) Schott. (J—495).

14. LEMNACEAE (Duckweed Family)

- \**Lemna minima* Phillipi (J—3532). This is apparently the first report of this species for the state.  
*L. perpusilla* Torr. (J—2781, 3518).  
*Spirodela polyrrhiza* (L.) Schleid. (J—2100, 2784).  
*Wolffia punctata* Griseb. (J—3533).

15. COMMELINACEAE (Spiderwort Family)

- COMMELINA COMMUNIS* L. (J—2675, 2737, 2961).  
*Tradescantia canaliculata* Raf. [*T. reflexa* Raf., in part] (J—1819, 1950, 2515, 2565, 3811). Anderson and Woodson (1935) have discussed the proper name for this species.  
*T. virginiana* L. (J—85, 174, 1400, 1425, 1480, 1533, 2476, 2485, 2505).

16. PONTEDEDIACEAE (Pickerelweed Family).

- Pontederia cordata* L. (J—1402). This specimen is perhaps referable to the broad-leaved forma *latifolia* (Farw.) House.

17. JUNCACEAE (Rush Family)

- Juncus canadensis* J. Gay (J—383, 2748).  
*J. interior* Wieg. (J—2497, 2566, 3403, 3530).  
*J. tenuis* Willd. [*J. macer* S. F. Gray] (J—314, 367, 980, 2580, 2588, 3035, 3421; V—2841).  
*J. torreyi* Coville (J—641, 824, 2733, 3115, 3758).

18. LILIACEAE (Lily Family)

- Allium canadense* L. (J—409, 461, 2529; V—1921).  
*A. tricoccum* Ait. (J—704; V—753).  
*ASPARAGUS OFFICINALIS* L. (J—905, 1784, 2088, escaped from cultivation).  
*Camassia scilloides* (Raf.) Cory [*C. esculenta* (Ker.) Robins.] (J—197, 1415, 1438, 1523, 1676, 1792; V—129).  
*Erythronium albidum* Nutt. (J—2, 51, 113, 203, 209, 227, 1422, 1477, 1501, 1675).  
*HEMEROCALLIS FULVA* L. (J—2075, escaped from cultivation).  
*Lilium michiganense* Farw. (J—740, 1497, 1569, 2472; V—1970).  
*Polygonatum canaliculatum* (Muhl.) Pursh [*P. commutatum* (R. & S.) Dietr.] (DM—2825; J—180, 226, 447).  
*Smilacina racemosa* (L.) Desf. (J—37, 79, 445, 913, 2634). Some of these specimens appear to represent either the var. *cylindrata* Fern., or intermediates between that variety and the typical phase of the species.  
*S. stellata* (L.) Desf. (V—1192, 1730).  
*Smilax ecirrhata* (Engelm.) Wats. (J—1677, 2061, 3009; V—126, 752, 1731).  
*S. herbacea* L. (J—386, 2027, 3796, 3816).  
*S. herbacea* L., var. *lasioneuron* (Hook.) A. DC. [*S. lasioneuron* Hook.] (J—515, 1858).  
*S. hispida* Muhl. (J—2069; V—1732).  
*Trillium nivale* Riddell (V—1601, 3182).

*T. recurvatum* Beck. (J—1, 96, 196, 208, 1417, 1457, 1616, 1691; V—191, 2007). One of these specimens has four leaves and flowers with parts in multiples of four.

*T. sessile* L. (J—1617). This specimen represents the phase with the greenish-yellow petals known as forma *luteum* (Muhl.) Peattie.

*Uvularia grandiflora* J. E. Sm. (J—53, 219, 255, 1514; V—118, 1715).

*U. sessilifolia* L. [*Oakesia sessilifolia* (L.) Wats.; *Oakesiella sessilifolia* (L.) Greene] (J—58, 444, 1429, 1481).

*Veratrum woodii* Robbins (J—1618, 2730, 3859; V—1697, 2002).

#### 19. AMARYLLIDACEAE (Amaryllis Family)

*Hypoxis hirsuta* (L.) Coville (J—12, 35, 146, 264, 265, 1452, 2482).

#### 20. DIOSCOREACEAE (Yam Family)

*Dioscorea villosa* L. (J—642; V—1888).

#### 21. IRIDACEAE (Iris Family)

*BELAMCANDA CHINENSIS* (L.) DC. (J—2663, escaped from cultivation).

*Iris virginica* L., var. *shrevei* (Small) E. Anderson [*I. versicolor* of authors, not of L. (J—357, 1609, 1836). Anderson (1928) has discussed the proper name for this species.

*Sisyrinchium angustifolium* Mill. [*S. graminoides* Bickn.; *S. graminum* Curtis] (V—1922).

*S. campestre* Bickn. (J—97, 263, 266, 516, 1546, 2490, 2530; V—1733).

#### 22. ORCHIDACEAE (Orchid Family)

*Cypripedium parviflorum* Salisb., var. *pubescens* (Willd.) Knight (J—135; V—3738).

*Goodyera pubescens* (Willd.) R. Br. [*Epipactis pubescens* (Willd.) A. A. Eaton] (V—1367).

*Orchis spectabilis* L. (J—254, 273, 388; V—127).

*Spiranthes gracilis* (Bigel.) Beck. (J—3052).

### Dicotyledoneae—Apetalae and Polypetalae

#### 23. SALICACEAE (Willow Family)

*POPULUS ALBA* L. (J—106, 3924, escaped from cultivation).

*P. DELTOIDES* Bartr. ex Marsh. (J—714, 1061, 1604, 1822, 2906).

*P. grandidentata* Michx. (J—2756).

*P. tremuloides* Michx. (J—1058, 1064, 1527).

*SALIX ALBA* L., var. *VITELLINA* (L.) Koch (J—1372, 1933, 2138, 2999).

*S. amygdaloides* Anderss. (J—161, 2496, 3110, 3420).

*S. humilis* Marsh. (J—1641, 2920, 3103, 3104, 3117, 3954).

