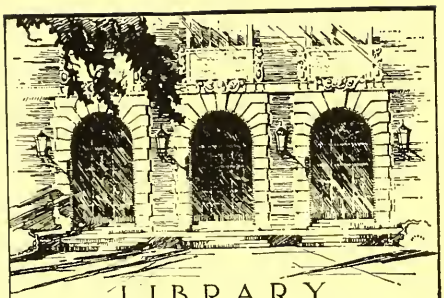

The Leguminosae of Illinois

WILLIAM G. GAMBILL, JR.

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Ohio University William G. Gambill, Jr.

Introduction

The purpose of this study is to present a concise account of our present knowledge of the genera and species of Leguminosae growing spontaneously in Illinois. The information contained in this paper has been accumulated from an intensive survey of the literature pertaining to Illinois plants, and from a study of several thousand sheets of herbarium specimens. Examinations of freshly collected material were also made. To achieve the end stated above and to make this work as useful as possible, the following data are included: Keys to the subfamilies, genera, and species; the valid name of each species, with its place of publication; a list of the synonyms under which each species has been known in the state; brief diagnostic descriptions of the species; statements of the type locality, habitat, and distribution within the state, as well as the known geographic range of each species; a list of references in taxonomic literature to the occurrence in Illinois; citation of specimens to certify distribution of each species by counties.

The arrangement of genera and the key to subfamilies are adapted from the treatment by P. H. W. Taubert in Engler & Prantl's *Die natürlichen Pflanzenfamilien* (III-3:70-388, 1894). In constructing the other keys, the writer made use of information obtained from the standard manuals, floras, and monographs cited in the list of references, as well as from the specimens themselves. The key to genera of subfamily Papilionoideae is patterned after that in G. N. Jones's *Flora of Illinois* (1945a: 158-60). For the most part, the keys are essentially artificial and are suitable principally for use in the identification of the genera and species present in Illinois.

For each species there is included a list of the authors who have attributed the plant to Illinois, with the dates of their publications and the relevant page numbers. The complete citation of such publications is to be found in the References. For nearly all of the species the type locality is quoted directly from the original place of publication. The method of indicating geographic range is the one used by Rydberg (1932), while the range of each species has been compiled from data in this work and in Britton & Brown (1913), Small (1933), Fassett (1939), Deam (1940), and Fernald (1950).

In the descriptions of species, an attempt is made to bring out the salient morphological features which serve to distinguish the plant. Complete taxonomic characterizations of the species have been considered to be beyond the scope of this study. Statements of habitat have been compiled mostly from information taken from herbarium labels of the specimens examined.

The plan has been followed of citing a representative specimen for each of the counties from which specimens have been seen. When a species is known from one or two counties only, more than one specimen for each may be listed. All specimens cited have been examined by the writer, unless otherwise indicated. No species has been included as an established member of the leguminous flora unless authentic Illinois specimens have been seen by the writer, or are known.

All cited specimens are located in the Herbarium of the University of Illinois, unless otherwise indicated. Additional material from the following herbaria has also been examined, and when cited has been accompanied by the appropriate symbol: Arnold Arboretum (A), Chicago Natural History Museum (C), Gray Herbarium (G), Illinois Natural History Survey (NHS), the University of Wisconsin (WIS).

In Illinois the Leguminosae represent five per cent of the total number of species of native and naturalized vascular plants. This family is fourth in size in the state, being surpassed in numbers only by the Compositae, Gramineae, and Cyperaceae. Here, as elsewhere, the leguminous plants are a conspicuous and often striking element of the flora, including some of the best known trees, shrubs, and herbs. It is hardly necessary to point out the tremendous economic importance of those which are cultivated in the state.

The writer recognizes 110 species in thirty-seven genera as being well-established members of the spontaneous flora of Illinois. Of this number, 29 species, or slightly more than 26 per cent, are naturalized plants, most of them introduced from Eurasia. This group is comprised of some or all of the Illinois species of the following genera: *Cassia, Trifolium, Melilotus, Medicago, Lotus, Robinia, Glycyrrhiza, Coronilla, Lespedeza, Vicia, Lathyrus,* and *Glycine.*

Eleven species are woody, and 99 are herbaceous. The Illinois species of the genera *Cercis, Gymnocladus, Gleditsia, Cladrastis,* and *Robinia* range in habit from small to large trees. *Amorpha fruticosa* and *A. canescens* are erect shrubs; *Wisteria macrostachya* is a twining shrub. The remainder of the species, all herbaceous, vary in habit from prostrate to twining, erect, or suffrutescent.

In the taxonomic treatment and in the construction of the keys, the writer has endeavored to throw emphasis upon the species as the fundamental unit in plant taxonomy. The species is considered as a distinct but variable entity, within which several variations of lesser magnitude than the species itself may be observed. Therefore, in the taxonomic treatment varieties have been placed in a position of synonymy with the species concerned, in an attempt to demonstrate the basic unity of the biological entities called species. This disposition of the varieties and forms is not to be interpreted as a judgment of their validity as such,

but as a means of calling attention to the similarity among the components of a species population. No attempt is made to include all the named variations of any species. Only those are noted which have been actually recorded as occurring in Illinois, or are found very frequently in the literature. Discussion of varieties attributed to Illinois will be found in the treatment of the related species.

Because of the geographic position of the state of Illinois, one may encounter a few truly boreal species of vascular plants in the extreme northern tip, and in the southern end find plants characteristic of the Coastal Plain. This rather unique position, along with the presence of the Wabash, Ohio, and Mississippi rivers in the lower part of the state, helps account for the surprising richness of the flora. From a biogeographical standpoint, nearly all of Illinois lies in the Austral Zone.

In an attempt to summarize briefly the distribution of members of the Leguminosae in Illinois, the observations contained in the subsequent paragraphs are believed to be pertinent. There are no truly boreal leguminous plants occurring in the state, but certain species are restricted to the extreme northern or northeastern counties: *Lupinus perennis, Vicia americana, V. caroliniana, Lathyrus maritimus, L. ochroleucus,* and *L. venosus. L. maritimus* requires a habitat which is found only in the counties immediately bordering Lake Michigan.

The following are among those native species distributed throughout all or most of the state: *Cercis canadensis, Gymnocladus dioica, Gleditsia triacanthos, Cassia fasciculata, Baptisia leucantha, Amorpha fruticosa, Petalostemum purpureum, P. candidum, Desmodium nudiflorum, D. glutinosum, D. illinoense, D. canadense, D. cuspidatum, D. longifolium, Lespedeza violacea, L. capitata, Apios americana, Strophostyles helvola, Strophostyles leiosperma, Amphicarpa bracteata,* and *A. comosa.*

Certain introduced species have become weed-like, and have been collected from every county in the state (Evers, 1951:620): *Trifolium hybridum, T. pratense, T. repens, Melilotus alba,* and *M. officinalis.* Other introduced species which are distributed throughout the state are *Trifolium procumbens, Medicago lupulina,* and *Vicia villosa.*

Species conspicuously absent from the northern third of the state but abundant elsewhere are *Cassia marilandica, Desmodium canescens, D. paniculatum, Lespedeza virginica.* Others widely distributed except in the southern third of the state are *Baptisia leucophaea, Psoralea tenuiflora, Amorpha canescens, Lathyrus palustris, L. myrtifolius,* and *Astragalus canadensis.*

Native species which are found in the southern half of the state are *Cassia nictitans, Desmodium sessilifolium, Lespedeza procumbens, L. intermedia, L. striata,* and *Stylosanthes biflora.*

Native species which are definitely characteristic of the southern third

of the state are *Gleditsia aquatica, Psoralea psoralioides, Wisteria macrostachya, Desmodium pauciflorum, D. rotundifolium, D. nuttallii, D. laevigatum, Phaseolus polystachyus, Strophostyles umbellata, Clitoria mariana,* and *Galactia volubilis.* Of these *Galactia volubilis, Clitoria mariana,* and *Wisteria macrostachya* are found in the extreme southern tip of the state. *Gleditsia aquatica* comes farther north only in the Mississippi and Wabash River valleys.

Introduced species found in southern Illinois are *Lespedeza striata, L. cuneata, Trifolium dubium,* and *T. incarnatum.*

Introduced species which may best be described as occasional, because of rather restricted ranges within the state and relatively small numbers of individuals are the following: *Cassia occidentalis, Cassia tora, Trifolium incarnatum, T. agrarium, Glycyrrhiza lepidota, Robinia hispida, R. viscosa, Astragalus trichocalyx, A. tennesseensis, Coronilla varia,* and *Lathyrus latifolius.*

As a final group, certain species should be classed as rare: *Cladrastis lutea, Hosackia americana, Lathyrus maritimus, Schrankia uncinata, Apios priceana,* and *Lespedeza leptostachya.*

Species which have been excluded as part of the spontaneous flora of Illinois have been discussed in their proper sequence in the section on taxonomic treatment.

Characterization of the Family Leguminosae

LEGUMINOSAE Juss.—Pea Family

Trees, shrubs, or herbs; leaves alternate, stipulate, and commonly compound (simple in *Cercis* and *Crotalaria*); flowers mainly perfect, in some groups also polygamous, and commonly irregular; petals separate or partially united (particularly the keel petals in papilionaceous flowers), usually 5, rarely only 1 or lacking; stamens commonly 10, rarely 5 or many, monadelphous, diadelphous, or occasionally distinct; pistil single, free, superior, and usually unilocular; fruit a 2-valved legume, commonly dehiscent, rarely indehiscent; seeds usually without endosperm.

This is a large group of plants of cosmopolitan distribution, with about 500 genera and 12,000 species. Its members fall rather naturally into three or four subdivisions which have been considered variously by botanists as families, subfamilies, or tribes. The writer believes that these subdivisions are sufficiently well set apart to warrant their recognition as separate families, particularly when large numbers of plants are studied from extensive areas. Since these families show closer relationships to one another than to any other families in the plant kingdom, they form a large natural unit which is recognized as an order by some contemporary botanists, particularly Hutchinson (1926:208). In a floristic study of such a relatively small area as Illinois, however, it seems more satisfactory to consider the Leguminosae as a single, large, though somewhat heterogeneous family, and to recognize the natural subdivisions as subfamilies.

Key to Subfamilies

1. Petals valvate in the bud; corolla regular or nearly so; leaves bipinnate; flowers small, in dense heads or racemes; petals 4 or 5, inconspicuous; stamens strongly exserted..... 1. *Mimosoideae*
1. Petals imbricated in the bud; corolla more or less irregular, sometimes imperfectly papilionaceous.
   2. Uppermost petal enclosed by the lateral ones in the bud; corolla irregular, and imperfectly papilionaceous or not at all..... ..... 2. *Caesalpinioideae*
   2. Uppermost or banner petal enclosing the lateral ones in the bud; corolla usually papilionaceous, with the 2 lowest or keel petals more or less united; petals mostly 5 (only 1 in *Amorpha*)..... ..... 3. *Papilionoideae*

I. SUBFAMILY MIMOSOIDEAE

1. Petals distinct; legumes flat, smooth, the valves not separating from the continuous margin; plant puberulent or pubescent; flowers greenish-white ..... 1. *Desmanthus*
1. Petals united near the bases; legumes somewhat terete, the valves separating from the continuous margin; plant recurved prickly; flowers rose-colored ..... 2. *Schrankia*

1. DESMANTHUS Willd.

Desmanthus illinoensis (Michx.) MacM. ex Robins. & Fern. in A. Gray Man. (ed. 7) 503 (1908); Pepoon (1927) 357; Ries (1939) 90; Jones (1945a) 161, (1945b) 274; Fuller (1946) 58; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 172; Fernald (1950) 884.

Mimosa illinoensis Michx. Fl. Bor. Am. 2:254 (1803).

Mimosa glandulosa Michx. Loc. cit.

Acacia brachyloba Willd. Sp. Pl. 4:1071 (1806).

Desmanthus brachylobus (Willd.) Benth. in Journ. Bot. 4:358 (1842); Lapham (1857) 510; Hyatt (1875) 68; Patterson (1876) 12; Williams (1877) 490; Flagg & Burrill (1878) 235; Brendel (1887) 47; Huett (1897) 68; McDonald (1900) 103.

Acuan illinoense (Michx.) Kuntze, Rev. Gen. Pl. 158 (1891).

Desmanthus illinoensis var. *glandulosus* (Michx.) Macbride in Contr. Gray Herb. 59:14 (1919).

Type Locality: "Hab. in pratensibus regionis Illinoensis."

Range: Tenn.—Fla.—Tex.—N.M.—S.D.

Puberulent or pubescent perennial herb; leaves bipinnately compound, the pinnae 15-32 pairs; stipules filiform; flowers perfect, or the lower ones staminate, in many-flowered peduncled heads; legumes strongly falcate, glabrous, in dense heads.—Illinois Mimosa.

Macbride (1919:14) describes *D. illinoensis* var. *glandulosus* which is said to differ from "the typical form of the species with which it merges . . . in the presence of a gland at the base of all the pinnae, rather than at the base of the lowest pair only." All specimens from Illinois in the University of Illinois Herbarium possess the glands at the base of all or most of the pinnae.

In dry soil; along river banks and railroads, on dry prairies. Local.

Specimens Examined: ALEXANDER CO.: Sunny places, Thebes, *L. P. Cranwill,* 2 August 1917. COOK CO.: Along Santa Fe Railway, Lyons Twp., *Agnes Chase 16791,* 10 August 1901. KANKAKEE CO.: River bank, Altorf, *E. J. Hill 185,* 27 August 1872. LA SALLE CO.: Deer Park, *A. B. Seymour,* 12 September 1881. MADISON CO.: On Horseshoe Lake, near Venice, *H. Eggert,* 7 August 1877 (C). PEORIA CO.: Dry prairie along edge of bluff, w. of Peoria, *V. H. Chase 3170,* 7 July 1919. SANGAMON CO.: Stray in

flower garden in city, Springfield, *Jennie K. Smith*, 3 June 1919. TAZEWELL CO.: River bottom, *J. T. Stewart*, 1861 (C). WILL CO.: Kankakee River, 8 mi. s.e. of Wilmington, *J. A. Steyermark & P. C. Standley 1724*, 14 July 1938 (C).

2. SCHRANKIA Willd.

Schrankia uncinata Willd. Sp. Pl. 4:1043 (1806); Mead (1846) 60; Vasey (1860) 119, (1861a) 141; Flagg & Burrill (1878) 235; Robinson & Fernald (1908) 504; Jones (1945a) 161, (1950) 172.

Leptoglottis nuttallii DC. Mem. Leg. 451 (1825); Britton & Rose (1928) 139; Small (1933) 656.

Morongia uncinata (Willd.) Britt. in Mem. Torr. Club 5:191 (1894); Britton & Brown (1913) 2:333.

Schrankia nuttallii (DC.) Standley in Field Mus. Publ. Bot. Ser. 8:13 (1930); Fernald (1950) 884.

Type Locality: "Habitat a Virginia ad Floridam."

Range: Va.—Fla.—Tex.—Colo.—S.D.

Recurved-prickly, spreading, or prostrate perennial herb; leaves bipinnate, somewhat sensitive; leaflets inequilateral at the base, strongly veined below; flowers rose-colored, perfect or polygamous, in dense axillary heads with long, prickly peduncles; legumes long, narrow, somewhat terete, beaked, densely prickly.—Sensitive Brier.

Specimens in the University of Illinois Herbarium are all characterized by prominent reticulate venation on the underside of the leaflets. This is a character commonly relied upon to separate S. *uncinata* from other species. This condition was clearly brought out by Willdenow (4:1043, 1806) in the original description of the species: "Folia bipinnata . . . supra aveniis, subtus elevato venosis." It seems evident, therefore, that the name S. *uncinata* is properly applied to the Illinois plant.

Further investigation shows that it is very likely that de Candolle had a specimen of this species when he described *Leptoglottis nuttallii*. According to his own account, de Candolle (1825:450) based his description on a single specimen in flower collected by Nuttall on his trip into the Arkansas territory. Two reasons are given in this account for placing the plant in a new genus. In the first place, although this plant looked like a hitherto unknown species of *Schrankia*, it had certain affinities with *Desmanthus* such as its sterile and petaloid stamens. Secondly, it differed from both genera in its 4-parted flower with 8 stamens. There was, however, no fruit available to aid in deciding to which of the two genera it belongs. De Candolle states that placing it in a new genus was a temporary expedient, until he should be able to examine mature fruits. From his careful Latin description, it is quite clear that his plant was a *Schrankia*, and, in addition, that it must have been S. *uncinata* Willd. He mentions the prominent venation of the underside of the leaflets in the following phrase: ". . . foliolis multijugis oblongis, mucronatis, subtus nervis paucis,

anastomosantibus elevatis distincte et singulari modo reticulatis" (op. cit. 451).

In dry soil, prairies, and open woods. Rare in Illinois. F. E. McDonald, in his record book (ined.), notes that he considers the plant to be "probably a chance introduction from the western plains where it is common." V. H. Chase, in a letter on the subject, dated 28 October 1946, states that he sees no reason for considering it a "chance introduction," since he has found it in no other place but in original prairie sod, and under exactly the same conditions in which it grows in the Western states. Chase's collections were made from the same locality as McDonald's and in 1940 Chase found the plants still growing there, since the habitat had been undisturbed. These facts, in addition to the records from early Illinois botanists, lead the writer to conclude that the plant is rightly considered native in Illinois.

Specimens Examined: PEORIA CO.: Dry, sandy soil, Peoria, *F. E. McDonald*, August 1901, and June 1903. *V. H. Chase* reports collecting it near the outskirts of Peoria 18 June 1919 (*No.* 3132), and 7 June 1921 (*No.* 3572). The writer has not seen the Chase specimens.

Schrankia angustata T. & G. has been reported from Coles County by Stover (1930:23), but there are no preserved specimens from this study. No other record of its occurrence in Illinois has been found, and since no specimens have been seen, the plant is not considered to be a part of the flora of this state.

II. SUBFAMILY CAESALPINIOIDEAE

1. Leaves simple, entire, suborbicular to cordate; flowers imperfectly papilionaceous; small trees.....3. *Cercis*
1. Leaves compound; flowers not at all papilionaceous; herbs or trees.
   2. Herbs; leaves singly pinnate; corolla yellow; flowers perfect.....6. *Cassia*
   2. Trees; leaves singly or doubly pinnate; corolla greenish or white; flowers polygamous or dioecious.
      3. Leaflets ovate, acute, and entire, 2.5-7.5 cm. long; flowers 1.5 cm. long, pinkish-white, in terminal racemes; stamens shorter than the sepals; legumes thick and woody; trunk and branches spineless.....4. *Gymnocladus*
      3. Leaflets oblong or oval, obtuse, and crenulate, 1-3 cm. long; flowers greenish, minute, in axillary spikes; stamens surpassing the petals; legumes coriaceous; trunk and branches usually armed with spines.....5. *Gleditsia*

3. CERCIS L.

Cercis canadensis L. Sp. Pl. 374 (1753); Beck (1826) 162; Mead (1846) 60; Lapham (1857) 510; Brendel (1859b) 602, (1859b) 630; Greene (1869) 8; Wolf (1870) 109; Ridgway (1872) 660; Patterson (1874) 5, (1876) 12; Schneck (1876) 526; Williams (1877) 490; Flagg & Burrill (1878) 234; Ridgway (1883) 65; Brendel (1887) 46; Huett (1897) 67; Snare & Hicks (1898) 6; Gleason (1910a) 23, (1910b) 158; Smith (1910) 18; Hall & Ingall (1911) 209; Fuller & Strausbaugh (1920) 26; Palmer (1921) 148; Gates (1923) 169; Thone (1925) 103; Gates (1926) 231; Pepoon (1927) 359; McDougall & Liebtag (1928) 229; Miller & Tehon (1929) 221; Eaton (1931) 155; Stover (1930) 20; Sargent (1933) 604; McDougall (1936) 160; Bradley (1938) 97; Evers (1941) 99; Feldman (1942) 61; Hopkins (1942) 201-02; Jones (1942) 72; Fuller (1943) 95; Jones (1945a) 161, (1947) 54; Bailey (1949) 52; Jones (1950) 172.

Cercis canadensis f. *alba* Rehd., Mitt. Deutsch. Dendr. Ges. 16:72 (1907).

Cercis canadensis f. *glabrifolia* Fern. in Rhodora 38:234 (1936).

Type Locality: "Habitat in Virginia."

Range: Conn.–N.Y.–Mich.–Iowa–Nebr.–Tex.–Fla.; Mex.

Small tree; leaves simple, entire, more or less cordate; stipules caducous; flowers pink or rose, occasionally white, imperfectly papilionaceous, appearing before the leaves in sessile fascicles; legumes oblong, flat, glabrous, the upper suture with a prominent margin, 5-10 cm. long.—Eastern Redbud.

Cercis canadensis f. *glabrifolia* Fern. is a form of the species in which

the leaves are entirely glabrous. Of the 25 Illinois specimens in the University of Illinois Herbarium with mature leaves available for study, only 2 have glabrous leaves. The others show varying degrees of pubescence on the lower surface, from small tufts of hairs in the axils of the veins at the base of the blade, to pubescence visible to the unaided eye, but restricted to the principal veins or their immediate branches.

Cercis canadensis f. *alba* Rehd. is distinguished by its white flowers.

In rich soil on wooded slopes and in bottom lands along streams. Common throughout Illinois except the northern counties.

Specimens Examined: ADAMS CO.: Bottom of east-facing slope, Coe Springs Woods, Quincy, *R. A. Evers 4*, 14 August 1939. ALEXANDER CO.: Olive Branch, *J. F. Ferry*, 12 August 1907 (C). BROWN CO.: Wooded ravine, Siloam Springs, *R. A. Evers 1332*, 13 April 1946. CALHOUN CO.: Hillside forests, Kampsville, *L. M. Turner 233*, May 1930 (C). CHAMPAIGN CO.: Woods near Urbana, *Walter Zimmerman 15358*, 5 May 1892. COLES CO.: Woods along Embarrass River, *G. N. Jones 11178*, 4 May 1940. COOK CO.: Willow Springs, *C. W. Duesner*, 17 May 1908 (C). DU PAGE CO.: College campus, Wheaton, *W. S. Moffatt 184*, 9 May 1889. FAYETTE CO.: In woods n. of Loogootee, *Louise O'Dell 205*, 7 August 1942. FRANKLIN CO.: Moist woods in river bottom, 4 mi. n.w. of Benton, *C. E. Kiefer 8*, 13 June 1940. FULTON CO.: Sepo, *F. C. Gates*, 14 July 1910. HARDIN CO.: Rocky hills, Saline Creek, *William Trelease*, 12 July 1916. HENDERSON CO.: Oquawka, *H. N. Patterson*, May and September 1874 (C). JACKSON CO.: Woods, Carbondale, *G. N. Jones 11865*, 4 July 1940. KANKAKEE CO.: River bank, Kankakee, *E. J. Hill 7*, 1872, 10 May and 12 July 1872. LA SALLE CO.: Sandy woods, Starved Rock, *Agnes Chase 1592*, 13 July 1901. MARION CO.: *M. S. Bebb*, 1860 (C). MASON CO.: Woods near Havana, *G. N. Jones 13418*, 26 April 1941. MENARD CO.: Moist woods near New Salem, *G. D. Fuller 7131*, 27 June 1942. PEORIA CO.: Along streams, Peoria, *F. E. McDonald*, April 1888. PULASKI CO.: Olmstead, *William Trelease*, 29 August 1916. RICHLAND CO.: Olney, *Robert Ridgway*, 31 July 1917 (C). SANGAMON CO.: Moist hillside, Clear Lake Twp., Sec. 31, *G. D. Fuller 6265*, 25 August 1941. UNION CO.: Rocky, wooded hillside, State Park, *G. D. Fuller 480*, 15 April 1941. VERMILION CO.: Wooded bank between Oakwood and Collison, *G. N. Jones 15650*, 30 April 1940. WABASH CO.: Woodland, *Hallock Shearer 32*, 20 April and 3 June 1895. WILL CO.: Bank of ravine in clay soil, Joliet, *E. J. Hill*, 9 May and 17 June 1902.

4. GYMNOCLADUS Lam.

Gymnocladus dioica (L.) K. Koch, Dendr. 1:5 (1869); Ridgway (1895) 410; Gleason (1910b) 158; Smith (1910) 18; Hall & Ingall (1911) 209; Pepoon (1917) 133; Vestal (1919) 241; Pepoon (1920) 202; Palmer (1921) 148; Thone (1925) 103; Gates (1926) 231; Pepoon (1927) 357; McDougall & Liebtag (1928) 229; Miller & Tehon (1929) 224; Eaton (1931) 156; Sargent (1933) 606; Bradley (1938) 97; Evers (1941) 99; Feldman (1942) 61; Jones (1942) 72; Fuller (1943) 95; Jones (1945a)

161; Fuller (1946) 58; Jones (1947) 54; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 172.

Guilandina dioica L. Sp. Pl. 381 (1753); Michaux ex Sargent (1889) 124.

Gymnocladus canadensis Lam. Encyc. 1:733 (1783); Mead (1846) 60; Lapham (1857) 510; Brendel (1859b) 602, (1859c) 660; Michaux (1859) 1:182; Wolf (1870) 109; Babcock (1872) 26; Ridgway (1872) 659; Patterson (1874) 5, (1876) 12; Schneck (1876) 527; Williams (1877) 490; Flagg & Burrill (1878) 234; Ridgway (1883) 63; Brendel (1887) 46; Higley & Raddin (1891) 32; Huett (1897) 68; Snare & Hicks (1898) 6; Pepoon (1910) 156.

Type Locality: "Habitat in Canada."

Range: N.Y.—S.D.—Okla.—Tenn.

Tree, unarmed, up to 30 m. height; leaves bipinnate, the lowest of the 5-11 pinnae often consisting of only 1 leaflet; leaflets ovate, acute to acuminate, entire 2.5-7.5 cm. long; flowers dioecious or polygamous, pinkish-white, in elongated racemes; calyx tubular, 5-lobed; petals 5, about as long as calyx lobes; legumes flat, woody, 1-2.5 dm. long, 5 cm. wide; seeds flattened, 1.5-2 cm. broad.—Kentucky Coffee Tree.

Rich woods, particularly in bottom lands along streams. Often in colonies which develop from root suckers, sometimes sent up at considerable distance from the parent tree. Extensively cultivated as an ornamental. Common throughout Illinois.

Specimens Examined: ADAMS CO.: Damp situation along highway, in brown, fine, sandy loam of upland prairie, Quincy, *R. A. Evers 84*, 24 September 1939. ALEXANDER CO.: Horseshoe Island, *G. N. Jones 12037*, 5 July 1940. CALHOUN CO.: Hillside forest, Kampsville, *L. M. Turner 306*, June 1930 (C). CHAMPAIGN CO.: University Woods near Urbana, *G. N. Jones 14068*, 2 July 1941. FULTON CO.: Gravelly bluff base, *H. S. Pepoon*, 15 June 1891. HANCOCK CO.: In woods along Mississippi River, Cedar Glen, *F. C. Gates 10212*, 26 May 1917. HENDERSON CO.: Mississippi River bottoms, near Oquawka, *H. N. Patterson*, 4 June 1872 (C). KANKAKEE CO.: Banks of Rock Creek, Rock Creek, *E. J. Hill*, 24 June 1871. LA SALLE CO.: Floodplain, Freedom Twp., Sec. 3, *G. D. Fuller 1130*, 12 September 1918. MACOUPIN CO.: Ravine in pasture, Carlinville, *W. E. Andrews*, 24 July 1889. MASON CO.: Havana, *F. C. Gates 3480*, 29 June 1910. PEORIA CO.: Rich woods, frequent, Peoria, *F. E. McDonald*, July 1904. UNION CO.: Fountain Bluff, *L. P. Cranwill*, 17 July 1917. WABASH CO.: Woods near bluff, shady loam, shrub or sprout, rare, Mt. Carmel, *Hallock Shearer 58*, 18 May 1915. WINNEBAGO CO.: Camp Grant, collected by *Mattoon*, 1919. WOODFORD CO.: Illinois River bottom, *F. E. McDonald*, June 1889.

5. GLEDITSIA L.

1. Legumes broadly linear, 7-50 cm. long, many-seeded; ovary pubes-

cent; spines thick, usually branched, rarely absent.....
.....1. *G. triacanthos* L.

1. Legumes oval, 2-5 cm. long, 1-seeded; ovary glabrous; spines slender, usually unbranched.....2. *G. aquatica* Marsh.

1. **Gleditsia triacanthos** L. Sp. Pl. 1056 (1753); Lapham (1857) 510; Brendel (1859b) 602, (1859c) 660; Michaux (1859) 2:108; Wolf (1870) 109; Ridgway (1872) 659; Patterson (1874) 5, (1876) 12; Schneck (1876) 527; Williams (1877) 490; Flagg & Burrill (1878) 234; Ridgway (1883) 64; Brendel (1887) 46; Higley & Raddin (1891) 33; Sargent (1892) 76; Ridgway (1895) 410; Huett (1897) 68; Snare & Hicks (1898) 6; Gleason (1907) 184, (1910a) 21, (1910b) 158; Pepoon (1910) 156; Smith (1910) 18; Hall & Ingall (1911) 209; Gleason (1912) 41, 42, 43; Pepoon (1920) 202; Vestal (1920) 237; Fuller & Strausbaugh (1920) 258; Palmer (1921) 148; Gates (1923) 169; Thone (1925) 103; Gates (1926) 231; Pepoon (1927) 357; McDougall & Liebtag (1928) 229; Miller & Tehon (1929) 228; Eaton (1931) 155; Sargent (1933) 608; Bradley (1938) 97; Evers (1941) 99; Feldman (1942) 61; Jones (1942) 72; Fuller (1943) 95; Jones (1945a) 161; Fuller (1946) 58; Jones (1947) 54; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 172.

Gleditsia inermis L., Syst. Nat. (ed. 10), 1313 (1759); Sp. Pl. (ed. 2.), 2:1509 (1763).

Gleditsia triacanthos var. *inermis* Pursh, Fl. Am. Sept. 1:221 (1814).

Gleditsia triacanthos f. *inermis* (L.) Zabel ex Beissner et al., Handb. Laubh.–Ben. 255 (1903); C. K. Schneider, Illustr. Handb. Laubholzk. 2: 12 (1907); Fassett in Rhodora 38:97 (1936a); Sargent (1933) 609; Bradley (1938) 97; Jones (1945a) 161, (1950) 172.

Type Locality: "Habitat in Virginia."

Range: N.Y.–S.D.–Tex.–Fla.

Armed tree, height up to 50 m., trunk diameter to 2 m.; bark rough, thorns simple or branching; leaves 1-2-pinnate; leaflets oblong-lanceolate, mostly glabrous, crenulate, 10-30 mm. long; flowers polygamous, greenish, in axillary spikes; calyx campanulate, 3-5-lobed; petals 3-5, about as long as calyx lobes; stamens 3-10, distinct; legumes broadly linear, flat, 7-50 cm. long, 2-3.5 cm. wide, glabrous, coriaceous, often somewhat twisted or falcate.–Common Honey Locust.

Trees of this species completely lacking the spines are known as *G. triacanthos* f. *inermis*. Fassett (1936a:97) states that they "are of sporadic occurrence with the commoner type, and do not constitute a true variety." This form has sometimes been known as *G. inermis*, as well as *G. triacanthos* var. *inermis* Pursh.

Rich woods, especially in bottom lands along streams; also roadsides, pastures, and as cultivated trees along city streets. Common throughout Illinois.

Specimens Examined: ADAMS CO.: Top of south bluff of Cedar Creek, Quincy, *R. A. Evers 36*, 23 August 1939. ALEXANDER CO.: Dry soil, Thebes, *L. P. Cranwill*, 9 August 1917. CALHOUN CO.: Floodplain forest, Kampsville, *L. M. Turner 287*, June 1930 (C). CHAMPAIGN CO.: Along Salt Fork near Urbana, *G. N. Jones 12692*, 1 August 1940. CHRISTIAN CO.: Pastures and fence rows, Taylorville, *O. DeMotte*, 9 May 1896. DU PAGE CO.: Glen Ellyn, *H. C. Benke 1150*, 2 June 1918 (C). EDGAR CO.: Paris, *W. S. Moffatt 1591*, date not given. FAYETTE CO.: Roadside woods n. of Loogootee, *Louise O'Dell 216*, 13 July 1940. FRANKLIN CO.: Roadside, 3 mi. n. Christopher, *C. E. Kiefer 16*, 12 June 1940. GALLATIN CO.: Shawneetown, *William Trelease*, 11 July 1916. HANCOCK CO.: Along creek in Cedar Glen, *F. C. Gates 10885*, 11 September 1917. HENDERSON CO.: Oquawka, *H. N. Patterson*, date not given. JO DAVIESS CO.: Street tree, Warren, *Pepoon & Moffatt 234*, July 1896. KANKAKEE CO.: River banks near Kankakee, *E. J. Hill*, 20 June 1874. LA SALLE CO.: Starved Rock, *Frank Thone 201*, date not given. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 26 May 1890. MASON CO.: Mixed woods, Havana, *F. C. Gates*, 29 June 1910. MENARD CO.: Moist woods, New Salem, *G. D. Fuller 7133*, 27 June 1942. OGLE CO.: Sandy woods and fields, Oregon, *E. J. Hill*, 12 July 1905. PEORIA CO.: Open woods near Princeville, *V. H. Chase 887*, 1 October 1900. UNION CO.: Fountain Bluff, *L. P. Cranwill*, 25 July 1917. WABASH CO.: Woods and thickets, *Hallock Shearer*, 15 June 1901. WINNEBAGO CO.: Rich, sandy loam in Rock River bottoms, ½ mi. w. of Camp Grant, *E. W. Mattoon 24*, 10 June 1919.

2. **Gleditsia aquatica** Marsh. Arb. Am. 54 (1785); Sargent (1892) 80; Ridgway (1895) 410; Robinson & Fernald (1908) 504; Hall & Ingall (1911) 209; Palmer (1921) 148; French (1926) 209; Miller & Tehon (1929) 229; Eaton (1931) 155; Sargent (1933) 610; Jones (1945a) 161; Bailey (1949) 52; Jones (1950) 172; Fernald (1950) 885.

Gleditsia monosperma Walt. Fl. Car. 254 (1788); Michaux (1803) 2: 257; Nuttall (1821) 40; Lapham (1857) 510; Brendel (1859b) 602, (1859c) 660; Michaux (1859) 2:108; Brendel (1860) 294, (1861) 404; Forbes (1870) 352; Vasey (1870a) 256; Ridgway (1872) 659; Patterson (1876) 12; Schneck (1876) 527; Flagg & Burrill (1878) 234; Ridgway (1883) 64; Brendel (1887) 84.

Asacara aquatica (Marsh.) Raf. Sylva Tell. 121 (1838); Britton & Rose (1930) 303.

Type Locality: Carolina.

Range: Fla.—La.—Mo.—S.C.

Armed tree, height up to 20 m. and trunk diameter to 8 dm., bark rough; foliage like that of *G. triacanthos* except that the leaflets are larger, thicker, darker green, more nearly lanceolate, more noticeably crenulate (Britton & Brown 2:339, 1913); legumes oval, 2-5 cm. long, 1.5-2 cm. broad, flat, glabrous, 1-seeded, not pulpy, and with an elongated stipe. —Water Locust.

In river swamps, where the base of the tree may be submerged for

several months at a time. Chiefly in southern Illinois and in the counties along the Mississippi River; rare.

Specimens Examined: ALEXANDER CO.: *F. Brendel*, 1860. CALHOUN CO.: Bottom forest, wet, Kampsville, *L. M. Turner 686*, August 1930 (C). JERSEY CO.: Grafton, *A. B. Seymour*, 14 October 1882. PULASKI CO.: Swamps, Karnak, *E. J. Palmer 16544*, 23 September 1919 (C). ST. CLAIR CO.: Swamps, e. of Carondelet *H. Eggert*, 9 August 1877 (C). WABASH CO.: *J. Schneck*, 9 November 1906.

6. CASSIA L.

1. Leaflets 5-20 mm. long, 2-5 mm. wide; stipules persistent; flowers with unequal petals, in small axillary clusters; legumes straight, usually less than 7 cm. long.
   2. Flowers 2-4 cm. broad; petals 10-17 mm. long; stamens 10; legumes 4-7 cm. long, glabrous or sparsely pubescent.....5. *C. fasciculata*
   2. Flowers 5-10 mm. broad; petals 3-8 mm. long; stamens 5; legumes 2.5-4 cm. long, appressed-pubescent.....6. *C. nictitans*
1. Leaflets 2-6 cm. long, 10-30 mm. wide; stipules deciduous; flowers with nearly equal petals, in axillary or terminal racemes; legumes more or less curved, 6-20 cm. long.
   3. Leaflets usually 2-3 pairs, obovate, obtuse; petiolar gland between or above first pair of leaflets; legumes narrowly linear, 10-20 cm. long, 2-5 mm. wide.....4. *C. tora*
   3. Leaflets usually 3 or more pairs, not obovate; petiolar gland near base of petiole; legumes 6-12 cm. long, 5-9 mm. wide.
      4. Leaflets mostly 3-6 pairs, lanceolate, acuminate; petiolar gland globose; annual.....1. *C. occidentalis*
      4. Leaflets mostly 5-11 pairs, elliptical or elliptic-lanceolate, mucronate; perennial.
         5. Ovary villous; leaflets elliptical; petiolar gland clavate or stipitate; legumes loosely villous, segments almost as broad as long; seeds flat, almost circular.....2. *C. hebecarpa*
         5. Ovary strigose; leaflets elliptic-lanceolate; petiolar gland ovoid; legumes glabrous, segments much broader than long; seeds plump, obovoid.....3. *C. marilandica*

1. **Cassia occidentalis** L. Sp. Pl. 377 (1753); Pepoon (1927) 357; Jones (1945a) 161, (1950) 172; Fernald (1950) 886.

Type Locality: "Habitat in Jamaica."

Range: Va.—Ind.—Mo.—Tex.—Fla., south to Panama; West Indies; S. Am.; Old World tropics (Britton & Rose 1930:257). Probably of American origin (Bentham 1871:532).

Erect annual, nearly glabrous, 2 m. high or less; stipules lanceolate,

deciduous; petiolar gland sessile, globose; leaflets 4-6 pairs, ovate-lanceolate, acuminate, 3-7 cm. long; petals nearly equal, 1.5-2 cm. long; legumes flat, linear, glabrous, slightly curved, 6-12 cm. long, 5-8 mm. wide, thickened at the margins; septa well-marked externally by depressions.—Coffee Senna.

Weed in waste ground, Chicago and vicinity; rare in Illinois.

Specimens Examined: COOK CO.: Waste ground, Chicago, *L. M. Umbach*, 7 September 1897; waste ground, Chicago, *L. M. Umbach*, 24 September 1898 (C).

2. **Cassia hebecarpa** Fern. in Rhodora 39:413 (1937b): Jones (1945a) 161; Fuller, Fell & Fell (1949) 74; Jones (1950) 173.

Cassia marilandica sensu Michaux (1803) 1:261; Short (1845) 194; Mead (1846) 60; Lapham (1857) 510; Patterson (1874) 5; Hyatt (1875) 68; Patterson (1876) 12; Schneck (1876) 526; Williams (1877) 490; Flagg & Burrill (1878) 234; Brendel (1887) 46; Huett (1897) 68; Snare & Hicks (1898) 6; Pepoon (1927) 359; McDougall (1936) 158; Ries (1939) 90.—Non L. (1753).

Type Locality: Newton, Mass.

Range: Me.—N.C.—Tenn.—Ill.—Wis.

Perennial herb, 6-20 dm.; stem glabrous or with few scattered hairs; stipules deciduous; petiolar gland clavate; leaflets 10-20, elliptical, mucronate, 2-4 cm. long; flowers in axillary racemes; petals nearly equal, 10-12 mm. long; stamens 10, upper 3 imperfect; ovary villous; legumes flat, linear, loosely villous, segments almost as broad as long; seeds flat, nearly circular.—American Senna.

Specimens of this plant found in herbaria are commonly labelled *C. marilandica* L. because this species was originally thought to be the one that Linnaeus had in mind in assigning that binomial. A study of the treatment by Linnaeus (1753:358) reveals, however, that this binomial covered two distinct species, both from the eastern United States, which he did not distinguish specifically. Upon the basis of a specimen from the Linnean Herbarium, Fernald (1937b:410-14) has shown that the plant labelled *C. marilandica* by Linnaeus was the same as the one which Shafer (1904:177-81) named *C. medsgeri*. This discovery established the true type of *C. marilandica* L., leaving the binomial *C. medsgeri* Shafer as a synonym. To the plant mistakenly labelled as *C. marilandica* for so many decades, Fernald has assigned the name *C. hebecarpa*.