*S. interior* Rowlee [*S. longifolia* Muhl., not of Lam.] (J—723, 1070, 2548, 3770, 3963; V—750, 751, 1745).

*S. lucida* Muhl. (J—3111).

*S. missouriensis* Bebb (H—2955; J—3002, 3118, 3962).

*S. nigra* Marsh. (J—280, 326, 1694, 2467, 2477, 2486, 2487, 2501, 2506, 2563, 3112, 3961).

#### 24. JUGLANDACEAE (Walnut Family)

*Carya cordiformis* (Wangenh.) K. Koch (J—171, 1092, 3996; V—2848). Some of the specimens are transitional toward var. *latifolia* Sarg.

*C. ovalis* (Wangenh.) Sarg. [*C. microcarpa* Nutt., in part] (V—3090).

*C. ovata* (Mill.) K. Koch (J—349, 395, 1447, 1673, 1789; V—1902).

*C. laciniosa* (Michx. f.) Loud. (J—2499).

*C. tomentosa* (Lam.) Nutt. [*C. alba* (L.) K. Koch, in part] (H—2954; J—3030, 3069).

*Juglans cinerea* L. (J—1069, 1655).

*J. nigra* L. (J—2570).

## 25. BETULACEAE (Birch Family).

- Betula nigra* L. (J—166, 1558, 1690, 2573).  
*Carpinus caroliniana* Walt., var. *virginica* (Marsh.) Fern. (H—573; J—2724, 3047).  
*Corylus americana* Walt. (J—164, 1071, 1600, 1682; V—1748, 1996).  
*Ostrya virginiana* (Mill.) K. Koch (J—1660, 2470; V—1306, 1704, 1909, 2851; W—3514).

## 26. FAGACEAE (Beech Family)

- Quercus alba* L. (J—1065, 1093, 2085; V—1884). Specimen 1065 is transitional toward the shallowly lobed forma *latiloba* (Sarg.) Palmer & Steyerl.  
*Q. bicolor* Willd. (J—2571, 3937).  
*Q. borealis* Michx. f. [*Q. rubra* L., in part; *Q. borealis* var. *maxima* (Marsh.) Ashe] (J—172, 1066, 2572, 3108; V—346, 575, 1986). All put specimen 3108 are of the scarcely separable *maxima*-phase of the species.  
 × *Q. bushii* Sarg. [*Q. marilandica* × *Q. velutina*] (J—3056). The tree is located in the n.e.  $\frac{1}{4}$  of Sec. 35, T71N, R8W.  
*Q. ellipsoidalis* E. J. Hill [*Q. coccinea* of Iowa authors, not of Muenchh.] (H—2962; J—2758; V—3119).  
*Q. imbricaria* Michx. (J—92, 158, 162, 1067, 1755, 2483, 3028; V—605, 1988).  
 × *Q. leana* Nutt. [*Q. imbricaria* × *Q. velutina*] (J—3034, 3784, 3975). Specimen 3975 is from a tree in the n.e.  $\frac{1}{4}$  of s.e.  $\frac{1}{4}$  of Sec. 30, T71N, R10W; the other specimens from a tree in n.w.  $\frac{1}{4}$  of s.e.  $\frac{1}{4}$  of Sec. 12, T72N, R8W.  
*Q. macrocarpa* Michx. (J—175, 178, 1091, 1545, 1758, 1800, 2085; V—1726).  
*Q. marilandica* Muenchh. (J—3057).  
*Q. muehlenbergii* Engelm. (J—3045; V—339, 603, 604, 1373, 1701, 1881, 1882, 1999). Extremely variable.  
*Q. stellata* Wangenh. (V—1890).  
*Q. velutina* Lam. (J—1068).

## 27. ULMACEAE (Elm Family)

- \**Celtis laevigata* Willd. (J—2697). This is apparently the first report of the species for the state; the specimen is perhaps referable to var. *smallii* (Beadle) Sarg. since the leaf margins are serrulate almost to the base.  
*C. occidentalis* L., var. *crassifolia* (Lam.) A. Gray [*C. crassifolia* Lam.] (J—1097).  
*Ulmus americana* L. (J—715, 1603, 1606, 1639, 1802, 2465, 2672).  
*U. rubra* Muhl. [*U. fulva* Michx.] (J—168, 405, 1526, 2072, 3881).  
*U. thomasi* Sarg. [*U. racemosa* Thomas, not of Borkh.] (V—3742).

## 28. MORACEAE (Mulberry Family)

- CANNABIS SATIVA* L. (J—1222).  
*Humulus americanus* Nutt. [*H. lupulus* of most American authors, not of L.] (J—1214, 1549, 2021, 2887).  
 \**H. JAPONICUS* Sieb. & Zucc. (J—2887, waif on railroad ballast). This appears to be the first report of this species for the state.  
*MACLURA POMIFERA* (Raf.) Schneid. (J—1094, 1813, escaped from cultivation).  
*Morus rubra* L. (J—1213, 1756, 2009).

## 29. URTICACEAE (Nettle Family)

- Laportea canadensis* (L.) Gaud. (J—2137; V—2853).  
*Parietaria pennsylvanica* Muhl. (J—413, 2621).  
*Pilea pumila* (L.) A. Gray (J—31, 2786, 2977).

*Urtica procera* Muhl. [*U. gracilis* of authors, not of Ait.; *U. lyallii* Watts.] (J—1226, 1937, 2126; V—1169. Specimen 2126 is typical of the species; the others represent the phase with ovate-cordate leaves sometimes recognized as *U. lyallii*.)

30. SANTALACEAE (Sandalwood Family)

*Comandra umbellata* (L.) Nutt. [*C. richardiana* Fern.] (H—539; J—149, 279, 1476; V—234, 235).

31. ARISTOLOCHIACEAE (Birthwort Family)

*Asarum reflexum* Bickn. [*A. canadense* of Iowa authors, in part, not of L.] (J—36, 446, 1445; V—1700). Some of these specimens approach the elongate-sepaled phase sometimes separated as var. *ambiguum* Bickn. and frequently misidentified as *A. canadense* var. *acuminatum* (Ashe) Bickn.

32. POLYGONACEAE (Buckwheat Family)<sup>5/</sup>

*FAGOPYRUM ESCULENTUM* Moench (J—428, 2722, escaped from cultivation).

*Polygonum aviculare* L. (J—894, 3946, 3947).

*P. coccineum* Muhl. [*P. muhlenbergii* (Meisn.) Wats.] (J—922, 1124, 2765, 2787, 3795). Specimen 922 represents the forma *natans* (Wieg.) Stanf., and the other specimens are referable to the forma *terrestris* (Willd.) Stanf.

*P. CONVOLVULUS* L. (J—2708).

*P. DUMETORUM* L. (J—2914). Perhaps only a small-fruited phase of *P. scandens* L.

*P. erectum* L. (H—2960; J—1229).

*P. hydropiper* L. (J—2788, 3804, 3968, 3969). These specimens seem referable to var. *projectum* Stanf. which is perhaps not really separable from the typical phase of the species.

*P. hydropiperoides* Michx. (J—906, 921, 3973).

*P. lapothifolium* L. (J—2790, 3807; V—1193).

*P. natans* (Michx.) A. A. Eaton [*P. amphibium* of authors, not of L.] J—950, 1125). Specimen 1125 is perhaps referable to forma *hartwrightii* (A. Gray) Stanf.

*P. pennsylvanicum* L. var. *laevigatum* Fern. (J—837, 1105, 2789, 3806).

*P. PERSICARIA* L. (J—1241, 3903).

*P. punctatum* Ell. [*P. acre* H.B.K.] (J—1080, 2930, 3793).

*P. ramosissimum* Michx. (J—1123, 2736, 2890, 3435, 3568, 3916, 3967).

*P. sagittatum* L. (J—1202).

*P. scandens* L. (J—2493, 2911, 2978; V—2866).

*P. tenue* Michx. (H—2958).

*P. virginianum* L. (J—2637; V—1146, 2852).

*RUMEX ACETOSELLA* L. (J—468, 1504, 1781, 2536).

*R. altissima* Wood (J—494, 713, 1853, 2537, 3896; L—1763).

*R. CRISPUS* L. (J—467).

\**R. triangulivalvis* (Danser) Rech. f. [*R. mexicanus* Meisn.] (J—157, 2663, 2549). This is apparently the first authentic report of this species for the state. Three sheets in the Iowa State College herbarium (Fults 1478, Lee Co.; Hayden 9394, Clay Co.; Spiker s.n., Chickasaw Co.) are referable here; all specimens labeled as "*R. mexicanus*" in that herbarium are referable to *R. altissimus*.

*R. verticillatus* L. (J—951, 971).

5/ Specimens of the genus *Polygonum* were examined by Mr. Carl C. Blickenstaff, Iowa State College, Ames, Iowa.

## 33. CHENOPODIACEAE (Goosefoot Family)

- ATRIPLEX PATULA* L. (J—1107, 3899).  
*A. PATULA* L., var. *HASTATA* (L.) A. Gray (J—2083, 2838).  
*CHENOPODIUM ALBUM* L. (J—1966, 2046).  
*C. AMBROSIODES* L. (J—2153, 3095, 3558; V—1201).  
*C. berlandieri* Moq., ssp. *zschackei* (Murr.) Zobel (J—2687, 2899).  
*C. gigantospermum* Aellen [*C. hybridum* of authors, not of L.] (J—815, 2042; V—760).  
*C. GLAUCUM* L. (J—814, 2055).  
*C. pratericola* Rydb. [*C. leptophyllum* of authors, not of Nutt.] (J—816, 904, 2618, 3813).  
*C. standleyanum* Aellen [*C. boscianum* Moq., in part] (J—2118, 2985).  
*C. URBICUM* L. (J—3950).  
*Cycloloma atriplicifolium* (Spreng.) Coult. (J—817, 903, 3908).  
*KOCHIA SCOPARIA* (L.) Schrad. (J—2915, 3944, as ballast waifs.)  
*Salsoia pestifer* A. Nels. [*S. kali* L., var. *tenuifolia* G.F.W. Mey.] (J—711, 742, 3898).

## 34. AMARANTHACEAE (Amaranth Family)

- Acnida altissima* Riddell [*A. tuberculata* Moq.] (J—1227).  
*A. tamariscina* (Nutt.) Wood (J—1115, 3960; V—1194).  
*AMARANTHUS BLITOIDES* Wats. (J—1111, 1944).  
*A. GRAECIZANS* L. (J—1243, 2020, 2054).  
*A. HYBRIDUS* L. (J—2122, 3887; V—1170).  
*A. RETROFLEXUS* L. (J—1106, 2082).  
*Froelichia gracilis* (Hook.) Moq. (J—3567).

## 35. NYCTAGINACEAE (Four-o'clock Family)

- Mirabilis nyctaginea* (Michx.) MacM. [*Oxybaphus nyctagineus* (Michx.) Sweet] (J—826, 1248).

## 36. PHYTOLACCACEAE (Pokeweed Family)

- Phytolacca americana* L. [*P. decandra* L.] (J—2706; V—1904).

## 37. ILLECEBRACACEAE (Whitlow-wort Family)

- Paronychia canadensis* (L.) Wood [*Anychia canadensis* (L.) B.S.P.] (J—2039, 2718, 3774).  
*P. fastigiata* (Raf.) Fern. [*Anychia polygonoides* Raf.] (J—2654, 2993, 3883; V—2666).

## 38. AIZOACEAE (Carpetweed Family)

- MOLLUGO VERTICILLATA* L. (J—1242; V—1979).

## 39. PORTULACACEAE (Purslane Family)

- Claytonia virginica* L. (J—4, 30, 212, 224, 248, 1427, 1461, 1687; V—1718).