In moist soil, along roadsides, on prairies, in open woods, and especially in alluvial bottoms where it may form rather dense stands. Found throughout the state.

Specimens Examined: CHAMPAIGN CO.: Border of woods, Urbana, *A. B.*

Seymour, 22 July 1880. COOK CO.: Edgebrook, *C. W. Duesner*, 1908 (C). FULTON CO.: Bluffs, Liverpool, *H. S. Pepoon*, July 1891. HENDERSON CO.: Mississippi River bottoms, near Oquawka, *H. N. Patterson* (C). MC LEAN CO.: Roadsides, prairies, Bloomington, *E. J. Hill*, 18 August 1870. OGLE CO.: Alluvial soil, ht. 2-4 ft., Oregon, *M. Waite*, 11 August 1883. PEORIA CO.: Alluvial bottom lands of Illinois River, Peoria, *F. E. McDonald*, 5 August 1890. PULASKI CO.: Mound City, collector unknown, 20 August 1860. RICHLAND CO.: Near Olney, *R. Ridgway* 399, 17 July 1918 (C).

3. **Cassia marilandica** L. Sp. Pl. 378 (1753); Fuller (1943) 95; Jones (1945a) 161; Bailey (1949) 52; Jones (1950) 173.

Cassia medsgeri Shafer in Torreya 4:179 (1904); Gates (1926) 231; McDougall (1936) 158.

Ditremexa medsgeri (Shafer) Britton & Rose in N. Am. Fl. 23:257 (1930).

Type Locality: "Habitat in Virginia, Marilandia."

Range: Pa.—Iowa—Kans.—Tex.—Ga.

Perennial herb, nearly glabrous throughout; stipules linear-lanceolate, deciduous; leaflets 6-11 pairs, elliptic-lanceolate 2.5-6.0 cm. long; petiolar gland ovoid or constricted at base; flowers in axillary and terminal racemes; petals 5, nearly equal; ovary strigose; legumes black, glabrous, broadly linear, thick, 5-10 cm. long and 8-9 mm. wide, slightly curved, segments much shorter than broad; seeds plump, obovoid.—Wild Senna.

In dry soil along roadsides, in open woods on hillsides, in bottom lands, and on waste ground. Found throughout the state.

Specimens Examined: ADAMS CO.: Waste ground, near Big Lake, *R. A. Evers 699*, 19 July 1941. ALEXANDER CO.: In open places, growth from 2-4 ft., not common, Thebes, *L. P. Cranwill*, 2 August 1917. CALHOUN CO.: Open prairie or semi-floodplain prairie, Kampsville, *L. M. Turner 504*, July 1930 (C). CHAMPAIGN CO.: Roadside s. of Mahomet, *G. Winterringer*, 29 August 1946. FAYETTE CO.: Kaskaskia River bottom, s. of Vandalia, *Louise O'Dell 587*, 27 July 1943. FRANKLIN CO.: Roadside 3 mi. n. of Mulkeytown, *C. E. Kiefer 10*, 13 June 1940. FULTON CO.: Open hillside, Canton, *McDougall 179*, 27 July 1928. HENDERSON CO.: Mississippi River bottoms, Oquawka, *H. N. Patterson* (C). KANKAKEE CO.: Near Rock Creek, *G. N. Jones 15966*, 18 July 1943. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 30 July 1889. MENARD CO.: Athens, *E. Hall*, July 1866 (C). OGLE CO.: *M. S. Bebb*, 1874 (C). PEORIA CO.: Peoria, *F. Brendel*, July 1859. PIATT CO.: Mud flat in Sangamon River, w. of White Heath, *F. C. Gates 2121*, 12 October 1907 (C). POPE CO.: Herod, *G. P. Clinton*, 4 August 1898. RICHLAND CO.: Woods on Larchmound, Olney, *R. Ridgway 1233*, 1 September 1920. VERMILION CO.: Open woods along river, between Oakwood and Collison, *G. N. Jones 15503*, 20 September 1942. WABASH CO.: Dry, hard, bottom soil in open woods, *J. Schneck*, 25 July 1880.

4. **Cassia tora** L. Sp. Pl. 376 (1753); Hill (1902) 564; Darlington (1923) 180; Pepoon (1927) 357; Jones (1945a) 162, (1950) 173; Fernald (1950) 886.

Cassia obtusifolia L. Sp. Pl. 377 (1753); Vasey (1861a) 141; Patterson (1876) 12; Flagg & Burrill (1878) 234.

Emelista tora (L.) Britton & Rose in Britton & Wilson, Sci. Surv. Puerto Rico and Virgin Isl. 5:371 (1924).

Type Locality: "Habitat in India."

Range: Pa.—Ind.—Mo.—Tex.—Fla.; West Indies; Mexico; Central and S. Am.; Old World tropics (Britton & Rose 1930:242). According to Bentham (1871:509), probably of American origin.

Annual herb, glabrous; stipules linear-spatulate, deciduous later; petiolar gland elongate, just between or above lowest pair of leaflets; leaflets 4-8, commonly 6, the terminal pair larger than the others, 3-7 cm. long; flowers few, axillary, petals nearly equal, 10-15 mm. long; stamens 10, upper 3 with imperfect anthers; legumes narrowly linear, 2 dm. long or less, 2-5 mm. wide, nearly straight to strongly curved.—Sickle Senna.

On waste ground, along railroad tracks, and in bottom lands along streams. Occasional.

Specimens Examined: LAKE CO.: By N. W. Railroad, Barrington, *E. J. Hill*, 21 September 1899. PULASKI CO.: Collected by *Fricke*, date not given. WABASH CO.: Little Mulberry River bottoms, near Mt. Carmel, *Hallock Shearer*, 1 September 1919. Banks of Ohio River, "southern Illinois," *George Vasey*, 20 August 1860 (C).

5. **Cassia fasciculata** Michx. Fl. Bor. Am. 1:262 (1803); Fuller (1943) 95; Jones (1945a) 162, (1947) 54; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74.

Cassia chamaecrista sensu Short (1845) 194; Mead (1846) 60; Lapham (1857) 510; Babcock (1872) 26; Patterson (1874) 5; Hyatt (1875) 68; Patterson (1876) 12; Schneck (1876) 526; Williams (1877) 490; Flagg & Burrill (1878) 234; Brendel (1887) 46; Higley & Raddin (1891) 32; Huett (1897) 68; Snare & Hicks (1898) 6; McDonald (1900) 103; Gleason (1907) 184, (1910a) 20, (1910b) 158; Thone (1925) 103; Pepoon (1927) 357; McDougall (1936) 159.—Non L. (1753).

Cassia chamaecrista var. *robusta* Pollard in Bull. Torr. Club 21:218 (1894); Robinson & Fernald (1908) 505; McDougall (1936) 159.

Chamaecrista fasciculata (Michx.) Greene in Pittonia 3:242 (1897); Pennell (1917) 350; Gates (1923) 169, (1926) 231; Ries (1939) 90.

Chamaecrista camporum Greene in Pittonia 5:108 (1903).—Type: Monticello, Piatt Co., Ill., 7 August 1899, E. L. Greene.

Chamaecrista fasciculata β Pennell in Bull. Torr. Club 44:352 (1917).

Cassia fasciculata var. *robusta* (Pollard) Macbr. in Contr. Gray Herb. n.s. 59:24 (1919); Deam (1940) 588; Fernald (1950) 886.

Type Locality: "Hab. in Pennsylvania et Virginia."

Range: Me.—Fla.—Mexico—Colo.—Minn.

Annual herb, erect; stem glabrous, appressed-puberulent, or hirsute;

stipules persistent, subulate-lanceolate; leaves sensitive; petiolar gland sessile; leaflets elliptical-linear, 5-20 mm. long; flowers 2-4 cm. broad, with unequal petals; stamens 10, unequal; legumes flat, linear, glabrous, or sparsely pubescent.—Showy Partridge Pea.

C. fasciculata var. *robusta* (Pollard) Macbr. is described as being generally more robust, the stem hirsute with spreading hairs. A study of stem pubescence of Illinois specimens reveals the following facts: Of a total of 54 specimens studied, 12 are glabrate; 27 are appressed-puberulent; 9 are appressed-puberulent with a scattering of stiff hairs; and 6 are hirsute, the pubescence consisting of a dense mixture of the short, appressed hairs, and the longer, stiff hairs. In these specimens there seems to be no correlation between the degree of density of pubescence and a generally robust character of the plant.

Roadsides, along railroad tracks, in open woods and fields. Common throughout Illinois. This plant is also one of the group which early establish themselves on shifting sand dunes along the Illinois River, according to Gleason (1910a:20).

Specimens Examined: ADAMS CO.: Along roadsides, Coe Springs, Quincy, *R. A. Evers* 5, 14 August 1939. CALHOUN CO.: Upland forest or semi-forest, Kampsville, *L. M. Turner 540*, July 1930 (C). CHAMPAIGN CO.: Meadow along railroad, near Urbana, *G. N. Jones 16566*, 6 August 1944. CHRISTIAN CO.: Roadsides, hillsides, Taylorville, *Ruby DeMotte*, 18 July 1896. COOK CO.: Cinder ballast of C. & N. W. Railroad, Palatine, *F. C. Gates 1897*, 7 August 1907. DU PAGE CO.: Along railroad near Wheaton, *W. S. Moffatt 441*, 30 August 1896. FAYETTE CO.: Roadside s. of St. Elmo, *Louise O'Dell 204*, 1 August 1942. GRUNDY CO.: Open roadside, near Coal City, *S. J. Ewer 650*, 29 September 1929. HANCOCK CO.: Ballast of Wabash Railroad, Denver, *F. C. Gates 10080*, 11 September 1916. JACKSON CO.: Near Carbondale, *J. McCree*, 8 July 1941. KANKAKEE CO.: 3 mi. w. of Bonfield, *G. N. Jones 15970*, 18 July 1943. LA SALLE CO.: Starved Rock, *Frank Thone 17*, date not given. LIVINGSTON CO.: Roadside, common, 5 mi. s. of Pontiac, *G. D. Fuller 9197*, 26 July 1944. MENARD CO.: Athens, *E. Hall*, 1861 (C). OGLE CO.: Dry, sandy soil, Oregon, *M. Waite*, 11 August 1889. PEORIA CO.: Damp, sandy soil, Peoria, *F. E. McDonald*, August 1901. PIKE CO.: Mississippi River bottoms, East Hannibal, *J. Davis*, 21 August 1918. SANGAMON CO.: Roadside, Woodside Twp., Sec. 18, *G. D. Fuller 6188*, 22 August 1941. STARK CO.: Along railroad embankment, Wady Petra, *V. H. Chase*, September 1894 (C). WHITESIDE CO.: Roadside, Sterling, *W. E. Reecher 223*, 2 August 1909 (C). WILL CO.: Cougar's Prairie, Joliet, *H. C. Skiels 445*, 8 August 1904 (C). UNION CO.: Moist soil, *G. D. Fuller 760*, 7 July 1941. VERMILION CO.: Along Vermilion River, between Oakwood and Collison, *G. N. Jones 14361*, 16 July 1941. WABASH CO.: Roadside on farm, Mt. Carmel, *J. Schneck*, 5 October 1900. WINNEBAGO CO.: Sandy hillside, 4 mi. n.e. of Durand, *E. W. Fell*, 10 September 1945.

6. **Cassia nictitans** L. Sp. Pl. 380 (1753); Mead (1846) 60; Lapham (1857) 510; Patterson (1874) 5, (1876) 12; Schneck (1876) 526; Flagg

& Burrill (1878) 234; Brendel (1887) 84; Snare & Hicks (1898) 6; Gleason (1907) 184; Pepoon (1927) 359; McDougall (1936) 159; Jones (1945a) 162; Fuller (1946) 58; Bailey (1949) 52; Jones (1950) 173; Fernald (1950) 886.

Chamaecrista nictitans (L.) Moench. Meth. 272 (1794); Gates (1926) 231; Pennell (1917) 359.

Type Locality: "Habitat in Virginia."

Range: Me.—Fla.—Tex.—Ariz.—Kans.—Ind.

Annual herb, erect or decumbent; stem appressed-pubescent; leaves sensitive, stipules persistent, subulate, attenuated; petiolar gland urceolate; leaflets linear-elliptic; flowers with unequal petals, axillary, 5-10 mm. broad, 2-3 in a group; stamens 5, equal; legumes flat, linear, pubescent, 2.5-4 cm. long, 4-5 mm. wide.—Sensitive Partridge Pea.

Open woods, roadsides, fields, in dry, sandy soil. Not common.

Specimens Examined: CALHOUN CO.: Open places or open woods, Kampsville, *L. M. Turner 666*, August 1930 (C). CASS CO.: Dry sandy barrens, Beardstown, *F. E. McDonald*, August 1904. GREENE CO.: Eldred, *W. E. Andrews*, 29 August 1889. HENDERSON CO.: Sandy barrens, near Oquawka, *H. N. Patterson*, date not given. JOHNSON CO.: Parker, *H. C. Benke 5238*, 4 September 1931 (C). POPE CO.: Herod, *G. P. Clinton*, 5 August 1898. PULASKI CO.: Mound City, *G. Vasey*, 20 August 1860. UNION CO.: Cobden, *F. S. Earle*, 31 July 1886. WABASH CO.: Roadside, dry, hard prairie, Mt. Carmel, *J. Schneck*, October 1900.

III. SUBFAMILY PAPILIONOIDEAE

1. All leaves simple.....9. *Crotalaria*
1. Leaves compound.
   2. Trees or shrubs.
      3. Trees.
         4. Stamens 10, distinct; stipules lacking; leaflets mostly 4.5-11 cm. long; bark smooth; inflorescence 15-50 cm. long.....7. *Cladrastis*
         4. Stamens 10, diadelphous; stipules woody spines, sometimes lacking; leaflets mostly 1.5-5 cm. long; bark rough; inflorescence 7-16 cm. long.....21. *Robinia*
      3. Shrubs.
         5. Twining; leaflets 7-9, 3-7 cm. long; raceme drooping, loosely-flowered; petals 5.....22. *Wisteria*
         5. Erect; leaves usually glandular-punctate; leaflets 11-51, 7-40 mm. long; racemes erect, spicate, densely-flowered; wing and keel petals lacking.....17. *Amorpha*
   2. Herbs.
      6. Leaves even-pinnate or bifoliolate, ending in a tendril.
         7. Style terete, pubescent only at summit; wings and keel adherent.....29. *Vicia*
         7. Style flattened, pubescent along inner side; wings nearly free from keel.....30. *Lathyrus*
      6. Leaves odd-pinnate.
         8. Leaves 3-foliolate or when digitate not more than 5-foliolate, rarely 1-foliolate.
            9. Leaves more or less glandular-punctate; leaflets 3-5, entire.....16. *Psoralea*
            9. Leaves not glandular-punctate.
               10. Leaflets dentate or denticulate.
                  11. Flowers in heads or short spikes.
                     12. Corolla adhering to stamens; legumes straight, included in calyx.....11. *Trifolium*
                     12. Corolla free from stamens; legumes curved or coiled.....13. *Medicago*
                  11. Flowers in very long, slender racemes; legumes straight, surpassing calyx.....12. *Melilotus*
               10. Leaflets entire.
                  13. Fruit a loment (breaking into 1-seeded, indehiscent segments).
                     14. Loments 1-several-jointed, joints similar and uncinate-pubescent; leaflets usually stipellate.....26. *Desmodium*

14. Loments of a single 1-seeded joint, sometimes with a lower, sterile, stalk-like joint; not uncinate-pubescent; leaflets not stipellate.
    15. Flowers purple or yellowish-white; stamens diadelphous; anthers similar; loments not longitudinally ribbed; stipules not sheathing the stem..... ..... 27. *Lespedeza*
    15. Flowers yellow; stamens monadelphous; anthers in 2 series; loments longitudinally ribbed; stipules sheathing stem.....28. *Stylosanthes*

13. Fruit a legume.
    16. Leaflets not stipellate.
        17. Flowers solitary, pink; stipules minute, black glands, or absent..... .....15. *Hosackia*
        17. Flowers in racemes or umbels, yellow, cream, or white in color; stipules mostly large and conspicuous.
            18. Flowers in elongated racemes; stamens distinct; legumes stipitate, inflated.....8. *Baptisia*
            18. Flowers in capitate umbels; stamens diadelphous; legumes not stipitate, terete, compressed..... ..... 14. *Lotus*
    16. Leaflets stipellate
        19. Style glabrous or essentially so.
            20. Plants annual, stems erect; flowers in nearly sessile, axillary clusters; mature legume 3-6 cm. long, densely villous.....35. *Glycine*
            20. Plants perennial, stems twining or prostrate; flowers in peduncled axillary racemes.
                21. Both petaliferous and apetalous flowers present; calyx of petaliferous flowers without bracteoles; calyx teeth nearly equal; leaflets broadly ovate.

terminal one about as long as wide.....36. *Amphicarpa*

21. Only petaliferous flowers present; calyx subtended by 2 bracteoles, bilabiate, the calyx teeth subulate.
    22. Stems very slender, finely hirsute; leaflets oval to lanceolate, 2-5 cm. long; racemes interrupted, few-flowered; corolla pink or rose; legumes finely appressed-pubescent.....37. *Galactia*
    22. Stems coarse, villous, becoming woody; leaflets broadly ovate to rhombic-ovate, entire or palmately lobed, 1-2 dm. long; racemes densely flowered, columnar; corolla reddish-purple; legumes densely villous. .....*Pueraria*

19. Style pubescent on upper surface.
    23. Flowers yellow; stems twining; leaflets ovate; keel incurved slightly..... *Vigna*
    23. Flowers purplish or whitish.
        24. Flowers 4-6 cm. long, solitary or in pairs, axillary, pale blue; stem ascending or twining..... 34. *Clitoria*
        24. Flowers less than 4 cm. long, in racemes or umbels.
            25. Inflorescence a loose raceme; keel spirally coiled; legumes slightly curved; seeds glabrous. .....32. *Phaseolus*
            25. Inflorescence umbellate; keel strongly incurved; legumes nearly straight;

seeds pubescent or rarely glabrous.....
.....33. *Strophostyles*

8. Leaflets 5 or more.
   26. Leaflets glandular-punctate; corolla imperfectly or indistinctly papilionaceous; legumes 1-2-seeded, indehiscent, enclosed in the calyx.
      27. Stamens 5; leaflets 5-9.....19. *Petalostemum*
      27. Stamens 10 or 9; leaflets more than 9.
         28. Leaflets lanceolate to ovate-lanceolate or nearly elliptical, mucronate, 2-4 cm. long; legume covered with stout, recurved prickles. ..... 24. *Glycyrrhiza*
         28. Leaflets oblanceolate or linear, obtuse, 3-11 mm. long; legume without recurved prickles. ..... 18. *Dalea*
   26. Leaflets not glandular-punctate; corolla papilionaceous; legumes several-seeded.
      29. Leaflets 5-11.
         30. Stems twining or climbing; leaflets 5-7 (occasionally 3), ovate or ovate-lanceolate; flowers maroon or greenish-white, in axillary racemes. ..... 31. *Apios*
         30. Stems erect; leaflets 7-11, oblanceolate; flowers blue, pink, or white, in terminal racemes. ..... 10. *Lupinus*
      29. Leaflets 11-31.
         31. Plants densely-pubescent; flowers in terminal racemes; legumes 3-6 cm. long..20. *Tephrosia*
         31. Plants strigose to glabrous; flowers in axillary racemes or head-like umbels.
            32. Flowers in racemes; legumes not 4-angled or jointed.....23. *Astragalus*
            32. Flowers in umbels, on long axillary peduncles; legumes linear, 4-angled, jointed. ..... 25. *Coronilla*

7. CLADRASTIS Raf.

Cladrastis lutea (Michx. f.) K. Koch, Dendrol. 1:6 (1869); Mattoon & Miller (1928) 76; Miller & Tehon (1929) 286; Jones (1945a) 162, (1950) 173; Fernald (1950) 888.

Virgilia lutea Michx. f. Arb. Am. 3:266. pl. 3 (1813).

Cladrastis tinctoria Raf. Neogenyton 1 (1825).

Type Locality: "In western Tennessee, and in the part of that state which is situated between the Cumberland Mountains and the Mississippi, and which is included between the 35th and 37th degrees of latitude."

Range: Ala.—Mo.—Ky.—N.C.

Tree, smooth-barked and unarmed, with yellow wood and glabrous foliage; leaves odd-pinnate, stipules absent; leaflets ovate to obovate, long-pointed or blunt-acuminate, mostly 4.5-10 cm. long; flowers papilionaceous, white, fragrant, in showy, many-flowered terminal panicles 15-30 cm. long; legumes linear, flat, 4-10 cm. long, 8-10 mm. wide, compressed, 3-6-seeded.—American Yellowwood.

Rich woods and bluffs, southern Illinois, rare.

Specimens Examined: ALEXANDER CO.: Olive Branch, *R. B. Miller*, 19 September 1928.

8. BAPTISIA Vent.

1. Leaflets 2.5-10 cm. long; flowers white or cream; mature pods 2.5-6 cm. long.
   2. Plants glabrous throughout, glaucous; stipules and floral bracts 1 cm. long or less, deciduous; pedicels 3-10 mm. long; stipe of pod at least twice as long as the calyx; pods ellipsoid, 2.5-4 cm. long. ..... 1. *B. leucantha*
   2. Plants more or less villous-pubescent throughout; stipules and floral bracts 2-4 cm. long, persistent; pedicels slender, 1-5 cm. long; stipe of pod shorter than the calyx; pods ovoid, 4-5 cm. long.... ..... 2. *B. leucophaea*
1. Leaflets less than 2 cm. long; flowers bright yellow; mature pods 6-12 mm. long..... *B. tinctoria*

1. **Baptisia leucantha** T. & G. Fl. N. Am. 1:385 (1840); Short (1845) 190; Mead (1846) 60; Lapham (1857) 510; Bebb (1860) 183; Babcock (1872) 26; Patterson (1874) 5; Hyatt (1875) 67; Patterson (1876) 12; Schneck (1876) 526; Williams (1877) 490; Flagg & Burrill (1878) 234; Brendel (1887) 46; Higley & Raddin (1891) 28; Huett (1897) 63; Snare & Hicks (1898) 5; Pepoon (1910) 149; Gates (1912) 360, (1923) 169; Thone (1925) 103; Gates (1926) 231; Pepoon (1927) 359; McDougall (1936) 161; Larisey (1940) 176; Fuller (1943) 95; Jones (1945a) 162; Fuller (1946) 58; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 173.

Type Locality: "In rich alluvial soil, Upper Canada (near Lake Erie), Michigan! Ohio! to Louisiana! and Arkansas!"

Range: Ontario—Minn.—Tex.—Fla.

Erect perennial herb, 1-2 m. tall, glabrous throughout, glaucous, turn-

ing black upon drying; stipules lanceolate, deciduous; leaves digitately 3-foliolate; petioles 5-10 mm. long; leaflets obovate to oblanceolate; mostly obtuse; flowers white, in bractless terminal and axillary racemes; pedicels 1 cm. long or less; legumes ellipsoid, black, glaucous, stipe 2-3 times as long as the calyx.—Atlantic Wild Indigo.

Roadsides, open woods, dry prairies, and waste places. Common throughout Illinois.

Specimens Examined: ADAMS CO.: Camp Point, *A. B. Seymour*, 27 June 1876. CHAMPAIGN CO.: Along Sangamon River near Mahomet, *G. N. Jones 12784*, 5 August 1940. CHRISTIAN CO.: Roadside, waste places, Taylorville, *Ruby DeMotte*, 15 June 1896. COOK CO.: Low moist ground, Gardner's Park, Chicago, *Agnes Chase 117*, 18 June 1897. FAYETTE CO.: 1 mi. e. of Loogootee, *Louise O'Dell 201*, 1 August 1942. FRANKLIN CO.: Near Christopher, *G. N. Jones 12176*, 6 July 1940. HANCOCK CO.: Herb in prairie along roadside, Carthage, *F. C. Gates 10861*, 22 September 1917. KANKAKEE CO.: Near Rock Creek, *G. N. Jones 15796*, 18 July 1942. LAKE CO.: Open sandy ridge, beach, n. of Waukegan and e. of Glenwood Ridge, *F. C. Gates 2750*, 29 June 1908. LA SALLE CO.: Starved Rock, *G. N. Jones 15797*, 16 June 1943. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 15 July 1889. MARSHALL CO.: Clearing along Henry Creek, near Lawn Ridge, *V. H. Chase 1475*, 7 July 1907. MASON CO.: Stevens Creek at Wabash, edge of woods, *I. W. Clokey 2487*, 1 August 1915. MC HENRY CO.: Algonquin, *W. A. Nason*, 15 July 1878. PEORIA CO.: Dry prairie, n. of Princeville, *V. H. Chase 107*, 15 July 1898. TAZEWELL CO.: Open, dry woods, above E. Peoria, *F. C. McDonald*, July 1904. VERMILION CO.: Meadow near railroad track, near Fithian, *G. N. Jones 11568*, 23 June 1940. WABASH CO.: Mouth of Crayfish Creek, in rich, black alluvial soil, near Mt. Carmel, *J. Schneck*, 30 May 1906.

2. **Baptisia leucophaea** Nutt. Gen. 1:282 (1818); Mead (1846) 60; Lapham (1857) 510; Warne (1870) 314; Babcock (1872) 26; Patterson (1874) 5, (1876) 12; Williams (1877) 490; Flagg & Burrill (1878) 234; Brendel (1887) 46; Higley & Raddin (1891) 28; Huett (1897) 63; McDonald (1900) 102; Larisey (1940) 158; Jones (1945a) 162; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 173.

Baptisia bracteata sensu Gleason (1907) 184, (1910b) 158; Britton & Brown (1913) 2:345; Pepoon (1927) 359; McDougall (1936) 161; Ries (1939) 90.—Non Muhl. ex Ell. (1817).

Baptisia leucophaea var. *glabrescens* Larisey in Ann. Mo. Bot. Gard. 27:161, tab. 21, fig. 1 (1940); Fernald (1950) 888.

Type Locality: "Habitat in Georgia and Louisiana."

Range: Mich.—Minn.—Tex.—La.

Perennial herb, less than 1 m. tall, villous-pubescent throughout; leaves digitately 3-foliolate, very short-petiolate or sessile; stipules persistent; leaflets oblanceolate to spatulate, obtuse or acute; flowers white or cream, showy, in axillary racemes, with persistent, foliaceous bracts; pedicels 1-5 cm. long, secund; legume ellipsoid or ovoid, 4-5 cm. long, strongly

reticulate, pubescent, with stipe shorter than the calyx; beak slender, eventually deciduous.—Plains Wild Indigo.

Of 31 specimens examined from Illinois, three show characters associated with *B. leucophaea* var. *glabrescens* by Larisey (1940:161), namely, glabrate stem, and general reduction in pubescence throughout the remainder of the plant. These three specimens seem to represent the opposite extreme from the villous pubescence usually associated with the species. The other specimens show degrees of pubescence varying between these two extremes.

Roadsides, fields, and open woods. Common.

Specimens Examined: CHAMPAIGN CO.: Along Illinois Central Railroad, Champaign, *J. B. Hammett*, 1 May 1891. COOK CO.: Oak openings, Berwyn, *E. J. Hill*, 20 June 1906. DU PAGE CO.: Prairie, e. of Addison, *W. S. Moffatt 148*, 25 May 1891. FAYETTE CO.: Roadside, ¾ mi. n. of Farina, *Louise O'Dell 487*, 10 May 1941. HANCOCK CO.: Herb in prairie along Wabash Railroad, Bentley, *F. C. Gates 8840*, 24 May 1916. HENDERSON CO.: Oquawka, *G. N. Jones 17041*, 10 June 1945. KANE CO.: Sandy swamp, occasional, St. Charles, *Gordon Persall*, 10 June 1942. KANKAKEE CO.: Sandy soil, near St. Anne, *G. N. Jones 11417*, 29 May 1940. LA SALLE CO.: Deer Park, *Ray Kienholz*, May 1915. MACON CO.: Decatur, *I. W. Clokey*, May 1896. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 12 May 1891. MC HENRY CO.: Algonquin, *W. A. Nason*, 22 May 1878. MENARD CO.: Dry prairies, *E. Hall*, 1861. OGLE CO.: Sandy soil, occasional, near Castle Rock, *G. D. Fuller 3266-9*, 27 June 1942. PEORIA CO.: Open prairies, Peoria, *F. E. McDonald*, May 1887. RANDOLPH CO.: 16 mi. s. of Columbia, *B. Bauer 2527*, 11 May 1940. RICHLAND CO.: Sugar Creek Prairie near Kinkade's, *R. Ridgway 909*, 13 September 1919.

Baptisia tinctoria (L.) R. Br. was reported from Illinois by Brendel in (1859a:584). Babcock (1872:26) lists it from "Gibson's" in the vicinity of Chicago, noting that it was rare. Patterson (1876:12) reports it from the "northern counties." Flagg & Burrill (1878:234) mention it in their list compiled from the lists of earlier Illinois botanists. Brendel (1887: 84) again cites it for northern Illinois, but not the Peoria region. Higley & Raddin (1891:28) state that it was infrequent in "sandy soil, both north and south, near the lake shore" (Michigan). Snare & Hicks (1898: 5) include it in their list of plants for Stark County. Pepoon (1927:359) quotes Higley & Raddin's statement and adds: "No one seems to find it in late years. Probably extinct in our area." Fernald (1945:215, 1950:887) lists var. *crebra* Fernald as occurring in Illinois, but cites no specimens.

Two specimens from Illinois, with incomplete data, are in the University of Illinois Herbarium. One labelled only "North Illinois" is from the Frederick Brendel collection. The other, labelled only "Chicago," is no. 1091 from the W. S. Moffatt collection. From this evidence and from the fact that no specimens have been collected in Illinois for more than 50 years, it is believed that this species no longer occurs in Illinois. *B. tinc-*

toria is included in the key in the event that specimens might be collected in Illinois.

Baptisia australis (L.) R.Br. has been reported from Illinois by Vasey (1860:119, 1861a:141), and by Flagg & Burrill (1878:234). This showy, blue-flowered *Baptisia* has not been reported since, so far as the writer has been able to determine. The only Illinois specimens seen were of cultivated plants. Accordingly, this species is not considered at the present time to occur spontaneously in the state.

9. CROTALARIA L.

1. Annual or perennial herb, 1-6 dm. tall; leaves linear-lanceolate to elliptical, 3-7 cm. long; flowers about 1 cm. long, 2-4 on terminal or axillary peduncles, 1-4 cm. long; legume 2.5-4 cm. long.....1. *C. sagittalis*
1. Suffrutescent, to 14 dm. high; leaves oblanceolate, as much as 15 cm. in length, glabrous above, finely pubescent below; flowers about 20 mm. long, in showy terminal racemes up to 3 dm. long; legume 5 cm. long.....*C. spectabilis*

Crotalaria sagittalis L. Sp. Pl. 714 (1753); Engelmann (1844) 96; Mead (1846) 60; Lapham (1857) 508; Brendel (1859) 583, (1860) 294; Patterson (1876) 10; Schneck (1876) 524; Flagg & Burrill (1878) 232; Brendel (1887) 46; McDonald (1900) 103; Darlington (1923) 180; Pepoon (1927) 359; Jones (1945a) 162; Fuller (1947) 51; Bailey (1949) 52; Jones (1950) 173.

Crotalaria sagittalis var. *typica* Senn in Rhodora 41:336 (1939).

Type Locality: "Habitat in Brasilia, Virginia."

Range: Mass.—S.D.—Tex.—Fla.; Mexico.

Annual or perennial herb, erect or ascending, 1-6 dm. tall, villous-pubescent throughout; stipules persistent, united, decurrent on the stem, sagittate above; leaves simple, elliptical, ovate, or linear-lanceolate, entire, nearly sessile; corolla pale yellow, 8-12 mm. long, nearly equalling the calyx; stamens monadelphous; legume glabrous, membranaceous, ellipsoid, 2.5-4 cm. long; seeds loose at maturity, rattling freely.—Rattlebox.

Commonly found in dry, sandy soil, along roadsides and railroad beds, on lakeshore, in open woods, and often behaving as a weed. Distributed locally throughout Illinois. C. C. Deam (1940:593) concludes that this species is introduced in Indiana, but evidence seems to indicate that it is probably native in Illinois.

Specimens Examined: ADAMS CO.: Open hillside, Quincy, *McDougall 173*, 28 July 1928. CHRISTIAN CO.: Taylorville, *W. E. Andrews*, 25 June 1898. COOK CO.: Single plant on railroad near Brighton, Chicago, *W. S. Moffatt*, 5 August 1893. FAYETTE CO.: Roadside s. of Brownstown, *Louise O'Dell*, 8 August 1942. JACKSON CO.: Found in light timber growth from

1-2 ft., common, Makanda, *L. P. Cranwill*, 22 July 1917. KANKAKEE CO.: Abundant in sandy soil along New York Central Railroad, 6 mi. w. of Kankakee, *R. A. Schneider 1304*, 29 July 1939. MARION CO.: *F. Brendel*, July 1860. MASON CO.: Lake Matanzas, *F. C. Gates*, 19 July 1910. PEORIA CO.: Sandy bluff near Kickapoo Creek, s.w. of Peoria, *V. H. Chase 8363*, 4 August 1946. POPE CO.: Herod, *G. P. Clinton*, 31 July 1898. WABASH CO.: Hard clayey soil, *J. Schneck*, 15 August 1887.

Senn (1939:338) cites specimens collected from Cass, Champaign, Madison, and Pope counties, deposited in the Gray Herbarium, and the U. S. National Herbarium.

Crotalaria spectabilis Roth (*C. retzii* A. Hitchc.), a showy plant cultivated in the southern states where it is reported as an escape, has been collected once in southern Illinois. The following data are from the herbarium label of a specimen in the University of Illinois Herbarium: ALEXANDER CO.: Along edge of soybean field, 4 mi. s.w. of Olive Branch, few miles from Mississippi River, *H. M. Franklin 34*, 20 August 1949. This specimen in flower is a portion of the only plant found by the collector. *C. spectabilis* is included in the key in the event that additional collections may be made in Illinois. It is native in India.

10. LUPINUS L.

Lupinus perennis L. Sp. Pl. 721 (1753); Bebb (1859) 586; Vasey (1861a) 141; Warne (1870) 314; Babcock (1872) 25; Patterson (1876) 10; Williams (1877) 490; Flagg & Burrill (1878) 232; Brendel (1887) 84; Higley & Raddin (1891) 28; Gleason (1910b) 158; Gates (1912) 360; Pepoon (1927) 359; McDougall (1936) 162; Jones (1945a) 162; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 173.

Lupinus perennis var. *occidentalis* S.Wats. in Proc. Am. Acad. 8:526 (1873); Fernald (1945) 215, (1950) 890.

Type Locality: "Habitat in Virgina."

Range: Me.—Minn.—La.—Fla.

Erect perennial herb, 2-6 dm. high; stems and petioles appressed-pubescent, with scattered larger hairs, to villous; leaves digitately 7-11 foliolate; leaflets oblanceolate; nearly sessile, entire, 1.5-5 cm. long; flowers showy, blue, and less often, pink or white, in long terminal racemes; legumes linear, 3-4 cm. long, densely pubescent, 4-6 seeded, valves coiling at maturity.—Wild Lupine.

Specimens examined from Illinois have the villous type of pubescence of stems and petioles assigned by Watson (1873:526) to *L. perennis* var. *occidentalis*. Fassett (1939:32) presents maps to support the view that *L. perennis*, in the western part of its range, tends to show abundantly a decidedly villous condition which is not common among the much less pubescent plants in the eastern part of its range. However, the same author points out that a line cannot be drawn separating the two phases.

In sandy soil, in open oak woods, along roadsides, and in old fields. Locally distributed in northern Illinois.

Specimens Examined: KANKAKEE CO.: Very abundant in oak woods on dry sand hills, 5 mi. n.e. of St. Anne, *R. A. Schneider 1563*, 29 May 1940; sandy soil, 5 mi. n.w. of Bonfield, *G. N. Jones 13539*, 10 May 1941. LEE CO.: Wooded sand hill, near Amboy, *V. H. Chase 5039*, 27 May 1934. OGLE CO.: Sandy hillside near Castle Rock, *G. D. Fuller*, 27 June 1942.

11. TRIFOLIUM L.

1. Flowers on short pedicels, reflexed in age.
   2. Corolla red, purple, pink, or white.
      3. Heads at least 2.5 cm. broad.
         4. Plants not stoloniferous; leaves pubescent (glabrous in var. *glabrum*); calyx tube less than half as long as subulate lobes; annual or biennial.....1. *T. reflexum*
         4. Plants stoloniferous; leaves glabrous; calyx tube about half as long as subulate lobes; perennial.....2. *T. stoloniferum*
      3. Heads 2 cm. broad or less.
         5. Stems creeping, rooting at the nodes; flowers white, tinged with pink.....3. *T. repens*
         5. Stems erect or ascending, not rooting at nodes; flowers pink or purplish.....4. *T. hybridum*
   2. Corolla yellow.
      6. Leaflets sessile or nearly so; stipules linear-lanceolate; heads 1-2 cm. in diameter; standard conspicuously striate when dry. .....8. *T. agrarium*
      6. Terminal leaflet stalked; stipules ovate; heads 4-12 mm. in diameter.
         7. Heads densely 20-40-flowered; standard conspicuously striate when dry.....9. *T. procumbens*
         7. Heads loosely 3-15-flowered; standard faintly striate when dry.....10. *T. dubium*
1. Flowers sessile or nearly so, not reflexed in age.
   8. Heads cylindrical to conical; calyx plumose-pubescent; plants annual.
      9. Corolla crimson, equalling or surpassing the calyx; leaflets obovate or obcordate.....6. *T. incarnatum*
      9. Corolla whitish, shorter than the calyx; leaflets linear or oblanceolate.....5. *T. arvense*
   8. Heads subglobose or short-cylindrical, 2-3 cm. broad, and sessile, or nearly so; corolla magenta (rarely white); calyx sparsely pilose; plants perennial.....7. *T. pratense*

1. **Trifolium reflexum** L. Sp. Pl. 766 (1753); Forbes (1870) 318; Vasey

(1870a) 256; Babcock (1872) 25; Patterson (1876) 10; Schneck (1876) 524; Flagg & Burrill (1878) 232; Brendel (1887) 46; Higley & Raddin (1891) 28; Huett (1897) 63; Kennedy (1909) 40; Pepoon (1927) 360; Jones (1945a) 162; Bailey (1949) 52; Jones (1950) 173; Fernald (1950) 893.

Trifolium reflexum var. *glabrum* Lojacono in Nuov. Giorn. Bot. Ital. 15: 150 (1883); Fernald (1950) 893.

Type Locality: "Habitat in Virginia."

Range: N.Y.–S.D.–Tex.–Fla.

Annual or biennial, ascending or decumbent, pubescent, branching near the base, not stoloniferous; stipules ovate, toothed, foliaceous; leaflets elliptical or obovate to suborbicular, 1.5-3 cm. long, obtuse, emarginate, or truncate at the apex; heads long-peduncled, globose, 2.5-3 cm. broad; flowers pedicelled, reflexed in fruit; calyx teeth much longer than the tube; standard red or purple, wings and keel nearly white; legume 3-6-seeded.–Buffalo Clover.

In *T. reflexum* var. *glabrum* the foliage is described as glabrous, the leaflets large, with nearly entire or slightly undulate margins, and the flowers as yellowish to white. The type material was collected by Dr. S. B. Mead at Augusta, Hancock Co., Illinois, in 1842. The twelve Illinois specimens of *T. reflexum* seen by the writer are all glabrous, and therefore, are considered as representing var. *glabrum*. Deam (1940:596) reports the variety from Indiana, and characterizes it as "the western form of the species." All Iowa specimens of *T. reflexum* examined by Fox (1945:213) are also of the glabrous type. *Trifolium stoloniferum*, because it is essentially glabrous, is reported to be frequently mistaken for this plant. *Trifolium reflexum* var. *glabrum* never produces stolons. This character helps to distinguish it from *T. stoloniferum*.

Open woods, fields, and meadows. Of local distribution, and not common in Illinois.