## 40. CARYOPHYLLACEAE (Pink Family)

- Arenaria lateriflora* L. (J—251, 448, 1532, 1540, 2513; V—1743).  
*Cerastium nutans* Raf. (DM—1772; J—75, 252, 1446, 1678, 2473, 2542; V—277, 1711).  
*C. viscosum* L. (J—412).  
*C. VULGATUM* L. (J—720; V—1751).  
*LYCHNIS ALBA* Mill. (J—1955).  
*SAPONARIA OFFICINALIS* L. (J—699, 3945).  
*Silene antirrhina* L. (J—2512, 2539, 2564; V—3521; W—176).  
*S. nivea* (Nutt.) Otth. [*S. alba* Muhl.] (V—597).  
*S. stellata* (L.) Ait. f. (J—845, 1490, 1561).  
*STELLARIA GRAMINEA* L. (J—2596).  
*S. longifolia* Muhl. (J—1829).  
*S. MEDIA* (L.) Cyril. (J—1640, 2561).

## 41. CERATOPHYLLACEAE (Hornwort Family)

*Ceratophyllum demersum* L. (L—1948).

## 42. RANUNCULACEAE (Buttercup Family)

*Actaea alba* (L.) Mill. (J—2648; V—1139, 1916).

*Anemone canadensis* L. (J—15, 88, 290, 458, 1431, 1475, 1541, 2550; L—1769).

*A. virginiana* L. (DM—3484; J—806; V—759, 2008).

*Anemonella thalictroides* (L.) Spach. (J—3, 104, 210, 1418, 1464, 1503, 1626; V—1712).

*Aquilegia canadensis* L. (J—19, 98, 513, 1528).

*Clematis pitcheri* T. & G. (J—1932, 2099, 3805; V—684, 1894, 3121).

*C. virginiana* L. (J—3025).

*DELPHINIUM AJACIS* L. (J—991, escaped from cultivation and well established).

*D. tricornis* Michx. (J—17, 86, 177, 430, 1409, 1459, 1524, 1782, 2528; V—125, 1737).

*Hepatica acutiloba* DC. (V—186, 1297, 1698, 3181).

*Isopyrum biternatum* (Raf.) T. & G. (J—14, 229, 321).

*Myosurus minimus* L. (J—3519).

*Ranunculus abortivus* L. (J—199, 1309, 1412, 1467, 1633, 1659).

*R. fascicularis* Muhl. (J—82).

*R. flabellaris* Raf. [*R. delphinifolius* Torr.] (J—83, 200, 1852).

*R. hispidus* Michx. (J—223, 309, 1440, 2514; V—1752).

*R. sceleratus* L. (L—1762; V—583).

*R. septentrionalis* Poir. (J—257, 1432, 1686, 2478; V—3188).

*Thalictrum dasycarpum* Fisch. & Lall. (J—514; V—1887).

## 43. MENISPERMACEAE (Moonseed Family)

*Menispermum canadense* L. (J—3820; V—601, 2012).

## 44. BERBERIDACEAE (Barberry Family)

*Caulophyllum thalictroides* (L.) Michx. (J—250; V—758, 1709).

*Podophyllum peltatum* L. (J—10, 71, 137, 160, 195, 1403, 1465, 1625, 1788, 1796; V—1699, 1897).

## 45. PAPAVERACEAE (Poppy Family)

*Sanguinaria canadensis* L. (J—18, 77, 201, 228, 1500, 1611; V—3180).

## 46. FUMARIACEAE (Fumitory Family)

*Corydalis micrantha* (Engelm.) A. Gray (J—220, 476, 1531, 1544).

*Dicentra cucullaria* (L.) Bernh. (J—16, 72, 108, 202, 1426, 1439, 1623; V—187, 3192).

## 47. CRUCIFERAE (Mustard Family)

*Arabis canadensis* L. (DM—3485; V—754).

*A. drummondii* A. Gray (J—301; V—1876, 3749).

*A. laevigata* (Muhl.) Poir (DM—3492; J—2629, 3775; V—340, 594).

*ARMORACIA RUSTICANA* Gaertn. [*Radicula armoracia* (L.) Robinson] (J—316, 1786).

*BARBAREA VULGARIS* R. Br. (J—238, 329, 1695, 1814, 2551; L—1771; V—1727).

*BRASSICA JUNCEA* (L.) Cosson (J—832).

*B. KABER* (DC.) Wheeler [*B. arvensis* of authors, not of (L.) Rabenh.] (J—331, 348, 427, 844, 2540).

*B. NAPUS* L. (J—2557, 2608).

*B. NIGRA* (L.) Koch (H—2957; J—434, 502, 574, 2149, 2689, 2886).

*CAPSELLA BURSA-PASTORIS* (L.) Medic. (J—99, 102, 194, 207, 333, 334, 376, 1444, 1631).

- Cardamine bulbosa* (Schreb.) B.S.P. (J—52, 259, 320, 1408, 1516, 1576, 1654, 2475).  
**CHEIRANTHUS CHEIRI** L. (J—1506, escaped from cultivation).  
**CONRINGIA ORIENTALIS** (L.) Dumort (J—510, 2532, 2533).  
*Dentaria laciniata* Muhl. (J—112, 237, 1424, 1453, 1521, 1620; V—1723).  
**DESCURAINIA PINNATA** (Walt.) Britt., var. **BRACHYCARPA** (Richards.) Fern. [*Sisymbrium canescens* Nutt., var. *brachycarpon* (Richards.) Wats; *Sophia pinnata* (Walt.) Howell] (J—296, 487, 1413, 1454, 1664, 1766, 2508; V—271, 1735).  
*Erysimum asperum* DC. (V—756, 1721).  
*E. cherianthoides* L. (V—1875).  
**E. PARVIFLORUM** Nutt. (J—44, 245, 3941).  
*Iodanthus pinnatifidus* (Michx.) Steud. (J—2043, 2067, 2119, 2599).  
**LEPIDIUM CAMPESTRE** (L.) R. Br. (J—287, 1812, 1847, 2531).  
*L. densiflorum* Schrad [L. *apetalum* Willd.] J—288, 512).  
*L. virginicum* L. (J—151, 156, 511, 541, 650, 694, 1437, 2489, 2612).  
*Lesquerella gracilis* (Hook.) Wats. (J—827).  
**RAPHANUS SATIVUS** L. (J—2604, escaped from cultivation).  
*Rorippa islandica* Borbas [*Radicula palustris* and *Rorippa palustris* of authors] (J—382, 537, 649, 1844; V—798). These specimens are apparently referable to var. *microcarpa* (Regel) Fern.  
*R. sessiliflora* (Nutt.) Hitchc. [*Radicula sessiliflora* (Nutt.) Greene] J—474, 1845, 1850; L—1768).  
**SISYMBRIUM ALTISSIMUM** L. (J—473, 518, 843, 3106, 3959).  
**S. OFFICINALE** L. (J—1783, 2668).  
**S. OFFICINALE** L., var. **LEIOCARPUM** DC. (J—496, 655).  
**S. THALIANUM** (L.) J. Gay (V—313).  
**THLASPI ARVENSE** L. (J—246, 2534).