Specimens Examined: CHRISTIAN CO.: Taylorville, *W. E. Andrews*, 6 June 1899. KANKAKEE CO.: Gravelly bank of island, near Altorf, *E. J. Hill*, 13 June 1874. LA SALLE CO.: Utica, *W. E. Andrews*, 12 June 1877. PEORIA CO.: Dry woods, Peoria, *F. E. McDonald*, June 1889. WABASH CO.: Farm near Mt. Carmel, *J. Schneck*, 8 June 1901. WILL CO.: Dryish meadows, Joliet, *E. J. Hill*, 27 June 1907.

Kennedy (1909:40) cites specimens from Hancock, Madison, and Marion counties in Illinois. These have not been seen by the writer.

2. **Trifolium stoloniferum** Muhl. Cat. 67 (1813); Mead (1846) 60; Lapham (1857) 508; Patterson (1876) 10; Williams (1877) 490; Flagg & Burrill (1878) 232; Brendel (1887) 84; Higley & Raddin (1891) 28; Darlington (1923) 180; Pepoon (1927) 360; Jones (1945a) 162, (1950) 174.

Type Locality: "Ohio, Kent. Pens."

Range: Ohio—S.D.—Kans.—Ky.

Perennial herb, glabrous, stoloniferous; stem branching profusely at the base; stipules ovate-lanceolate, acute; leaflets obovate, obcordate, or suborbicular, denticulate; heads globose, the flowers pedicelled, reflexed in fruit; calyx teeth subulate, 2 or 3 times as long as the tube; sinuses of the calyx pubescent; corolla white, purple-tinged.—Running Buffalo Clover.

Trifolium stoloniferum is similar to *T. reflexum*, from which it may be separated by its perennial habit, the production of stolons, and its essentially glabrous condition throughout.

Kennedy (1909:37) reports that "In specimens in the herbaria that I have examined, this species has quite frequently been mistaken for *reflexum, hybridum, carolinianum* and *repens*. When the stolons are not well developed it resembles very closely *T. reflexum glabrum*. It seems to be more limited in its distribution than *T. reflexum* and its variety *glabrum*."

Examination of records of the occurrence of *T. stoloniferum* in Illinois (as listed above) reveals that these records were based chiefly upon specimens collected by Mead in Hancock County (1848), by French in Washington County (date unknown), and by Higley & Raddin in south Chicago (1886). The scarcity of any specimens collected during the last sixty years, leads to the conclusion that this plant may no longer occur in Illinois, or must be considered exceedingly rare.

Deam (1940:1066) does not find sufficient evidence to include *T. stoloniferum* in the flora of Indiana, and Fox (1945:214) finds no reliable records of its occurrence in Iowa. Palmer and Steyermark (1935:576) report it from central and southern Missouri.

Specimen Examined: HANCOCK CO.: S. B. Mead, June 1848.

3. **Trifolium repens** L. Sp. Pl. 767 (1753); Mead (1846) 60; Lapham (1857) 508; Babcock (1872) 25; Patterson (1874) 4, (1876) 10; Schneck (1876) 524; Williams (1877) 490; Flagg & Burrill (1878) 232; Brendel (1887) 46; Higley & Raddin (1891) 28; Huett (1897) 63; Snare & Hicks (1898) 5; Gleason (1910b) 158; Gates (1912) 360; Sherff (1913) 602; Gates (1923) 169; Thone (1925) 103; Gates (1926) 231; Pepoon (1927) 360; Stover (1930) 23; Jones (1942) 72; Fuller (1943) 95; Jones (1945a) 162; Fuller (1946) 58; Jones (1947) 55; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 174; Evers (1951) 620.

Type Locality: "Habitat in Europae pascuis."

Range: Nova Scotia—Fla.—Calif.—Alaska;West Indies. Native of Eurasia.

Perennial herb with creeping stems and stoloniferous habit; leaves

long-petioled; stipules ovate-lanceolate, membranous; leaflets obcordate, obovate, or emarginate, denticulate, glabrous; flowers pedicelled, white or pinkish, in long-pedunculed, globose heads; calyx much shorter than the corolla, the calyx tube longer than the teeth; flowers reflexed in fruit; legumes enclosed within the persistent corolla.—White Clover.

Roadsides, fields, meadows, pastures, lawns, and waste places. Very common throughout all Illinois. Evers (1951:620) reports collecting it from every county in the state.

Specimens Examined: CHAMPAIGN CO.: Roadside, near Urbana, *G. N. Jones 11708*, 2 June 1940. CHRISTIAN CO.: Fields and pastures, Taylorville, *Ruby DeMotte*, 16 June 1896. DU PAGE CO.: Wheaton, *W. S. Moffatt 152*, August 1889. FAYETTE CO.: Farmyard n.w. of Farina, *Louise O'Dell 229*, 29 June 1940. HANCOCK CO.: In lawns, Carthage, *F. C. Gates 8898*, 4 June 1916. MC HENRY CO.: Algonquin, *W. A. Nason*, 2 July 1878. PERRY CO.: Du Quoin, Expedition of 1869, *I. S. R. 129a*, 19 June 1869. PIKE CO.: Fields, East Hannibal, *John Davis 112*, 3 June 1913. PEORIA CO.: Meadow lands, Peoria, *F. E. McDonald*, July 1886. WABASH CO.: Mt. Carmel, *H. Shearer*, 27 May 1903.

4. **Trifolium hybridum** L. Sp. Pl. 766 (1753); Higley & Raddin (1891) 28; Hill (1892) 246; Huett (1897) 63; Gates (1912) 361; Darlington (1923) 180; Gates (1923) 169; Thone (1925) 103; Gates (1926) 231; Pepoon (1927) 360; Fuller (1943) 95; Jones (1945a) 162; Fuller (1946) 58; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 174; Evers (1951) 620.

Type Locality: "Habitat in Europae cultis."

Range: Newfoundland—West Indies; Fla.—Calif.—Wash.—Alaska. Cultivated and escaped; native of Europe.

Erect or ascending perennial herb, nearly glabrous; leaves long-petioled; stipules ovate-lanceolate, acuminate, and membranous; leaflets obovate, oval, or almost elliptic, sharply serrulate; flowers pink or rose, in long-pedunculed, globose heads; pedicels reflexed in age; corolla 3-4 times as long as the calyx; legumes enclosed within the persistent corolla.—Alsike Clover.

Fields, roadsides, pastures, lawns, and waste places. Common throughout Illinois. Evers (1951:620) reports collecting it from every county in the state.

Specimens Examined: ADAMS CO.: In pasture land, near Burton Cave, *R. A. Evers 1134*, 4 June 1943. CHAMPAIGN CO.: Roadside, near Urbana, *G. N. Jones 11797*, 9 June 1940. COOK CO.: Riverside, *Dr. W. C. Ohlendorf*, 9 July 1895. DU PAGE CO.: Lawn, Wheaton, *W. S. Moffatt 175*, 11 June 1894. FAYETTE CO.: Roadside n.w. of Farina, *Louise O'Dell 228*, 29 June 1940. LEE CO.: Prairie roadside, 5 mi. s.w. of Dixon, *E. Keithley*, 3 June 1945. PIKE CO.: Fields, East Hannibal, *John Davis 113*, 3 June 1913. RICHLAND CO.: Meadow, 3½ mi. n. of Olney, *Vera L. Scherer 164*, 9 June 1947. SANGA-

MON CO.: Near Springfield, *G. N. Jones 11649*, 23 May 1940. STARK CO.: Near Wady Petra, *V. H. Chase*, 21 June 1896. TAZEWELL CO.: Roadside, near East Peoria, *V. H. Chase 8892*, 9 July 1947. WABASH CO.: Rich clayey soil, farm near Mt. Carmel, *J. Schneck*, 28 July 1905.

5. **Trifolium arvense** L. Sp. Pl. 769 (1753); Brendel (1859a) 584; Vasey (1861a) 141; Patterson (1876) 10; Flagg & Burrill (1878) 232; Higley & Raddin (1891) 28; Darlington (1923) 180; Pepoon (1927) 360; Jones (1945a) 163; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 174.

Type Locality: "Habitat in Europa, America septentrionali."

Range: N.H.—Quebec—Minn.—Iowa—S.C.; Ore.—Wash. Naturalized from Europe.

Erect annual herb, villous-pubescent throughout; leaves short-petioled; stipules lanceolate, subulate-tipped; leaflets linear or oblanceolate; heads peduncled, dense, longer than wide, 1-3 cm. long; flowers sessile, corolla whitish, much shorter than the subulate plumose-pubescent calyx-lobes. —Rabbit-foot Clover.

Roadsides, dry fields, lawns, banks, and waste places. Found locally throughout Illinois.

Specimens Examined: CHAMPAIGN CO.: Lawn near Chemistry Laboratory, campus University of Illinois, Urbana, *C. Herme*, 26 June 1893. JOHNSON CO.: *F. Brendel*. OGLE CO.: Oregon, *M. B. Waite*, 18 August 1884. PEORIA CO.: *F. Brendel*. STEPHENSON CO.: *T. Hunt*, 1882. TAZEWELL CO.: *F. Brendel*. WASHINGTON CO.: Dubois, *A. A. Hinkley*, 14 June 1904. WOODFORD CO.: Open sandy slope, Spring Bay, *V. H. Chase 11480*, 28 August 1950.

6. **Trifolium incarnatum** L. Sp. Pl. 769 (1753); Darlington (1923) 180; Pepoon (1927) 360; Jones (1945a) 163, (1950) 174.

Type Locality: "Habitat in Italia."

Range: Me.—Minn.—Iowa—D.C. Escaped from cultivation; native of Europe.

Erect annual herb, appressed-pubescent or villous; leaves long-petioled; stipules membranous and foliaceous at the tip; leaflets almost sessile, obovate or obcordate, denticulate, pubescent; heads dense, subcylindrical, terminal, often 5 cm. long; flowers sessile, corolla scarlet, longer than subulate calyx-lobes; calyx densely pubescent with brown hairs.—Crimson Clover.

Fields, roadsides, and waste places. Rare in Illinois. May escape cultivation and persist a short time. Not permanently established, but occasionally found. Pepoon (1927:360) writes that this species was "for a number of years abundant in Ravenswood (Cook Co.) west of the C. & N. W. Ry., but at present seemingly extinct. Along roads southeast. Precariously persistent escape. The winters average too cold for this plant."

Specimen Examined: ALEXANDER CO.: One plant on roadside (no planted areas of it seen at this location), s. of Unity, *H. E. Ahles 3810*, 8 May 1951.

7. **Trifolium pratense** L. Sp. Pl. 768 (1753); Mead (1846) 60; Lapham (1857) 508; Brendel (1870) 378; Babcock (1872) 25; Patterson (1874) 4, (1876) 10; Schneck (1876) 524; Williams (1877) 490; Flagg & Burrill (1878) 232; Higley & Raddin (1891) 28; Huett (1897) 63; Snare & Hicks (1898) 5; Gleason (1910b) 158; Gates (1912) 360; Sherff (1913) 602; Darlington (1923) 180; Gates (1923) 169; Thone (1925) 103; Gates (1926) 231; Pepoon (1927) 360; Jones (1942) 72; Fuller (1943) 95; Jones (1945a) 163; Fuller (1946) 58; Jones (1947) 55; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 174; Evers (1951) 620.

Type Locality: "Habitat in Europae graminosis."

Range: Newfoundland—Fla.—Calif.—Alaska; West Indies. Cultivated and naturalized; native of Europe.

Perennial herb, erect, ascending, or decumbent, somewhat pubescent; stipules ovate, strongly reticulate, subulate-tipped; leaflets usually 3, sessile, oval, obovate, or elliptical, denticulate, often with a dark marking near the center on the upper surface; heads globose or ovoid, subsessile; flowers sessile, red, purple, or, less often white; calyx pilose with brown hairs, with subulate lobes shorter than the corolla.—Red Clover.

Cultivated as a fodder crop, and common as an escape in waste fields, roadsides, pastures, and lawns. Throughout Illinois. Evers (1951:620) reports collecting it from every county in the state.

Specimens Examined: ADAMS CO.: Along roadside, Quincy, *R. A. Evers 343*, 23 May 1941. CHAMPAIGN CO.: Edge of Brownfield Woods, near Urbana, *G. N. Jones 13943*, 17 June 1941. CHRISTIAN CO.: Fields, meadows, etc., Taylorville, *Ruby DeMotte*, 25 May 1897. DU PAGE CO.: Wheaton, *W. S. Moffatt 153*, August 1889. FAYETTE CO.: Roadside n.w. of Farina, *Louise O'Dell 227*, 28 June 1940. HANCOCK CO.: Herb along Wabash Railroad, Bentley, *F. C. Gates 8833*, 24 May 1916. KANKAKEE CO.: Fields, Kankakee, 9 June 1870 (this specimen recorded as having white flowers). LAWRENCE CO.: Roadside, ½ mi. s. of Lawrenceville, *J. P. Sivert 509*, 1 July 1947. MENARD CO.: Athens, *E. Hall*, 1861. PIKE CO.: Mississippi River bottoms, Shepherd, *John Davis 942*, 23 July 1913. PEORIA CO.: Fields, roadsides, etc., Peoria, *F. E. McDonald*, June 1889. RICHLAND CO.: Roadside, 4 mi. n. of Olney, *Vera L. Scherer 232*, 20 June 1947. UNION CO.: Fields, State Forest, *G. D. Fuller 571*, 21 May 1941. WABASH CO.: Rich soil, very common, Mt. Carmel, *H. Shearer*, 10 June 1904.

8. **Trifolium agrarium** L. Sp. Pl. 772 (1753); Darlington (1923) 180; Pepoon (1927) 360; Fuller (1943) 95; Jones (1945a) 163, (1950) 174.

Type Locality: "Habitat in Europae pratis."

Range: Newfoundland—Minn.—Kans.—N.C. Naturalized from Europe.

Ascending or erect annual herb, glabrous or somewhat pubescent; stipules linear-lanceolate, persistent, joined to the petiole for about half

its length; leaves palmately 3-foliolate; leaflets all sessile, glabrous; flowers in dense axillary heads, 1-2 cm. in diameter, reflexed in age; corolla yellow, brown, and conspicuously striate when dry; legume included within persistent corolla.—Yellow Hop Clover.

Roadsides, and in fields and waste places. Local.

Specimens Examined: PEORIA CO.: Along roadsides, Peoria, *F. E. McDonald*, July 1903; grass plots, Peoria, *F. E. McDonald*, June 1903.

9. **Trifolium procumbens** L. Sp. Pl. 772 (1753); Mead (1846) 60; Lapham (1857) 508; Williams (1877) 490; Flagg & Burrill (1878) 232; Huett (1897) 63; Darlington (1923) 180; Pepoon (1927) 360; Fuller (1943) 95; Jones (1945a) 163; Fuller (1946) 58; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 174.

Type Locality: "Habitat in Europae campestribus."

Range: Nova Scotia—N.D.—Miss.—S.C.; Wash.—Calif. Naturalized from Europe.

Prostrate or procumbent annual herb, pubescent; stipules ovate, fused to the lower portion of the petiole; leaflets 3, wedge-shaped or obovate, 6-12 mm. long, the lateral ones sessile, and the terminal leaflet noticeably stalked; heads 20-40-flowered, 4-12 mm. in diameter, the flowers eventually reflexed; corolla yellow, striated, brown when dry, persistent, longer than the enclosed legume.—Low Hop Clover.

In lawns, roadsides, open woods, fields, pastures, and waste places. Distributed locally throughout Illinois.

Specimens Examined: COOK CO.: Open woods w. of Glencoe, *E. E. Sherff 1712*, 20 August 1912. DU PAGE CO.: In a lawn, rare, Wheaton, *W. S. Moffatt 126*, 2 June 1894. FAYETTE CO.: Edge of Wolf Creek Woods n.e. of St. Elmo, *Louise O'Dell 550*, 10 July 1943. JACKSON CO.: Dry soil overlying rock, Makanda, *H. A. Gleason*, 11 June 1903. JEFFERSON CO.: Field, 5 mi. s. of Mt. Vernon, *H. E. Ahles 2346*, 15 May 1950. JOHNSON CO.: Lawn weed, Vienna, *H. E. Ahles*, 28 May 1949. LAKE CO.: Grassy woods along Bluff Lake, *F. C. Gates 1767*, 27 July 1907. LAWRENCE CO.: Waste ground, Lawrenceville, *J. P. Sivert 510*, 8 July 1947. LEE CO.: Open timber, limestone, 2 mi. n. of Dixon, *E. Keithley*, 3 July 1943. MARION CO.: 2 mi. s. of Salem, *H. E. Ahles*, 28 May 1949. MASSAC CO.: Fallow field, 3 mi. e. of Joppa, *H. E. Ahles 3799*, 8 May 1951. PEORIA CO.: Woodland pasture near Jubilee, *V. H. Chase*, November 1902. PIKE CO.: New Canton, *E. T. Ebersol*, 5 June 1948. POPE CO.: Roadside near Dixon Springs, *G. N. Jones 12003*, 4 July 1940. RICHLAND CO.: Along gravel road, 3½ mi. n. of Olney, *Vera L. Scherer 597*, 31 May 1947. SCOTT CO.: Roadsides, 2 mi. n. of Manchester, *Alice Flynn*, 16 June 1950. TAZEWELL CO.: Roadside, n. of E. Peoria, *V. H. Chase 10528*, 4 July 1949. UNION CO.: Moist soil, fields, Wolf Lake, *G. D. Fuller 581*, 22 May 1941. WAYNE CO.: Near Fairfield, *H. F. Thut*, 25 May 1946. WHITE CO.: Field, 1½ mi. n. of Crossville, *H. E. Ahles 2149*, 13 May 1950.

10. **Trifolium dubium** Sibth. Fl. Oxon. 231 (1794); Jones (1945a) 163, (1950) 174.

Type Locality: Near Oxford, England.

Range: Nova Scotia—Wis.—Kans.—Tex.—Fla.; Ore.—Wash. Naturalized from Europe.

Erect or ascending annual herb; stipules ovate or lanceolate, adnate to lower portion of petiole; leaflets 3, cuneate or obovate, and emarginate or truncate at apex; heads 3-15-flowered, flowers becoming reflexed; corolla yellow, becoming brown with age; standard scarcely striate, and longer than legume, over which it is folded.—Little Hop Clover.

Roadsides, in fields, and waste places; southern Illinois.

Specimens Examined: ALEXANDER CO.: Roadside s. of Unity, *H. E. Ahles 3840*, 8 May 1951. JOHNSON CO.: Weed in Lawn, *H. E. Ahles 2338*, 14 May 1950. MASSAC CO.: Fallow field, 3 mi. e. of Joppa, *H. E. Ahles 3802*, 8 May 1951. UNION CO.: Roadsides, State Forest, *G. D. Fuller 566*, 16 May 1941.

Trifolium resupinatum L., known as the Persian Clover, a native of the Mediterranean region and Persia, has been reported from Illinois by Fernald (1945:215; 1950:892) on the basis of two specimens (nos. 5598 and 5946) collected by Benke at Mount Prospect, in Cook County. This annual species has flowers with very short pedicels, the corolla rose-purple, and the calyx pilose, becoming inflated and chartaceous at maturity, enclosing the legume at its base.

If the plant occurs at all in Illinois at the present time, it is extremely rare and is certainly not a part of the established spontaneous flora. The writer has seen no Illinois specimens. Deam (1940:595) mentions a single area where this species was once collected in Indiana but does not consider it established in that state. Fassett (1939:38) lists two stations in Wisconsin. In Missouri *T. resupinatum* has been reported by Palmer & Steyermark (1935:576) from only one county. Jones (1945b:283) states that the plant is not established in Illinois.

12. MELILOTUS Mill.

1. Corolla white, standard slightly longer than the wings; legumes distinctly reticulated, glabrous; seeds round..... 1. *M. alba*
1. Corolla yellow, standard approximately the same length as wings; legumes strongly cross-ribbed and glabrous, or faintly reticulated and pubescent.
   2. Ovary and legume glabrous; legume strongly cross-ribbed; seeds not punctate, nor notched at the apex..... 2. *M. officinalis*
   2. Ovary and legume beset with short hairs; legume faintly reticulated; seeds punctate, notched at the apex..... 3. *M. altissima*

1. **Melilotus alba** Desv. in Lam. Encycl. 4:63 (1797); Brendel (1859a) 584; Vasey (1861a) 141; Brendel (1870) 379; Babcock (1872) 25; Patterson (1874) 4, (1876) 10; Schneck (1876) 525; Williams (1877) 490; Flagg & Burrill (1878) 232; Higley & Raddin (1891) 28; Huett (1897) 64; Snare & Hicks (1898) 6; Hill (1902) 567; Gates (1912) 361, (1923) 169; Darlington (1923) 180; Thone (1925) 103; Gates (1926) 231; Pepoon (1927) 361; Stover (1930) 23; McDougall (1936) 163; Fuller (1943) 95; Jones (1945a) 163; Fuller (1946) 58; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 175; Evers (1951) 620.

Type Locality: "Cette espèce croît naturellement dans la Sibérie. On la trouve aussi en Europe."

Range: Nova Scotia—D.C.—N.M.—Calif.—Wash. Naturalized from Eurasia.

Erect annual or biennial herb, 1-3 m. high, much branched, glabrous, puberulent when young; leaves pinnately trifoliolate; stipules subulate; leaflets linear-elliptic or oblanceolate, dentate; flowers short-pedicelled, in long, lax racemes; corolla white, 3-4.5 mm. long, deciduous, the standard slightly longer than the other petals; legumes ovoid, glabrous, reticulated, tipped with lower part of the persistent style; seeds round.—White Sweet Clover.

Roadsides, railroads, fields, and waste places. Common throughout Illinois. Evers (1951:620) reports collecting it from every county in the state.

Specimens Examined: ADAMS CO.: Along roadside, Quincy, *R. A. Evers 348*, 23 May 1941. CHAMPAIGN CO.: Roadside, near Urbana, *G. N. Jones 11790*, 9 June 1940. COOK CO.: Streets, *W. S. Moffatt 155*, 6 July 1884. FAYETTE CO.: Roadside n.w. of Farina, *Louise O'Dell 220*, 29 June 1940. KANKAKEE CO.: Roadsides, near Bourbonnais, *E. J. Hill*, 18 July 1873. LIVINGSTON CO.: Roadsides and fields, common, 2 mi. n. of McDowell, *G. D. Fuller 9110*, 25 July 1944. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 1 July 1889. MC HENRY CO.: Algonquin, *W. A. Nason*, 9 July 1878. MENARD CO.: Athens, *E. Hall*, 1861. PEORIA CO.: Peoria, *F. Brendel*. STARK CO.: Clay hillside near Mud Run, Wady Petra, *V. H. Chase 702*, 31 July 1900. UNION CO.: Moist soil, State Forest, *G. D. Fuller 644*, 13 June 1941. VERMILION CO.: Along railroad, Muncie, *W. B. McDougall 8*, 29 June 1928. WABASH CO.: In yards and along roads, *H. Shearer*, 6 July 1900.

2. **Melilotus officinalis** (L.) Lam. Fl. Fr. 2:594 (1778); Mead (1846) 60; Patterson (1874) 4, (1876) 10; Higley & Raddin (1891) 28; Huett (1897) 64; Deam (1912) 367; Darlington (1923) 180; Gates (1923) 169, (1926) 231; Pepoon (1927) 361; McDougall (1936) 163; Ries (1939) 90; Jones (1942) 72; Fuller (1943) 95; Jones (1945a) 163; Fuller (1946) 58; Jones (1947) 55; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 174; Evers (1951) 620.

Trifolium melilotus officinalis L. Sp. Pl. 765 (1753).

Type Locality: "Habitat in Europae campestribus."

Range: Nova Scotia—Fla.—Colo.—Utah—Idaho—Mont.; Wash.—Calif. Naturalized from Europe.

Closely resembling *M. alba*, but differing in the following respects: Leaflets varying from broadly obovate to elliptical, and rounded or obtuse at the apex; flowers yellow, 5-7 mm. long, the standard about equalling the wings and keel in length; legumes markedly wrinkled in appearance, with transverse ribs, and occasionally slightly pubescent; seeds neither punctate nor notched at the apex.—Yellow Sweet Clover.

Roadsides, railroads, fields, and waste places. Common throughout the state. Evers (1951:620) reports collecting it from every county in the state.

Specimens Examined: ADAMS CO.: Along roadside, Quincy, *R. A. Evers* 352, 23 May 1941. CHAMPAIGN CO.: Edge of Brownfield Woods, near Urbana, *G. N. Jones 13944*, 17 June 1941. COOK CO.: Roadsides, Englewood, *E. J. Hill*, 17 July 1882. DU PAGE CO.: Railroad, Wheaton, *W. S. Moffatt 154*, 20 June 1889. FAYETTE CO.: Roadside n.w. of Farina, *Louise O'Dell 221*, 29 June 1940. HANCOCK CO.: Herb in ballast of T. P. & W. R. R., Cedar Glen, *F. C. Gates*, 26 May 1917. LIVINGSTON CO.: Roadsides and fields, common, 2 mi. n. of McDowell, *G. D. Fuller 9109*, 25 July 1944. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 1 June 1890. MARION CO.: Waste places, Salem, *M. S. Bebb*, 1860. PEORIA CO.: Along A. T. & S. F. R. R. track, e. of Edelstein, *V. H. Chase 1765*, 31 May 1908. UNION CO.: State Forest, *G. D. Fuller* 585, 23 May 1941. VERMILION CO.: Railroad, Muncie, *W. B. McDougall 9*, 29 May 1928. WABASH CO.: Escaped from cultivation, Mt. Carmel, *J. Schneck*, July 1886.

3. **Melilotus altissima** Thuill. Fl. Par. ed. 2:378 (1799); Jones (1950) 174.

Type Locality: France.

Range: Fernald (1950:895) reports it as local from Cape Breton Island to New York and Pennsylvania; Fassett (1939:39) lists it for southern Wisconsin at Racine; Umbach (see below) collected it in Lake County, Illinois; introduced from Eurasia.

Similar to *M. officinalis*, but distinguished from it by the following characters: leaflets nearly linear or linear-lanceolate to narrowly oblanceolate, and inconspicuously toothed, or sometimes nearly entire; ovary and legume distinctly pubescent; veins on the legume indistinct; seeds punctate, emarginate.

Along roads, rare in Illinois.

Specimens Examined: LAKE CO.: Roadside, Lake Villa, *Umbach 2263*, 11 July 1908 (WIS.); roadside, Beach, *Umbach 4281*, 31 July 1909 (WIS.); roadside, Waukegan, *Umbach 5870*, 29 July 1912 (WIS.).

13. MEDICAGO L.

1. Flowers bluish-purple, 7-9 mm. long; legumes spirally coiled, 2-3 times; leaflets linear-lanceolate to obovate, more than twice as long as broad.....1. *M. sativa*
1. Flowers yellow, 2-5 mm. long; legumes reniform or spirally coiled, 4-7 times; leaflets obovate, oval, or obcordate, less than twice as long as broad.
   2. Stipules ovate-lanceolate, the margins nearly entire to dentate near the base; leaflets obovate, obcordate or suborbicular; legume 1-seeded, reniform, strongly curved, slightly pubescent, reticulate. .....2. *M. lupulina*
   2. Stipules broadly semi-sagittate, margins generally laciniate; leaflets obovate to obcordate, usually with purplish blotch near center, above; legume several-seeded, coiled in a dense spiral, with 2 rows of curved prickles.....*M. arabica*

1. **Medicago sativa** L. Sp. Pl. 778 (1753); Vasey (1860) 119, (1861a) 141; Flagg & Burrill (1878) 232; Hill (1892) 246; Huett (1897) 64; Darlington (1923) 180; Gates (1926) 231; Pepoon (1927) 361; Fuller (1943) 95; Jones (1945a) 163; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 175.

Medicago sativa f. *alba* Benke in Amer. Midl. Nat. 16:424 (1935).

Type Locality: "Habitat in Hispaniae, Galliae apricis."

Range: Me.—Va.—Calif.—British Columbia; Europe. Cultivated and escaped.

Decumbent or ascending perennial herb, often much branched, sparingly pubescent, glabrous when mature; leaves digitately trifoliolate; leaflets cuneate, oblanceolate, obovate, or elliptical, dentate, 1-3 cm. long; stipules lanceolate, acuminate, mostly entire; flowers blue or violet, pedicelled, in compact racemes; corolla 7-10 mm. long; legumes coiled spirally, pubescent, 2-several-seeded.—Alfalfa.

M. sativa f. *alba* Benke differs from the plant of the above description only in its pure white corolla. This form is apparently rare. Type: McHenry, McHenry County, Illinois, 11 September 1934, *H. C. Benke 5665*. (Type in Chicago Natural History Museum.)

Roadsides, railroads, fields, and waste places, throughout the state. Extensively cultivated as a forage crop.

Specimens Examined: ADAMS CO.: Along roadside, Quincy, *R. A. Evers 121*, 12 August 1940. CHAMPAIGN CO.: Roadside, near Urbana, *G. N. Jones 11778*, 6 June 1940. COOK CO.: C. & A. dumping ground, Brighton Park, Chicago, *Agnes Chase*, 15 September 1896. DU PAGE CO.: Along railroad, Turner, *W. S. Moffatt 222*, 21 June 1897. FAYETTE CO.: Roadside s.w. of Shobonier, *Louise O'Dell 616*, 6 July 1940. KANE CO.: Geneva, *J. Higgins, W. S. Moffatt 1587*, 30 August 1891. KANKAKEE CO.: Near St. Anne, *G. N.*

Jones 11481, 16 June 1940. MARION CO.: Roadside, near Salem, *G. N. Jones 11855*, 3 July 1940. PEORIA CO.: Waste places, Peoria, *F. E. McDonald*, June 1903. UNION CO.: Moist soil, common, State Forest, *G. D. Fuller 584*, 23 May 1941. WHITE CO.: At the depot, escaped from cultivation, Grayville, *J. Schneck*, 17 August 1904.

2. **Medicago lupulina** L. Sp. Pl. 779 (1753); Vasey (1860) 119, (1861a) 141; Higley & Raddin (1891) 29; Huett (1897) 64; Darlington (1923) 180; Gates (1926) 231; Pepoon (1927) 361; McDougall (1936) 163; Fuller (1943) 95; Jones (1945a) 163; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 175.

Type Locality: "Habitat in Europae pratis."

Range: Nova Scotia—Fla.—Tex.—Calif.—Wash.; Mexico. Naturalized from Eurasia.

Annual herb, sparingly pubescent, much-branched at the base, the branches decumbent; leaves digitately trifoliolate; leaflets obovate, obcordate, or elliptical, crenulate or denticulate, 4-15 mm. long; stipules ovate-lanceolate, dentate, flowers yellow, in dense cylindrical head-like racemes less than 1 cm. long; corolla yellow, about 3 mm. long; mature legumes black, strongly curved, slightly pubescent, prominently reticulate, and 1-seeded.—Black Medic.

Along roads, railroads, or in fields, pastures, and in waste ground. Common throughout the state.

Specimens Examined: CHAMPAIGN CO.: Waste ground, near Urbana, *G. N. Jones 11831*, 28 June 1940. CHRISTIAN CO.: Taylorville, *W. E. Andrews*, 21 June 1899. COLES CO.: Field along Embarrass River, *G. N. Jones 15105*, 16 May 1942. COOK CO.: Along asphalt road, Hyde Park, Chicago, *Agnes Chase 1573*, 5 August 1901. FAYETTE CO.: Roadside near Wolf Creek, *Louise O'Dell 218*, 11 June 1943. KANKAKEE CO.: Roadside, near St. Anne, *G. N. Jones 11478*, 16 June 1940. LAKE CO.: Ballast of the Wisconsin Central Railroad, Rockefeller, *F. C. Gates 1719*, 1 July 1907. LIVINGSTON CO.: Roadside, common, 2 mi. n. of McDowell, *G. D. Fuller 9116*, 25 July 1944. PEORIA CO.: Along A. T. & S. F. R. R. track, e. of Princeville, *V. H. Chase 1764*, 31 May 1908. VERMILION CO.: Along Vermilion River, between Oakwood and Collison, *G. N. Jones 11581*, 23 June 1940. WILL CO.: Pastures, Lockport, *E. J. Hill*, 29 July 1907.

Medicago arabica (L.) Huds., known commonly as the Spotted Medic, has been reported from Illinois as a "waif" by Evers (1951:617) on the basis of a single specimen: JACKSON CO.: In peach orchard, w. of Carbondale, *G. H. Boewe*, 15 May 1940 (NHS). Since this is the only Illinois specimen seen by the writer, the species is not considered as an established member of the flora of the state. Its distinguishing characters have been included in the key to species of *Medicago*.

14. LOTUS (Tourn.) L.

Lotus corniculatus L. Sp. Pl. 775 (1753).

Type Locality: "Habitat in Europa."

Range: Newfoundland—Va.—Ohio—Mo.—Iowa—Minn. Widely cultivated and becoming naturalized; native of Eurasia.

Stems numerous, decumbent or ascending, from a long, perennial root, glabrate or upper portion appressed-pubescent; leaflets 5, obovate, oblanceolate, or narrowly oblong, the lower pair appearing as stipules, often broader than the others; flowers 3-12, bright yellow, often tinged with red, in long-peduncled capitate umbels; calyx lobes very slender, long-tapering, about the length of the tube; legumes linear, nearly terete, to 2.5 cm. in length.—Bird's-foot Trefoil.

Roadsides and fields. Commonly cultivated as a forage crop, and appearing as an escape which maintains itself. Local.

Specimens Examined: CHAMPAIGN CO.: Growing along fence, University Farm, Urbana, *W. G. Gambill*, 14 July 1950. JO DAVIESS CO.: Pasture and adjacent roadside, e. of Woodbine, *H. E. Ahles* 4407, 19 July 1951.

15. HOSACKIA Dougl.

Hosackia americana (Nutt.) Piper in Contr. U. S. Nat. Herb. 11:366 (1906); Robinson & Fernald (1908) 511; Britton & Brown (1913) 2:359; Pepoon (1917) 133; Darlington (1923) 180; Pepoon (1927) 361; Jones (1945a) 163; Fuller (1946) 58; Jones (1950) 175.

Trigonella americana Nutt. Gen. 2:120 (1818).

Type Locality: "On the banks of the Missouri."

Range: Manitoba—Ark.—Ill.—Tex.—Calif.—Idaho; Mexico.

Erect annual herb, villous-pubescent or glabrate; leaves 1-3-foliolate, often 1-foliolate above, sessile; stipules minute, black glands, or absent; leaflets linear-lanceolate or elliptic acute, the middle one slightly longer stalked; peduncles axillary, bracted, single-flowered; flowers pink or rose, tinged with yellow; calyx lobes subulate, nearly equalling the corolla; legumes linear, flattened, or somewhat terete, 2-3.5 cm. long, glabrous.—Prairie Bird's-foot Trefoil.

Along railroads, prairies, in dry soil, probably adventive from western United States. Rare in Illinois.

Specimens Examined: COOK CO.: Along Chicago & Alton Railroad, near Brighton, *W. S. Moffatt*, 1 September 1893. GREENE CO.: Along railroad grades, Wrightsville, *F. E. McDonald*, July 1904. McDonald notes that at this location the plant seemed to him to be "introduced but well established."

16. PSORALEA L.

1. Leaves pinnately 1-3-foliolate; lower surface of leaflets, calyx and legumes not conspicuously glandular-dotted; legumes rugose.

2. Leaflets ovate-lanceolate, 4.5-10 cm. long, 2.5-6 cm. wide; legumes roughly ovoid, about 1 cm. long, wrinkled, and rough-pointed.... .....1. *P. onobrychis*
2. Leaflets linear-lanceolate, 4-7 cm. long, 1-2 cm. wide; legumes suborbicular, 4 mm. long, wrinkled.....2. *P. psoralioides*

1. Leaves digitately 3-5-foliolate; both surfaces of leaflets, calyx, and legumes conspicuously glandular-dotted; legumes smooth..... .....3. *P. tenuiflora*

1. **Psoralea onobrychis** Nutt. Gen. 2:104 (1818); Mead (1846) 60; Lapham (1857) 509; Hyatt (1875) 67; Patterson (1876) 10; Schneck (1876) 525; Flagg & Burrill (1878) 232; Brendel (1887) 46; Vail (1894) 116; Huett (1897) 64; Snare & Hicks (1898) 6; Robinson & Fernald (1908) 511; Stover (1930) 23; McDougall (1936) 164; Deam (1940) 598; Fuller (1943) 95; Jones (1945a) 164, (1950) 175; Fernald (1950) 897.

Orbexilum onobrychis (Nutt.) Rydb. in N. Am. Fl. 24:5 (1919).

Type Locality: Near St. Louis, Mo.

Range: Ohio—Iowa—Mo.—Tenn.

Stoloniferous, perennial herb; stem up to 1 m. or more in height, glabrous or slightly pubescent; leaves pinnately 3-foliolate; leaflets ovate-lanceolate, 4.5-10 cm. long, 1.5-6 cm. wide; foliage glands few and inconspicuous; racemes loose-flowered, long-peduncled; corolla 6-7 mm. long, blue-purplish; legumes obliquely ovoid, with a curved beak, wrinkled, and rough-pointed.—Sainfoin Psoralea.

Along streams, fence rows, and at the edges of thickets. Occasional, chiefly in northern Illinois.

Specimens Examined: ADAMS CO.: In sandy soil along bank of Horseshoe Lake, *Evers & Jones 1204*, 22 June 1943. CHRISTIAN CO.: Taylorville, *W. E. Andrews*, 24 June 1897. KANKAKEE CO.: Borders of thickets, Kankakee, 12 July 1870. MACON CO.: C. H. & D. right of way, damp soil, *I. W. Clokey 2394*, 8 July 1915. MACOUPIN CO.: Carlinville, *W. E. Andrews*. MENARD CO.: Thickets, Athens, *E. Hall*, 1861. PEORIA CO.: Open wooded hillside, 2 mi. s.e. of Jubilee, *V. H. Chase 847*, 23 September 1900. VERMILION CO.: Striplands, Oakwood, *W. B. McDougall 48*, 5 July 1928. WABASH CO.: Thickets, *H. Shearer*, 1 July 1927. WILL CO.: Roadside, in sandy soil, Custer Park, *W. S. Moffatt 191*, 18 July 1890.

Vail (1894:116) cites, among others, a specimen from Tazewell County: Pekin, no. 8 (1837), collector unknown. Not seen by the writer.

2. **Psoralea psoralioides** (Walt.) Cory in Rhodora 38:406 (1936); Jones (1945a) 164, (1950) 175.

Hedysarum pedunculatum Mill. Gard. Dict. Ed. 8, no. 17 (1768).

Trifolium psoralioides Walt. Fl. Car. 184 (1788).

Psoralea melilotoides Michx. Fl. Bor. Am. 2:58 (1803); Lapham (1857) 509; Patterson (1876) 10; Schneck (1877) 83; Flagg & Burrill (1878) 232; Brendel (1887) 84.

Psoralea eglandulosa Ell. Bot. S. C. & Ga. 2:198 (1822).

Psoralea pedunculata (Mill.) Vail in Bull. Torr. Club 21:114 (1891); Vail (1894) 115; Britton & Brown (1913) 2:364; Ries (1939) 90.

Orbexilum pedunculatum (Mill.) Rydb. in N. Am. Fl. 24:7 (1919).

Psoralea psoralioides var. *eglandulosa* (Ell.) Freeman in Rhodora 39: 426 (1937); Fernald (1950) 897.

Type Locality: South Carolina.

Range: Va.—Kans.—Tex.—Fla.

Perennial herb with a spindle-shaped root; stem pubescent, 3-8 dm. high; leaves pinnately 3-foliolate, sparingly glandular or glandless; leaflets linear-lanceolate, entire, mucronulate; racemes loose-flowered, 4-10 cm. long, long-peduncled; floral bracts ovate, acuminate, glandular, and deciduous; calyx strigose, lobes lanceolate; corolla pale purple, 5-7 mm. long; legumes suborbicular, flat, with a short, incurved beak, transversely wrinkled.—Sampson's Snakeroot.

Plants of this species growing in the Mississippi basin are said to be distinguished from those of the Atlantic coastal area by having narrower leaflets, smaller floral bracts, larger calyces, and no glands. They have been designated *Psoralea psoralioides* var. *eglandulosa*. All specimens seen from Illinois show these characters.

Prairies, thickets, roadsides, and fence rows. Not common in Illinois.

Specimens Examined: CLARK CO.: In upland prairie soil, along the railroad track, Darwin, *J. Schneck*, 5 June 1900. FAYETTE CO.: Roadside n.e. of St. Elmo, *Louise O'Dell 222*, 11 June 1943. JACKSON CO.: Rock barrens, Makanda, *H. A. Gleason*, 13 June 1903. JOHNSON CO.: Dry, hard soil, Tunnel Hill, *J. Schneck*, 27 May 1902. ST. CLAIR CO.: *F. Brendel*, 1850. WABASH CO.: Fence row on rock, *J. Schneck*, May 1900.

Freeman (1939:426) cites the following Illinois specimens: JACKSON CO.: Makanda, *Gleason*, 1903. MARION CO.: Bebb. RICHLAND CO.: Olney, *R. Ridgway 799*, 1919.

3. **Psoralea tenuiflora** Pursh, Fl. Am. Sept. 475 (1814); Higley & Raddin (1891) 29; Vail (1894) 97; Huett (1897) 64; Robinson & Fernald (1908) 512; Britton & Brown (1913) 2:361; McDougall (1936) 164; Deam (1940) 597; Fuller (1943) 95; Jones (1945a) 164; Fernald (1945) 215; Jones (1945b) 278; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 175.

Psoralea floribunda Nutt. in T. & G. Fl. N. A. 1:300 (1838); Engelmann (1843) 96; Short (1845) 194; Mead (1846) 60; Lapham (1857) 509; Brendel (1859a) 583; Babcock (1872) 25; Hyatt (1875) 67; Patterson (1876) 10; Williams (1877) 490; Flagg & Burrill (1878) 232; Brendel (1887) 46; Vail (1894) 98; Britton & Brown (1913) 2:361.

Psoralea tenuiflora var. *floribunda* (Nutt.) Rydb. Fl. Neb. 21:55 (1895); Robinson & Fernald (1908) 512; Fernald (1945) 215, (1950) 898.

Psoralidium floribundum (Nutt.) Rydb. in N. Am. Fl. 24:15 (1919); Rydberg (1932) 464.

Type Locality: "On the banks of the Missouri."

Range: Minn.—Ind.—Ark.—Tex.—Ariz.—Mont.

Erect, much branched perennial herb with glandular-punctate foliage and fine, whitish, appressed pubescence; leaves digitately 3-5-foliolate; leaflets oblong-lanceolate or elliptical, 1-5 cm. long, entire, mucronate; flowers in pedunculed racemes, 1-2 flowers at a node, often appearing whorled; calyx strigose or canescent, densely glandular; corolla blue or rarely white, 5-6 mm. long; legume glabrous, ovoid, 5-8 mm. long, densely glandular.—Few-flowered Psoralea.

In dry soil on prairies, rocky bluffs, and hillsides. Not common in Illinois.

Specimens Examined: CASS CO.: Chandlerville, *A. B. Seymour*, 11 August 1886. COOK CO.: Pasture, rocky soil, Lemont, *Agnes Chase 1096*, 13 and 29 June 1899. DU PAGE CO.: Railroad track, Naperville, *L. M. Umbach*, 2 July 1897. GREENE CO.: Eldred, *W. E. Andrews*, 30 August 1889. KANE CO.: Dry prairie, occasional, St. Charles, *G. D. Fuller 7290*, 7 July 1942. LAKE CO.: Dry gravelly ground along railroad, Barrington, *Agnes Chase 1120*, 21 June 1899. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 4 July and 30 August 1889. MARSHALL CO.: Wooded hills of the Wisconsin moraine along the Illinois River, Steuben Twp., *V. H. Chase 1788*, 7 June 1908. MC HENRY CO.: Algonquin, *W. A. Nason*, 27 June 1878. MC LEAN CO.: Hudson, *A. B. Seymour*, 20 July 1881. MENARD CO.: Bluffs, Athens, *E. Hall*, July 1865. PEORIA CO.: Dry prairies, Peoria, *F. E. McDonald*, June 1903. WILL CO.: Dry top of limestone ridge, Lockport, *E. J. Hill*, 14 June 1899.

Vail (1894:99) cites the following additional specimens from Illinois: Pekin (Tazewell Co.), *Buckley;* Augusta (Hancock Co.), *S. B. Mead* (1844). Not seen by the author.

17. AMORPHA L.

1. Foliage canescent; leaves sessile or nearly so; leaflets 9-18 mm. long. ..... 1. *A. canescens*
1. Foliage sparsely pubescent or glabrous; leaves petioled; leaflets 2-5 cm. long.
   2. Branches, petioles, leaf rachises, and peduncles pubescent, especially when young; racemes usually clustered; legume conspicuously glandular ..... 2. *A. fruticosa*
   2. Branches, petioles, leaf rachises, and peduncles glabrous or nearly so; racemes usually solitary; legume nearly glandless .... *A. nitens*

1. **Amorpha canescens** Pursh, Fl. Am. Sept. 467 (1814); Engelmann (1843) 96; Short (1845) 190; Mead (1846) 60; Lapham (1857) 509; Warne (1870) 347; Babcock (1872) 25; Patterson (1874) 5; Hyatt (1875) 68; Patterson (1876) 10; Williams (1877) 490; Flagg & Burrill

(1878) 232; Brendel (1887) 46; Higley & Raddin (1891) 29; Huett (1897) 64; Snare & Hicks (1898) 6; Gleason (1907) 184, (1910b) 158; Gates (1912) 361, (1923) 169; Thone (1925) 103; Gates (1926) 231; Pepoon (1927) 361; McDougall (1936) 165; Feldman (1942) 61; Tehon (1942) 146; Fuller (1943) 95; Jones (1945a) 164; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Fernald (1950) 898; Jones (1950) 175.

Amorpha canescens var. *glabrata* A. Gray, Pl. Wright 1:49 (1852); Schneider (1907) 300.

Amorpha canescens var. *typica* Schneider in Bot. Gaz. 43:300 (1907).

Amorpha canescens f. *glabrata* (Gray) Fassett in Rhodora 38:191 (1936).

Type Locality: Banks of the Missouri.

Range: Manitoba—Mich.—La.—N.M.—Mont.

Small bushy shrub, 3-10 dm. high, densely white-canescent throughout; leaves odd pinnate; leaflets 21-51, 7-20 mm. long, oval or oblong-lanceolate, entire, mucronate, nearly sessile; racemes spicate, densely-flowered, clustered, the terminal raceme longest; calyx-lobes lanceolate or linear; standard blue, 5 mm. long, folded around the stamens and style; wings and keel lacking; legume ovoid, about 4 mm. long, canescent, 1-seeded.—Lead Plant Amorpha.

Amorpha canescens var. *glabrata* A. Gray, also known as *A. canescens* f. *glabrata* (Gray) Fassett, is said to have stems and leaves sparsely pubescent with silky hairs, or glabrate, the leaves being a brighter green than in the typical form of the species. Illinois has been included in the range of this variety by Palmer (1931:167), but no specimens are cited. Since it is possible to find a wide range of variation in the amount and character of pubescence in the species, the writer has not segregated specimens of the f. *glabrata* in the citations below.

Roadsides, dry prairies, rocky slopes, or sandy beaches. Distributed locally throughout Illinois.

Specimens Examined: ADAMS CO.: Bluff top at Burton Cave, *R. A. Evers 1113*, 4 June 1943. CARROLL CO.: Rocky hillsides, Savanna, *E. J. Hill 130*, 12 July 1902. CHAMPAIGN CO.: Roadside, near Urbana, *N. R. Piesbergen*, 17 June 1942. CHRISTIAN CO.: Taylorville, *W. E. Andrews*, 24 June 1899. COOK CO.: Dry prairie, near Glenwood, *O. E. Lansing, Jr. 1401*, 14 July 1902. DU PAGE CO.: Railroad, Lisle, *A. J. Prisc 131*, 4 August 1925 (A). FAYETTE CO.: Railroad, Vandalia, *W. B. McDougall 84*, 9 July 1928. HANCOCK CO.: Herb in prairie along Wabash Railroad, Bentley, *F. C. Gates 10052*, 11 September 1916. HENDERSON CO.: Prairies and barrens, about Oquawka, *H. N. Patterson, May-June*. IROQUOIS CO.: Railroad, Watseka, *W. B. McDougall 112*, 11 July 1928. JO DAVIESS CO.: Dry, open ground, slopes above bluffs of Mississippi River near East Dubuque, *E. J. Palmer 27877*, 12 June 1925 (A). KANE CO.: Dry south slope, Elgin, *E. E. Sherff 1943*, 22 September 1912. KANKAKEE CO.: Sandy soil along lake, near St. Anne, *G. N. Jones 16669*, 9 September 1944. LAKE CO.: Sandy soil along Lake

Michigan, 3 mi. n. of Waukegan, *G. N. Jones 16497*, 15 July 1944. LA SALLE CO.: Thickets, rocky hill, Ottawa, *E. J. Palmer 40516*, 23 June 1933 (A). LIVINGSTON CO.: Roadside prairie, common, 2.5 mi. n.w. of Pontiac, *G. D. Fuller 9179*, 26 July 1944. MACON CO.: Decatur, *I. W. Clokey*, 22 June 1899. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 1 July 1889. MASON CO.: Havana, *F. C. Gates 3488*, 29 June 1910. MC HENRY CO.: Algonquin, *W. A. Nason*, 23 July 1878. OGLE CO.: Dry hillsides, occasional, White Pines Forest Park, *G. D. Fuller 3385-0*, 30 June 1942. PEORIA CO.: Moist prairie, 3 mi. n.e. of Princeville, *V. H. Chase 1874*, 8 July 1908. STARK CO.: *V. H. Chase*, 1 July 1896.

2. **Amorpha fruticosa** L. Sp. Pl. 713 (1753); Short (1845) 195; Mead (1846) 60; Lapham (1857) 509; Brendel (1859b) 602; Wolf (1870) 109; Babcock (1873) 248; Patterson (1874) 5, (1876) 10; Schneck (1876) 525; Williams (1877) 490; Flagg & Burrill (1878) 232; Ridgway (1883) 63; Brendel (1887) 46; Higley & Raddin (1891) 29; Huett (1897) 64; Snare & Hicks (1898) 6; Fuller & Strausbaugh (1920) 252; Palmer (1921) 148; Thone (1925) 103; Pepoon (1927) 361; McDougall (1936) 165; Bradley (1938) 20; Feldman (1942) 61; Tehon (1942) 145; Fuller (1943) 95; Jones (1945a) 164, (1945b) 279; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 175.

Amorpha fruticosa var. *angustifolia* Pursh, Fl. Am. Sept. 2:466 (1814); Fassett (1939) 48.

Amorpha fruticosa var. *emarginata* Pursh, Fl. Am. Sept. 2:466 (1814); Palmer (1931) 196; Deam (1940) 599; Fernald (1945) 215.

Amorpha fruticosa var. *vulgaris* Pursh, Fl. Am. Sept. 2:466 (1814); Fassett (1936b) 191, (1939) 49.

Amorpha croceolanata P. W. Wats., Dendr. 2, pl. 139 (1825); Palmer (1931) 182.

Amorpha fragrans Sweet, Brit. Fl. Gard. pl. 241 (1828); Rydberg (1919) 33, (1932) 462.

Amorpha tennesseensis Shuttlew. ex Kuntze, Delect. Sem. Hort. Lips. 1848, p. 1 adn. ex Walpers, Ann. Bot. Syst. 2:360 (1851); Schneider (1907) 303.

Amorpha fruticosa var. *croceolanata* (P. W. Wats.) Schneid., Illustr. Handb. Laubholzk. 2:73 (1907); Fernald (1945) 215, (1950) 899.

Amorpha fruticosa var. *typica* Schneid. in Bot. Gaz. 43:304 (1907).

Amorpha fruticosa var. *tennesseensis* (Shuttlew.) Palmer in Journ. Arnold Arb. 12:192 (1931); Fernald (1945) 215.

Type Locality: "Habitat in Carolina."

Range: Conn.—Minn.—La.—Fla.

Shrub 1.5-6 m. high, glabrous or sparingly pubescent; leaflets 11-35, 1.5-4 cm. long, and 7-20 mm. wide, elliptical or oval, glabrous or somewhat pubescent on the lower side, glandular-dotted; racemes spicate and densely-flowered, clustered or solitary; calyx-lobes deltoid or rounded,

much shorter than the calyx-tube; standard 6 mm. long, blue; legume 7-9 mm. long, slightly curved, glabrous, conspicuously glandular-dotted.—False Indigo.

Because of the tendency of plants of this species to vary considerably in the number, size, and shape of the leaflets, as well as the amount and character of the pubescence, several named variations have been recognized in the past, and some attempt has been made to set up a definite geographical range for some of them. *A. fruticosa* var. *vulgaris* Pursh, distinguished by spreading pubescence on the lower surface of the leaflets has been considered by Fassett (1936b:190) to represent "typical *A. fruticosa*." *A. fruticosa* var. *angustifolia* Pursh, with appressed pubescence on the lower surface of the leaflets has been called the "western phase of *A. fruticosa*" (Fassett, 1939:48). Both of these have been said to occur in Illinois.

A. fruticosa var. *tennesseensis* (Shuttlew. ex. Kuntze) Palmer, differing from the species in the "more numerous, narrow-oblong leaflets, and in the slightly curved or nearly straight pod" is reported by Palmer (1931: 192) from Adams and Stark counties in Illinois, and by Fernald (1950: 899). This plant, under the name *A. tennesseensis* Shuttlew. has been attributed to Jersey County by Schneider (1907:303).

A. fruticosa var. *emarginata* Pursh with "usually larger, oval or ovate leaves, blunt or emarginate at the apex" is cited by Palmer (1931:196) from Macon, Champaign, and Alexander counties, Illinois.

A. fruticosa var. *croceolanata* (P. W. Wats.) Schneider, characterized by tawny, villous pubescence, especially when young, has been attributed to southern Illinois by Fernald (1945:215; 1950:899), and by Palmer (1931:182) under the name *A. croceolanata* P. W. Wats.

A study of the specimens of *A. fruticosa* in the University of Illinois Herbarium shows that a series of intergradations between the typical form of the species and the varieties listed above can be rather easily established. The writer therefore considers it advisable to recognize such variations as occurring within the limits of the species as originally described, and in the citations of specimens has referred these variations to *A. fruticosa*.

In bottom lands, along streams, and other low, wet places. Distributed locally throughout Illinois.

Specimens Examined: ADAMS CO.: Pasture, near Burton Cave, *R. A. Evers 1136*, 4 June 1943. ALEXANDER CO.: Low bottoms of Cache River, near Cairo, *E. J. Palmer 15082*, 8 May 1919 (A). CARROLL CO.: Mississippi River bottom, Savanna, 12 July 1902, collector not known. CHAMPAIGN CO.: Sangamon River, near Mahomet, *G. N. Jones 11758*, 9 June 1940. COOK CO.: "Plants local," Arlington Heights, *H. C. Benke 5596* 17 June 1932 (A). CHRISTIAN CO.: Taylorville, *W. E. Andrews*, 14 November 1896. FAYETTE CO.: Roadside ditch s. of Brownstown, *Louise O'Dell 199*, 4 June 1943. GAL-

LATIN CO.: Dry bottoms, Shawneetown, *W. Trelease*, 11 July 1916. KANKAKEE CO.: River banks, *E. J. Hill*, 20 May 1870. LA SALLE CO.: Roadside, near Starved Rock, *Agnes Chase 1601*, 13 July 1901. MACON CO.: Marshy ground, Cowford Bridge, *I. W. Clokey 2382*, 31 May 1915. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 30 May 1890. POPE CO.: Rocky banks of Ohio River, subject to overflow, near Golconda, *E. J. Palmer 23767*, 17 September 1923 (A). OGLE CO.: Rocky banks, Oregon, *W. S. Moffatt 466*, 18 August 1895. PEORIA CO.: Wet bottom ground, Peoria, *F. E. McDonald*, June 1904. PIATT CO.: Monticello, *Seymour & Waite*, 17 July 1886. PIKE CO.: Mississippi River levee, East Hannibal, *J. Davis*, 5 June 1913. SANGAMON CO.: Wet thickets, occasional, Rochester Twp., *G. D. Fuller 7094*, 1 June 1942. STARK CO.: Wet prairie, near Wady Petra, *V. H. Chase 737*, 14 August 1900. VERMILION CO.: Moist thicket along Vermilion River between Oakwood and Collison, *G. N. Jones 13827*, 24 May 1941. WABASH CO.: Rich alluvial soil, near Mt. Carmel, *J. Schneck*, 20 May 1899. WHITE CO.: Carmi, *R. F. Clark*, 1 June 1928. WILL CO.: Thickets, Custer Park, *W. S. Moffatt*, 18 July 1890. WOODFORD CO.: Bottom land along Illinois River, 3 mi. s. of Spring Bay, *G. N. Jones 14296*, 27 July 1941.

Amorpha nitens Boynton in Biltmore Bot. Studies 1:139 (1902); Palmer (1931) 177; Fernald (1945) 215, (1950) 899.

This species is very similar to *A. fruticosa*, but differs from it chiefly in the following respects: The leaflets of *A. nitens* at maturity are glabrous and shining above, and sparsely pubescent below; the rachis of the leaves and the inflorescence is glabrous; the racemes are usually solitary, or occasionally with one or two short basal branches; the calyx is glabrous except for the ciliated margins of the lobes, and not glandular; and the legumes are glandless.

E. J. Palmer (1931:177) attributes this species to Illinois on the basis of two specimens from Golconda, Pope County. The writer thus far has been able to examine one of these, from which the following data are taken: POPE CO.: Low banks of the Ohio River, Golconda, *E. J. Palmer 15371*, 5 June 1919 (A). This specimen was in flower, but not yet in fruit. Since no other Illinois specimens have been seen, the writer does not believe there is sufficient evidence at the present time for considering this species as a member of the spontaneous flora of the state. *A. nitens* is included in the key to species of *Amorpha* in the event that additional collections are made in Illinois.

Amorpha virgata Small in Bull. Torr. Club 21:17 (1894); Palmer (1931) 181.

This species ranges as far north as southern Illinois, according to Palmer (1931:181), although no Illinois specimens are cited. The writer has seen no material from Illinois and, on the basis of present evidence, does not believe it should be included as part of the spontaneous flora of the state.

18. DALEA Juss.

Dalea alopecuroides Willd. Sp. Pl. 3:1336 (1803); Short (1845) 189; Lapham (1857) 509; Babcock (1873) 248; Patterson (1876) 10; Williams (1877) 491; Flagg & Burrill (1878) 232; Brendel (1887) 84; Robinson & Fernald (1908) 513; Pepoon (1927) 361; Deam (1940) 600; Jones (1945a) 164; Fuller (1946) 58; Jones (1950) 175; Fernald (1950) 899.

Psoralea dalea L. Sp. Pl. 764 (1753).

Parosela dalea (L.) Britton in Mem. Torr. Club 5:196 (1894); Britton & Brown (1913) 2:367.

Parosela alopecuroides (Willd.) Rydb. in N. Am. Fl. 24:78 (1920); Rydberg (1932) 466; Small (1933) 694.

Type Locality: "Habitat in America."

Range: Minn.–Ill.–Ala.–Tex.–N.M.–S.D.

Erect annual herb, 2-10 dm. high, glabrous, with leaves and stem glandular-punctate; leaves odd-pinnate; leaflets 15-41, elliptic, cuneate, or oblanceolate, 3-11 mm. long; flowers in very dense, oblong terminal spikes, 1.5-8 cm. long; calyx lobes linear-lanceolate, acuminate, very silky-pubescent; corolla 2.5-3 mm. long, whitish or pink; legume included within the calyx, membranous, one-seeded.—Foxtail Dalea.

Dry prairies, and along railroads, and as a weed in waste places. Occasional in Illinois.

Specimens Examined: CHAMPAIGN CO.: Weed in orchard, University Farm, Urbana, *G. N. Jones 15569*, 17 September 1942. DU PAGE CO.: Railroad, Naperville, *W. S. Moffatt 305*, 18 August 1894. HENDERSON CO.: Along railroad, e. of Burlington, Iowa, *H. N. Patterson*. HENRY CO.: Dry prairies, Galva, *F. E. McDonald*, 5 August 1883. ST. CLAIR CO.: *F. Brendel*. UNION CO.: Jonesboro, *F. Brendel*.

19. PETALOSTEMUM Michx.

1. Flowers purple or rose, rarely white.
   2. Leaflets 3-5, linear, involute; calyx silky-pubescent; flowers purple, rarely white; legume pubescent ..... 1. *P. purpureum*
   2. Leaflets 13-31, linear-elliptical or oblanceolate, not involute; calyx glabrous; flowers rose-purple; legume glabrous ..... 2. *P. foliosum*
1. Flowers white; leaflets 5-9, linear-elliptical or oblanceolate; calyx glabrous; legume sparingly pubescent ..... 3. *P. candidum*

1. **Petalostemum purpureum** (Vent.) Rydb. in Mem. N. Y. Bot. Gard. 1:238 (1900); Gleason (1907) 184, (1910b) 158; Gates (1912) 361, (1923) 169, (1926) 231; Pepoon (1927) 362; McDougall (1936) 166; Fuller (1943) 95; Jones (1945a) 164, (1945b) 274; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 176.

Dalea purpurea Vent. Descr. Pl. Cels, pl. 40 (1801).

Petalostemum violaceum Michx. Fl. Bor. Am. 2:50 (1803); Engelmann

(1843) 96; Short (1845) 190; Mead (1846) 60; Lapham (1857) 509; Warne (1870) 347; Babcock (1872) 25; Patterson (1874) 4; Hyatt (1875) 68; Patterson (1876) 10; Schneck (1876) 525; Williams (1877) 491; Flagg & Burrill (1878) 232; Brendel (1887) 46; Higley & Raddin (1891) 29; Huett (1897) 65; Snare & Hicks (1898) 6.

Kuhnistera purpurea (Vent.) MacM. Met. Minn. Valley 32 (1892); Heller (1896) 124.

Petalostemum purpureum f. *arenarium* Gates in Torreya 11:127 (1911), (1912) 361.

Type Locality: Described from cultivated specimens introduced from Illinois.

Range: Manitoba—Ind.—Ark.—N.M.—Saskatchewan.

Perennial herb often with woody base; stem 2-9 dm. high, glabrous or slightly pubescent; foliage glandular-punctate; leaves odd-pinnate, closely clustered; leaflets 3-5, linear to lanceolate, 8-20 mm. long, involute; flowers crowded, in very dense terminal cylindrical spikes; bracts densely pubescent except for the dark, almost glabrous tip; calyx silky-pubescent; corolla violet or purple, rarely white, indistinctly papilionaceous; legume membranous, included within the calyx.—Purple Prairie Clover.

Gates (1911:125-28) has given the name *P. purpureum* f. *arenarium* to a variation "in which xerophytic adaptations are induced by growth in sand." The type material (*Gates 2922*) was collected from plants "growing in sandy soil in the *Andropogon scoparius* consocies of the bunchgrass prairie at Waukegan, Lake County, Illinois, August 7, 1908." This form is said to differ from the species in having a larger and more bulky tap root, numerous (20-38) ascending or nearly prostrate stems, with appressed, linear leaflets, and relatively smaller flowering spikes.

Dry prairies; along roadsides, railroads; sandy beaches along Lake Michigan. Locally distributed throughout Illinois.

Specimens Examined: ADAMS CO.: Along C. B. & Q. R. R., one mi. w. of Camp Point, *Evers, Jones & Jones 570*, 18 July 1941. CHAMPAIGN CO.: Along railroad, Urbana, *G. N. Jones 14254*, 15 July 1941. COLES CO.: Along I. C. R. R., between Doran and Humboldt, *G. S. Winterringer 380*, 19 July 1947. COOK CO.: Damp prairie, Riverside, *O. E. Lansing 1447*, 22 July 1902. DU PAGE CO.: Wheaton, *W. S. Moffatt 158*, date not given. HANCOCK CO.: Railroad, Carthage, *W. B. McDougall 170*, 27 July 1928. KANE CO.: Dry gravelly hill, Elgin, *E. E. Sherff 1773*, 27 August 1912. KANKAKEE CO.: Dry prairies, near Waldron, *E. J. Hill*, 10 July 1873. LAKE CO.: Sandy beaches on Lake Michigan, Waukegan, *H. A. Gleason & F. D. Shobe 304*, 17 August 1906. LEE CO.: Sandy hill, 4½ mi. n.w. of Franklin Grove, *E. Keithley*, 28 July 1946. MASON CO.: I. C. tracks, s.e. of Havana, *F. C. Gates 3603*, 6 July 1910. MC HENRY CO.: Algonquin, *W. A. Nason*, 20 July 1878. OGLE CO.: Dry prairies, Oregon, *M. Waite*, 4 August 1888. PEORIA CO.: Dry prairie near Princeville, *V. H. Chase 760*, 24 August 1900. SANGAMON CO.: Dry field, rare, Auburn Twp., Sec. 12, *J. E. Dixon*, 19 July 1944. STARK CO.:

Prairie, near Wady Petra, *V. H. Chase*, 9 July 1896. UNION CO.: Rock soil, Pine Hills, *G. D. Fuller* 756, 3 July 1941. WINNEBAGO CO.: Sandy field, occasional, near Shirland, *G. D. Fuller*, 4 August 1945.

2. **Petalostemum foliosum** A. Gray in Proc. Am. Acad. 7:336 (1868); Patterson (1876) 10; Flagg & Burrill (1878) 232; Boltwood (1879) 219; Hill (1879) 239; Brendel (1887) 84; Huett (1897) 65; Robinson & Fernald (1908) 513; Britton & Brown (1913) 2:371; Rydberg (1920) 126; Pepoon (1927) 362; Small (1933) 696; McDougall (1936) 167; Jones (1945a) 164, (1950) 176; Fernald (1950) 900.

Type Locality: Banks of the Fox River, Kane County, Illinois.

Range: Ill.—Tenn.

Erect perennial herb with a somewhat woody base, 3-10 dm. high, glabrous throughout; leaflets 12-31, linear elliptical or oblanceolate, bright green above, pale and glandular-punctate below; spikes dense, cylindrical, 1.5-5 cm. long, about 1 cm. thick in fruit; bracts lanceolate, with subulate tips much longer than the calyx and somewhat persistent; calyx glabrous; corolla pink; legume about 3 mm. long, glabrous.—Leafy Prairie Clover.

River banks and gravelly soil, rare.

Specimens Examined: KANE CO.: Geneva, *J. Higgins 1588*, 30 August 1891. KANKAKEE CO.: Gravelly banks of island in Kankakee River, near Altorf, *E. J. Hill*, 27 August 1872; same location, *E. J. Hill*, 28 July 1873. Boltwood (1879:219) reported collecting this species from abundant growths in Ottawa, La Salle County, but the writer has not examined his specimens.

Type: KANE CO.: Banks of Fox River (Illinois), *Burgess Truesdell*, 1867.

3. **Petalostemum candidum** (Willd.) Michx. Fl. Bor. Am. 2:49 (1803); Mead (1846) 60; Lapham (1857) 509; Warne (1870) 347; Babcock (1872) 25; Patterson (1874) 4; Hyatt (1875) 68; Patterson (1876) 10; Schneck (1876) 83; Williams (1877) 491; Flagg & Burrill (1878) 232; Brendel (1887) 46; Higley & Raddin (1891) 29; Huett (1897) 65; Snare & Hicks (1898) 6; Gleason (1907) 184, (1910b) 158; Gates (1912) 361, (1923) 169; Thone (1925) 103; Gates (1926) 231; Pepoon (1927) 362; McDougall (1936) 167; Fuller (1943) 95; Jones (1945a) 164; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 176.

Dalea candida Willd. Sp. Pl. 3:1337 (1802).

Kuhnistera candida (Willd.) Kuntze, Rev. Gen. Pl. 192 (1891); Rydberg (1895) 153; Heller (1896) 120.

Type Locality: "Habitat in America boreali."

Range: Manitoba—Ind.—La.—Tex.—Saskatchewan.

Erect perennial herb, base woody; stem 3-10 dm. high, glabrous; leaves pinnately 5-9-foliolate; leaflets linear-oblong or oblanceolate, 1-3.5 cm. long, glandular-punctate below; spikes dense, cylindrical, 1.5-10 cm. long; bracts with a subulate tip, longer than the calyx; calyx glabrous, the

lobes ciliolate; corolla white; legume 3 mm. long, included within the calyx, sparingly pubescent.—White Prairie Clover.

Dry prairies; along railroads, roadsides, and sandy ridges bordering Lake Michigan; usually found with *P. purpureum*, but rarer. Local, throughout the state.

Specimens Examined: ADAMS CO.: Near Camp Point, *Irene Steiner*, 4 July 1948. CHAMPAIGN CO.: Along I. C. R. R., Champaign, *G. P. Clinton*, 1888. COOK CO.: Damp prairie, Riverside, *O. E. Lansing 1457*, 22 July 1902. DU PAGE CO.: Common on dry prairies, Wheaton, *W. S. Moffatt 159*, July 1884. HARDIN CO.: Dry hills, Cave-in-Rock to Saline Creek, *W. Trelease*, 12 July 1916. IROQUOIS CO.: Railroad, Gilman, *W. B. McDougall 117*, 11 July 1928. JO DAVIESS CO.: Prairies, *Pepoon & Moffatt 185*, July 1896. KANKAKEE CO.: Dry prairies near Waldron, *E. J. Hill*, 10 July 1873. LAKE CO.: Dry sand ridges along Lake Michigan, Waukegan, *H. A. Gleason & F. D. Shobe 295*, 18 August 1906. LA SALLE CO.: Starved Rock, *F. Thone 55*, date not given. MACON CO.: Stevens Creek at Wabash, timber, *I. W. Clokey 2395*, 1 July 1915. MASON CO.: Along railroad, Mason City, *Ann Schertiger*, 3 July 1948. MC HENRY CO.: Algonquin, *W. A. Nason*, 23 July 1878. OGLE CO.: Dry prairies, Oregon, *M. Waite*, 7 July 1883. PEORIA CO.: Dry woods, Peoria, *F. E. McDonald*, July 1895. UNION CO.: In dry soil, growth from 2-3 ft., common, Fountain Bluff, *L. P. Cranwill*, 25 July 1917. WINNEBAGO CO.: C. & N. W. R. R. right-of-way, near Perryville, *E. W. Fell*, 7 August 1945.

20. TEPHROSIA Pers.

Tephrosia virginiana (L.) Pers. Syn. Pl. 2:329 (1807); Mead (1846) 60; Lapham (1857) 509; Brendel (1860) 294; Babcock (1872) 25; Patterson (1874) 5, (1876) 10; Williams (1877) 491; Brendel (1887) 46; Higley & Raddin (1891) 29; Huett (1897) 65; McDonald (1900) 102; Gleason (1910b) 158; Pepoon (1910) 152; Thone (1925) 103; Pepoon (1927) 362; Henderson (1929) 147; McDougall (1936) 168; Fassett (1939) 59; Deam (1940) 601; Fuller (1943) 95; Jones (1945a) 164; Fernald (1945) 215; Jones (1945b) 278; Fuller (1946) 58; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Wood (1949) 272; Jones (1950) 176.

Cracca virginiana L. Sp. Pl. 752 (1753); Gleason (1907) 184; Gates (1926) 231; Ries (1939) 90.

Tephrosia holosericea Nutt. in Journ. Acad. Phila. 7:105 (1834).

T. virginiana var. *holosericea* (Nutt.) T. & G. Fl. N. Am. 1:296 (1838); Deam (1940) 601; Fuller (1943) 95; Fernald (1945) 215.

Cracca virginiana holosericea (Nutt.) Vail in Bull. Torr. Club 22:27 (1895).

Type Locality: "Habitat in Virginia, Canada."

Range: Me.—Manitoba—Tex.—Fla.

Erect perennial herb, 3-6 dm. high, villous; leaves pinnately 7-29-foliolate; leaflets linear-elliptical, 2-3.5 cm. long, glabrous or with soft white pubescence above, villous beneath; flowers large, in short terminal ra-

cemes; calyx villous, the lobes lanceolate and acuminate; corolla whitish, tinged with purple, 15-17 mm. long; legumes linear, 3-6 cm. long, 4-6 mm. wide, straight or slightly curved, densely pubescent.—Goat's-rue.

In dry sandy soil in dunes, and on open hillsides. Fairly abundant throughout the state.

A variation characterized by leaflets somewhat narrower than in the species as originally described, and with the upper surface of the leaflets pubescent has been described as *T. virginiana* var. *holosericea* (Nutt.) T. & G. According to Fassett (1939:59) this plant has a generally more northerly and westerly distribution in the United States, whereas the typical *T. virginiana,* with upper surfaces of the leaflets glabrous "is the common plant of the southeastern states."

In a recent monograph of *Tephrosia,* Wood (1949:271-74) points out the following facts about the forms just mentioned: Mass collections show that both "glabrous" and "hairy" plants often occur in the same colony, the proportion varying by chance. A map is presented to show that there is no real geographic segregation of either type, and therefore, nothing to warrant taxonomic recognition of either entity on a geographical basis. Wood concludes that there is no evidence to justify retention of var. *holosericea.*

Specimens Examined: BOONE CO.: Sandy field, 2½ mi. n. of Argyll, *E. W. & G. B. Fell,* 24 June 1946. CHRISTIAN CO.: Taylorville, *W. E. Andrews,* 19 August 1898. COOK CO.: Open woodland dunes, common, Thornton, *G. D. Fuller 7304,* 24 June 1942. FAYETTE CO.: Along the I. C. R. R., 1 mi. s. of Farina, *G. S. Winterringer 1166,* 14 June 1948. GALLATIN CO.: In sandy soil on top of bluff at Buzzard's Point, 9½ mi. s. of Equality, *G. S. Winterringer 1094,* 30 May 1948. HANCOCK CO.: Herb in open woods on hillside, Cedar Glen, *F. C. Gates 10842,* 11 September 1917. HENDERSON CO.: Near Oquawka, *H. N. Patterson,* 1872. JACKSON CO.: *F. Brendel,* 1860. JO DAVIESS CO.: Blowout in station 3, Hanover, *H. A. Gleason & F. C. Gates 2629,* 16 June 1908. JOHNSON CO.: Rock ledge at Cedar Grove, 4 mi. s.w. of Goreville, *G. S. Winterringer 1229,* 13 June 1948. KANKAKEE CO.: Sandy soil near St. Anne, *G. N. Jones 11497,* 16 June 1940. LA SALLE CO.: Open sandy soil, Ottawa, *W. B. McDougall 43,* 2 July 1928. LEE CO.: Sandy hillside, occasional, 4 mi. n. of Dixon, *G. D. Fuller,* 26 August 1946. MACOUPIN CO.: Carlinville, *W. E. Andrews,* 24 June 1893. MASON CO.: Along roadside, Havana, *Ann Schertiger,* 3 July 1948. MASSAC CO.: *A. P. Sharp,* July 1881. MENARD CO.: Sandy ground, Athens, *E. Hall,* June 1864. OGLE CO.: Rocky hills, Oregon, *W. S. Moffatt 441,* 18 August 1895. PEORIA CO.: Dry woods at head of "Rocky Glen," very rare, and local, Peoria, *F. E. McDonald,* June 1891. UNION CO.: Hill near Wolf Lake, *G. N. Jones 12078,* 5 July 1940. WINNEBAGO CO.: Sand hill on Sugar River, 1 mi. w. of Shirland, *E. W. Fell,* 10 August 1945.

21. ROBINIA L.

1. Tree, 3-30 m. high; twigs and petioles not hispid; racemes 6-many-flowered.

2. Flowers white or yellowish and fragrant; twigs and petioles glabrate or puberulent; stipules thorny; large tree. . 1. *R. pseudoacacia*
2. Flowers pink, not fragrant; twigs and petioles glandular-viscid; stipules not spiny; small tree. . . . . 3. *R. viscosa*

1. Shrub, 0.5-3 m. high; twigs and petioles densely hispid; racemes 3-5-flowered. . . . . 2. *R. hispida*

1. **Robinia pseudoacacia** L. Sp. Pl. 722 (1753); Mead (1846) 60; Lapham (1857) 509; Brendel (1859b) 602, (1859c) 660; Michaux (1859) 2:92; Ridgway (1872) 659; Patterson (1876) 10; Schneck (1876) 525; Williams (1877) 491; Flagg & Burrill (1878) 233; Ridgway (1883) 65; Higley & Raddin (1891) 29; Ridgway (1895) 411; Huett (1897) 65; Snare & Hicks (1898) 6; Gleason (1910b) 158; Smith (1910) 18; Hall & Ingall (1911) 209; Palmer (1921) 148; Gates (1923) 169; Thone (1925) 103; Gates (1926) 231; Pepoon (1927) 362; Miller & Tehon (1929) 232; Eaton (1931) 156; Sargent (1933) 623; Bradley (1938) 97; Evers (1941) 99; Feldman (1942) 61; Jones (1942) 72, (1945a) 164; Fuller (1946) 58; Jones (1947) 55; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 176.

Robinia pseudoacacia var. *unifoliola* Talou, Hortic. Franc. 157 (1859).

Robinia pseudoacacia monophylla Carr. in Rev. Hort. 630, fig. 121, 122 (1860); Clute (1907) 63.

Robinia pseudoacacia f. *unifoliola* (Talou) Rehder in Journ. Arnold Arb. 3:37 (1922).

Type Locality: "Habitat in Virginia."

Range: Pa.—Ark.—La.—Ga. Extensively cultivated, and escaped throughout the United States and southern Canada.

Large tree with rough, furrowed bark, reaching 30 m. in height; leaves pinnately 9-19-foliolate; stipules woody; leaflets ovate or elliptical, entire, obtuse or emarginate, 3-5 cm. long, 1-2 cm. wide, glabrate; flowers showy, fragrant, in drooping axillary or terminal racemes; corolla white, 15-22 mm. long; legumes broadly linear, 6-10 cm. long, 10-12 mm. wide, glabrous, 4-16-seeded.—Black Locust.

Cultivated as shade tree along city streets and roadsides, and along fences, and as a hedge tree; escaped from cultivation and naturalized, possibly native, particularly in river bottoms. Common throughout Illinois.

It is not easy to determine whether *Robinia pseudoacacia* should be listed as native in Illinois. In the journal of his travels into the Illinois territory, Michaux (1889:124) mentions this tree among those he observed along the Mississippi River, in the region between Kaskaskia and the Ohio River. Since the black locust had been introduced into France in the early 17th century, and widely cultivated in that country, Michaux

must certainly have been familiar with it before he came to North America. His identification was, therefore, in all probability, accurate.

Mead (1846:60) lists *R. pseudoacacia* as a cultivated ornamental tree in the vicinity of Augusta, Hancock County. In any case, one would hardly expect the tree to be native that far north in Illinois. The next record is that of Lapham (1857:509) who includes the tree in a list stated specifically to be a catalogue of the "plants growing naturally within the state of Illinois." Brendel (1859b:602) pointed out that even before the time of the Civil War the tree was so well established in Illinois that it was very difficult to ascertain its original distribution here, if any, but he states that "the centre of its original home is probably Kentucky, and we can presume that it is a native of South Illinois too." Schneck (1876:525) makes this notation regarding *R. pseudoacacia* in the lower Wabash River valley: "Escaped to improved grounds and borders of woods. . . . Naturalized from eastern United States." Patterson (1876:10) gives Vasey and Forbes as authorities for his statement about this tree: "Undoubtedly indigenous on the banks of the Ohio River."

Ridgway (1883:65) says of *R. pseudoacacia*: "Not observed by Dr. Schneck or myself in Wabash or adjoining counties in Illinois." Sargent (1922:622) says the species is native in southern Illinois. Palmer and Steyermark (1935:578) state that it is native in parts of the Ozark region of Missouri. The distribution map by Munns et al. (1938:147) includes southern Illinois in the natural range of *R. pseudoacacia*. Deam (1940: 602) considers that in Indiana the tree "was, no doubt, a native in the southeastern part of the state near the Ohio River."

Although it is now impossible to prove, conclusively, whether this species is native in Illinois, the above statements suggest a strong probability that it may be indigenous in southern Illinois along the Ohio and Mississippi rivers.