48. CAPPARIDACEAE (Caper Family)

- Polanisia trachysperma* T. & G. (J—693, 1961, 2688, 3571, 3904).

49. CRASSULACEAE (Stonecrop Family)

- Penthorum sedoides* L. (J—972, 1081, 2091).  
**SEDUM PURPUREUM** Tausch. (J—3562).  
**S. TELEPHIOIDES** Michx. (J—3092).

50. SAXIFRAGACEAE (Saxifrage Family)

- Heuchera hispida* Pursh (J—477, 749, 1830).

51. GROSSULARIACEAE (Gooseberry Family)

- Ribes americanum* Mill. [*R. floridum* L'Her] (J—1502).  
*R. cynosbati* L. (V—2011).  
*R. missouriense* Nutt. [*R. gracile* of authors, not of Michx.] (J—73, 165, 249, 258, 1407, 1478, 1630, 1663, 2463; V—1740).  
*R. odoratum* Wendl [*R. aureum* of authors, not of Pursh] (J—242, 1543, 1667).

52. PLATANACEAE (Planetree Family)

- Platanus occidentalis* L. (V—1906).

53. ROSACEAE (Rose Family)

- Agrimonia gryposepala* Wallr. (J—902, 915).  
*A. parviflora* Ait. (J—953).  
*A. pubescens* Wallr. [*A. mollis* (T. & G.) Britt.] (J—1103, 2785).  
*Amelanchier canadensis* (L.) Medic. (H—556; J—965, 1423, 1460, 1661, 2040; V—1307).  
*Aruncus sylvester* Kostel. (DM—2810).

- Crataegus calpodendron* (Ehrh.) Medic. (J—1221, 2558, 3024, 3046, 3580, 3878). The reports of *C. chapmani* var. *pukenetii* Eggleston and *C. pubescens* Sarg. for Jefferson County by Gilly and McDonald (1937) were based on misidentifications of specimens of this species.
- C. crus-galli* L. (J—169, 3970, 3987).
- C. hannahensis* Palmer (J—1009, 2583).
- C. margaretta* Ashe (J—1095, 1474, 2092; V—136).
- C. mollis* (T. & G.) Schelle (J—1010, 1473, 1522, 1680, 3922; V—1147).
- Fragaria virginiana* Duchesne (J—23, 80, 269, 829, 1430, 1455, 2523; V—128, 1742).
- F. virginiana* Duchesne, var. *illinoensis* (Prince) A. Gray (J—431, 2511, 3855).
- Geum canadense* Jacq. (J—625, 1310; V—685).
- G. laciniatum* Murr., var. *trichocarpum* Fern. [*G. virginianum* L., in part] (J—611).
- G. vernum* (Raf.) T. & G. (J—173).
- Malus ioensis* (Wood) Britt. [*Pyrus ioensis* (Wood) L. H. Bailey] (J—89, 283, 1099, 1405, 1466, 1665, 1754).
- Physocarpus opulifolius* (L.) Maxim. (J—2631, 3856; V—761, 1908, 1984). The specimens are probably referable to var. *intermedium* (Rydb.) Robins., despite the great variability in degree of pubescence of the fruits.
- Potentilla arguta* Pursh (J—722, 846).
- P. monspeliensis* L. (J—628, 724; V—1997).
- P. simplex* Michx. [*P. canadensis* of authors, in part] (J—24, 262, 1479, 2509; V—147, 338).
- Prunus americana* Marsh. (J—33, 1073, 1472, 1608, 2469).
- P. serotina* Ehrh. (J—379, 1406, 1433, 1757, 2510, 2910).
- P. virginiana* L. (DM—1775, 3474; J—28, 1416, 1456, 2521; V—1716, 1750, 1912).
- Rosa blanda* Ait. (J—1941).
- R. humilis* Marsh. (J—25, 710, 1722, 1808).
- R. suffulta* Greene [*R. pratincola* Green, not of A. Br.] (J—399, 634, 847, 848, 1815).
- Rubus allegheniensis* Porter (J—407, 1799).
- R. argutus* Link (J—449, 1072, 1434, 1702, 1840).
- R. flagellaris* Willd. [*R. villosus* Ait., not of Thunb.] (DM—3487; J—2520).
- R. occidentalis* L. (J—3565).
- Spiraea alba* DuRoi [*S. salicifolia* of authors, not of L.] (J—744, 952).