Specimens Examined: ADAMS CO.: West of Mendon, *R. A. Evers 60*, 11 September 1939. CHAMPAIGN CO.: Roadside, Sangamon River, 15 mi. w. of Urbana, *G. N. Jones 13883*, 23 May 1941. DU PAGE CO.: Cultivated, streets, Wheaton, *W. S. Moffatt 160*, 7 June 1885. EDWARDS CO.: Frequent, Browns, *J. Schneck*, 4 April 1899. FAYETTE CO.: Roadside s. of St. Elmo, *Louise O'Dell 223*, 1 August 1942. FRANKLIN CO.: Near Christopher, *G. N. Jones 12158*, 6 July 1940. HANCOCK CO.: Along T. P. & W. R. R., Cedar Glen, *F. C. Gates 10209*, 26 May 1917. KANKAKEE CO.: Naturalized in woods, Kankakee, *E. J. Hill*, 6 June 1874. LA SALLE CO.: Starved Rock, *F. Thone 207*, date not given. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 23 May 1890. PEORIA CO.: Banks of Kickapoo River, thoroughly naturalized, *F. E. McDonald*, May 1890. POPE CO.: Along the Ohio River, Golconda, *G. N. Jones 12011*, 4 July 1940. RICHLAND CO.: Cultivated on hillside, e. end of Bird Haven, *Mattoon 103*, 2 September 1919. STARK CO.: Roadside, 1 mi. n. of Toulon, *V. H. Chase 1693*, 24 May 1908. TAZEWELL CO.: Open woods, *V. H. Chase 3192*, 16 July 1919. UNION CO.: Along river bank, State

Forest, *G. D. Fuller 549*, 5 May 1941. WOODFORD CO.: Richland Creek near Illinois River, *G. N. Jones 14261*, 27 July 1941.

A specimen of *Robinia pseudoacacia* f. *unifoliola* (Talou) Rehder was reported (as *R. pseudoacacia monophylla*) to have been received by Clute (1907: 63) from Mr. H. C. Skeels of Lockport (Will Co.) Illinois. We are given no further information about this particular specimen, and, since the writer has not seen any Illinois specimens, it seems justifiable to conclude that this form may be met with only rarely.

2. **Robinia hispida** L. Mant. 101 (1767); Flagg & Burrill (1878) 232; Rydberg (1924) 225; Gates (1936) 231; Rydberg (1932) 470; Small (1933) 702; Jones (1945a) 164, (1950) 176.

Type Locality: "Hab. in Carolina, Carthagena."

Range: Va.—Tenn.—Ala.—Ga. Escaped from cultivation west to Minn. —Kans.

Shrub, 0.5-3.0 m. high, branches, petioles, and leaf rachises densely hispid; leaves pinnately 7-15-foliolate; leaflets broadly ovate or elliptical to suborbicular, 1.5-5 cm. long, 1-3.5 cm. wide, glabrous or slightly pubescent on the veins below; racemes mostly 3-5-flowered, the peduncles, pedicels, and calyx bristly; flowers pink or purple, not fragrant; legumes densely hispid, 5-8 cm. long, 1 cm. wide.—Bristly Locust.

Cultivated, often established, and occasionally spontaneous. Not common in Illinois.

Specimens Examined: HARDIN CO.: Along highway 146, between Elizabethtown and Cave-in-Rock, *G. S. Winterringer 888*, 28 April 1948.

3. **Robinia viscosa** Vent. Descr. Pl. Cels, pl. 4 (1800); in Bull. Soc. Philom. Paris 1, 2:161 (1799); Huett (1897) 65.

Type Locality: "Alleghany Mountains, central Carolina, towards the sources of Savanna River."

Range: Pa.—Ala.—Ga.—N.C. Escaped from cultivation elsewhere.

Shrub or small tree, 3-10 m. high; branches, twigs, petioles glandular-viscid; leaves pinnately 11-27-foliolate; leaflets ovate or elliptical, dark green and glabrate above, puberulent and paler below; racemes 6-15-flowered, peduncles and pedicels puberulent and glandular-viscid; calyx puberulent, reddish-purple; corolla pink; legume 5-8 cm. long, 1 cm. wide, glandular-hispid.—Clammy Locust.

Not native in Illinois, but escaped from cultivation and established locally. Rare.

Specimens Examined: JO DAVIESS CO.: Escaped from cultivation, near Warren, *Pepoon & Moffatt 165*, July 1896. Huett (1897:65) reports it from La Salle County, but no specimens have been seen from that county.

22. WISTERIA Nutt.

Wisteria macrostachya (T. & G.) Robins. & Fern., A. Gray, Man. Bot.

N.U.S. ed. 7:515 (1908); Palmer (1921) 148; Tehon (1942) 148; Jones (1945a) 165, (1950) 176; Fernald (1950) 903.

Glycine frutescens sensu Michx. 2:63 (1803); non L., quoad. pl. Ill.

Wisteria frutescens sensu Lapham (1857) 509; Brendel (1859b) 602; Patterson (1876) 10; Schneck (1876) 509; Brendel (1887) 84; not (L.) Poir. (1823).

Kraunhia macrostachys (Nutt.) Small in Bull. Torr. Club 25:134 (1898); Britton & Brown (1913) 2:374; Rydberg (1923) 185.

Type Locality: Louisiana.

Range: Ill.—Mo.—La.—Tenn.

Woody twining shrub sometimes 8 m. in length; leaves pinnate, usually 9-foliolate; leaflets 3-7 cm. long, ovate or elliptic-lanceolate, acute or acuminate; racemes loosely flowered, 2-3 dm. long, terminal, drooping, pubescent and glandular; calyx hirsute and glandular, campanulate, the lower lobes nearly as long as the tube; corolla lilac or purple; legume 7-12 cm. long, reddish-brown, somewhat constricted between the seeds. —Kentucky Wisteria.

Swampy woods in southern Illinois; rare. Also widely cultivated.

Specimens Examined: PULASKI CO.: Fricke (in F. Brendel herbarium), date not given; Cypress swamp, 5 mi. n. of Grand Chain, *G. S. Winterringer 1943*, 29 May 1949. Reported also from Alexander, Pope, and St. Clair counties, but specimens from these counties have not been seen.

Wisteria sinensis Sweet has been reported from Illinois by Jones (1945a:165) and Fernald (1950) 903. The writer has seen no Illinois specimens of this species, and at the present time has no evidence for considering it an established part of the flora of the state. This species is also cultivated in the state as an ornamental.

23. ASTRAGALUS L.

1. Corolla purplish-blue, 8-10 mm. long; legume lunate in outline, one-loculed ..... 1. *A. distortus*
1. Corolla white, cream-colored, or greenish-yellow, 1-2.5 cm. long; legumes not lunate, two-loculed.
   2. Legumes pubescent at maturity; stems villous; calyx villous-pilose. ..... 2. *A. tennesseensis*
   2. Legumes glabrous at maturity; stems glabrate or sparingly strigose above.
      3. Legumes ellipsoid; leaflets 1.5-4 cm. long; racemes 5-10 cm. long; calyx finely strigose ..... 3. *A. canadensis*
      3. Legumes nearly globose; leaflets 5-15 mm. long; racemes 2-3 cm. long; calyx notably white-villous ..... 4. *A. trichocalyx*

1. **Astragalus distortus** T. & G. Fl. N. A. 1:333 (1838); Lapham (1857) 509; Patterson (1876) 10; Flagg & Burrill (1878) 233; Brendel (1887) 84;

McDonald (1900) 102; Robinson & Fernald (1908) 517; Britton & Brown (1913) 2:382; M. E. Jones (1923) 256; Jones (1945a) 165, (1950) 176; Fernald (1950) 908.

Holcophacos distortus (T. & G.) Rydb. ex Small, Fl. SE. U. S. 618, 1332 (1903); Rydberg (1929) 311.

Type Locality: Arkansas, *Nuttall.*

Range: W.Va.—Iowa—s.e. Kans.—Tex.

Perennial herb with taproot; stem much branched, the branches prostrate or ascending, 1-4 dm. long, glabrous or sparingly strigose; leaves odd-pinnate, 13-25-foliolate; leaflets elliptical or obovate, emarginate or rounded at the apex, 4-10 mm. long, glabrous above, sparingly strigose below; flowers purplish-blue, or occasionally almost white, in short racemes 2-4 cm. long; corolla 8-10 mm. long; legume crescent-shaped, 1.5-2.5 cm. long, sessile in the calyx, coriaceous, glabrous, 1-loculed.—Bent Milk Vetch.

In dry soil. Not common in Illinois.

Specimens Examined: CASS CO.: Sandy barrens, common, Beardstown, *F. E. McDonald*, 24 May 1905. COOK CO.: Morgan Park, Chicago, *W. D. Barnes*, 21 May 1899. ST. CLAIR CO.: *F. Brendel.*

2. **Astragalus tennesseensis** A. Gray ex Chapm. Fl. S. U. S. 98 (1860); Robinson & Fernald (1908) 515; Deam (1940) 1067; Fernald (1945) 216; Jones (1950) 176; Fernald (1950) 912.

Astragalus plattensis var. *tennesseensis* A. Gray in Proc. Am. Acad. 6:193 (1864); Patterson (1876) 10; Brendel (1887) 84.

Astragalus plattensis sensu Williams (1877) 491; Flagg & Burrill (1878) 233; Huett (1897) 65; Jones (1945a) 165; Fernald (1950) 912; non Nutt. (1838).

Astragalus plattensis var. *missouriensis* Coulter in Bot. Gaz. 5:71 (1880), nom. nud.

Geoprumnon tennesseense (A. Gray) Rydb. ex Small, Fl. SE. U.S. 615, 1332, (1903); Britton & Brown (1913) 2:378; Rydberg (1926) 164, (1929) 462.

Type Locality: Nashville, Tenn.

Range: Ill.—Tenn.—Ala.

Perennial herb, villous, with ascending stems from a tufted rootstock; leaflets 15-25, linear-elliptic, 8-20 mm. long, glabrate above, pilose beneath; racemes dense, 2-3 cm. long, peduncles 5-10 cm. long; calyx villous, the lobes about one-third as long as the tube; corolla yellowish-white, 15-17 mm. long; legumes oblong-ovoid, pubescent, 2.5-3.0 cm. long, gradually pointed, strongly wrinkled.—Tennessee Milk Vetch.

Dry slopes and banks; prairies; not common in Illinois.

Specimens Examined: GRUNDY CO.: Morris, *G. Vasey*, date not given.

WILL CO.: Dry banks, limestone soil, *E. J. Hill,* 26 May 1902; dry slope of ridge, Joliet, *E. J. Hill,* 8 June 1907.

Fernald (1945:216) cites, in addition, specimens from Ogle and LaSalle counties in the Gray Herbarium.

3. **Astragalus canadensis** L. Sp. Pl. 757 (1753); Mead (1846) 60; Lapham (1857) 509; Warne (1870) 347; Babcock (1872) 25; Patterson (1874) 5, (1876) 10; Schneck (1876) 525; Williams (1877) 491; Flagg & Burrill (1878) 233; Brendel (1887) 46; Higley & Raddin (1891) 29; Huett (1897) 65; Gates (1912) 361; Pepoon (1927) 362; McDougall (1936) 169; Fuller (1943) 95; Jones (1945a) 165; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 176.

Astragalus carolinianus L. Sp. Pl. 757 (1753); Ries (1939) 90.

Astragalus canadensis var. *longilobus* Fassett in Rhodora 38:94 (1936), (1939) 74.

Type Locality: "Habitat in Virginia and Canada."

Range: Quebec—Fla.—Utah—British Columbia.

Erect perennial herb, 1-1.5 m. high, sparingly strigose or glabrate; leaflets 15-31, elliptic or elliptic-lanceolate, obtuse at the apex, 1.5-4.0 cm. long, glabrous above and strigose below in maturity; flowers greenish-yellow, in long-peduncled, dense racemes 5-10 cm. long; calyx-tube finely strigose, the lobes less than half as long as the tube; corolla 12-15 mm. long; legumes oblong, sessile, coriaceous, glabrous, 2-loculed, 10-15 mm. long.—Canada Milk Vetch.

Specimens of this species having the calyx-lobes more than half as long as the calyx tube, and sometimes longer than the tube, have been designated *Astragalus canadensis* var. *longilobus.* Of 40 Illinois specimens in the University of Illinois Herbarium, 7 have calyx-teeth of sufficient length to place them in this variety. The remaining specimens show a range of variation between the length described in the species and that of the variety.

Along streams and in rich woods. Distributed throughout Illinois.

Specimens Examined: ADAMS CO.: *A. B. Seymour,* 27 July 1878. CHAMPAIGN CO.: Along Salt Fork River, 5 mi. s. of St. Joseph, *G. N. Jones 14115,* 6 July 1941. COOK CO.: Low wet bank of ditch, Riverside, *O. E. Lansing 1444,* 22 July 1902. DU PAGE CO.: Rich woods, Naperville, *L. M. Umbach,* 24 July 1895. FULTON CO.: Railroad, Canton, *W. B. McDougall 187,* 27 July 1928. KANKAKEE CO.: River banks, Kankakee, *E. J. Hill,* 20 July 1870. LAKE CO.: Beach of Lake Michigan, n. of Waukegan, *F. C. Gates 3042,* 22 June 1909. MASON CO.: Lake Matanzas, *F. C. Gates 3747,* 19 July 1910. MC HENRY CO.: Algonquin, *W. A. Nason,* 26 July 1878. PEORIA CO.: Peoria, *F. E. McDonald,* July 1889. PIATT CO.: Monticello, *Seymour & Waite,* 17 July 1886. STARK CO.: Dry prairie, near Wady Petra, *V. H. Chase 684,* 19 July 1900. VERMILION CO.: Along middle fork of Vermilion River, between Oakwood and Collison, *G. N. Jones 14343,* 16 July 1943. WABASH

CO.: Sandy loam, old Palmyra, *J. Schneck*, 4 July 1900. WINNEBAGO CO.: Edge of woods, 2 mi. n.e. of Rockford, *E. W. Fell*, 7 August 1945.

4. **Astragalus trichocalyx** Nutt. ex T. & G. Fl. N. Am. 1:332 (1838); Engelmann (1843) 96; Jones (1945a) 165, (1950) 176.

Astragalus mexicanus sensu Lapham (1857) 509; Bebb (1860) 183; Patterson (1876) 10; Flagg & Burrill (1878) 233; Brendel (1887) 84; Robinson & Fernald (1908) 515; M. E. Jones (1923) 237; McDougall (1936) 169; non A.DC. (1826).

Geoprumnon mexicanum (A.DC.) Rydb. in Small, Fl. SE. U. S. 616 (1903); Britton & Brown (1913) 2:377.

Geoprumnon trichocalyx (Nutt.) Rydb. in Bull. Torr. Club 53:163 (1926); Rydberg (1929) 461, (1932) 482.

Astragalus mexicanus var. *trichocalyx* (Nutt.) Fern. in Rhodora 39: 317 (1937); Fernald (1950) 912.

Type Locality: Plains of Arkansas.

Range: Ill.—Kans.—Tex.—Ark.

Perennial herb from a tufted, woody rootstock, branching at the base into several stems 3-5 dm. long, glabrous below, sparingly strigose above; leaflets 17-33, elliptical to obovate, 5-15 mm. long, glabrous above, appressed-pubescent below; racemes crowded, 2-3 cm. long, on peduncles 5-8 cm. long; calyx densely pubescent with short white hairs; corolla cream-colored, often purplish at the tip, 2 cm. long; legumes nearly globose, 2-2.5 cm. long and 2 cm. thick, glabrous, obtuse at the apex, 2-loculed, edible at maturity.—Large Ground Plum.

Prairie soil, rare in Illinois.

Specimens Examined: MACOUPIN CO.: Carlinville, *W. E. Andrews*, 1 May 1890; fruits 28 May 1891.

Reported also by Patterson (1876:10) from Madison County (Miss Holmes) and St. Clair County (Brendel), but specimens have not been seen from these counties.

Astragalus pachycarpus T. & G. Fl. N. A. 1:332 (1838) has been attributed to Illinois by Mead (1846:60). The following statement accompanies his citation: ". . . perhaps a new species between *A. obcordatus* and *distortus*." No other records of the occurrence of this plant in Illinois have been found. Since the plant has presumably not been collected in Illinois since Mead's time, this *Astragalus* is not considered a part of the flora of the state.

24. GLYCYRRHIZA L.

Glycyrrhiza lepidota (Nutt.) Pursh, Fl. Am. Sept. 480 (1814); Fassett (1939) 79; Steyermark & Swink (1949) 148; Jones (1950) 177.

Liquiritia lepidota Nutt. in Fraser's Cat. (1813). Hyponym.

Type Locality: "On the banks of the Missouri."

Range: Minn.—Mo.—Tex.—Calif.—Wash.—Alberta. Adventive eastward.

Erect, branching perennial herb, 5-10 dm. high, the root thickened and sweet; leaves odd-pinnate, glandular-dotted; leaflets 11-19, elliptical to lanceolate, entire, obtuse, mucronate, 2-3.5 cm. long, scaly when young; flowers in dense, rather long-peduncled, but short spikes; corolla creamy-white, about 12 mm. long; legumes 12-17 mm. long, covered with hooked prickles.—Wild Licorice.

Along railroad tracks, in waste ground; adventive from the Great Plains and westward; rare.

Reported by Steyermark and Swink (1949:148) from Cahokia, St. Clair County on the basis of a specimen collected by H. Eggert; date not given. Collected also by Swink "along Illinois Central railroad tracks just north of St. Charles Road, Elmhurst, Du Page Co., July 6, 1948."

25. CORONILLA L.

Coronilla varia L. Sp. Pl. 743 (1753); Flagg & Burrill (1878) 220; Jones (1945a) 165, (1950) 177.

Type Locality: "Habitat in Lusatia, Bohemia, Dania, Gallia."

Range: Mass.—S.D.—Mo.—Md.

Perennial herb, stems straggling or ascending, glabrous, 3-4 dm. high; leaves sessile, odd-pinnate, 11-25-foliolate; leaflets elliptical or obovate, obtuse, mucronate, 8-17 mm. long, glabrous; flowers pinkish-white, in axillary umbels, with peduncles exceeding the leaves in length; legumes linear, straight, 4-angled, 3-7 jointed, each joint 6-8 mm. in length.—Crown Vetch.

Roadsides and in waste places, where it has escaped from cultivation; naturalized from Europe.

Specimens Examined: MARION CO.: Salem, *C. M. Tilson*, June 1917. The writer has collected specimens from plants which seem well established along fences on the University of Illinois Farms, Urbana, Champaign Co. (July, 1950).

26. DESMODIUM Desv.

1. Stipe of the loment 2-3 times longer than the calyx; loment nearly straight above, deeply constricted below into almost separate joints.
   2. Panicle on long, usually leafless stalk arising at the base of the plant ..... 1. *D. nudiflorum*
   2. Panicle axillary or terminal, but not as above.
      3. Leaves in a cluster at the base of the peduncle; flowers many; corolla purple ..... 2. *D. glutinosum*
      3. Leaves scattered along the stem; flowers few; corolla white ..... 3. *D. pauciflorum*

1. Stipe of the loment not much longer than the calyx, or, the loment sessile in the calyx; loment constricted on both margins, but more deeply below than above.
   4. Stipules ovate, acuminate, persistent and conspicuous.
      5. Stems trailing; leaflets nearly orbicular.....4. *D. rotundifolium*
      5. Stems erect or ascending; leaflets ovate to ovate-lanceolate.
         6. Inflorescence profusely branched, axillary and terminal; joints of the loment noticeably longer than broad, almost rhombic in outline.....5. *D. canescens*
         6. Inflorescence seldom branched, terminal; joints of the loment little longer than broad, oval to orbicular in outline. .....6. *D. illinoense*
   4. Stipules linear to lanceolate-ovate, early deciduous except in nos. 11, 12, and 13.
      7. Loments 1- 3- or 4-jointed; bracts inconspicuous; flowers not more than 6 mm. long.
         8. Leaflets linear to narrowly linear-lanceolate, sessile or nearly so.....7. *D. sessilifolium*
         8. Leaflets not as above.
            9. Leaflets 2.5-8 cm. long, narrowly ovate or ovate-lanceolate; stipules caducous.....8. *D. rigidum*
            9. Leaflets 1-3 cm. long; stipules tending to persist.
               10. Stem pubescent; leaves sessile or nearly so; petioles and leaflets ciliate; leaflets elliptic or narrowly ovate to rhombic.....9. *D. ciliare*
               10. Whole plant glabrous or nearly so; leaves distinctly petiolate; leaflets ovate to suborbicular..... .....10. *D. marilandicum*
      7. Loments commonly with 4 or more joints.
         11. Stipules 4.5-20 mm. long, linear-lanceolate or ovate, persisting at least until time of flowering; primary bracts large, conspicuous; flowers large, 6-14 mm. long; stipe of the loment not much longer than the calyx, or sessile.
            12. Petioles commonly 2.5 cm. or less in length; stipules 4.5-9.5 mm. long, linear-lanceolate, attenuate; joints of the loment oval or suborbicular...11. *D. canadense*
            12. Petioles commonly 4 cm. or more in length; stipules 1-2 cm. long, ovate-attenuate; joints of the loment rhombic or subtriangular.
               13. Leaflets glabrous beneath; floral bracts and stipules not ciliate.....12. *D. cuspidatum*
               13. Leaflets with soft, white, appressed pubescence

above and below; floral bracts and stipules ciliate. .....13. *D. longifolium*

11. Stipules setaceous, inconspicuous, early deciduous; primary bracts small, inconspicuous; flowers small, less than 8 mm. long; stipe of the loment exceeding the calyx.
    14. Pedicels short, 3-12 mm. long; leaflets with at least some pubescence below, but not glaucous.
        15. Leaflets thick, rhombic or ovate to elliptic-ovate; width of the terminal leaflet at least half the length.
            16. Stipules not long persistent; terminal leaflets acute to obtuse at the apex, not prominently reticulate below; joints of the loment curved above, nearly rounded below and deeply indented.....14. *D. nuttallii*
            16. Stipules usually persistent through flowering; terminal leaflets obtuse, often slightly emarginate at apex, quite prominently reticulate below; joints of the loment triangular to rhombic in outline.....15. *D. glabellum*
        15. Leaflets thin, linear-lanceolate to narrowly ovate-lanceolate, rarely more than 2 cm. wide, the terminal leaflet two to many times longer than wide.. .....16. *D. paniculatum*
    14. Pedicels long, 10-19 mm.; leaflets short-pilose and glaucous below.....17. *D. laevigatum*

1. **Desmodium nudiflorum** (L.) DC. Prodr. 2:330 (1825); Mead (1846) 60; Lapham (1857) 509; French (1870) 384; Babcock (1872) 25; Patterson (1876) 10; Schneck (1876) 525; Flagg & Burrill (1878) 233; Brendel (1887) 46; Higley & Raddin (1891) 30; Huett (1897) 66; Thone (1925) 103; Pepoon (1927) 362; McDougall (1936) 170; Fuller (1943) 95; Jones (1945a) 165; Fuller (1946) 58; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 177.

Hedysarum nudiflorum L. Sp. Pl. 749 (1753).

Meibomia nudiflora (L.) Kuntze, Rev. Gen. Pl. 197 (1891); Gleason (1907) 184; Gates (1923) 169.

Type Locality: "Habitat in Virginia."

Range: Me.—Minn.—Kans.—La.—Fla.

Erect or ascending, with leaves clustered at summit of a sterile stem; peduncle arising from base of plant, 6-10 dm. high, leafless, or occasionally with 1 or 2 leaves; leaflets 3, oval or ovate, blunt-acuminate, pale beneath, 2-8 cm. long, the terminal one somewhat rhomboidal, the others inequilateral; corolla rose-purple, 8-11 mm. long; loment 2-3 jointed,

long-stipitate, straight or slightly concave on the back, obliquely rounded below, uncinate-pubescent.—Naked Flowered Tick Clover.

In woods. Common in Illinois.

Specimens Examined: CHAMPAIGN CO.: Woods, Mahomet, *G. P. Clinton*, 6 September 1899. CUMBERLAND CO.: Woodland, 7 mi. w. and 1 mi. n. of Toledo, *H. E. Ahles 2587*, 9 August 1950. FAYETTE CO.: Woods, Ramsey, *H. M. Franklin*, 16 July 1949. JACKSON CO.: In deep woods and rich soil, w. of Makanda, *L. P. Cranwill*, 22 July 1917. JO DAVIESS CO.: Dry hills, Warren, *H. S. Pepoon*, July 1896. LA SALLE CO.: Starved Rock, *F. Thone 56*, date not given. LAWRENCE CO.: Low hillside in woods, Lawrenceville, *J. P. Sivert*, 11 August 1947. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 30 July 1889. PEORIA CO.: Peoria, *F. Brendel*, date not given. POPE CO.: Herod, *G. P. Clinton*, 27 July 1898. RICHLAND CO.: Edge of woods 2½ mi. s. of Noble, *Vera L. Scherer 66*, 14 July 1947. SALINE CO.: Rocky woods at Cave Hill, 5½ mi. s.w. of Equality, *G. S. Winterringer 1353*, 22 July 1948. SHELBY CO.: Tower Hill, *R. G. Mills*, 29 September 1940. TAZEWELL CO.: Dry wooded hillside, 4 mi. n. of E. Peoria, *V. H. Chase 11458*, 25 August 1950. UNION CO.: Cobden, *A. B. Seymour*, August 1880. VERMILION CO.: Wooded ridge, Kickapoo State Park, *G. S. Winterringer 1433*, 7 August 1948. WABASH CO.: Rich sandy loam, woods near Hanging Rock, *J. Schneck*, 4 September 1904.

2. **Desmodium glutinosum** (Muhl.) Wood, Classbook 120 (1845); Jones (1945a) 165; Fuller (1946) 58; Jones (1947) 54; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 177.

Hedysarum glutinosum Muhl. ex Willd. Sp. Pl. 3:1198 (1802).

Hedysarum acuminatum Michx. Fl. Bor. Am. 2:72 (1803).

Desmodium acuminatum (Michx.) DC. Prodr. 2:329 (1825); Mead (1846) 60; Lapham (1857) 509; Babcock (1872) 25; Patterson (1874) 5, (1876) 10; Schneck (1876) 525; Williams (1877) 490; Flagg & Burrill (1878) 233; Brendel (1887) 46; Higley & Raddin (1891) 30; Huett (1897) 66; Snare & Hicks (1898) 6; Jones (1942) 72; Fuller (1943) 95.

Desmodium grandiflorum sensu Robinson & Fernald 519 (1908); Gleason (1910b) 159; Pepoon (1910) 148; Thone (1925) 103; Pepoon (1927) 362; McDougall & Liebtag (1928) 229; McDougall (1936) 170.—Non (Walt.) DC. (1825).

Meibomia grandiflora sensu Britton & Brown 2:396 (1913); Gates (1923) 169, (1926) 231.—Non (Walt.) Kuntze (1891).

Meibomia acuminata (Michx.) Blake in Bot. Gaz. 78:277 (1924).

Type Locality: "Habitat in America boreali."

Range: Me.—Saskatchewan—Tex.—Fla.

Erect perennial herb, glabrous or sparingly pubescent; leaves clustered near the top of the stem, from which rises the long, naked peduncle; petioles 7-15 cm. long; leaflets 3, broadly ovate, acuminate, 5-13 cm. long; inflorescence a many-flowered panicle; corolla rose-purple, 6-7 mm. long; loment long-stipitate, 2-3-jointed, the joints about 1 cm. long, slightly con-

cave above, obliquely rounded below, uncinate-pubescent.—Large Flowered Tick Clover.

According to Schubert (1942b:279) the name *D. glutinosum* (Muhl. ex Willd.) Wood has priority over the binomial *D. acuminatum* (Michx.) DC. This is because the basonym, *Hedysarum glutinosum* Muhl. ex Willd., was published in 1802, one year before the name *Hedysarum acuminatum* Michx. appeared in 1803. This fact was brought out by the discovery that Vol. III, part 2, of Willdenow's edition of Linnaeus' *Species Plantarum* was published in 1802, rather than in 1803, the date which has commonly been assigned to it in the past. (See Schubert 1942a:150.)

In moist woods and on hillsides. Common in Illinois.

Specimens Examined: ADAMS CO.: In woods at Fall Creek Gorge, *Evers & Jones 638*, 19 July 1941. CHAMPAIGN CO.: Woods along Sangamon River, 15 mi. w. of Urbana, *G. N. Jones 12558*, 20 July 1940. CLARK CO.: Woods along Rocky Branch, near Dolson, *G. N. Jones 12611*, 25 July 1940. COOK CO.: Sandy woods, Thornton, *E. J. Hill 28*, 4 July 1896. CUMBERLAND CO.: Woodland, 7 mi. n.w. of Toledo, *H. E. Ahles 2586*, 9 August 1950. EFFINGHAM CO.: Woodland, 9 mi. s. of Effingham, *H. E. Ahles 2643*, 9 August 1950. FAYETTE CO.: Wolf Creek Woods, n.e. of St. Elmo, *Louise O'Dell 646*, 10 July 1943. FRANKLIN CO.: Near Christopher, *G. N. Jones 12205*, 6 July 1940. FULTON CO.: Sepo, *F. C. Gates*, 14 July 1910. JACKSON CO.: Rich low woods, Campbells Lakes, *J. McCree 854*, 24 June 1941. KANKAKEE CO.: Rich woods, near Waldron, *E. J. Hill 182*, 10 July 1873. KNOX CO.: Opening in woods, near Williamsfield, *V. H. Chase 1841*, 5 July 1908. LA SALLE CO.: Starved Rock, *F. Thone 5*, no date given. MACOUPIN CO.: Carlinville, *W. E. Andrews*, June and July 1889. MASON CO.: Chatauqua Grounds, *F. C. Gates*, 16 July 1910. MC HENRY CO.: Algonquin, *W. A. Nason*, 10 July 1878. PEORIA CO.: Rich woods, Peoria, *F. E. McDonald*, August 1889. PIATT CO.: Woodland, Allerton Park w. of Monticello, *H. E. Ahles 3292*, 4 September 1950. ST. CLAIR CO.: Woods, New Athens, *N. R. Piesbergen*, 4 July 1942. SCHUYLER CO.: Along the wooded bluffs of Sugar Creek, *Evers & Jones 561*, 18 July 1941. STARK CO.: Hillside near Spoon River, near Wady Petra, *V. H. Chase*, July 1892. TAZEWELL CO.: Wooded hills, near E. Peoria, *V. H. Chase 8959*, 30 July 1947, 19 August 1947. VERMILION CO.: Along Vermilion River, between Oakwood and Collison, *G. N. Jones 14373*, 16 July 1941. WABASH CO.: Rich sandy loam, open woods near Hanging Rock, *J. Schneck*, July 1900. WINNEBAGO CO.: Moist woods, common, 6 mi. s. of Rockford, near New Milford, *G. D. Fuller*, 4 August 1945.

3. **Desmodium pauciflorum** (Nutt.) DC. Prodr. 2:330 (1825); Lapham (1857) 509; Forbes (1870) 352; French (1870) 384; Patterson (1876) 10; Schneck (1876) 525; Flagg & Burrill (1878) 233; Brendel (1887) 46; Higley & Raddin (1891) 30; McDougall (1936) 170; Jones (1945a) 165; Bailey (1949) 52; Jones (1950) 177.

Hedysarum pauciflorum Nutt. Gen. 2:109 (1818).

Type Locality: "In sylvis Ohio, Kentucky et Tennessee."

Range: N.Y.—Ontario—Mich.—Kans.—Tex.—Fla.

Stems decumbent or ascending, 1.5-5.5 dm. high, sparingly pubescent; leaves alternate, petioled, scattered along the stem; leaflets with appressed hairs, rhombic-ovate or obovate, bluntly acuminate or acute, the terminal one rhomboid, and all paler beneath; racemes axillary or terminal, usually unbranched, few-flowered; corolla white, 5-6 mm. long; loment long-stipitate, 1-3- or rarely 4-jointed, the joints slightly concave or straight on the back, obliquely rounded below, uncinate-pubescent.—Few-flowered Tick Clover.

In woods and ravines, chiefly southern Illinois.

Specimens Examined: JACKSON CO.: Hillside near Little Muddy River, *J. McCree*, 27 August 1941. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 31 July 1889. PEORIA CO.: Damp shady ravines, "Rocky Glen," Peoria, *F. E. McDonald*, August 1891. ST. CLAIR CO.: *F. Brendel*, 1850. UNION CO.: Moist woods, Pine Hill, *G. D. Fuller* 852, 11 September 1941. WABASH CO.: Low, rich, black soil in the woods at Hanging Rock, *J. Schneck*, 27 July 1880; rich, muck soil, low woods, *J. Schneck*, 26 July 1900.

4. **Desmodium rotundifolium** DC. Prodr. 2:330 (1825); Patterson (1876) 11; Schneck (1877) 83; Flagg & Burrill (1878) 233; Brendel (1887) 84; Higley & Raddin (1891) 30; Huett (1897) 66; Buhl (1934) 8; Jones (1945a) 166; Fuller (1946) 58; Jones (1950) 177.

Type Locality: ". . . in siccis et rupestribus á Pensylvania ad Carolinam."

Range: Mass.—Mich.—Mo.—La.—Fla.

Branches trailing, 5-10 dm. long, pilose; stipules ovate-triangular, persistent, ciliate, bent downward at maturity, 5-12 mm. long; leaflets nearly orbicular, sparingly pubescent on both sides, or glabrate above, ciliate, 1.5-5 cm. long; corolla purple, 8-10 mm. long; loments 3-5-jointed, short-stipitate, sinuses on both edges nearly equal, the joints elliptical or rhomboid, uncinulate-pubescent.—Prostrate Tick Clover.

Dry woods, chiefly in southern Illinois.

Specimens Examined: ST. CLAIR CO.: *F. Brendel*, 1850. VERMILION CO.: Open woods, along middle fork of Vermilion River between Oakwood and Collison, *G. N. Jones 14085*, 4 July 1941. WABASH CO.: Rich sandy loam, woods, "Old Palmyra," *J. Schneck*, September 1900; rich sandy loam, woods, near Patton, *J. Schneck*, September 1902.

5. **Desmodium canescens** (L.) DC. Prodr. 2:328 (1825); Lapham (1857) 509; Patterson (1874) 5, (1876) 11; Flagg & Burrill (1878) 233; Brendel (1887) 46; Huett (1897) 66; Snare & Hicks (1898) 6; Pepoon (1927) 363; McDougall (1936) 171; Jones (1942) 72; Fuller (1943) 95; Jones (1945a) 166; Fuller (1946) 58; Jones (1947) 54; Fuller, Fell & Fell (1949) 74; Jones (1950) 177.

Hedysarum canescens L. Sp. Pl. 748 (1753).

Meibomia canescens (L.) Kuntze, Rev. Gen. Pl. 195 (1891).

Desmodium canescens var. *hirsutum* (Hook.) Robins. in Rhodora 10:33 (1908).

Type Locality: "Habitat in Virginia, Jamaica."

Range: Mass.—Ont.—Minn.—Kans.—Tex.—Fla.

Perennial herb; stem much branched, densely pubescent with short, hooked hairs, and longer, spreading hairs; stipules ovate-lanceolate, acuminate, persistent; leaflets ovate, acute or subacuminate, scabrous on both sides, pubescent and paler beneath, terminal one larger and rhombic; inflorescences axillary and terminal, branched; corolla purple, 1 cm. long; loments 4-6-jointed, the joints longer than wide, unequally rhomboid, uncinate-pubescent.—Hoary Tick Clover.

Plants with the upper part of the stem and the inflorescence villous, and the leaflets more oblong-ovate than those of the species have been called *Desmodium canescens* (L.) DC. var. *hirsutum* (Hook.) Robins. Illinois is commonly included in the range of this variety. Examination of 37 sheets in the University of Illinois Herbarium indicates a considerable amount of variation in plants of *D. canescens* in Illinois with regard to pubescence and leaflet shape. It is the opinion of the writer that the range of variations is adequately covered by the description of these characters in the species. Therefore, plants with the characters described for var. *hirsutum* are not cited separately below.

Along streams; damp ground along roadsides and fences. Throughout the state.

Specimens Examined: ALEXANDER CO.: Open woods, 2 mi. e. of Thebes, *H. M. Franklin 35*, 15 August 1949. CASS CO.: Chandlerville, *A. B. Seymour*, 19 August 1886. CHAMPAIGN CO.: Along the Salt Fork River, near Urbana, *G. N. Jones 14222*, 13 July 1941. CHRISTIAN CO.: Taylorville, *W. E. Andrews*, 29 July 1898. DE WITT CO.: Roadside, 2 mi. w. of Clinton, *G. S. Winterringer 827*, 25 July 1947. FAYETTE CO.: 2 mi. w. of Ramsey, *Louise O'Dell 211*, 27 July 1940. JACKSON CO.: Roadside ditch, n.e. of Carbondale, *J. McCree & G. Wilson*, 21 August 1941. LAWRENCE CO.: Wooded roadside, 8 mi. s. of Bridgeport, *J. P. Sivert 103*, 11 August 1946. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 8 August 1889. MENARD CO.: Athens, *E. Hall*, September 1865. PEORIA CO.: Damp ground usually adjoining woodlands, Peoria, *F. E. McDonald*, July 1887. PIKE CO.: Sandy bottoms, East Hannibal, *J. Davis*, 14 August 1915. POPE CO.: Herod, *G. P. Clinton*, 4 August 1898. RICHLAND CO.: Thicket near Goose Creek, 3 mi. n. of Olney, *Vera L. Scherer 451*, 13 August 1947. UNION CO.: Anna, *A. B. Seymour*, 13 August 1880. WABASH CO.: Rich, sandy loam, open woods, near Hanging Rock, *J. Schneck*, 8 August 1900.

6. **Desmodium illinoense** A. Gray in Proc. Am. Acad. 8:289 (1870); Patterson (1874) 5, (1876) 11; Flagg & Burrill (1878) 233; Brendel (1887) 46; Hill (1892) 249; Huett (1898) 164; Snare & Hicks (1898) 6; McDonald (1900) 102; Robinson & Fernald (1908) 521; Gleason (1910b) 159; Gates (1912) 361; Pepoon (1927) 363; Rydberg (1932) 490; Mc-

Dougall (1936) 171; Fuller (1943) 95; Jones (1945a) 166; Fuller (1946) 58; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 177.

Meibomia illinoensis (A. Gray) Kuntze, Rev. Gen. Pl. 193 (1891); Vail (1892) 114; Gates (1923) 169; Rydberg (1932) 490.

Type Locality: "Illinois, in dry ground."

Range: Ohio—Mich.—S.D.—Okla.—Tex.—Mo.

Stem erect, 5-20 dm. high, uncinate-pubescent; stipules ovate, acuminate, ciliate, persistent, 10-15 mm. long; all leaves petiolate, the petioles 2-6 cm. in length; leaflets lanceolate to ovate-lanceolate, acute or obtuse, strongly reticulate and minutely pubescent on the veins below, sticky to the touch; inflorescences terminal, generally not branched; flowers on conspicuous pedicels, 1-2 cm. long; corolla 6-9 mm. long, outer surface of standard very pale-pinkish-green, inner surface brilliant pink, as are the exposed surfaces of the wing petals; loments 3-6-jointed, the joints oval or orbicular, uncinate-pubescent, short-stipitate, 4-7 mm. long.—Illinois Tick Clover.

Dry woods and in prairie soil, and along railroads and roadsides. Common throughout Illinois.

Specimens Examined: CHAMPAIGN CO.: Prairie soil along road, near Urbana, *G. N. Jones 16531*, 30 July 1944. COOK CO.: Open woods, Chicago, *O. E. Lansing 369*, 21 July 1898. FULTON CO.: Sand ridge, Liverpool, *H. S. Pepoon*, 6 August 1891. HENDERSON CO.: Near Oquawka, *H. N. Patterson*, August 1873. KANKAKEE CO.: Roadside, near St. Anne, *G. N. Jones 16644*, 9 September 1944. LAKE CO.: Dry hillside, in grassy ground, e. of Pistakee Lake, Fox Lake, *E. J. Hill*, 25 August 1908. MACON CO.: Dry roadside, 6 mi. w. of Decatur, *I. W. Clokey 2399*, 12 July 1915. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 9 July 1889. MASON CO.: C. P. & St. L. track, n. of Havana, *F. C. Gates 3472*, 27 June 1910. OGLE CO.: Open woods, common, White Pines Forest State Park, *Alice L. Hills*, 8 July 1942. PEORIA CO.: Dry prairie, 3 mi. n. of Princeville, *V. H. Chase 1887*, 15 August 1908. PUTNAM CO.: Original prairie, s. of Putnam, *V. H. Chase 10498*, 2 July 1949. STARK CO.: Dry prairie, 4 mi. n.w. of Wady Petra, *V. H. Chase 1928*, 6 September 1908. WINNEBAGO CO.: Open woods, common, 6 mi. s. of Rockford, near New Milford, *G. D. Fuller*, 4 August 1945.

7. **Desmodium sessilifolium** (Torr.) T. & G., Fl. N. Am. 1:363 (1838); Engelmann (1843) 96; Mead (1846) 60; Lapham (1857) 509; Babcock (1872) 25; Patterson (1874) 5, (1876) 11; Schneck (1876) 525; Flagg & Burrill (1878) 233; Brendel (1887) 46; Higley & Raddin (1891) 30; Huett (1897) 66; Robinson & Fernald (1908) 522; Thone (1925) 103; Pepoon (1927) 363; Jones (1945a) 166, (1950) 178; Schubert (1950a) 919.

Hedysarum sessilifolium Torr. ex Curtis in Bost. Journ. Nat. Hist. 1:123 (1837).

Meibomia sessilifolia (Torr.) Kuntze, Rev. Gen. Pl. 198 (1891); Gleason (1908) 184.

Type Locality: Wilmington, N.C.

Range: Mass.—Mich.—Ill.—Kans.—Tex.—S.C.

Stem erect, 3-12 dm. high, uncinate-pubescent; leaves sessile, or with petiole 2-3 mm. in length; stipules linear, usually caducous; leaflets, linear to lanceolate or elliptic-lanceolate, obtuse, thick, glabrate or rough above, reticulate and pilose beneath; corolla purple or creamy-white, 4-5 mm. long; loment short-stipitate, 1-4-jointed, the joints obliquely ovate, reticulate, densely uncinate-pubescent, only slightly longer than wide.—Sessile-leaved Tick Clover.

In sandy soil, open woods, and along roadsides; local.

Specimens Examined: ADAMS CO.: Wooded hillside near Quincy, *R. Brinker 3051*, 9 September 1943. CHRISTIAN CO.: Taylorville, *W. E. Andrews*, 8 August 1898. CLAY CO.: Sandy soil, s. of Flora, *H. E. Ahles 2683*, 9 August 1950 (flowers cream-colored). COOK CO.: Chicago, collector not known, 17 August 1860. JACKSON CO.: Dry, clay soil along railroad, Carbondale, *J. McCree & G. Wilson*, 21 August 1941. KANKAKEE CO.: Near St. Anne, *G. N. Jones 16047*, 14 August 1943. LA SALLE CO.: Starved Rock, *F. Thone 192*. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 8 August 1889. MC HENRY CO.: Algonquin, *W. A. Nason*, 31 July 1878. PEORIA CO.: Dry prairies, near Peoria, *F. E. McDonald*, August 1885. POPE CO.: Roadside, w. of Dixon Springs, *H. E. Ahles 2787*, 10 August 1950 (flowers cream-colored). WABASH CO.: Sandy soil, roadside, Old Palmyra, *J. Schneck*, 28 August 1904.

8. **Desmodium rigidum** (Ell.) DC. Prodr. 2:330 (1825); Lapham (1857) 509; Patterson (1876) 11; Schneck (1876) 525; Williams (1877) 490; Flagg & Burrill (1878) 233; Brendel (1887) 84; Higley & Raddin (1891) 30; Pepoon (1927) 364; Jones (1945a) 167; Fuller (1946) 58; Jones (1950) 178.

Hedysarum rigidum Ell. Bot. S.C. and Ga. 2:215 (1823).

Meibomia rigida (Ell.) Kuntze, Rev. Gen. Pl. 198 (1891).

Type Locality: South Carolina.

Range: N.H.—Mich.—Nebr.—Tex.—Fla.; Mexico.

Stem erect, rigid, finely uncinate-pubescent, 6-9 dm. high; lower leaves petioled, upper leaves nearly sessile; stipules small, lanceolate, early deciduous; leaflets ovate-lanceolate to elliptical, obtuse, somewhat scabrous and sparingly pubescent above, pilose, pale and reticulate beneath; corolla rose, 5-6 mm. long; loment sessile in the calyx, 1- 3- or 4-jointed, the joints obliquely ovate, the upper margin gently convex, the lower strongly curved, uncinate-pubescent.—Rigid Tick Clover.

Dry sandy soil; of local distribution in Illinois.

Specimens Examined: ADAMS CO.: *R. Brinker 3733*, 1 September 1944. LIVINGSTON CO.: Dry thickets, common, n. part of county, *G. D. Fuller 9633*, 23 September 1944. MADISON CO.: Dry, sandy soil, East Alton, *F. E. McDonald*, September 1902.

9. **Desmodium ciliare** (Muhl.) DC. Prodr. 2:329 (1825); Brendel (1859a) 584; Vasey (1861a) 141; Patterson (1876) 11; Schneck (1876) 525; Flagg & Burrill (1878) 233; Brendel (1887) 84; Jones (1945a) 167; Bailey (1949) 52; Jones (1950) 178.

Hedysarum ciliare Muhl. ex Willd. Sp. Pl. 3:1196 (1802).

Hedysarum obtusum Muhl. ex Willd. Sp. Pl. 3:1190 (1802).

Desmodium obtusum (Muhl.) DC. Prodr. 2:329 (1825).

Meibomia obtusa (Muhl.) Vail in Bull. Torr. Club 19:115 (1892).

Type Locality: "Habitat in America boreali."

Range: Ontario—Mich.—Nebr.—Tex.—Fla.

Stem erect or ascending, pubescent; leaves crowded; petioles short, ciliate; leaflets broadly ovate or oval, thick, sparingly pubescent on both sides, ciliate, 1-2.5 cm. long; corolla purple, 2-4 mm. long; loments 1-3-jointed, the joints nearly oval, the stipe not longer than the calyx lobes.—Small-leaved Tick Clover.

Dry hills and sandy fields; infrequent in Illinois and local in distribution.

Specimens Examined: CHRISTIAN CO.: Taylorville, *W. E. Andrews*, 13 August 1898. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 29 August 1899. MENARD CO.: Sandy hills, Athens, *E. Hall*, 1861.

10. **Desmodium marilandicum** (L.) DC. Prodr. 2:328 (1825); Brendel (1859a) 584; Vasey (1861a) 141; Patterson (1876) 11; Schneck (1876) 525; Flagg & Burrill (1878) 233; Brendel (1887) 84; Pepoon (1927) 363; Jones (1945a) 167; Fuller (1946) 58; Bailey (1949) 52; Jones (1950) 178; Fernald (1950) 920.

Hedysarum marilandicum L. Sp. Pl. 748 (1753).

Meibomia marilandica (L.) Kuntze, Rev. Gen. Pl. 198 (1891).

Type Locality: "Habitat in Carolina, Virginia."

Range: Mass.—Mich.—Ill.—Mo.—Okla.—Tex.—S.C.

Stem erect or ascending, 6-9 dm. high, glabrous or nearly so; leaves petioled, crowded on the stem; stipules subulate, mainly deciduous; leaflets ovate, suborbicular, or elliptical, 1-2.5 cm. long, glabrous, or nearly so; corolla purple, 2-4 mm. long; loment 1-3-jointed, sessile in the calyx or nearly so, the joints obliquely oval.—Maryland Tick Clover.

Dry hills and woods, of local distribution.

Specimens Examined: MACOUPIN CO.: Carlinville, *W. E. Andrews*, 23 August 1889. MENARD CO.: Dry hills, Athens, *E. Hall*, 1861. PEORIA CO.: Dry woods, "Rocky Glen," Peoria, *F. E. McDonald*, September 1891; top of bluff, "Rocky Glen," Peoria, *V. H. Chase 11557*, 7 September 1950.

11. **Desmodium canadense** (L.) DC. Prodr. 2:328 (1825); Mead (1846) 60; Lapham (1857) 509; Babcock (1872) 25; Patterson (1874) 5, (1876) 11; Schneck (1877) 93; Williams (1877) 490; Flagg & Burrill

(1878) 233; Brendel (1887) 46; Higley & Raddin (1891) 30; Huett (1898) 164; Thone (1925) 103; Pepoon (1927) 363; McDougall (1936) 171; Fuller (1943) 95; Jones (1945a) 166; Fuller (1946) 58; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 178; Schubert (1950a) 921.

Hedysarum canadense L. Sp. Pl. 748 (1753).

Meibomia canadensis (L.) Kuntze, Rev. Gen. Pl. 195 (1891); Gleason (1907) 184; Gates (1923) 169.

Type Locality: "Habitat in Virginia, Canada."

Range: New Brunswick—N.C.—Okla.—S.D.—Manitoba.

Stem erect, 5-20 dm. high, pubescent; stipules linear-lanceolate, persistent or deciduous later; lower leaves petioled, upper leaves nearly sessile; leaflets lanceolate or ovate-lanceolate, obtuse, glabrate and scabrous above, appressed-pubescent and paler beneath; racemes densely panicled, bracts ovate-lanceolate, deciduous at length; flowers showy, purple, 8-14 mm. long; loment nearly sessile in the calyx, about 2.5 cm. long, 3-5-jointed, the joints nearly oval.—Canada Tick Clover.

Prairie soil, roadsides, thickets, and river banks. Locally distributed throughout the state.

Specimens Examined: CHAMPAIGN CO.: Sangamon River, 15 mi. w. of Urbana, *G. N. Jones 12826*, 20 August 1940. CHRISTIAN CO.: Taylorville, *W. E. Andrews*, 13 August 1896. COOK CO.: Thickets, Riverside, *E. J. Hill*, 26 July 1907. DU PAGE CO.: Low ground, Wheaton, *W. S. Moffatt 166*, 6 August 1889. FAYETTE CO.: Railroad, Vandalia, *W. B. McDougall 85*, 9 July 1928. FORD CO.: Roadside, 9 mi. n.w. of Rantoul, *H. M. Franklin*, 30 July 1949. FULTON CO.: Original prairie, Canton, *V. H. Chase 10593*, 30 July 1949. KANKAKEE CO.: Dry prairies, Kankakee, *E. J. Hill*, 16 July 1873. LAKE CO.: *Populus-Salix-Cornus* thicket, beach (Lake Michigan), n.w. of Waukegan and e. of Glenwood Ridge, *F. C. Gates 2960*, 21 August 1908. LA SALLE CO.: Starved Rock, *F. Thone 178*. LAWRENCE CO.: Roadside, ½ mi. e. of Lawrenceville, *J. P. Sivert 584*, 26 July 1947. LIVINGSTON CO.: Roadside thickets, occasional, 2½ mi. w. of Pontiac, *G. D. Fuller 9199*, 26 July 1944. MACON CO.: On Wabash Railroad, dry soil, 6 mi. w. of Decatur, *I. W. Clokey 2400*, 12 July 1915. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 13 July 1889. OGLE CO.: Thickets, common, Oregon, *Alice L. Hills*, 8 July 1942. PEORIA CO.: Dry gravelly slope, rare, Peoria, *F. E. McDonald*, August 1903. RICHLAND CO.: Oak-hickory woods, 3 mi. n. of Claremont, *Vera L. Scherer 493*, 14 July 1947. STARK CO.: Dry prairie, near Wady Petra, *V. H. Chase*, 2 August 1895. VERMILION CO.: Thicket, Danville, *W. S. Moffatt 165*, 3 August 1889. WABASH CO.: Woods, *J. Schneck*, 5 July 1894.

12. **Desmodium cuspidatum** (Muhl.) Loud. Hort. Brit. 309 (1830); Mead (1846) 60; Lapham (1857) 509; Patterson (1876) 11; Schneck (1876) 525; Williams (1877) 490; Flagg & Burrill (1878) 233; Brendel (1887) 46; Huett (1897) 66; Jones (1950) 177.

Hedysarum cuspidatum Muhl. ex Willd. Sp. Pl. 3:1198 (1802).

Hedysarum bracteosum Michx. Fl. Bor. Am. 2:73 (1803).

Desmodium bracteosum (Michx.) DC. Prodr. 2:329 (1825); Pepoon (1927) 363; Jones (1945a) 166.

Meibomia bracteosa (Michx.) Kuntze, Rev. Gen. Pl. 195 (1891); Gates (1926) 231.

Type Locality: "Habitat in America boreali."

Range: Me.—Minn.—Tex.—Fla.

Stem erect, 1 m. high or more, glabrous or sparingly pubescent; stipules lanceolate, cuspidate, often deciduous in age; leaflets ovate to ovate-lanceolate, acuminate or approaching acute, glabrous, except for occasional hairs on the veins below; bracts conspicuous, cuspidate, striate, not ciliate, caducous; corolla purple, 6-9 mm. long; loment 3-7-jointed, joints about twice as long as wide, rhomboid, uncinate-pubescent.—Large-bracted Tick Clover.

In rich woods and thickets; along roads, railroads, and fences.

Specimens Examined: ADAMS CO.: Cleared ground, Camp Point, *A. B. Seymour*, 23 August 1878. CHAMPAIGN CO.: *C. I. Hays*, 18 August 1876. FAYETTE CO.: Woody thicket, s. of Brownstown, *Louise O'Dell 210*, 8 August 1942. KANKAKEE CO.: Thickets, Rock Creek, *E. J. Hill*, 27 August 1872. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 20 August 1889. PEORIA CO.: Dry thickets, Peoria, *F. E. McDonald*, August 1903. RICHLAND CO.: Roadside, $2\frac{1}{2}$ mi. n. of Olney, *V. L. Scherer 482*, 30 September 1947. TAZEWELL CO.: Opening in dry, hill-top woods, 4 mi. n. of East Peoria, *V. H. Chase 11450*, 25 August 1950. WABASH CO.: Rich, sandy loam, near Patton station, *J. Schneck*, 28 August 1904. WOODFORD CO.: Dry opening in woods, n. of Germantown, *V. H. Chase 11534*, 5 September 1950.

13. **Desmodium longifolium** (T. & G.) Smyth in Trans. Kans. Acad. Sci. 16:159 (1899); Jones (1945a) 166, (1950) 177.

Desmodium canadense var. *longifolium* T. & G. Fl. N. Am. 1:365 (1840).

Meibomia longifolia (T. & G.) Vail in Bull. Torr. Club 23:140 (1896); Rydberg (1932) 489.

Desmodium bracteosum var. *longifolium* (T. & G.) B. L. Robins. in Rhodora 10:34 (1908); Thone (1925) 103; Pepoon (1927) 363.

Desmodium cuspidatum var. *longifolium* (T. & G.) Schubert in Rhodora 52:138 (1950); Fernald (1950) 921.

Type Locality: "Arkansas, Nuttall!"

Range: Ill.—Kans.—La.—Ala.

Stem erect, 1 m. or more in height, striate, pilose and uncinate-pubescent; stipules lanceolate, ciliate, generally persistent; leaflets ovate or ovate-lanceolate, acuminate, moderately or sparsely pubescent to glabrate above, pale and pilose below; bracts cuspidate, striate, ciliate, and caducous; corolla purple, occasionally white, 6-9 mm. long, the flowers on slender, glandular-pubescent pedicels; loment 4-6-jointed, upper margin

slightly rounded or angled, lower strongly triangular, 8-10 mm. long, densely uncinate-pubescent.—Long-leaved Tick Clover.

Rich, moist soil in open woods and ravines.

Specimens Examined: ALEXANDER CO.: Open woods, 2 mi. e. of Thebes, *H. M. Franklin 36*, 18 August 1949. CHAMPAIGN CO.: Roadside, Urbana, *W. B. McDougall 159*, 25 July 1928. COOK CO.: Rich woods, rather moist, Riverside, *E. J. Hill 158*, 8 August 1902. LA SALLE CO.: Starved Rock, *F. Thone 136*, date not given. MACOUPIN CO.: *W. E. Andrews*, 8 August 1889. MARSHALL CO.: Open woods, s. of Sparland, *V. H. Chase 10661*, 13 August 1949. MC HENRY CO.: Algonquin, *W. A. Nason*, 23 July 1878. MENARD CO.: Rich soils in timber, erect, 4-5 feet, not rare, *E. Hall 5*, 1861. PEORIA CO.: Open ravine in woods, Peoria Heights, *V. H. Chase 9029*, 20 August 1947. SCHUYLER CO.: Along wooded bluffs of Sugar Creek, *Evers, Jones & Jones 621*, 18 July 1941. STARK CO.: Rich, open, wooded hillside, Essex Twp., *V. H. Chase 132*, 22 July 1898. TAZEWELL CO.: Moist, open, ground, near East Peoria, *V. H. Chase 8994*, 13 August 1947. WABASH CO.: Rich loam and clay, fence row on farm, *J. Schneck*, 3 September 1900.

14. **Desmodium nuttallii** (Schindl.) Schub. in Rhodora 52:142 (1950).

Meibomia nuttallii Schindl. in Rep. Spec. Nov. 32:354 (1927).

Desmodium viridiflorum sensu Lapham (1857) 509; Patterson (1876) 11; Flagg & Burrill (1878) 233; Brendel (1887) 84; Deam (1910) 367; Pepoon (1927) 363; Fuller (1943) 95; Jones (1945a) 166; Fuller (1946) 58; Jones (1950) 178.—Non (L.) DC. (1825).

Meibomia viridiflora sensu Ries (1939) 90.—Non (L.) Kuntze (1891).

Type Locality: Craig County, Virginia (lectotype).

Range: N.Y.—Mo.—Ark.—Fla.

Stem erect or ascending, 7-15 dm. high, uncinate-pubescent and sparsely pilose; stipules lanceolate, striate, acuminate, ciliate, early deciduous; terminal leaflets ovate to rhombic near tip of plant, elliptic-ovate below, length about twice the width, apex bluntly acute or obtuse, the base rounded to cuneate; lateral leaflets elliptic-ovate; upper surface of leaflets moderately soft-pubescent, the lower surface rather densely pilose; racemes compound, chiefly terminal; loments 1-4-jointed, the stipe 2-4 mm. long, plainly exceeding the calyx; joints of the loment with the upper margin curved rather than angled, the lower margin conspicuously rounded or cuneate.—Nuttall's Tick Clover.

In an attempt to dispel the confusion and misunderstanding which have existed with regard to *Desmodium viridiflorum*, Schubert (1950: 138-44) has recognized two distinct entities which formerly were covered by that binomial. Plants with widely deltoid or rhombic terminal leaflets and distinctly rhomboidal loment articles having the upper margin definitely angled have been designated *D. viridiflorum* (L.) DC. The range of this plant includes the Coastal Plain states from Delaware to Florida and west to Texas, and inland only to Arkansas and Tennessee.

Desmodium nuttallii (Schindl.) Schub. is said to differ from *D. viridiflorum* in its elliptic-ovate terminal leaflets, in its loment articles with the rounded upper margin, in the generally smaller size of all its parts, and in its more inland range, which is indicated above. Examination of the Illinois specimens at hand shows that the plant which has previously been called *D. viridiflorum* in this state is the one recognized by Schubert under the name *D. nuttallii*.

In open woods, in fence rows, and roadsides; local, southern Illinois; not common.

Specimens Examined: LAWRENCE CO.: Roadside, near Sumner, *J. P. Sivert*, 14 August 1947. WABASH CO.: Dry sandy loam, fence row, near Keensburgh, *J. Schneck*, 20 August 1880; dry sandy loam, roadside, near old Palmyra, *J. Schneck*, 28 August 1904; rich sandy loam, woods, near Mt. Carmel, *J. Schneck*, 4 September 1904.

15. **Desmodium glabellum** (Michx.) DC. Prodr. 2:329 (1825); Schubert (1950a) 922.

Hedysarum glabellum Michx. Fl. Bor. Am. 2:73 (1803).

Desmodium dillenii sensu Lapham (1857) 509; Patterson (1876) 11; Schneck (1876) 525; Williams (1877) 490; Flagg & Burrill (1878) 233; Brendel (1887) 46; Higley & Raddin (1891) 30; Pepoon (1927) 363; Fuller (1943) 95; Jones (1945a) 166; Fuller (1946) 58; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 178, P.P.—Non Darl. (1837).

Meibomia dillenii sensu Ries (1939) 90.—Non (Darl.) Kuntze (1891).

Type Locality: "Hab. in Carolina inferiore."

Range: Mass.—Mich.—Ill.—Tex.—Ala.—S.C.

Stem erect, glabrate to uncinulate-puberulent and sparsely pilose; stipules subulate, deciduous; leaflets reticulate, ciliate, glabrate to sparingly appressed-pilose above, paler below and moderately pilose; terminal leaflets rhombic to ovate or elliptical, obtuse, often retuse; lateral leaflets elliptic and obtuse; corolla purple; loments 1-5-jointed, stipitate, the stipe 3-7 mm. long; joints of the loment roughly triangular to rhombic.

Schubert (1950:154) has reduced the binomial *Desmodium dillenii* Darl. to the status of a *nomen confusum* upon the discovery that this binomial was based by Darlington on a series of specimens containing two separate elements, which were also combined in his description. The element represented by plants with obtuse leaflets and short petioles (to 3.3 cm.) is *D. glabellum* (Michx.) DC., according to Schubert. To the element with acute leaflets and long petioles (up to 7 cm.) she has given the name *D. perplexum* Schub. This latter plant is further separated from *D. glabellum* by thinner leaflets which are usually more abundantly pilose, and much less conspicuously reticulate, Schubert states.

Study of 21 sheets of Illinois specimens labelled *D. dillenii* in the Uni-

versity of Illinois Herbarium shows that all but three of the specimens represent *D. glabellum*. These three specimens have long-petioled, thinner, and somewhat less reticulate leaflets than the others, and may possibly represent Schubert's *D. perplexum*. The writer feels that further study and comparison with authenticated specimens should be carried on before *D. perplexum* is included definitely as a part of the spontaneous flora of the state.

Dry soil, chiefly in open woods; of local occurrence throughout most of the state.

Specimens Examined: ADAMS CO.: Woods near Coe Springs, Quincy, *R. A. Evers 760*, 15 August 1941. JACKSON CO.: De Soto, collector and date not known. JERSEY CO.: Grafton, *A. B. Seymour*, 14 October 1882. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 22 August 1889. PEORIA CO.: Peoria, *F. Brendel*. PIKE CO.: Mississippi River bottoms, Shepherd, *J. Davis*, 16 September 1914. WABASH CO.: Dry, sandy, and clayey soil, *J. Schneck*, 24 August 1902.

16. **Desmodium paniculatum** (L.) DC. Prodr. 2:329 (1825); Mead (1846) 60; Lapham (1857) 509; Brendel (1859a) 583; Patterson (1876) 11; Schneck (1876) 525; Flagg & Burrill (1878) 233; Brendel (1887) 46; Higley & Raddin (1891) 30; Huett (1898) 164; Pepoon (1927) 363; Fuller (1943) 95; Jones (1945a) 166; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 178.

Hedysarum paniculatum L. Sp. Pl. 749 (1753).

Desmodium paniculatum var. *pubens* T. & G., Fl. N. Am. 1:364 (1840).

Meibomia paniculata (L.) Kuntze, Rev. Gen. Pl. 198 (1891); Gleason (1907) 184; Ries (1939) 90.

Type Locality: "Habitat in Virginia."

Range: Me.—Minn.—Nebr.—Tex.—Fla.

Stem erect, 5-10 dm. high, glabrous or somewhat pubescent; leaves petioled; stipules subulate, usually deciduous; leaflets linear-lanceolate to ovate-lanceolate, obtuse or acute, paler beneath, glabrate or sparingly pubescent above and below to moderately pilose below; racemes very paniculate; flowers purple, 5-8 mm. long; loments stipitate, 1-5-jointed, the joints triangular or nearly rhombic in outline, minutely uncinate-pubescent.—Panicled Tick Clover.

Specimens Examined: CHAMPAIGN CO.: Sandy soil in open woods along Sangamon River, 15 mi. w. of Urbana, *G. N. Jones 16266*, 28 August 1943. CHRISTIAN CO.: Taylorville, *W. E. Andrews*, 20 August 1889. FAYETTE CO.: Roadside near woods, n. of Loogootee, *Louise O'Dell 212*, 8 August 1942. HANCOCK CO.: Herb in prairie in cemetery, Carthage, *F. C. Gates 10094*, 15 September 1916. JACKSON CO.: Ditch, rich soil, Carbondale, *J. McCree & G. Wilson*, 21 August 1941. LA SALLE CO.: Starved Rock, *F. Thone 136*. LAWRENCE CO.: 1½ mi. n. of Sumner, *J. P. Sivert*, 24 August 1946. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 20 August 1889.

PEORIA CO.: Open, dry woods, *F. E. McDonald*, September 1902. RICHLAND CO.: Wet bottom land, 3½ mi. n. of Olney, *Vera L. Scherer 541*, 15 September 1947. ST. CLAIR CO.: *F. Brendel*. WABASH CO.: Banks of Wabash River on the upper commons, Mt. Carmel, *J. Schneck*, 28 September 1900. WOODFORD CO.: Sunny place, low ground, n. of Spring Bay, *V. H. Chase 7898*, 30 August 1942.

17. **Desmodium laevigatum** (Nutt.) DC. Prodr. 2:329 (1825); Patterson (1876) 11; Brendel (1887) 84; Jones (1945a) 166, (1950) 178.

Hedysarum laevigatum Nutt. Gen. 2:109 (1818).

Type Locality: "Habitat in the forests of New Jersey; rare."

Range: N.Y.—Fla.—Tex.—Mo.

Stem erect, glabrous, or nearly so, often glaucous; stipules subulate, caducous; leaflets ovate (terminal) to ovate-elliptical (laterals), obtuse, glabrate or puberulent above, glaucous beneath, often appressed-pilose, the terminal leaflet larger than the lateral ones; pedicels slender, 1 cm. or over in length; corolla rose to purple; loments 2-5 or 6-jointed, the joints nearly rhombic in outline, uncinate-pubescent.—Smooth Tick Clover.

In open woods and along roads, rare in Illinois.

Specimens Examined: STARK CO.: Open wooded hillside, n.w. of Wady Petra, *V. H. Chase*, 15 August 1895. TAZEWELL CO.: Opening in woods, near East Peoria, *V. H. Chase 10047*, 16 August 1948. WABASH CO.: Rich, sandy loam, roadside, near Patton, *J. Schneck*, October 1882.

27. LESPEDEZA Michx.

1. Stipules subulate; calyx-lobes narrow; plants perennial.
   2. Corolla purplish; legume strongly exserted from the calyx-lobes.
      3. Inflorescences on slender peduncles mostly exceeding the leaves.
         4. Stems prostrate or slightly ascending; inflorescence capitate or spicate.
            5. Stems glabrous or minutely appressed-pubescent..... .....1. *L. repens*
            5. Stems downy-pubescent.....2. *L. procumbens*
         4. Stems erect; inflorescence loosely paniculate..3. *L. violacea*
      3. Inflorescence sessile or nearly so.
         6. Leaflets oval, oblong, or suborbicular.
            7. Leaflets downy-pubescent beneath.....4. *L. stuvei*
            7. Leaflets glabrate or appressed-pubescent beneath..... .....5. *L. intermedia*
         6. Leaflets linear or linear-elliptic.....6. *L. virginica*
   2. Corolla yellowish-white; legume included in the calyx, or scarcely exserted.

8. Inflorescences many-flowered, borne near tips of stems or branches.
   9. Inflorescences cylindrical, uninterrupted spikes, or dense heads of crowded flowers; 1-2 cm. thick.
      10. Peduncles generally nearly equalling or much longer than the subtending leaves; legumes as long as the calyx lobes, or only slightly shorter; leaflets oval or suborbicular.....7. *L. hirta*
      10. Peduncles generally very much shorter than the subtending leaves; legumes conspicuously shorter than the calyx lobes; leaflets linear to elliptic or oblong.....9. *L. capitata*
   9. Inflorescences slender, interrupted spikes with peduncles nearly equalling or exceeding the leaves, loosely flowered, less than 1 cm. thick; leaflets linear.....8. *L. leptostachya*
8. Flowers borne singly or in clusters up to 4 in leaf axils all the way along the stem.....10. *L. cuneata*

1. Stipules ovate-lanceolate, scarious, persistent; calyx-lobes ovate; plants annual.
   11. Stem pubescence downwardly appressed; leaves subsessile, the petioles about 1 mm. long; flowers and fruits axillary, solitary or in 2's and 3's.....11. *L. striata*
   11. Stem pubescence upwardly appressed; leaves distinctly petioled, the petioles 4-10 mm. long; flowers and fruits in spike-like racemes, axillary or at tips of stems, with ciliated leafy bracts.....12. *L. stipulacea*

1. **Lespedeza repens** (L.) Bart. Prodr. Fl. Phila. 2:77 (1818); Lapham (1857) 509; Forbes (1870) 352; Patterson (1876) 11; Flagg & Burrill (1878) 233; Brendel (1887) 84; Pepoon (1927) 364; Jones (1945a) 167; Fuller (1946) 58; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 178.

Hedysarum repens L. Sp. Pl. 749 (1753).

Type Locality: "Habitat in Virginia."

Range: Conn.—Minn.—Tex.—Fla.

Stem trailing or prostrate, glabrous or finely appressed-pubescent; stipules subulate; leaflets oval or obovate, 6-15 mm. long, sparingly pubescent or glabrate above, appressed-pubescent below; obtuse or retuse, mucronulate; inflorescence loose, few-flowered; corolla pinkish-purple; legumes oval or suborbicular, 3-4 mm. long, minutely pubescent.—Creeping Bush Clover.

Roadsides, open woods, and fence rows; in dry, sandy soil. Local.

Specimens Examined: FRANKLIN CO.: Rich, sandy soil, Big Muddy River, Plumfield, *J. McCree*, 22 July 1941. JOHNSON CO.: In open area in woods, Vienna quad., R3E, T13S, on country road, 2 mi. e. from Route 1, ¼ mi. n. of Massac Co. line, on hillside s. of footprint rock, *J. Schopf 731*, 18 July 1931 (NHS).

2. **Lespedeza procumbens** Michx. Fl. Bor. Am. 2:70 (1803); Mead (1846) 60; Lapham (1857) 509; Patterson (1876) 11; Flagg & Burrill (1878) 233; Higley & Raddin (1891) 30; Huett (1897) 66; Robinson & Fernald (1908) 523; Deam (1910) 367; Thone (1925) 103; Pepoon (1927) 364; Fuller (1943) 95; Jones (1945a) 167; Bailey (1949) 52; Jones (1950) 179.

Type Locality: "Habitat in Virginia et Carolina."

Range: N.H.—Wis.—Tex.—Fla.

Stem trailing or procumbent, tomentose, with spreading hairs; stipules subulate; leaflets 10-25 mm. long, mainly oval or elliptical, obtuse or retuse, mucronulate, pubescent on both sides or sometimes glabrate above; corolla pinkish-purple; legume flat, oval or round, 3-4 mm. long.—Trailing Bush Clover.

Roadsides, hillsides; in dry soil. Local, chiefly in the southern half of the state.

Specimens Examined: ADAMS CO.: Camp Point, *A. B. Seymour*, 20 August 1879. FAYETTE CO.: Pasture, n. of Loogootee, *Louise O'Dell 217*, 28 July 1940. POPE CO.: Roadside, near Big Grand Pierre Creek, n.e. of Golconda, *H. E. Ahles 2775*, 11 August 1950. PULASKI CO.: *Fricke* (Brendel Herbarium), no date known. RICHLAND CO.: Bird Haven, Olney, *H. Shearer*, 25 September 1932. SALINE CO.: Rock woods, Womble Mt., 2 mi. n.w. of Herod, *G. S. Winterringer 1743*, 26 September 1948. UNION CO.: Anna, *A. B. Seymour*, 13 August 1880. WABASH CO.: Open woods, near Mt. Carmel, *J. Schneck*, 30 August 1904.

3. **Lespedeza violacea** (L.) Pers. Syn. 2:318 (1807); Mead (1846) 60; Lapham (1857) 510; Babcock (1872) 25; Patterson (1874) 5, (1876) 11; Schneck (1876) 526; Flagg & Burrill (1878) 233; Brendel (1887) 46; Higley & Raddin (1891) 30; Huett (1897) 66; Snare & Hicks (1898) 6; French (1926) 210; Pepoon (1927) 364; Ries (1939) 90; Fuller (1943) 95; Jones (1945a) 167; Fuller (1946) 58; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 179.

Hedysarum violaceum L. Sp. Pl. 749 (1753).

Lespedeza prairea (Mack. & Bush) Britton in Small Fl. S. E. U. S. ed. 1:641 (1903); Britton & Brown (1913) 2:404.

Type Locality: "Habitat in Virginia."

Range: N.H.—Minn.—Kans.—La.—Fla.; Mexico.

Stem erect, ascending, or spreading, about 4-10 dm. long, sparingly pubescent; leaflets oval or elliptical, thin, glabrous above, appressed-pubescent, and pale beneath; inflorescence loosely paniculate and few-

flowered; corolla purple, 6-10 mm. long; legume ovate, 4-6 mm. long, glabrate or sparingly pubescent.—Violet Bush Clover.

Dry soil in open woods. Throughout the state.

Specimens Examined: ADAMS CO.: Dry soil, Camp Point, *A. B. Seymour*, 23 August 1878. CHAMPAIGN CO.: High bank along Crystal Lake, Urbana, *G. P. Clinton*, 11 August 1899. CHRISTIAN CO.: Taylorville, *W. E. Andrews*, 20 August 1898. DE KALB CO.: Kishwaukee River bank, near Genoa, *E. W. & G. B. Fell*, 18 August 1946. FULTON CO.: Dry bluffs along Spoon River, Lewistown, *H. S. Pepoon*, September 1889. IROQUOIS CO.: Roadside, vicinity of Sugar Creek, e. of Milford, *H. E. Ahles 3244*, 2 September 1950. JACKSON CO.: Roadside ditch, 2½ mi. s. of Hollidayboro, *J. McCree Jr. & W. Welch*, 12 September 1941. JO DAVIESS CO.: Summit of wall, Apple River Canyon, *V. H. Chase 6768*, 4 September 1938. LA SALLE CO.: Starved Rock, *F. Thone 160*. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 7 August 1889. PEORIA CO.: Open, dry woods, Peoria, *F. E. McDonald*, August 1902. PIATT CO.: Weedy area, Allerton Park, w. of Monticello, *H. E. Ahles 3324*, 4 September 1950. RICHLAND CO.: Edge of oak-hickory woods, 3½ mi. n. of Olney, *Vera L. Scherer 502*, 16 August 1947. STARK CO.: Open woods, dry sandy soil, s.w. ¼, Sec. 30, Valley Twp., *V. H. Chase*, 1 August 1895. UNION CO.: Moist soil, Pine Hills, *G. D. Fuller 857*, 11 September 1941. WINNEBAGO CO.: Sandy soil, edge of woods, 1 mi. w. of Shirland, *E. W. & G. B. Fell*, 25 August 1946.

4. **Lespedeza stuvei** Nutt. Gen. 2:107 (1818); Jones (1945a) 167, (1950) 179; Fernald (1950) 925.

Lespedeza stuvei var. *angustifolia* Britt. in Trans. N. Y. Acad. Sci. 12:63 (1893); Blake (1924b) 29.

Type Locality: "Habitat in the sandy fields of New Jersey."

Range: Mass.—Mich.—Kans.—Okla.—Va.

Stem erect or ascending, simple or only slightly branched, 3-12 dm. high, leafy, velvety-pubescent; leaves crowded, short petioled; leaflets elliptical or suborbicular, obtuse or retuse, 1-2.5 cm. long, densely pubescent beneath; both petaliferous and apetalous flowers in dense, nearly sessile, axillary clusters; corolla violet-purple, 4-6 mm. long; legumes ovate to orbicular, densely pubescent, 4-6 mm. long.—Stuve's Bush Clover.

L. stuvei var. *angustifolia* Britt. has been reported by Blake from Coulterville, Randolph County (*W. H. Emig 242*, 25 August 1914). Plants of this variety are said to differ from the species only in the shape of their leaflets, which are linear or linear-oblong. Blake states, however, that the specimens from Coulterville are so nearly intermediate in form between the typical variety and *Lespedeza virginica* that it is difficult to determine their true position. Recently, Hopkins (1935:265) has reduced this variety to f. *angustifolia* (Britton) Hopkins. The form *angustifolia* has also been recognized under these names: *L. stuvei neglecta* Britton (Mem. Torr. Bot. Club 5:206, 1894); and *L. neglecta* (Britton) Mackenzie & Bush (Trans. Acad. Sci. St. Louis 12:17, 1902).

Woods, of local distribution, and not common in Illinois.

Specimens Examined: JERSEY CO.: Wooded bluffs, above Grafton, *Pepoon & Barrett*, 1 June 1932 (NHS). JOHNSON CO.: Rock, sunny, wooded slope, 10 mi. n.e. of Vienna, *Pepoon & Barrett*, 3 June 1932 (NHS). WABASH CO.: On Hanging Rock, near Mt. Carmel, *J. Schneck*, 16 October 1900.

5. **Lespedeza intermedia** (Wats.) Britton, Trans. N. Y. Acad. Sci. 12: 63 (1893); Fuller (1943) 95; Jones (1945a) 167; Fuller, Fell & Fell (1949) 74; Jones (1950) 179.

Lespedeza stuvei var. *intermedia* S. Wats. in A. Gray, Man. (ed. 6), 141 (1890); Higley & Raddin (1891) 29.

Lespedeza frutescens sensu Gleason (1912) 42; Britton & Brown (1913) 2:406; Pepoon (1927) 364.—Non (L.) Britt. (1894).

Type Locality: "Mass. to Fla., and west to Mich., Ill., e. Kan., and Ark."

Range: Me.—Minn.—Kans.—Tex.—Fla.

Stem erect, finely appressed-pubescent or glabrous, 3-10 dm. high; petioles the same length as the leaves or shorter; leaflets oval or elliptical, 1-4 cm. long, dark green and glabrous above, paler and finely appressed-pubescent beneath; flower clusters axillary and nearly sessile, usually crowded near the top of the stem; corolla violet-purple, 4-6 mm. long; legume ovate or oval, 4-7 mm. long, pubescent.—Wand Bush Clover.

Dry soil, along roadsides and in open woods; chiefly in southern Illinois.

Specimens Examined: ADAMS CO.: Sunny, dry hillside, 2 mi. s. of Quincy, *R. Brinker 3025*, 8 September 1943. FAYETTE CO.: In woods along Hurricane Creek, Mulberry Grove, *G. H. Boewe*, 1 September 1944 (NHS). MASSAC CO.: Roadsides, Joppa, *G. L. Stout*, 11 October 1928 (NHS). MONROE CO.: 3½ mi. w. of Waterloo, *G. H. Boewe*, 23 October 1941 (NHS). POPE CO.: Along open area at edge of open scrubby timber, 8 mi. n.e. of Golconda, *G. H. Boewe*, 14 October 1941 (NHS). UNION CO.: Dry summit of a cliff, Alto Pass, *H. S. Pepoon & T. D. Foster*, 11 September 1931 (NHS).

6. **Lespedeza virginica** (L.) Britton in Trans. N. Y. Acad. Sci. 12: 64 (1893); Gleason (1907) 184; Thone (1925) 103; Pepoon (1927) 364; Fuller (1943) 95; Jones (1945a) 167; Bailey (1949) 52; Jones (1950) 179.

Medicago virginica L. Sp. Pl. 778 (1753).

Hedysarum reticulatum Muhl. in Willd. Sp. Pl. 3:1194 (1803).

Lespedeza reticulata (Muhl.) Pers. Syn. Pl. 2:318 (1807); Mead (1846) 60; Brendel (1887) 46; Higley & Raddin (1891) 30.

Lespedeza virginica f. *deamii* Hopk. in Rhodora 37:265 (1935).

Type Locality: "Habitat in Virginia."

Range: N.H.—Wisc.—Kans.—Tex.—Fla.

Stem erect, 3-11 dm. high, with few branches, glabrate or appressed-pubescent, densely leafy; leaflets linear or linear-elliptical, 1-3.5 cm. long, finely appressed-pubescent on both sides, or glabrate above, and occasionally strigose beneath; flower clusters sessile or nearly so, axillary,

crowded on the upper part of the stem; legumes ovate or ovate-orbicular, 4 mm. long, pubescent or glabrate.—Slender Bush Clover.

A form in which the stem pubescence is wide-spreading or ascending, the lower surfaces of the leaflets merely appressed-pubescent, and the petioles slightly longer has been named *L. virginica* f. *deamii* Hopkins (Rhodora 37:265, 1935). This plant was collected from a black-jack oak association near Bath, Macon County, 17 August 1903, by H. A. Gleason. In Illinois it occurs only locally.

Dry, open woods, locally throughout Illinois.