54. LEGUMINOSAE (Pea Family)<sup>6/</sup>

- Amorpha canescens* L. (DM—303, 3483; H—2959; J—1090, 1936, 3048, 3868; V—679, 1898). Specimen 3048 is referable to forma *glabrata* (Pursh) Fassett.
- A. fruticosa* L., var. *angustifolia* Pursh (J—489, 1074, 1841).
- Amphicarpa bracteata* (L.) Fern. [*A. monoica* (L.) Ell.] (DM—2820; J—1120, 3833, 3873, 3986).
- A. bracteata* (L.) Fern., var. *comosa* (L.) Fern. (J—2102).
- Apios americana* Medic. [*A. tuberosa* Moench] (J—2921, 3936).
- Astragalus adsurgens* Pall. (J—1493).
- A. canadensis* L. (J—851, 1043, 2128, 2678, 3760).
- A. distortus* T. & G. (J—152, 1530, 2474).
- Baptisia leucantha* T. & G. (J—635, 1052, 1483, 2107; V—646).
- B. leucophaea* Nutt. [*B. bracteata* (Muhl.) Ell.] (J—275, 1436, 1791).
- Cassia marilandica* L. [*C. madsgeri* Shafer] (J—2094, 2763, 3818).
- Cercis canadensis* L. (J—100, 1458, 1538, 2632, 3872; V—120, 1720, 1885).

<sup>6/</sup> Specimens of this family were checked or identified by Dr. Duane Isely of the Iowa State College Department of Botany.



- Chamaecrista fasciculata* (Michx.) Greene [*Cassia chamaecrista* L.; *Cassia fasciculata* Michx.] (DM—306; J—849, 1495, 3032, 3919).  
*Crotalaria sagittalis* L. (DM—2816; J—2775).  
*Desmanthus illinoensis* (Michx.) MacM. (J—939, 2734).  
*Desmodium bracteosum* (Michx.) DC. (J—3005, 3848; V—1148).  
*D. braceosum* (Michx.) DC., var. *longifolium* T. & G. (J—2682, 2727).  
*D. canadense* (L.) DC. (J—872, 1572, 2659, 2742, 2881, 3763).  
*D. canescens* (L.) DC. (J—2658, 2754, 2997, 3980).  
*D. dillenii* Darl. (J—1375).  
*D. glutinosum* (Willd.) Wood [*D. grandiflorum* of authors, not of (Walt.) DC.; *D. acuminatum* (Michx.) DC.] (H—551; J—916; V—763, 1992).  
*D. paniculatum* (L.) DC. (J—1235, 2657, 2876, 2994).  
*D. paniculatum* (L.) DC., var. *pubens* T. & G. (J—2939; V—1144).  
*Gleditsia triacanthos* L. (J—973, 1062, 1945, 3852; V—1891, 2014).  
 Specimen 3852 represents the thornless forma *inermis* (Pursh) Fassett.  
*Glycyrrhiza lepidota* (Nutt.) Pursh (J—834).  
*Gymnocladus dioica* (L.) Koch (J—1974).  
*Lathyrus palustris* L. (V—587).  
*Lespedeza capitata* Michx. (J—1209, 2743, 3051, 3754, 3310, 3921).  
*L. capitata* Michx., var. *stenophylla* Bissell & Fern. (J—3864; V—1183).  
*L. repens* (L.) Bartr. (J—3882; V—1156).  
 \**L. STIPULACEA* Maxim. [*L. striata* of many authors, in part, not of (Thunb.) Hook. & Arn.] (J—2937; W—1217). This is apparently the first report of this species for the state; previous reports, including that of Fox (1945), have used the name *L. striata* which refers to a distinctly different plant.  
*L. violacea* (L.) Pers. (DM—2821; J—1927, 2656, 2880, 3001, 3004, 3063, 3843, 3853, 3981; V—1145, 1155).  
*L. virginica* (L.) Britt. (DM—2769; J—3865; V—1184).  
**MEDICAGO LUPULINA** L. (J—1274).  
**M. SATIVA** L. (J—61, 718, both escaped from cultivation and persistent).  
**MELILOTUS ALBA** Desr. (J—50, 850, 1647).  
**M. OFFICINALIS** (L.) Lam. (J—488, 811, 3354). The report of *M. indica* (L.) All. for Jefferson Co. by Gilly and McDonald (1937) was based on misidentification of aberrant specimens of this species.  
*Petalostemum candidum* Michx. (V—678).  
*P. purpureum* (Vent.) Rydb. (J—745, 1047, 3753).  
*Psoralea onobrychis* Nutt. (DM—3473).  
*P. tenuiflora* Pursh (J—3890; V—762).  
**ROBINIA PSEUDO-ACACIA** L. (J—55, 1063).  
*Strophostyles helvola* (L.) Britt. (DM—878; J—984, 1931, 3783, 3965; V—2845).  
*S. leiosperma* (T. & G.) Piper. [*S. pauciflora* (Benth.) Wats.] (DM—2808; J—2894).  
**TRIFOLIUM ARVENSE** L. (DM—2809).  
*T. DUBIUM* Sibth (J—2597).  
*T. HYBRIDUM* L. (J—1109, escaped from cultivation).  
*T. PRATENSE* L. (J—211, 623, 652, 841, 1811; V—2844).  
*T. reflexum* L., var. *glabrum* Lojaccono (V—596, 1846).  
*T. REPENS* L. (J—22, 74, 719).  
*Vicia americana* Muhl. (J—1529; V—342, 1896).

## 55. GERANIACEAE (Geranium Family)

- Geranium carolinianum* L. (J—429).  
*G. maculatum* L. (J—20, 95, 107, 1420, 1451, 1505, 2503; V—1714).

## 56. LINACEAE (Flax Family)

- Linum medium* (Planch.) Britt. (J—852).  
*L. sulcatum* Riddell (J—2909, 3951).

## 57. OXALIDACEAE (Wood-sorrel Family)

- Oxalis cymosa* Small [*O. europaea* Jord. ?] (H—564; J—469, 682, 3356).  
*O. stricta* L. (J—734).  
*O. violacea* L. (J—103, 479, 2484).

## 58. ZYGOPHYLLACEAE (Caltrop Family)

- TRIBULUS TERRESTRIS* L. (J—1244, 2031, 2052, 3942).

## 59. RUTACEAE (Rue Family)

- Ptelea trifoliata* L. (J—2589; V—1143).  
*Zanthoxylum americanum* Mill. (DM—3491; J—1629, 2574).