Specimens Examined: ADAMS CO.: In woods near Coe Springs, Quincy, *R. A. Evers 778*, 15 August 1941. ALEXANDER CO.: Open woods on hill top, 2 mi. e. of Thebes, *H. M. Franklin 40*, 18 August 1949. CHRISTIAN CO.: Taylorville, *W. E. Andrews*, 26 August 1898. COLES CO.: Edge of woods, near Charleston, *G. N. Jones 17509*, 6 September 1946. COOK CO.: Dry copse, South Chicago, *E. J. Hill*, 9 September 1882. CUMBERLAND CO.: Woodland, n.w. of Toledo, *H. E. Ahles 2585*, 9 August 1950. HANCOCK CO.: Open woods, Cedar Glen, *F. C. Gates 10846*, 11 September 1917. JACKSON CO.: Clay bank, roadside near county line at Williamson and Jackson, *J. McCree & G. Wilson*, 27 August 1941. LA SALLE CO.: Starved Rock, *F. Thone 179*. LAWRENCE CO.: Edge of woods, 6 mi. s. of Sumner, *J. P. Sivert*, 19 August 1946. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 30 July 1889. MENARD CO.: River banks and open timber lands, *E. Hall*, 1861. PEORIA CO.: Open, dry woods, *F. E. McDonald*, September 1887. PIKE CO.: Mississippi River bottoms, Shepherd, *J. Davis 1163*, 15 October 1915. POPE CO.: Roadside, 3 mi. n.e. of Herod, *G. S. Winterringer 1477*, 16 August 1948. RICHLAND CO.: Northwest of Olney on Pumpkin Center Road, *R. Ridgway 1241*, 7 September 1920. ST. CLAIR CO.: Edge of woods, New Athens, *N. R. Piesbergen*, 4 July 1942. SALINE CO.: Rocky woods at Womble Mt., 2 mi. n.w. of Herod, *G. S. Winterringer 1744*, 26 September 1948. SHELBY CO.: Dry hilltop, Tower Hill, *R. G. Mills*, 29 September 1940. TAZEWELL CO.: Dry hilltop opening in woods, 4 mi. n. of E. Peoria, *V. H. Chase 11452*, 25 August 1950. UNION CO.: Barrens, and dry open fields, Wolf Lake, *G. D. Fuller 831*, 26 August 1941. WABASH CO.: Fence row, in sandy loam, old Palmyra, *J. Schneck*, 11 August 1900. WAYNE CO.: Pasture near woods, 3 mi. s. of Fairfield, *Mamie Walker*, 14 September 1949. WILLIAMSON CO.: E. of Marion, *A. F. Grandt*, 6 September 1950.

7. **Lespedeza hirta** (L.) Hornem. Hort. Havn. 699 (1807); Patterson (1876) 11; Schneck (1876) 526; Flagg & Burrill (1878) 233; Brendel (1887) 84; Britton (1893) 66; Pepoon (1927) 364; Fuller (1943) 95; Jones (1945a) 167; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 179.

Hedysarum hirtum L. Sp. Pl. 748 (1753).

Lespedeza polystachya Michx. Fl. Bor. Am. 2:71 (1803); Higley & Raddin (1891) 31; Snare & Hicks (1898) 6.

Lespedeza hirta (L.) Ell. Bot. S. C. & Ga. 2:207 (1822); Vasey (1861a) 141.

Lespedeza hirta var. *typica* Schindler in Engler, Jahrb. 49:623 (1913); Fernald (1941) 584.

Type Locality: "Habitat in Virginia."

Range: Me.—Minn.—La.—Fla.

Stem erect or ascending, villous; leaflets oval or suborbicular, pubescent, 1-4 cm. long; heads cylindrical, dense, on elongated peduncles often much longer than the leaves; flowers all complete; corolla yellowish-white, about 6 mm. long, the standard spotted with purple; legume oval or obovate, 7-8 mm. long, pubescent, about equalling the calyx-lobes.—Hairy Bush Clover.

Plants of this species conforming to the above description have been designated *L. hirta* var. *typica* Schindler (see Fernald in Rhodora 43:582, 1941).

Dry, sandy soil on wooded slopes and ridges; of local distribution in Illinois.

Specimens Examined: COOK CO.: Sandy soil, Thornton, *E. J. Hill,* 15 August 1864. JACKSON CO.: Dry sunny slopes, Giant City Park, *Pepoon & Barrett,* 1 May 1932 (NHS). LAKE CO.: Sandy swales, *Pepoon & Barrett,* 30 June 1932 (NHS). POPE CO.: Dry upland woods, Herod, *H. A. Gleason,* 23 August 1902. UNION CO.: Wooded ridges, Atwood Ridge, *G. D. Fuller 862,* 16 September 1941.

8. **Lespedeza leptostachya** Engelm. ex A. Gray in Proc. Am. Acad. 12: 57 (1876); Britton (1893) 68; Robinson & Fernald (1908) 525; Britton & Brown (1913) 2:408; Rydberg (1932) 492; Deam (1940) 1068; Jones (1945a) 168, (1950) 179; Fernald (1950) 927.

Type Locality: "Minnesota, Illinois, Iowa."

Range: Minn.—Ill.—Iowa.

Stem erect, simple or branched, 3-10 dm. high, silky-pubescent; leaflets linear, 2.5-3 cm. long, also silky-pubescent, exceeding the short petioles in length; spikes very slender, loosely-flowered, with peduncles as long as, or longer than the leaves; corolla yellowish-white; legumes ovate and pubescent, nearly equalling the calyx lobes.—Prairie Bush Clover.

Prairies, rare in Illinois.

Specimens Examined: MC HENRY CO.: Union, *A. B. Seymour,* 1 September 1881.

A. Gray (1876:57) cites a specimen from Illinois collected by M. S. Bebb. Presumably this specimen came from Winnebago County, where Bebb actively collected. Britton (1893:68) cites a specimen from Fountaindale, Winnebago County, also collected by Bebb. Neither specimen has been seen by the writer.

9. **Lespedeza capitata** Michx. Fl. Bor. Am. 2:71 (1803); Engelmann (1844) 96; Mead (1846) 60; Lapham (1857) 510; Babcock (1872) 25; Patterson (1874) 5, (1876) 11; Schneck (1876) 526; Flagg & Burrill (1878) 233; Brendel (1887) 46; Higley & Raddin (1891) 31; Huett

(1897) 66; Snare & Hicks (1898) 6; McDonald (1900) 103; Gleason (1907) 184, (1910a) 21, (1910b) 159; Gates (1912) 361, (1923) 169; Thone (1925) 103; Gates (1926) 231; Pepoon (1927) 364; Fuller (1943) 95; Jones (1945a) 167; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 179.

Lespedeza capitata var. *vulgaris* T. & G., Fl. N. Am. 1:368 (1840); Fernald (1941) 577.

Lespedeza capitata var. *angustifolia* sensu Babcock (1872) 25; Patterson (1876) 11; Flagg & Burrill (1878) 233; non Pursh (1814).

Lespedeza angustifolia sensu Higley & Raddin (1891) 31; Huett (1897) 66; Pepoon (1927) 364; non (Pursh) Ell. (1822).

Lespedeza capitata var. *longifolia* sensu Britton (1893) 67; Robinson & Fernald (1908) 524; non (DC.) T. & G. (1840).

Lespedeza velutina Bickn. in Torreya 1:102 (Sept., 1901).—Non Dunn (Feb., 1901).

Lespedeza capitata var. *velutina* (Bickn.) Fern. in Rhodora 10:51 (1908); Benke (1935) 423.

Lespedeza capitata var. *stenophylla* Bissell & Fernald in Rhodora 14: 92 (1912); Fernald (1941) 579.—Type: Peoria, *F. E. McDonald*, in 1904.

Lespedeza longifolia sensu Britton & Brown (1913) 2:407; Jones (1945a) 168, (1950) 179; non DC. (1825).

Lespedeza capitata var. *typica* Fern. in Rhodora 43:576 (1941).

Lespedeza capitata var. *stenophylla* f. *argentea* Fern. in Rhodora 43: 579 (1941).—Type: *H. A. Gleason*, Havana, Mason County, in August 1903.

Type Locality: "Hab. in Virginia et Carolina."

Range: Me.—S.D.—Kans.—La.—Fla.

Stem stiff and erect, mainly unbranched and wand-like, generally velvety-pubescent but sometimes appressed pubescent or glabrate, 5-15 dm. high; leaves nearly sessile; leaflets variable, from linear to elliptic or oblong, generally silky-pubescent below, glabrous to silky-pubescent above; heads subglobose, on peduncles much shorter that the leaves, or nearly sessile in the upper axils; corolla yellowish-white, the standard with a purple spot; legume ovate-oblong, 5-6 mm. long, pubescent, much exceeded by the calyx lobes.—Round-headed Bush Clover.

Examination of 58 sheets of specimens shows that in Illinois a wide range of variation in type and amount of pubescence of stem, in length, width, and pubescence of leaflets, as well as in length of peduncle and shape of inflorescence occurs in this species. As is indicated above, numerous attempts have been made to give certain rather constant combinations of these characters varietal or even specific status. These recognizable types represent the extreme expression of certain characters. They are not sharply set apart from other members of the species popu-

lation, however, since a definite series of intergradations can be rather easily established with a large number of specimens at hand. Furthermore, such types do not seem to be characterized by distinctness of range. It is known, also, that interspecific hybridization may occur in this genus, a fact which further complicates any attempts to classify the numerous types observable. Accordingly, the writer prefers to indicate the broad limits of the species as usually understood, without attempting to place in definite taxonomic categories at this time the variations occurring within these limits.

Fassett (1939:102) states that in Wisconsin, *L. capitata* "consists of no less than eight races or varieties," distinguished upon the basis of the characters of shape and pubescence of leaflets. He states further that "in the field two or more of these forms may be found in almost any colony of *L. capitata*," indicating that these variations do not exhibit geographical segregation. For these reasons he made no attempt to give nomenclatural recognition of the variations in Wisconsin as separate species or varieties.

Dry barrens and prairies, open woods, along roads, and in fields; throughout the state.

Specimens Examined: ADAMS CO.: Along roadside, w. of Camp Point, *R. A. Evers 866*, 7 September 1941. CHAMPAIGN CO.: Open woods along Sangamon River, 15 mi. w. of Urbana, *G. N. Jones 13103*, 29 September 1940. CLAY CO.: Dry ground, s. of Flora, *H. E. Ahles 2679*, 9 August 1950. COOK CO.: Sandy roadside, Evanston, *Agnes Chase*, 27 August 1896. HANCOCK CO.: In cemetery, Carthage, *F. C. Gates 10100*, 5 September 1916. HENDERSON CO.: Sandy barrens near Oquawka, *H. N. Patterson*. HENRY CO.: Galva, *F. E. McDonald*, September 1883. KANE CO.: Dry slope, Elgin, *E. E. Sherff*, 27 August 1912. KANKAKEE CO.: Near St. Anne, *G. N. Jones 16037*, 14 August 1943. KNOX CO.: Original prairie, near Williamsfield, *V. H. Chase 10721*, 21 August 1949. LAKE CO.: Sandy soil, Waukegan, *McDougall 244*, 18 August 1928. LA SALLE CO.: Starved Rock, *L. C. Piatt*, September 1880. LEE CO.: Sand, Sec. 10, May Twp., *V. H. Chase 5313*, 1 September 1935. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 21 August 1889. MARION CO.: Roadside, 2 mi. s. of Alma, *G. S. Winterringer 1494*, 19 August 1948. MARSHALL CO.: Dry hilltop, opening in woods along west fork of Senachwine Creek, near Lawn Ridge, *V. H. Chase 1559*, 6 October 1907. MC HENRY CO.: Algonquin, *W. A. Nason*, 26 August 1878. MENARD CO.: Dry barrens and prairies, *E. Hall* (no date or number). OGLE CO.: Dry fields, common, White Pines Forest State Park, *Alice L. Hills*, 10 September 1941. PIATT CO.: Woods, Monticello, *A. B. Seymour*, 29 July 1880. PEORIA CO.: Dry prairie, near Princeville, *V. H. Chase 782*, 24 August 1900. RICHLAND CO.: Clay hillside, 3½ mi. n.e. of Olney, *Vera L. Scherer 509*, 1 September 1947. WABASH CO.: Dry, sandy soil, old Palmyra, *J. Schneck*, 14 September 1900. WAYNE CO.: Marsh, ¾ mi. e. of Geff, *Mamie Walker*, 8 September 1949. WHITESIDE CO.: Dry soil, Prophetstown, *W. S. Moffatt 534*, 15 September 1896. WILL CO.: Railroad, Custer Park, *W. S. Moffatt 167*, 9 September 1889. WINNEBAGO CO.: Low prairie, ½ mi. w. of Shirland, *E. W. & G. B. Fell*, 11

August 1946. WOODFORD CO.: Original prairie, sandy soil, Spring Bay, *V. H. Chase 11483,* 28 August 1950.

10. **Lespedeza cuneata** (Dumont) G. Don, Gen. Hist. Dichlam. Pl. 2: 307 (1832); Jones, Ahles, Fuller & Winterringer (1951) 501.

Hedysarum sericeum Thunb. Fl. Jap. 287 (1784).

Anthyllis cuneata Dumont de Courset, Bot. Cult. (ed. 2) 6:100 (1811).

Lespedeza sericea (Thunb.) Miq. in Ann. Mus. Bot. Lugd. -Bat. 3:49 (Prol. Fl. Jap. 237) 1867.

Type Locality: "Les Indes orientales."

Range: Pa.—Mo.—La.—Fla.; introduced from China and Japan.

Perennial, much-branched, often reaching a height of 1.5 m., tending to be shrubby; leaflets 1-2 cm. long, oblanceolate, cuneate, truncate or emarginate, mucronulate, grayish-green and sericeous below, bright green, glabrous above; flowers shorter than the leaves, in clusters of 1-4 in the leaf axils; corolla creamy-yellow, with purple spots; legume 1.5-2.0 mm. long, oval, ciliate.—Chinese Bush Clover.

Fields and roadsides, southern Illinois; extensively planted as forage crop and soil binder; and spreading as an escape plant.

Specimens Examined: FAYETTE CO.: Wooded pasture, 2 mi. s. of Ramsey, *H. M. Franklin,* 19 August 1949. JACKSON CO.: Near Elkville, *A. F. Grandt,* 4 September 1950.

11. **Lespedeza striata** (Thunb.) H. & A. Bot. Beechey 262 (1841); Schneck (1891) 375; Britton (1893) 68; Darlington (1923) 180; Benke (1929) 146; Rydberg (1932) 492; Jones (1945a) 168; Isely (1948) 23; Bailey (1949) 52; Jones (1950) 179; Fernald (1950) 927.

Hedysarum striatum Thunb. Fl. Jap. 289 (1784).

Type Locality: Japan.

Range: Va.—Ill.—Kans.—La.—Fla. Naturalized from Asia.

Annual, prostrate or spreading, erect in dense stands, up to 20 cm. in height; stem pubescence downwardly appressed, in lines, or covering entire surface; leaves very short-petioled or subsessile; stipules ovate-lanceolate, scarious, persistent, 1-1.8 mm. wide; leaflets obovate, oblong, or narrowly elliptical; flowers solitary or in 2's and 3's, axillary and sessile or nearly so; calyx-teeth 5, subequal; legumes acuminate at tip with distinct point or beak, weakly reticulate, brownish-black, not glandular; mature seeds mottled black, noticeably lobed near hilum.—Common Lespedeza.

Old fields, or on roadsides in the southern half of the state.

Specimens Examined: ALEXANDER CO.: Horseshoe Island, *G. N. Jones 12041,* 5 July 1940. GALLATIN CO.: Roadside, Shawneetown quad., R9E, T11S, *J. C. Schopf,* 15 August 1931 (NHS). JACKSON CO.: In light, sunny timber, growth from 3-8 inches, e. of Makanda, *L. P. Cranwill,* 18 July 1917. JOHNSON CO.: Roadside, near Vienna, *J. C. Schopf,* 1931 (NHS). MARION CO.: Peach orchard, e. of Centralia, *L. Campbell & G. J. Alexopoulos,* 4 Au-

gust 1930 (NHS). POPE CO.: Herod, *G. P. Clinton*, 28 July 1898. UNION CO.: In open, dry soil, very common, Fountain Bluff, *L. P. Cranwill*, 28 July 1917. WABASH CO.: Dry, hard, clayey soil; near Mt. Carmel, *J. Schneck*, October 1902.

12. **Lespedeza stipulacea** Maxim. Prim. Fl. Amur. 85 (1859); Jones (1950) 179.

Type Locality: Amur.

Range: Pa.—Iowa—Kans.—Okla.—Ga.

Annual, very similar in habit to *L. striata*, often taller; stems glabrate or sparsely strigose, the hairs upwardly appressed; leaves with distinct petioles, 4-10 mm. long; stipules 3-4 mm. wide on main stems; flowers occurring in spike-like racemes with ciliated leafy bracts; calyx-teeth 5, appearing as 4 as result of nearly complete union of posterior 2; legume rounded at tip with short, straight, or recurved point, conspicuously reticulate and glandular; seeds solidly blackish, hardly lobed.—Korean Bush Clover.

Fields and roadsides; cultivated as forage, and used as soil binder in erosion control; most abundant in southern half of the state; recently introduced from Asia and rapidly becoming naturalized.

Specimens Examined: ADAMS CO.: Near Camp Point, *Irene Steiner*, 4 July 1948. CHAMPAIGN CO.: Edge of field, St. Joseph, *G. N. Jones 18889*, 7 September 1949. FAYETTE CO.: Bank of ditch, 1 mi. n. of Schobonier, *V. H. Chase 8530*, 28 September 1946. HENRY CO.: On sand prairie, *R. J. Dobbs*, 3 October 1937. LAWRENCE CO.: Roadside, near Sumner, *J. P. Sivert*, 29 August 1947. POPE CO.: Roadside, n. of Herod, *H. E. Ahles 2738*, 10 August 1950. RICHLAND CO.: Oak-hickory woods, 1 mi. s. of Calhoun, *Vera L. Scherer 518*, 1 September 1947.

28. STYLOSANTHES Sw.

Stylosanthes biflora (L.) B. S. P. Prel. Cat. N. Y. 13 (1888); Robinson & Fernald (1908) 525; Jones (1945a) 168, (1945b) 282; Bailey (1949) 52; Jones (1950) 179; Fernald (1950) 928.

Trifolium biflorum L. Sp. Pl. 773 (1753).

Stylosanthes elatior Sw. in Svensk. Acad. Handl. 296 (1789); Brendel (1860) 294; Patterson (1876) 11; Schneck (1876) 526; Flagg & Burrill (1878) 233; Brendel (1887) 84.

Stylosanthes riparia sensu Fernald (1945) 216, (1950) 928; non Kearney (1897).

Stylosanthes biflora var. *hispidissima* (Michx.) Pollard & Ball in Proc. Biol. Soc. Wash. 13:134 (1900); Fernald (1945) 216, (1950) 928.

Type Locality: "Habitat in Virginia, Canada."

Range: N.Y.—Kans.—Tex.—Fla.

Stem wiry, often branching from the base, the branches spreading, ascending, or erect, glabrate or more or less villous; stipules sheathing the

stem, tips filiform; leaflets 3, lanceolate, oblanceolate, or almost linear, nearly acute at both ends, 1-3.5 cm. long; flowers few, usually terminal, of two types, petaliferous and sterile, or apetalous and fertile, both nearly sessile; floral bracts yellow-bristled and entire; corolla yellow, 8 mm. long; legume obovate, pubescent, 2-jointed, the lower empty or abortive. —Pencil Flower.

Plants with stems copiously hispid throughout have been designated *S. biflora* var. *hispidissima* (Michx.) Pollard & Ball. Study of a total of 16 sheets of Illinois specimens shows that specimens on 4 of the sheets have hispid stems, with others showing varying degrees of pubescence, or glabrate.

In dry woods, not common; chiefly in southern Illinois.

Specimens Examined: HARDIN CO.: Rocky woods at Buzzard's Pt., 9.5 mi. s. of Equality, *G. Winterringer 1077*, 30 May 1948. JACKSON CO.: Dry open woods on hilltop, rare, Giant City State Park, *G. D. Fuller*, 12 June 1946. JOHNSON CO.: Rocky soil at Cedar Grove, 4 mi. s. of Goreville, *G. S. Winterringer 1175*, 12 June 1948. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 21 August 1889. POPE CO.: Dry upland woods, Herod, *H. A. Gleason*, 23 August 1902. ST. CLAIR CO.: *F. Brendel*, date unknown. SALINE CO.: Womble Mt., *H. E. Ahles*, 16 October 1949. UNION CO.: Cobden, *A. B. Seymour*, 14 August 1880.

29. VICIA L.

1. Flowers single or paired, on short peduncles, or nearly sessile, axillary; plants annual.
   2. Flowers 10-18 mm. long; leaflets 2-6 pairs, upper ones linear to linear-oblong or oblanceolate.....1. *V. angustifolia*
   2. Flowers 2-2.5 cm. long; leaflets 4-8 pairs, upper ones elliptical or oblanceolate to cuneate, truncate or emarginate.....2. *V. sativa*
1. Flowers in axillary racemes, on elongated peduncles; plants perennial or annual (*V. villosa*).
   3. Racemes densely 15-40-flowered.
      4. Stems generally villous; flowers 14-18 mm. long; calyx gibbous on upper side at base.....3. *V. villosa*
      4. Stems striate, inconspicuously appressed-pubescent or glabrate; flowers 9-14 mm. long; calyx not gibbous on upper side but merely rounded.....6. *V. cracca*
   3. Racemes loosely 3-20-flowered.
      5. Flowers 3-9, bluish-purple, 1.5-2 cm. long; stipules semi-sagittate, sharply-toothed.....4. *V. americana*
      5. Flowers 3-20, white, tinged with blue, about 1 cm. long; stipules linear or linear-lanceolate.....5. *V. caroliniana*

1. **Vicia angustifolia** Reichard, Fl. Moen. Franc. 2:44 (1778); Jones (1945a) 168, (1950) 180.

Vicia sativa var. *angustifolia* (L.) Ser. in DC. Prodr. 2:361 (1825).

Type Locality: European.

Range: Nova Scotia–Fla.–Mo.–Minn.; British Columbia–Calif. Naturalized from Europe.

Annual, very similar to *V. sativa* in habit, but glabrous or puberulent; leaflets 2-6 pairs, 1.5-3 cm. long, the upper ones linear and mucronate, the lower oblong or obovate and truncate; flowers 1 or 2 in the upper axils, 10-18 mm. long; corolla purple; legume linear-oblong, glabrous, 4-5.5 cm. long, 5-7 mm. wide, glabrous, black at maturity.—Narrow-leaved Vetch.

Roadsides, fields, and waste places; of local occurrence, more common in southern Illinois.

Specimens Examined: BOONE CO.: I. C. R. R., 2 mi. s.e. of Irene, *E. W. & G. B. Fell*, 5 July 1946. JACKSON CO.: Near Carbondale, *J. McCree*, 14 May 1941. PULASKI CO.: Roadside ditch, s. of Villa Ridge, *H. E. Ahles 3834*, 8 May 1951. SALINE CO.: Roadside bank, 2 mi. s. of Harrisburg, *H. E. Ahles 3735*, 7 May 1951. UNION CO.: Ballast of M. & O. R. R., n. of Mill Creek, *Pepoon & Barrett*, 15 May 1932 (NHS).

2. **Vicia sativa** L. Sp. Pl. 736 (1753); Mead (1846) 60; Williams (1877) 490; Flagg & Burrill (1878) 234; Snare & Hicks (1898) 6; Pepoon (1927) 364; Jones (1945a) 168; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 180.

Type Locality: "Habitat inter Europae segetes hodie."

Range: Ga.–Ala.–Minn.–Me.; Pacific Coast. Escaped from cultivation, native of Eurasia.

Annual; spreading, ascending or climbing, pubescent, and in age, glabrate; stipules sharply-toothed; leaflets 4-8 pairs, oblanceolate, obovate, or narrowly elliptical, truncate to emarginate and mucronate at apex, 1.5-3 cm. long; flowers usually in pairs, axillary, sessile, or short-peduncled, 2-3 cm. long, showy, purple or rose-color; legume linear-oblong, brownish, pubescent when young, 4-8 cm. long, 7-8 mm. wide.—Spring Vetch.

Along railroads, in abandoned fields, and waste places; escaped from cultivation; not common.

Specimens Examined: ALEXANDER CO.: S.e. of Cache, *H. E. Ahles 1141*, 28 May 1949. WARREN CO.: Railroad grades, near Youngstown, *F. E. McDonald*, 20 June 1893.

3. **Vicia villosa** Roth, Tent. Fl. Germ. 2:182 (1789); Pepoon (1927) 365; McDougall (1936) 172; Fuller (1943) 95; Jones (1945a) 168; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 180.

Type Locality: European.

Range: Me.–Saskatchewan–Kans.–Pa.; British Columbia–Calif. Naturalized from Europe.

Annual or biennial; stem 3-10 dm. high, villous; leaflets 10-24, narrowly elliptical to linear, villous; flowers 14-18 mm. long, blue-violet and white, occasionally all white; calyx strongly gibbous at the base, the lobes almost thread-like; legume broadly oblong, flat, oblique at each end, 2.5-3.5 cm. long, 7-10 mm. wide, glabrous.—Hairy Vetch.

Roadsides, in fields as weeds, and in waste places; sometimes escaped from cultivation; not uncommon in Illinois.

Specimens Examined: ALEXANDER CO.: Gravel roadside, 1 mi. e. of McClure, *H. M. Franklin*, 13 June 1949. BOONE CO.: Roadside, near Poplar Grove, *E. W. & G. B. Fell*, 3 June 1946. CHAMPAIGN CO.: Experiment Station Farm, Urbana, *G. P. Clinton*, 17 June 1891. DE KALB CO.: Prairie, near Genoa, *V. H. Chase 10325*, 22 May 1949. IROQUOIS CO.: Roadside, ½ mi. e. of Watseka, *H. E. Ahles 2545*, 5 August 1950. LEE CO.: Prairie roadside, 5 mi. s.w. of Dixon, *E. Keithley*, 3 June 1945. OGLE CO.: Growing in field of strawberries, Oregon, *E. J. Hill*, 8 July 1905. PEORIA CO.: Roadside, Chillicothe, *V. H. Chase 9663*, 15 June 1948. ST. CLAIR CO.: Roadside, locally abundant, East St. Louis, *G. D. Fuller*, 4 June 1947. UNION CO.: On roadsides, Wolf Lake, *G. D. Fuller 579*, 22 May 1941. VERMILION CO.: Along Vermilion River between Oakwood and Collison, *G. N. Jones 11577*, 23 June 1940. WABASH CO.: Roadside, apparently an escape, in dry, clayey soil, *J. Schneck*, 1 June 1903.

4. **Vicia americana** Muhl. ex Willd. Sp. Pl. 3:1096 (1803); Brendel (1859a) 584; Vasey (1861a) 141; Babcock (1872) 25; Patterson (1876) 11; Williams (1877) 490; Flagg & Burrill (1878) 234; Brendel (1887) 46; Higley & Raddin (1891) 31; Huett (1897) 66; Gates (1912) 361; Thone (1925) 103; Pepoon (1927) 365; McDougall (1936) 172; Jones (1945a) 168; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 180; Fernald (1950) 932.

Type Locality: "Habitat in Pennsylvania."

Range: New Brunswick—Va.—Ariz.—British Columbia.

Perennial; stem glabrous or nearly so, trailing or climbing, 3-10 dm. high; leaves nearly sessile; stipules semi-sagittate, sharply-toothed; leaflets 8-14, elliptical or ovate-oblong, obtuse, mucronulate; racemes shorter than the leaves, 3-9-flowered; corolla bluish-purple, 1.5-2 cm. long; legume short-stalked, glabrous, 2.5-3 cm. long.—American Vetch.

River banks, moist thickets, woods, railroad embankments. Chiefly in northern Illinois.

Specimens Examined: COOK CO.: Woods along Des Plaines River, Maywood, *Agnes Chase 806*, 27 May 1898. DU PAGE CO.: Naperville, *R. Kienholz*, May 1915. KANE CO.: Aurora, without definite locality, 1 July 1869, collector unknown. KANKAKEE CO.: Thickets, Kankakee, *E. J. Hill*, 29 May 1873. LAKE CO.: In field, near Antioch, *G. N. Jones 15174*, 3 June 1942. MC HENRY CO.: Algonquin, *W. A. Nason*, 11 June 1878. OGLE CO.: Dry bank, 3 mi. e. of Munroe, *V. H. Chase 10337*, 22 May 1949. STARK CO.: Waste ground, near Wady Petra, *V. H. Chase 1411*, 9 June 1907.

5. **Vicia caroliniana** Walt. Fl. Car. 182 (1788); Vasey (1860) 119, (1861a) 141; Babcock (1872) 25; Patterson (1876) 11; Williams (1877) 490; Flagg & Burrill (1878) 234; Brendel (1887) 84; Higley & Raddin (1891) 31; Pepoon (1927) 365; Jones (1945a) 168; Fuller, Fell & Fell (1949) 74; Jones (1950) 180.

Type Locality: South Carolina.

Range: Ontario—Minn.—Kans.—Ga.

Perennial; glabrous or nearly so; stems trailing or climbing, 4-10 dm. long; leaves short-petioled; stipules linear; leaflets 8-18, oblong to linear-oblong, obtuse, 1-2 cm. long; racemes 3-20-flowered, loose; calyx teeth very short; corolla white, about 1 cm. long, the keel often bluish-tipped; legume flat, oblong, 2.5-3 cm. long, glabrous.—Carolina Vetch.

Woods, roadsides, and river banks; chiefly in northern Illinois.

Specimens Examined: COOK CO.: Woods along Des Plaines River, n. of Thatcher's Park, *Agnes Chase 16,* 2 June 1897. DU PAGE Co.: Edge of woods, Warrenville, *L. M. Umbach 58,* 10 May 1895. LAKE CO.: Ballast of the C. & N. W. R. R., Beach, *F. C. Gates 1649,* 16 June 1907. MC HENRY CO.: Algonquin, *W. A. Nason.* WINNEBAGO CO.: Woods, Rock Cut Forest Preserve, *E. W. & G. B. Fell,* 20 April 1947.

6. **Vicia cracca** L. Sp. Pl. 735 (1753); Higley & Raddin (1891) 31; Pepoon (1927) 365; Jones (1945a) 168; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 180; Fernald (1950) 932.

Type Locality: "Habitat in Europae, pratis agris."

Range: Newfoundland—N.J.—Kans.—Idaho—British Columbia. Naturalized from Europe.

Perennial; stem slender and weak, trailing or climbing, striate, appressed-pubescent or glabrate; stipules half-sagittate, entire; leaflets 8-24, linear-oblong, mucronate; racemes axillary, dense, 15-40-flowered, one-sided; flowers bluish-purple, rarely white, 9-15 mm. long; calyx not gibbous at the base but merely rounded, lower lobes long-triangular, shorter than the tube, upper lobes broad and short; legume oblong, flat, oblique at each end, glabrous, 2-2.5 cm. long.—Bird Vetch.

Fields, waste places, borders of thickets; of local distribution in Illinois; not common.

Specimens Examined: MASON CO.: Along roadside, Havana, *Ann Schertiger,* 3 July 1948. VERMILION CO.: Along the middle fork of the Vermilion River between Oakwood and Collison, *G. N. Jones 11611,* 23 June 1940. WAYNE CO.: Near Fairfield, *H. F. Thut,* 1 June 1946. WINNEBAGO CO.: Along I. C. R. R., 2 mi. w. of Rockford, *E. W. & G. B. Fell,* 13 June 1948.

Specimens from Cook County are reported by Higley & Raddin (1891:31) and Pepoon (1927:365). Fuller (1946:58) reports this species from Jo Daviess County. No specimens from these counties have been seen by the writer.

Vicia hirsuta (L.) Koch. has been reported from Illinois by Jones

(1945a:168). The writer has seen no Illinois specimens, and at the present time finds no reason for including it with the spontaneous flora of the state.

30. LATHYRUS L.

1. Leaflets 2.....1. *L. latifolius*
1. Leaflets 4-14.
   2. Stipules nearly equalling the adjacent leaflets in size.....2. *L. maritimus*
   2. Stipules decidedly smaller than the adjacent leaflets.
      3. Flowers purplish, pink, or occasionally white.
         4. Leaflets 4-8 (rarely 10); peduncles 2-9-flowered.
            5. Leaflets linear to elliptical; stem winged..3. *L. palustris*
            5. Leaflets elliptical to broadly lanceolate; stem only angled.....4. *L. myrtifolius*
         4. Leaflets 8-14; peduncles 10-24-flowered (rarely 8-flowered).....5. *L. venosus*
      3. Flowers yellowish-white.....6. *L. ochroleucus*

1. **Lathyrus latifolius** L. Sp. Pl. 733 (1753); Flagg & Burrill (1878) 234; Jones (1945a) 169, (1950) 180.

Type Locality: "Habitat in Europae sepibus."

Range: Conn.—D.C.—Calif.—Ore. Probably occurring locally throughout most of the northern states, escaped from cultivation, native of Europe.

Perennial, glabrous throughout; stems broadly-winged, 1-2 m. long; stipules leafy, often 2.5 cm. long, the upper lobe lanceolate; petioles winged, equalling or exceeding the stipules; leaflets 2, lanceolate to ovate-lanceolate, 4-7 cm. long, veiny; peduncles exceeding the leaves, many-flowered; flowers showy, purple, white or pink, 2.0-2.5 cm. long; legumes broadly linear, 6-10 cm. long, reticulate.—Perennial Pea.

Roadsides and waste places, locally throughout Illinois. Escaped from cultivation.

Specimens Examined: CHAMPAIGN CO.: Roadside, near Urbana, *G. N. Jones 12510*, 20 July 1940; roadside along the Salt Fork River, near Urbana, *G. N. Jones 14229*, 13 July 1941.

2. **Lathyrus maritimus** (L.) Bigel. Fl. Bost. Ed. 2:268 (1824); Vasey (1861a) 141, (1870b) 342; Warne (1870) 314, 347; Babcock (1872) 25; Patterson (1876) 11; Flagg & Burrill (1878) 234; Higley & Raddin (1891) 31; Gates (1912) 361; Pepoon (1927) 365; Jones (1945a) 169, (1950) 180.

Pisum maritimum L. Sp. Pl. 727 (1753).

Lathyrus japonicus Willd. var. *glaber* (Ser.) Fernald in Rhodora 34: 181 (1932); Deam (1940) 618.

Type Locality: "Habitat in Europae borealis littoribus maris arenalis."

Range: Arctic Coast—N.J.—and Ore.; lake shores: N.Y.—Minn.—Manitoba; Europe.

Perennial, somewhat fleshy, more or less glabrous, slightly glaucous; stems thickened, angled; stipules broadly ovate, hastate and foliaceous, nearly as large as the nearest leaflets; leaflets 3-6 pairs, thick, oval, obovate or broadly elliptical; peduncles shorter than the leaves, 6-10-flowered; corolla purple, 18-25 mm. long; legumes broadly linear, glabrous or somewhat pubescent, 4-8 cm. long, reticulate.—Beach Pea.

Doubt has been expressed (Fernald, 1932:177-87) concerning the binomial *Lathyrus maritimus* (L.) Bigel. Gleason (1947:209-12) has clearly and forcefully summarized the arguments in favor of retaining this name, and the writer feels there is no question about the propriety of continuing to apply it to the species under consideration.

Sandy beaches of Lake Michigan. Rare.

Specimens Examined: COOK CO.: Sandy shore of Lake Michigan, South Chicago, *E. J. Hill*, 19 June 1875; sand of the lake shore, Evanston, *W. S. Moffatt 505*, 20 October 1894; sand, base of clay cliff, Evanston, *Agnes Chase*, 17 June 1896. LAKE CO.: Sand beaches of Lake Michigan, Waukegan, *H. A. Gleason & F. D. Shobe 291*, 18 August 1906; Waukegan, *R. Kienholz*, 5 June 1915; beach, n. of Waukegan and e. of Glenwood Ridge, *F. C. Gates 3157*, 19 July 1909.

3. **Lathyrus palustris** L. Sp. Pl. 733 (1753); Mead (1846) 60; Bebb (1859) 586; Brendel (1859a) 584; Vasey (1861a) 141; Warne (1870) 314, 347; Babcock (1872) 26; Patterson (1874) 5, (1876) 11; Schneck (1876) 526; Williams (1877) 490; Flagg & Burrill (1878) 234; Brendel (1887) 46; Higley & Raddin (1891) 32; Huett (1897) 67; Snare & Hicks (1898) 6; Fernald (1911) 50; Sherff (1912) 432, (1913) 602; Pepoon (1927) 365; Jones (1945a) 169; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 180; Fernald (1950) 934.

Type Locality: "Habitat in Europae borealis pascuis paludosis."

Range: Labrador—N.Y.—S.D.—Ore.—Alaska; Eurasia.

Perennial, stem glabrous or slightly pubescent, trailing or climbing, 3-12 dm. long, commonly winged, or sometimes wingless, or angled; stipules half-sagittate to lanceolate, ovate-lanceolate and linear; leaflets 2-5 pairs, linear to elliptical, 2.5-7 cm. long; peduncles 2-9-flowered; flowers purple, 1.0-2.5 cm. long; legume linear, sessile, 4-5 cm. long.—Marsh Pea.

This species is widely recognized as being exceedingly variable (see Fernald, 1911:47-52). One variation characterized by its smaller size (1-6 dm. high), slightly winged or wingless glabrous stems, linear to lanceolate leaflets, and flowers about 1.5 cm. in length has been named *L. palustris* var. *linearifolius* Ser. ex DC., Prodr. 2:371 (1825). This plant

is not distinguished from others of the species by a difference in habitat and range within Illinois; therefore, it is referred to the species in the citations of specimens.

Banks of rivers and lakes, thickets, ditches, wet meadows. Local.

Specimens Examined: CHAMPAIGN CO.: Clay bank in woods along river, Mahomet, *G. P. Clinton*, 23 May 1900. COOK CO.: Rich prairies, near South Chicago, *O. E. Lansing, Jr. 1797*, 26 June 1903. DU PAGE CO.: Railroad, Elmhurst, *W. S. Moffatt 171*. LAKE CO.: Beaches along Lake Michigan, Waukegan, *H. A. Gleason & F. G. Shobe 297*, 20 August 1906. MC HENRY CO.: Ringwood, *G. Vasey*, no date. TAZEWELL CO.: Bogs, *F. E. McDonald*, June 1889. WABASH CO.: Quagmire, near Mt. Carmel, *J. Schneck*, 5 June 1900.

4. **Lathyrus myrtifolius** Muhl. ex Willd. Sp. Pl. 3:1091 (1803); Mead (1846) 60; Jones (1945a) 169; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 180.

Lathyrus palustris var. *myrtifolius* (Muhl.) A. Gray, Man. Ed. 2:104 (1856); Babcock (1872) 26; Patterson (1876) 11; Flagg & Burrill (1878) 234; Higley & Raddin (1891) 32; Pepoon (1937) 365; Gates (1912) 361.

Type Locality: "Habitat in Pennsylvania."

Range: New Brunswick–Manitoba–Tenn.–N.C.

Very similar to *L. palustris* from which it is separated by its wingless but angled, glabrous stems; leaflets which are elliptical to broadly lanceolate; and its smaller flowers, 1-1.5 cm. in length.—Myrtle-leaved Marsh Pea.

Thickets, ditches, wet meadows, and other moist places; more abundant in the northern half of the state; local.

Specimens Examined: CHRISTIAN CO.: Taylorville, *W. E. Andrews*, 14 June 1899. COOK CO.: Swampy grassland, occasional, 1½ mi. w. of Willow Springs, *G. D. Fuller*, 18 July 1946. JO DAVIESS CO.: Warren, *H. S. Pepoon*, no date. KANKAKEE CO.: Thicket, near St. Anne, *G. N. Jones 11530*, 16 June 1940. LAKE CO.: Meadow along Lake Michigan, Waukegan, *G. N. Jones 17238*, 15 July 1944. LA SALLE CO.: Starved Rock, *F. Thone 195*, no date. OGLE CO.: Moist places, Oregon, *M. Waite*, 15 July 1882. PEORIA CO.: Peoria, *F. Brendel*, no date. TAZEWELL CO.: Spring Mill Bog, near East Peoria, *V. H. Chase 3157*, 29 June 1919. VERMILION CO.: Danville, *M. B. Waite*, 24 June 1886. WABASH CO.: Quagmire on farm, near Mt. Carmel, *J. Schneck*, 25 September 1900. WINNEBAGO CO.: Marsh, ½ mi. w. of Shirland, *E. W. & G. B. Fell*, 2 July 1946.