## 60. SIMARUBACEAE (Quassia Family)

- AILANTHUS ALTISSIMA* (Mill.) Swingle [*A. glandulosa* Desf.] (J—3553, escaped from cultivation).

## 61. POLYGALACEAE (Milkwort Family)

- Polygala sanguinea* L. (DM—2824; J—1051, 2719, 3357, 3762; V—2847).  
*P. senega* L. (V—3748).  
*P. verticillata* L. (J—2633, 2646, 3997).

## 62. EUPHORBIACEAE (Spurge Family)

- Acalypha gracilens* A. Gray (DM—2814; J—1218, 3404; V—2869).  
*A. rhomboidea* Raf. [*A. virginica* of authors, not of L.] (J—1228).  
*Chamaesyce maculata* (L.) Small [*Euphorbia maculata* L.; *E. supina* Raf.; *C. supina* (Raf.) Moldenke] (J—839, 2044, 3363, 3850, 3897). Croizat (1947) has finally clarified the tangled nomenclature of this and the following species.  
*C. preslii* (Guss.) Arth. [*Euphorbia preslii* Guss.; *E. maculata* of recent authors, but not of L.] (J—1055, 1110, 1954, 3362, 3364, 3575).  
*Croton monanthogynous* Michx. (V—764, 1149).  
*Poinsettia dentata* (Michx.) Small [*Euphorbia dentata* Michx.] (J—1025, 3358, 3350, 3360, 3893).  
*P. heterophylla* (L.) Kl. & Garcke [*Euphorbia heterophylla* L.] (V—1150).  
*Tithymalopsis corollata* (L.) Kl. & Garcke [*Euphorbia corollata* L.] (J—312, 940).  
*TITHYMALUS CYPARISSIAS* (L.) Hill [*Euphorbia cyparissias* Hill] (J—400, 889, 1670, 2077, all escaped from cultivation).  
*T. OBTUSATUS* (Pursh) Kl. & Garcke [*Euphorbia obtusata* Pursh] (J—460, 3361). The report of *Euphorbia dictyosperma* Fisch. & Mey. for Jefferson Co. by Gilly and McDonald (1937) was based on a misidentification of a specimen of this species.

## 63. ANACARDIACEAE (Staff-tree Family)

- Rhus aromatica* Ait. [*R. canadensis* Marsh.] (J—293, 1077, 1619; V—138, 1707).  
*R. copallina* L. (V—1746).  
*R. glabra* L. (DM—1777; J—1056, 1959; V—1895).  
*R. radicans* L. [*R. toxicodendron* of authors, not of L.] (J—500; V—1919).

64. CELASTRACEAE (Staff-tree Family)

*Celastrus scandens* L. (J—3812).  
*Euonymus atropurpureus* Jacq. (DM—3488; J—1507; V—1903, 3745).

65. STAPHYLEACEAE (Bladdernut Family)

*Staphylea trifolia* L. (J—132, 3365; V—122, 1710).

66. ACERACEAE (Maple Family)

*Acer negundo* L. (J—76, 672, 695, 1448, 1607, 1652; V—576).  
*A. negundo* L., var. *violaceum* Kirchner (J—1308).  
*A. nigrum* Michx. f. (DM—1773; H—563; J—2630, 2717; V—1708).  
*A. saccharinum* L. (J—716, 1098, 1602, 1636, 1638, 1645, 2673, 3971).

67. HIPPOCASTANACEAE (Horse-chestnut Family)

*Aesculus glabra* Willd. (J—268, 1404, 1462, 1635, 1681, 1848, 3367, 3368; V—123, 1747, 1893).  
*Ae. octandra* Marsh. (J—3125).

68. BALSAMINACEAE (Touch-me-not Family)

*Impatiens biflora* Walt. (J—1624, 2879; V—2855).  
*I. pallida* Nutt. (J—2731).

69. RHAMNACEAE (Buckthorn Family)

*Ceanothus americanus* L. (J—886, 1498, 2650, 3862; V—1877).  
*Rhamnus lanceolata* Pursh (DM—1774; J—3560; V—577, 1702, 1717, 1914).

70. VITACEAE (Grape Family)

*Parthenocissus inserta* (Kern.) K. Fritsch [*Psedera vitacea* (Knerr) Greene] (J—1076, 2562, 3949).  
*P. quinquefolia* (L.) Planch. [*Psedera quinquefolia* (L.) Greene] (J—1127, 2569, 3576, 3819; V—1703). Some specimens are transitional toward forma *hirsuta* (Donn) Fern.  
*Vitis cinerea* Engelm. (J—2136).  
*V. riparia* Michx. [*V. vulpina* of authors, not of L.] (J—481, 1075, 1835, 2135, 2676; V—1878, 2013).

71. TILIACEAE (Linden Family)

*Tilia americana* L. (J—163, 452, 491, 1096, 1513, 2547; V—1967).

72. MALVACEAE (Mallow Family)

*ABUTILON THEOPHRASTI* Medic. (J—1108, 2709).  
*Callirhoe involucrata* (T. & G.) A. Gray (V—2865).  
*Hibiscus militaris* Cav. (J—2768, 3794).  
*H. TRIONUM* L. (J—40, 2426, 2746).  
*MALVA NEGLECTA* Wallr. [*M. rotundifolia* of authors, not of L.] (J—179, 2707; V—1968).  
*SIDA SPINOSA* L. (J—1270, 1928).

73. HYPERICACEAE (St. John's-wort Family)<sup>7/</sup>

*Hypericum ascyron* L. (J—963; V—3127).  
*H. ellipticum* Hook (J—860, 1930).  
*H. mutilum* L. (J—881, 1083, 3826).  
*H. PERFORATUM* L. (J—3031).  
*H. prolificum* L. (J—2652, 3867; V—796, 1985).  
*H. punctatum* Lam. (J—910; V—1977).

7/ Specimens of this family were checked and identified by Mr. D. D. Millsbaugh of the Iowa Wesleyan College Department of Biology.

*H. sphaerocarpum* Michx. [*H. cistifolium* of authors, not of Lam.] (J—733, 941, 3917; V—771, 1981). Svenson (1940) has discussed the proper name for this species.

#### 74. CISTACEAE (Rockrose Family)

*Helianthemum bicknellii* Fern. [*H. majus* of authors, not of (L.) B.S.P.] (J—2711, 2950; V—1188).  
*H. canadense* L. (J—1029, 3788, 3866).  
*Lechea intermedia* Leggett (J—3875).  
*L. tenuifolia* Michx. (H—2968; J—1021, 1236, 3060).  
*L. villosa* Ell. (J—3059).

#### 75. VIOLACEAE (Violet Family)

*Viola cucullata* Ait. (J—21, 91, 110, 1233, 1553).  
*V. eriocarpa* Schw. [*V. scabriuscula* Schw.] (J—5, 29, 114, 261, 1410, 1469, 1621).  
*V. fimbriatula* Sm. [*V. ovata* Nutt.] (J—241).  
*V. papilionacea* Pursh (J—318, 1658, 1693).  
*V. pedata* L. (J—410, 1657; V—1713).  
*V. pedata* L., var. *lineariloba* DC. (J—93, 419, 1555).  
*V. pedatifida* G. Don. (J—240, 1470, 2491).  
*V. pubescens* Ait. (J—198, 214; V—770).  
*V. sororia* Willd. (J—213, 260, 1552, 1554, 1612, 1622).  
*V. viarum* Pollard ex Britt. (J—90, 244, 1471).

#### 76. LYTHRACEAE (Loosestrife Family)

*Ammania coccinea* Rottb. (J—1210, 2770).  
*Cuphea petiolata* (L.) Koehne (J—2984, 3988, 3992).  
*Lythrum alatum* Pursh (J—631, 842, 1084; V—1975).  
*Rotala ramosior* (L.) Koehne (V—2665).

#### 77. ONAGRACEAE (Evening-primrose Family)

*Circaea latifolia* Hill [*C. lutetiana* of authors, not of L.] (DM—2819; J—917, 2034, 2628; V—769; W—3515).  
*Epilobium coloratum* Muhl. (H—3128; J—3564, 3923).  
*Gaura biennis* L. (J—2907, 2912, 3915, 3964; V—1199).  
*G. parviflora* Dougl. (W—2897).  
*Ludwigia alternifolia* L. (J—880).  
 \**L. palustris* (L.) Ell. (J—954, 974). This is apparently the first report of this species for the state.  
*OENOTHERA LACINIATA* Hill (J—819, 2739, 3902).  
 \**Oe. pilosella* Raf. [*Oe. pratensis* (Small) B. L. Robins.] (J—661, 1494, 1937). This is apparently the first report of this species for the state.  
*OE. PYCNOCARPA* Atkinson & Bartlett [*Oe. biennis* of many authors, perhaps not of L.] (J—707, 858, 859, 985, 1250, 1562, 2883, 2952, 3037, 3058, 3777, 3817, 3900, 3901, 3905, 3910, 3952, 3956; V—2864). The name *Oe. pycnocarpa* is used for these specimens with considerable misgiving; no really satisfactory treatment of the American members of the "biennis-complex" is available at present.  
*Oe. rhombipetala* Nutt. (J—659, 1953, 2918, 3782, 3832).

#### 78. HALORAGACEAE (Water-milfoil Family)

*Myriophyllum pinnatum* (Walt.) B.S.P. [*M. scabratum* Michx.] (J—365, 746).

#### 79. ARALIACEAE (Ginseng Family)

*Aralia nudicaulis* L. (J—2035, 2544).  
*A. racemosa* L. (DM—1776; J—2647, 3369).  
*Panax quinquefolia* L. (V—1138).

80. UMBELLIFERAE (Parsley Family)

- Cicuta maculata* L. (J—857, 1287, 2095).  
*Chaerophyllum procumbens* (L.) Crantz (J—233, 325, 1548, 1692, 1831, 2545; V—1738).  
*Cryptotaenia canadensis* (L.) DC. (J—622, 1854, 3579).  
 DAUCUS CAROTA L. (J—717, 891, 1648, 2018).  
*Eryngium yuccifolium* Michx. (J—1028).  
 \**Eulophus americanus* Nutt. (J—505). This is apparently the first report of this species for the state; the specimen was collected in a small area of residual prairie along the C. B. & Q. railroad east of Fairfield.  
*Osmorhiza claytoni* (Michx.) Clarke (DM—2811; V—1990).  
*O. longistylis* (Torr.) DC. (J—2644).  
 PASTINACA SATIVA L. (J—657, 1662, 1942, 2019).  
*Polytaenia nuttallii* DC. (J—524).  
*Sanicula canadensis* L. (H—558; J—629, 1794, 3828, 3824, 3994; V—1889, 1976).  
*S. gregaria* Bickn. (DM—2812; J—351, 451).  
*Sium suave* Walt. [*S. cicutaeifolium* Schrank] (J—1126).  
*Taenidia integerrima* (L.) Drude (J—2578, 3884; V—345, 584, 1900).  
*Thaspium barbinode* (Michx.) Nutt. (DM—3478; J—2066, 2504, 3834; V—767). Specimen 3478 apparently had either white or very pale yellow flowers, but in all other characteristics is referable to this species.

81. CORNACEAE (Dogwood Family)<sup>8/</sup>

- Cornus alternifolia* L. f. (H—569; J—2721).  
*C. drummondii* C. Meyer [*C. asperifolia* of authors, not of Michx.] (H—565; V—598).  
*C. purpusi* Koehne [*C. amomum* of authors, in part, not of Mill.; *C. obliqua* of authors, not of Raf.] (J—2071, 2097, 2923, 3767, 3773).  
*C. racemosa* Lam. [*C. paniculata* L'Her] (J—27, 526, 1491, 1810, 3768, 3769).  
*C. rugosa* Lam. [*C. circinata* L'Her] (J—1801, 2667).

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<sup>8/</sup> Nomenclature of this family is in agreement with that in the recent treatment by Rickett (1945).