5. **Lathyrus venosus** Muhl. in Willd. Sp. Pl. 3:1092 (1803); Lapham (1857) 510; Babcock (1872) 25; Patterson (1876) 11; Williams (1877) 490; Flagg & Burrill (1878) 234; Brendel (1887) 84; Higley & Raddin (1891) 31; Gates (1912) 361; Pepoon (1927) 365; Jones (1945a) 169; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 180.

Lathyrus venosus var. *intonsus* Butters & St. John in Rhodora 19:158 (1917).

Type Locality: "Habitat in Pennsylvania."

Range: Ontario—Ga.—La.—Kans.—Mont.—Saskatchewan.

Perennial, glabrous, or often hirtellous throughout; stem 4-angled but not winged, 1-2 m. long; stipules ovate-lanceolate to linear-lanceolate, half-sagittate; leaflets 4-7 pairs, oval with prominent veins, peduncles 6-24-flowered; corolla purple, 12-15 mm. long; legume broadly linear, 4-5 cm. long, flat, reticulate, glabrous.—Veiny Pea.

Plants of this species characterized by being hirtellous throughout, reaching a length of 2 m., having inflorescences with 6-18 flowers, and linear-lanceolate stipules, those of the lower nodes 1.2-2 cm. long and 2.5-5 mm. wide, have been recognized as *L. venosus* Muhl. var. *intonsus* Butters & St. John. The fifteen specimens of *Lathyrus venosus* from Illinois in the University of Illinois Herbarium all show these characters.

In a cyto-taxonomic study of the genus *Lathyrus,* Senn (1938a:75) points out that *L. venosus* is normally a tetraploid plant, with a haploid chromosome number of fourteen. All the other 41 species of *Lathyrus* studied cytologically up to that time have a haploid number of seven.

Along streams, on ditch banks, in thickets; restricted to northeastern Illinois.

Specimens Examined: COOK CO.: Open grassy thicket, Winnetka, *F. C. Gates 1682.2,* 22 June 1907. DU PAGE CO.: Naperville, *Ray Kienholz,* 30 May 1915. KANKAKEE CO.: Thickets, Kankakee, *E. J. Hill,* 14 June 1873. LAKE CO.: Beach, in *Prunus* thicket, n. of Waukegan and e. of Glenwood Ridge, *F. C. Gates 3016,* 16 June 1909. MC HENRY CO.: Algonquin, *W. A. Nason,* 8 June 1878.

6. **Lathyrus ochroleucus** Hook. Fl. Bor. Am. 1:159 (1833); Vasey (1860) 119, (1861a) 141; Babcock (1872) 25; Patterson (1876) 11; Flagg & Burrill (1878) 234; Brendel (1887) 84; Higley & Raddin (1891) 31; Huett (1897) 67; Pepoon (1927) 366; Fuller (1943) 95; Jones (1945a) 169; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 181; Fernald (1950) 935.

Type Locality: "Hudson's Bay. . . . From the Red River, in latitude 49°, through the whole woody country to Bear Lake, in latitude 66°."

Range: Manitoba—Quebec—N.J.—Wyo.—British Columbia—Mackenzie.

Perennial, glabrous and somewhat glaucous; stem 3-10 dm. long, terete or slightly angled; stipules broad, leafy, ovate or semi-cordate, nearly half the size of the leaflets; leaflets 3-4 pairs, oval or ovate, thin, pale beneath, 2-5 cm. long; peduncles shorter than the leaves, 5-10-flowered; corolla yellowish-white, about 1.5 cm. long; legume oblong-linear, 3-4 cm. long, glabrous.—Cream Pea.

Banks of streams, woods, and thickets, in northern Illinois.

Specimens Examined: COOK CO.: River bank, Maywood, *Agnes Chase,* 26 May 1899. DU PAGE CO.: Thicket, Warrenville, *W. S. Moffatt 172,* 4 July

1891. LAKE CO.: Open woods, Naval Station, *E. J. Hill*, 21 June 1910. JO DAVIESS CO.: Apple River Canyon, *G. N. Jones 17332*, 6 May 1944. MC HENRY CO.: Algonquin, *W. A. Nason*, 18 May 1878. OGLE CO.: Roadside, occasional, *G. D. Fuller*, 27 June 1942.

Lathyrus pratensis L. is reported from Illinois by Jones (1945a) 169 and Fernald (1950) 935. The writer has seen no Illinois specimens of this yellow-flowered Meadow Pea, and at the present time finds no reason for including it as a part of the spontaneous flora of the state.

31. APIOS Medic.

1. Corolla brownish-purple, the standard rounded at the apex, and without a spongy protuberance; rootstock with several tuberous swellings. ..... 1. *A. americana*
1. Corolla greenish-white, tinged with rose or magenta, the standard with a spongy protuberance; rootstock with a single, large, tuberous swelling as much as 18 cm. in diameter..... 2. *A. priceana*

1. **Apios americana** Medic. in Vorles. Churpf. Phys.-oekon. Gesellsch. 2:355 (1787); Fuller (1943) 95; Jones (1945a) 169, (1945b) 275; Fuller (1946) 58; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 181.

Glycine apios L. Sp. Pl. 753 (1753); Michaux (1803) 2:63; Gates (1926) 231.

Apios tuberosa Moench., Meth. 165 (1794); Mead (1846) 60; Lapham (1857) 510; Warne (1870) 347; Babcock (1872) 25; Patterson (1874) 5, (1876) 11; Schneck (1876) 526; Williams (1877) 491; Flagg & Burrill (1878) 233; Brendel (1887) 46; Higley & Raddin (1891) 32; Huett (1897) 67; Snare & Hicks (1898) 6; Gates (1912) 361; Pepoon (1927) 366; McDougall (1936) 173; Ries (1939) 90.

Apios americana var. *turrigera* Fernald in Rhodora 41:546 (1939), (1950) 936.

Type Locality: North America.

Range: New Brunswick—Fla.—Tex.—Colo.—Minn.

Twining perennial herb with tuberous, moniliform rootstock; pubescent or glabrate; stipules subulate, deciduous; leaves usually 5-7-foliolate, the leaflets ovate to ovate-lanceolate, 3-10 cm. long; racemes axillary, dense, often branching, the rachis with small lumpy outgrowths; flowers large, brownish-purple, somewhat fragrant, the standard about 1 cm. long, rounded or retuse at the apex; calyx hemispherical, 4-5 mm. long; legume linear, 6-12 cm. long, straight or somewhat curved, coriaceous; stem with milky juice; tubers edible.—Groundnut.

Plants in which the racemes are "loosely lanceolate- or ovoid-attenuate, with prolonged tips; mature denuded rachis 1-2 dm. long" (Fernald, 1950:936) have been designated *A. americana* var. *turrigera*. Among the

25 Illinois specimens of *A. americana* in the University of Illinois Herbarium, eight show the characters associated with var. *turrigera*. Among these are two cited by Fernald in the publication of the variety.

Woods, thickets, and river banks, in moist soil.

Specimens Examined: CLARK CO.: Woods along Rocky Branch, near Dolson, *G. N. Jones 12603*, 25 July 1940. COOK CO.: Bank of Calumet River in thickets, South Chicago, *E. J. Hill*, 26 August 1878. FRANKLIN CO.: Rich soil, ditch along M. P. R. R., 2 mi. s.w. of Royalton, *J. McCree*, 25 June 1941. JACKSON CO.: Along railroad, Carbondale, *J. McCree*, 10 July 1941. LAKE CO.: Ballast of the C. & N. W. R. R., Waukegan, *F. C. Gates 2946*, 14 August 1908. LAWRENCE CO.: Along stream, Sumner, *J. P. Sivert*, 29 August 1947. MACON CO.: Damp thicket, Calamus Lake, *I. W. Clokey*, 22 July 1915. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 12 August 1889. MARSHALL CO.: Rich bottom land, Holton, *V. H. Chase 10672*, 13 August 1949. MC HENRY CO.: Algonquin, *W. A. Nason*, 20 August 1878. MENARD CO.: Athens, *E. Hall*, August 1867. OGLE CO.: Oregon, collector uncertain, 20 August 1884. PEORIA CO.: Peoria, *F. Brendel*. PULASKI CO.: Vine on shrubs, woods near Karnak, *G. S. Winterringer*, 11 August 1949. TAZEWELL CO.: Damp woodlands, *F. E. McDonald*, August 1889. VERMILION CO.: Along middle fork of Vermilion River between Oakwood and Collison, *G. N. Jones 16235*, 21 August 1943. WABASH CO.: Mt. Carmel, *M. B. Waite*, 6 August 1887. WINNEBAGO CO.: In brush in marshy ground by roadside, 3 mi. w. of Rockford, *E. W. Fell*, 27 August 1945.

2. **Apios priceana** B. L. Robins. in Bot. Gaz. 25:451 (1898); Jones (1950) 181; Winterringer (1951) 504.

Type Locality: Bowling Green, Warren County, Kentucky. Collected by Miss Sadie F. Price, type specimens in Gray Herbarium.

Range: Tenn.—Ky.—s. Ill.

Similar to *A. americana* but differing in the following respects: With a single, irregularly spheroidal, tuberous rootstock; the hemispherical calyx 8-10 mm. long; corolla larger than in *A. americana*, greenish-white, tinged with rose or magenta; standard with a fleshy or spongy protuberance.—Price's Groundnut.

Damp, rich soil, woods, southern Illinois. Rare.

Specimen Examined: UNION CO.: Damp, rich soil, along Wolf Lake, *G. D. Fuller 664*, 8 September 1941.

Vigna sinensis (L.) Endl. ex Hassk. Pl. Jav. Rar. 386 (1848); Deam (1910) 368; Jones (1945a) 169, (1950) 181; Fernald (1950) 937.

Dolichos sinensis L. Cent. Pl. 2:28 (1756).

Type Locality: "Habitat in India."

Range: Fla.—Tex.—Mo.—N.C. Native of Asia.

Annual, twining or trailing, glabrous or slightly pubescent; leaflets 3, broadly ovate, 8-15 cm. long, the terminal one long-stalked, and sometimes contracted above a broad base which is obtusely hastate, the lateral

ones obliquely ovate, inequilateral, and short-stalked; peduncles much exceeding the leaves, bearing few flowers, loosely subcapitate; corolla yellow or purplish, 1.5-2.5 cm. long; legume fleshy, nearly straight, 12-20 cm. or longer.—Common Cow Pea.

Cultivated as a field crop in southern Illinois. Since all Illinois specimens seen by the writer were of cultivated plants, *V. sinensis* is not considered an established member of the spontaneous flora of the state.

32. PHASEOLUS L.

Phaseolus polystachyus (L.) B.S.P. Prel. Cat. N. Y. 15 (1888); Robinson & Fernald (1908) 528; McDougall (1936) 173; Ries (1939) 90; Deam (1940) 622; Fernald (1942) 419; Jones (1945a) 169, (1945b) 274; Bailey (1949) 52; Jones (1950) 181; Fernald (1950) 936.

Dolichos polystachios L. Sp. Pl. 726 (1753).

Phaseolus perennis Walt. Fl. Car. 182 (1788); Lapham (1857) 510; Patterson (1876) 11; Schneck (1876) 526; Williams (1877) 491; Flagg & Burrill (1878) 233; Brendel (1887) 84; Higley & Raddin (1891) 32; Huett (1897) 67; Pepoon (1927) 366.

Phaseolus paniculatus Michx. Fl. Bor. Am. 2:60 (1803).

Type Locality: "Habitat in Virginia."

Range: Conn.—Quebec—Minn.—Nebr.—La.—Fla.

Perennial herbaceous vine, stem twining or trailing, minutely pubescent, 1-4 m. long; leaflets 3, broadly ovate to suborbicular, finely pubescent, 4-10 cm. long; racemes axillary, longer than the leaves, simple or branched, loosely-flowered; corolla purple or whitish, 7-10 mm. long; legume flat, slightly curved, 4-8 cm. long, 6-9 mm. wide, somewhat glaucous.—Kidney Bean.

Woods and thickets, not common in Illinois.

Specimens Examined: ALEXANDER CO.: Open woods, 2 mi. e. of Thebes, *H. M. Franklin 44*, 18 August 1949. JACKSON CO.: Dry upland woods, *H. A. Gleason*, 18 August 1900. UNION CO.: Moist woods, rare, roadside near Jonesboro, *G. D. Fuller 670*, 11 July 1941. WABASH CO.: Thicket on Hanging Rock, rich, shaded, sandy loam, *J. Schneck*, 8 August 1904. WILLIAMSON CO.: Wet, rich, gumbo soil in Big Muddy River bottom land near Bush, *J. McCree, Jr.*, 11 August 1948.

33. STROPHOSTYLES Ell.

1. Leaflets broadly ovate to ovate-lanceolate, obtusely 3-lobed, or panduriform, or entire; flowers 8-12 mm. long; calyx tube glabrous; legumes 3.5-9 cm. long, glabrous or sparsely pubescent.
   2. Leaflets ovate or ovate-lanceolate, entire, or occasionally with shallow lobes; peduncles slender, when in flower 3-6 times as long as the leaves, often 20-25 cm. long; flowers pink, fading yellow,

12-14 mm. long; mature legume narrowly linear, 3.5-6.5 cm. long, only about 4 mm. wide; root perennial.....1. *S. umbellata*

2. Leaflets obtusely 3-lobed, or panduriform, or broadly ovate and entire; peduncles, when in flower, little longer than the leaves, in fruit, about twice as long; flowers pink to purplish, about 1 cm. long, fading green; mature legume broadly linear, 4.5-9 cm. long but commonly about 6 cm., 5-8 mm. wide; root annual.....
.....2. *S. helvola*

1. Leaflets lanceolate to linear-oblong, not lobed; flowers 5-6 mm. long; calyx tube hirsute; legume 2-3 cm. long, densely pubescent; annual...
.....3. *S. leiosperma*

1. **Strophostyles umbellata** (Muhl.) Britt. in Britt. & Brown, Illustr. Fl. 2:339 (1897); Gleason (1907) 184; Pepoon (1927) 366; McDougall (1936) 174; Fernald (1945) 216; Fuller (1946) 58; Jones (1950) 181; Fernald (1950) 937.

Glycine umbellata Muhl. ex Willd. Sp. Pl. 3:1058 (1802).

Phaseolus helvolus sensu Torrey Fl. N. Y. 161 (1824); T. & G. Fl. N. Am. 280 (1840); Mead (1846) 60; Lapham (1857) 510; Babcock (1872) 26; Patterson (1876) 11; Schneck (1876) 526; Flagg & Burrill (1878) 233; Brendel (1887) 46; non L. (1753).

Phaseolus umbellatus (Muhl.) Britt. in Trans. N. Y. Acad. 9:10 (1889).

Type Locality: "Habitat in Pennsylvania."

Range: N.Y.—Fla.—La.—Tex.; Ark.; Mo.; Ill.; Ind.

Stems slender, trailing, retrorsely-pubescent, up to 12 dm. long from perennial root; leaflets ovate or ovate-lanceolate, entire or only occasionally with shallow lobes, strigose-pubescent beneath; peduncles slender, when in flower 3-6 times as long as the leaves, often 20-25 cm. long; flowers pinkish, fading yellow, about 12-14 mm. long in 3-5-flowered umbels; legumes narrowly linear, 3.5-6.5 cm. long, only about 4 mm. wide, sparsely pubescent; seeds rather truncate at the ends, more or less squarish in outline, 3.5-6 mm. long, mealy-pubescent.—Pink Wild Bean.

In dry, sandy, or rocky soil; infrequent, southern Illinois.

Specimens Examined: FAYETTE CO.: Roadside, n. of Loogootee, *Louise O'Dell* 225, 8 August 1942. HARDIN CO.: Roadside n.e. of Elizabethtown, *R. A. Evers 13434*, 23 August 1948 (NHS). JACKSON CO.: Sassafras barrens, Makanda, *H. A. Gleason 2440*, 18 July 1902 (G). JEFFERSON CO.: Clay bank at side of highway, s.w. of Mt. Vernon, *G. H. Boewe*, 9 August 1940 (NHS). JOHNSON CO.: On weedy land at base of bluff, 6 mi. n.e. of Vienna, *J. Schopf 1106*, 6 August 1931 (NHS). LAWRENCE CO.: In peach orchard near Birds, *G. H. Boewe*, 9 August 1938 (NHS). MACOUPIN CO.: Carlinville, *C. Robertson*, 4 September 1888 (NHS). MARION CO.: Along state route 2, 12 mi. n. of Centralia, *Pepoon & Foster*, 10 September 1931 (NHS). MASSAC CO.: Dry sandy soil, Metropolis, *H. A. Gleason*, 16 August 1902. POPE CO.: Dry rocky soil in woods, 8 mi. n.e. of Golconda, *G. S. Winterringer 4115*, 26

August 1949. RICHLAND CO.: Turkey Creek, w. of Elbow, *R. Ridgway 1194*, 24 August 1920. UNION CO.: Cobden, *F. S. Earle*, 26 July 1886. WABASH CO.: Sand hill, *J. Schneck*, 26 August 1899. WASHINGTON CO.: Along highway, 5 mi. w. of Ashley, *G. H. Boewe*, 10 September 1940 (NHS). WILLIAMSON CO.: E. of road at top of small hollow, weedy, Creal Springs, *J. Schopf*, 20 July 1931 (NHS).

2. **Strophostyles helvola** (L.) Britt., Britt. & Brown, Illustr. Fl. 2:338 (1897); Gleason (1907) 184, (1910b) 159; Gates (1923) 169; Thone (1925) 103; Gates (1926) 231; Pepoon (1927) 366; Robertson (1928) 135; McDougall (1936) 174; Fuller (1943) 95; Jones (1945a) 169, (1945b) 282; Fuller (1946) 58; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 181.

Phaseolus helvolus L. Sp. Pl. 724 (1753); Mead (1846) 60; Lapham (1857) 510; Babcock (1872) 26.

Phaseolus diversifolius Pers. Syn. Pl. 2:296 (1807); Lapham (1857) 510; Warne (1870) 347; Babcock (1872) 26; Patterson (1874) 5, (1876) 11; Schneck (1876) 526; Brendel (1887) 46; Huett (1897) 67.

Strophostyles angulosa Ell. Bot. S. C. & Ga. 2:229 (1823); Higley & Raddin (1891) 32; Snare & Hicks (1898) 6.

Strophostyles angulosa var. *missouriensis* S. Wats. ex Watson & Coulter in A. Gray, Man., Ed. 6:145 (1890).

Strophostyles peduncularis sensu Higley & Raddin (1891) 32.—Non Ell. (1822).

Strophostyles helvola var. *missouriensis* (S. Wats.) Britt., Britt. & Brown, Illustr. Fl. 2:339 (1897); Robinson & Fernald (1908) 529; Fernald (1942) 421, (1945) 216, (1950) 937.

Strophostyles missouriensis (S. Wats.) Small, Fl. S.E. U. S. 654 (1903); Britton & Brown (1913) 2:423.

Type Locality: "Habitat in Carolina."

Range: Quebec—Minn.—Tex.—Fla.

Annual, low-twining or trailing, 1-2 m. long, glabrous or villous-pubescent; leaflets 3, obtusely 3-lobed, or panduriform, or broadly ovate and entire, tapering to a blunt point; peduncles axillary, when in flower little longer than the leaves, in fruit about twice as long; corolla pinkish or purple, greenish when faded; about 1 cm. long; legume broadly linear, 4.5-9 cm. long, but commonly about 6 cm., 5-8 mm. wide; seeds nearly cylindrical, 5-8 mm. long, pubescent or black and shining.—Trailing Wild Bean.

S. *helvola* var. *missouriensis* is described as a high-climbing variety, 3-10 m. long; principal leaflets rhombic-ovate, not lobed; leaflets, flowers, legumes, and seeds slightly larger than in the species. A study of over 60 sheets of S. *helvola* from Illinois in the University of Illinois Herbarium shows that only two specimens have the characters set forth by Fernald

(1950:937) for the var. *missouriensis*. Furthermore, a series of intergradations involving these characters can be easily seen. The differences with respect to size of leaflets, flowers, legumes, and seeds in these specimens would seem to be readily accountable for within the limits of expected variation of the species.

Bottom lands, roadsides, railroads, and in thickets; locally throughout the state.

Specimens Examined: ADAMS CO.: Open hillside, Quincy, *W. B. McDougall 172*, 28 July 1928. BROWN CO.: Along railroad, Timewell, *R. A. Evers 853*, 7 September 1941. CALHOUN CO.: Roadside, Kampsville, *W. B. McDougall 232*, 13 August 1928. CASS CO.: Sandy fields, common, 2 mi. w. of Bluff Springs, *G. D. Fuller 12528*, 10 August 1946 (NHS). CHAMPAIGN CO.: Climbing over bushes, Sangamon River, 15 mi. w. of Urbana, *G. N. Jones 16552*, 6 August 1944. CHRISTIAN CO.: Taylorville, *W. E. Andrews*, 27 August 1898. COOK CO.: Sandy shore of Lake Michigan, Glencoe, *E. J. Hill*, 24 September 1909. GRUNDY CO.: Wet meadow, 1½ mi. s. of Morris, *R. A. Evers 6652*, 20 August 1947 (NHS). HANCOCK CO.: Vine in ballast of Topeka, Peoria & Western R. R., Elvaston, *F. C. Gates 10806*, 11 September 1917. HARDIN CO.: Rocky bank of the Ohio River, 1 mi. e. of Rosiclare, *G. S. Winterringer 1610*, 27 September 1948. HENDERSON CO.: New Crystal Lake, Duck Club, *H. S. Hawkins*, 21 August 1938 (NHS). IROQUOIS CO.: Thicket, near Watseka, *W. S. Moffatt 360*, 18 August 1897. JACKSON CO.: Carbondale, *A. B. Seymour*, 19 August 1880. JERSEY CO.: In orchard n. of Grafton, *G. H. Boewe*, 30 August 1944 (NHS). JO DAVIESS CO.: Sandy bottom land, s. of East Dubuque, *R. A. Evers 13803*, 26 August 1948 (NHS). JOHNSON CO.: On rocky promontory at edge of cultivated area, 1¾ mi. s. of Goreville, *J. Schopf 855*, 27 July 1931 (NHS). KANKAKEE CO.: Dry gravelly banks, near Altorf, *E. J. Hill*, 28 July 1878. KNOX CO.: Roadside, near Williamsfield, *V. H. Chase 10658*, 10 August 1949. LA SALLE CO.: Starved Rock, *F. Thone 159*. LAWRENCE CO.: On sandy hill in peach orchard, s. edge of St. Francisville, *G. H. Boewe*, 22 August 1941 (NHS). MACON CO.: In dry soil, s. side of Lake Decatur, *G. S. Winterringer 177*, 23 August 1947. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 1 October 1892. MADISON CO.: Along railroad, 2 mi. n.w. of Collinsville, *G. H. Boewe*, 1 July 1941 (NHS). MARSHALL CO.: Roadside, s. of La Rosa, *R. A. Evers 7135*, 27 August 1947 (NHS). MASON CO.: Mason State Forest, n. of Havana, *J. Hall*, 12 October 1947. MASSAC CO.: Bottom land woods, s. of Mermet, *R. A. Evers 13378*, 22 August 1948 (NHS). MC LEAN CO.: Near the Mackinaw River and state route 2, *Pepoon & Foster*, 9 September 1931 (NHS). MERCER CO.: Sand bank along roadside, n.e. of New Boston, *R. A. Evers 7019*, 22 August 1947 (NHS). MENARD CO.: Sangamon bottoms, n.w. of Oakford, *R. A. Evers 7285*, 6 September 1947 (NHS). MORGAN CO.: Sandy soil, c. of Meredosia, *R. A. Evers 7558*, 13 September 1947 (NHS). OGLE CO.: Byron, *R. E. Blount*, 1885. PEORIA CO.: Sandy fields, Peoria, *F. E. McDonald*, July 1886. PIATT CO.: Monticello, *Seymour & Waite*, 17 July 1886. PIKE CO.: Weed patch near peach orchard, near Nebo, *Campbell & Alexopoulos*, 29 August 1930 (NHS). POPE CO.: In Jackson Hollow s.w. of McCormick, *R. A. Evers 8452*, 23 September 1947 (NHS). PULASKI CO.: Olmsted, *W. Trelease*, 29 August 1916. RICHLAND CO.: Railroad, 3½ mi. n. of Olney,

Vera L. Scherer 499, 17 August 1947. ROCK ISLAND CO.: Roadside, w. of Milan, *R. A. Evers 6955*, 22 August 1947 (NHS). ST. CLAIR CO.: Roadside, n.w. of Belleville, *R. A. Evers 8028*, 17 September 1947 (NHS). SANGAMON CO.: Sandy soil, occasional, Springfield Twp., Sec. 1, *G. D. Fuller 5397*, 28 July 1941. SCHUYLER CO.: Roadside, w. of Littleton, *R. A. Evers 6024*, 7 August 1947 (NHS). SCOTT CO.: Roadside, n. of Bluffs, *R. A. Evers 7602*, 13 September 1947 (NHS). STARK CO.: Moist prairie, near Wady Petra, *V. H. Chase 732*, 14 August 1900. TAZEWELL CO.: Sandy field, Pekin, *V. H. Chase 10863*, 10 September 1949. UNION CO.: Gravelly soil, *G. D. Fuller 847*, 10 September 1941. VERMILION CO.: Along Vermilion River, between Oakwood and Collison, *G. N. Jones 12956*, 14 September 1940. WABASH CO.: Climbing over high weeds, rich sandy, alluvial soil, near Mt. Carmel, *J. Schneck*, 4 September 1904. WILL CO.: Near river, Custer Park, *W. S. Moffatt 179*, 9 September 1889. WOODFORD CO.: Richland Creek, near Illinois River, *G. N. Jones 14267*, 27 July 1941.

3. **Strophostyles leiosperma** (T. & G.) Piper in Contr. U. S. Nat. Herb. 22: 668 (1925); Fuller (1943) 95; Jones (1945a) 170; Bailey (1949) 52; Jones (1950) 181.

Phaseolus pauciflorus Benth. Comm. Leg. Gen. 76 (1837); Lapham (1857) 510; Forbes (1870) 352; Patterson (1876) 11; Schneck (1876) 526; Brendel (1887) 84; Huett (1897) 67.—Non Don (1832).

Phaseolus leiospermus T. & G. Fl. N. Am. 1:280 (1838); Mead (1846) 60.

Strophostyles pauciflora (Benth.) S. Wats. ex A. Gray, Man., Ed. 6:145 (1890); Higley & Raddin (1891) 32; McDonald (1900) 103; Pepoon (1927) 366; Robertson (1928) 136.

Type Locality: "Red River, Louisiana, Dr. Hale! Arkansas, Dr. Leavenworth!"

Range: Miss.—Tex.—Colo.—Nebr.—Minn.—Wis.—Ind.

Annual, stem 3-10 dm. long, retrorsely pubescent, low-climbing or trailing; leaflets lanceolate to linear-oblong, not lobed; flowers 2-6 in capitate umbels, 5-6 mm. long; calyx-tube 1-1.5 mm. long, the lower lobe longer than the tube; corolla purple; legume linear, flattened, 2-3 cm. long, densely pubescent; seeds purple, at maturity glabrous and shiny.—Small Wild Bean.

Roadsides, railroad tracks, river banks, waste ground. Locally throughout most of the state.

Specimens Examined: ADAMS CO.: On prairie, e. of Camp Point, *R. A. Evers 732*, 12 August 1941. BOND CO.: Roadside, n.w. of Greenville, *R. A. Evers 8127*, 18 September 1947 (NHS). CARROLL CO.: In sand along roadside s. of Savanna, *R. A. Evers 6839*, 21 August 1947 (NHS). CASS CO.: Chandlerville, *A. B. Seymour*, 18 August 1886. CHRISTIAN CO.: Taylorville, *W. E. Andrews*, 26 August 1898. CLINTON CO.: Shattuc, *M. B. Waite*, 2 August 1887. COOK CO.: Waste ground, Brighton Park, Chicago, *L. M. Umbach*, 5 September 1896. CRAWFORD CO.: Roadside n. of Flat Rock, *R. A. Evers 13523*, 23 August 1948 (NHS). FAYETTE CO.: Roadside, s. of Browns-

town, *Louise O'Dell 224*, 8 August 1942. HAMILTON CO.: Roadside, s. of McLeansboro, *R. A. Evers 13153*, 20 August 1948 (NHS). HARDIN CO.: Roadside, 2 mi. s. of Eichorn, *H. E. Ahles 1834*, 16 October 1949. HENRY CO.: Where Green River flows under canal, *R. J. Dobbs*, 12 August 1938 (NHS). JACKSON CO.: Pasture, occasional, *G. D. Fuller 391*, 14 August 1940. JEFFERSON CO.: In peach orchard, s. of Centralia, *Campbell & Alexopoulos*, 6 August 1930 (NHS). JOHNSON CO.: In orchard, s.e. of New Burnsides, *G. H. Boewe*, 14 August 1942 (NHS). MACOUPIN CO.: Carlinville, *W. E. Andrews*, 29 July 1889. MADISON CO.: Sandy soil, Edwardsville crossing, *F. E. McDonald*, August 1892. MARION CO.: Along roadsides, s.e. of Centralia, *Campbell & Alexopoulos*, 7 August 1930 (NHS). MASON CO.: Mason State Forest, n. of Havana, *J. Hall*, 12 October 1947. MENARD CO.: Athens, *E. Hall*, 1862. MONROE CO.: In field s. of Poe, *R. A. Evers 7995*, 17 September 1947 (NHS). MONTGOMERY CO.: Along railroad, 1 mi. w. of Litchfield, *R. A. Evers 7851*, 15 September 1947 (NHS). PEORIA CO.: Railroad track, 1 mi. s. of Wady Petra, *V. H. Chase 1159*, 31 July 1904. PERRY CO.: Tamaroa, 17 August 1860, collector not known. PIKE CO.: Roadside s.e. of Barry, *R. A. Evers 7729*, 15 September 1947 (NHS). POPE CO.: Rocky soil in woods, 4.5 mi. e. of Dixon Springs, *G. S. Winterringer 1315*, 20 July 1948. RANDOLPH CO.: In field, n.e. of Bremen, *R. A. Evers 7930*, 17 September 1947 (NHS). RICHLAND CO.: Dry clay hillside, 3½ mi. n. of Olney, *Vera L. Scherer 439*, 6 August 1947. ROCK ISLAND CO.: Sandy roadside, 5 mi. n. of Cordova, *R. A. Evers 6939*, 21 August 1947 (NHS). ST. CLAIR CO.: *F. Brendel*, 1850. SALINE CO.: Womble Mt., *H. E. Ahles 1836*, 16 October 1949. SCOTT CO.: Roadside, n. of Bluffs, *R. A. Evers 7623*, 13 September 1947 (NHS). UNION CO.: On sandstone cliffs, Alto Pass, *Pepoon & Foster 1258*, 11 September 1931 (NHS). WABASH CO.: Farm near Mt. Carmel, *J. Schneck*, September 1904. WASHINGTON CO.: Roadside, 4 mi. s. of Nashville, *R. A. Evers 7865*, 17 September 1947 (NHS). WHITE CO.: Along railroad, s. of Enfield, *R. A. Evers 8630*, 25 September 1947 (NHS).

34. CLITORIA L.

Clitoria mariana L. Sp. Pl. 753 (1753); Lapham (1857) 510; Forbes (1870) 318; Vasey (1870a) 256; Patterson (1876) 12; Flagg & Burrill (1878) 234; Brendel (1887) 84; Robinson & Fernald (1908) 529; French (1926) 210; Fernald (1937c) 479; Jones (1945a) 170; Bailey (1949) 52; Jones (1950) 181; Fernald (1950) 938.

Type Locality: "Habitat in America septentrionali."

Range: N.Y.—N.J.—Ind.—Mo.—Tex.—Fla.; Ariz.

Perennial, erect, ascending, or occasionally twining, 3-12 dm. high; stipules ovate-lanceolate, striate, persistent; leaflets 3, ovate-lanceolate, entire, pale beneath, glabrous; peduncles axillary, shorter than the petioles, 1-3-flowered; flowers pale blue, 5-6 cm. long, showy, the standard very large; legumes linear, flattened, 2.5-6 cm. long.—Butterfly Pea.

Dry ridges and banks in southern Illinois.

Specimens Examined: JOHNSON CO.: Dry woods, 2.5 mi. s.e. of Ozark, *G. S. Winterringer 1155*, 5 July 1948. POPE CO.: Herod, *G. P. Clinton*, 30 July 1898. UNION CO.: Cobden, *F. S. Earle*, 30 June 1879; Pine Hill, near

Wolf Lake, *G. N. Jones 12090*, 5 July 1940; sandstone ridge, near Wolf Lake, *G. D. Fuller 834*, 26 August 1941.

35. GLYCINE L.

Glycine max (L.) Merr. Interpret. Rumph. Herb. Amboinense 274 (1917); Jones (1950) 181; Fernald (1950) 938.

Phaseolus max L. Sp. Pl. 725 (1753).

Dolichos soja L. op. cit. 727.

Glycine soja (L.) Sieb. & Zucc. in Abh. Akad. Muench. 4, Abt. 2:119 (1845); Jones (1945a) 169.

Soja max (L.) Piper, in Journ. Am. Soc. Agron. 6:84 (1914).

Type Locality: "Habitat in India."

Range: Native of Asia; extensively cultivated in Illinois, and in some other parts of the United States, as well as in the Orient.

Annual herb, densely villous, 6-20 dm. high; leaflets 3, broadly ovate to ovate-lanceolate, 6-15 cm. long or more, entire, obtuse or bluntly acute; flowers white, in nearly sessile axillary racemes; legumes short-stalked, pendent, 3-6 cm. long, 7-9 mm. wide, densely pubescent, 2-4-seeded.—Soybean.

Extensively cultivated in Illinois; occasionally spontaneous in areas where cultivated, but not maintaining itself through more than one or two seasons.

Specimens Examined: CHAMPAIGN CO.: Along railroad, Urbana, *G. N. Jones 18809*, 15 August 1948. VERMILION CO.: On railroad track, Danville, *W. G. Gambill*, 24 August 1951. WAYNE CO.: Roadside, ¾ mi. e. of Geff, *Mamie Walker 65*, 4 July 1949.

36. AMPHICARPA Ell.

1. Stems with scattered yellowish hairs, or glabrate; leaves thin, the terminal leaflet reaching 6 cm. in length; inflorescence not branched, 1-8-flowered; lower floral bracts shorter than the pedicels; corolla white or pinkish-purple; legumes pubescent along the margin, but glabrous on the broad surfaces ..... 1. *A. bracteata*
1. Stems conspicuously villous, the hairs golden-brown; leaflets noticeably larger and thicker than in *A. bracteata*, the terminal one reaching 10 cm. in length; inflorescence often branched, 7-17-flowered; lower floral bracts longer than the pedicels; corolla purple, the color darker than in *A. bracteata;* legumes sparingly pubescent along the broad surfaces ..... 2. *A. comosa*

1. **Amphicarpa bracteata** (L.) Fern. in Rhodora 35:276 (1933); Fuller (1943) 95; Jones (1945a) 170; Fuller (1946) 58; Fuller, Fell & Fell (1949) 74; Jones (1950) 182.

Glycine bracteata L. Sp. Pl. 754 (1753).

Glycine monoica L. Sp. Pl. (ed. 2) 1023 (1763); Michaux (1803) 2:64.

Amphicarpa monoica (L.) Ell. Journ. Acad. Phil. 1:373 (1818); Mead (1846) 60; Lapham (1857) 510; Babcock (1872) 26; Patterson (1874) 5, (1876) 12; Schneck (1876) 526; Flagg & Burrill (1878) 234; Brendel (1887) 46; Higley & Raddin (1891) 32; Snare & Hicks (1898) 6; Gates (1912) 361; Pepoon (1927) 366.

Lobomon acutifolium Raf. New Fl. N. Am. 1:84 (1836).

Falcata comosa sensu Gleason (1907) 184; Gates (1923) 169, (1926) 231.—Non (L.) Kuntze (1891).

Type Locality: "Habitat in Virginiae madidis, umbrosis."

Range: Quebec—Manitoba—Nebr.—La.—Fla.

Low, twining, perennial; stems slender with whitish or yellowish reflexed hairs, or glabrate; leaflets 3, thin, broadly ovate, pale beneath, the terminal leaflet 2-6 cm. long; petaliferous flowers 1-8, in unbranched axillary racemes, the corolla white to pinkish-purple; cleistogamous flowers solitary in the lower axils, or at the tips of creeping stems; legume of petaliferous flowers linear-oblong, several-seeded, glabrous on the surfaces, pubescent on the sutures, with seeds 3.5 mm. long; legume from cleistogamous flowers obovoid, somewhat fleshy, generally 1-seeded.—Hog Peanut.

In moist woods and along streams, common throughout Illinois.

Specimens Examined: ADAMS CO.: Woods near Coe Springs, *Evers and Jones 511*, 20 July 1941. CHAMPAIGN CO.: Edge of woods s. of Mahomet, *G. S. Winterringer 598*, 29 August 1946. COLES CO.: Woods, near Charleston, *G. N. Jones 17518*, 6 September 1946. COOK CO.: Forest preserve, River Forest near Des Plaines River, *G. S. Winterringer 106*, 7 October 1947. DU PAGE CO.: Woods, Winfield, *W. S. Moffatt 181*, 20 September 1889. KANE CO.: Open woods, Elgin, *E. E. Sherff 1957*, 14 September 1912. LA SALLE CO.: Open woods, Matthiessen State Park, *V. H. Chase 10173*, 19 September 1948. LAWRENCE CO.: Low woods, 4 mi. n. of Sumner, *J. P. Sivert*, 24 August 1946. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 19 August 1889. PEORIA CO.: Open woods s. of Princeville, *V. H. Chase 1187*, 23 October 1904. RICHLAND CO.: Turkey Creek, w. of Elbow, *R. Ridgway 1191*, 24 August 1920. WABASH CO.: Woods on Hanging Rock, *J. Schneck*, September 1900.

2. **Amphicarpa comosa** (L.) G.Don in Loud. Hort. Brit. 314 (1830); Jones (1945a) 170; Fuller (1946) 58; Bailey (1949) 52; Fuller, Fell & Fell (1949) 74; Jones (1950) 182.

Glycine comosa L. Sp. Pl. 754 (1753).

Amphicarpa pitcheri T. & G. Fl. N. A. 1:292 (1838); Mead (1846) 60; Snare & Hicks (1898) 6; Deam (1910) 368; Gleason (1910b) 159; Thone (1925) 103; Pepoon (1927) 366.

Falcata pitcheri (T. & G.) Kuntze, Rev. Gen. Pl. 182 (1891).

Amphicarpa bracteata var. *pitcheri* (T. & G.) Fassett in Rhodora 38: 95 (1936).

Amphicarpa bracteata var. *comosa* (L.) Fernald in Rhodora 39:318 (1937).

Type Locality: "Habitat in Virginiae madidis, umbrosis."

Range: Mass.—Minn.—S.D.—Tex.—Tenn.

Similar to *A. bracteata* but more robust throughout; stem conspicuously brownish-villous; leaflets larger and thicker, the terminal one 5-10 cm. in length; inflorescence often branched, 7-17-flowered; corolla purple, darker than in *A. bracteata;* legumes strigose on the surfaces, densely pubescent along the sutures; seeds 3.5-5.5 mm. long.—Hog Peanut.

In moist woods and along streams, common throughout Illinois.

Specimens Examined: CHAMPAIGN CO.: Edge of woods, s. of Mahomet, *G. S. Winterringer 597*, 29 August 1946. COOK CO.: Rich damp woods, River Forest, *Agnes Chase 1445*, 1 September 1900. DU PAGE CO.: Woods, Winfield, *W. S. Moffatt*, no date given. LAKE CO.: Rich upland woods, Channel Lake, Antioch, *Gleason & Shobe 282*, 14 August 1906. LA SALLE CO.: Starved Rock, *F. Thone 175*, date not given. LAWRENCE CO.: Along stream bed, wooded roadside, near Sumner, *J. P. Sivert*, 29 August 1947. MACOUPIN CO.: Carlinville, *W. E. Andrews*, 15 August 1889. MC HENRY CO.: *W. A. Nason*, 23 August 1879. OGLE CO.: Moist woods, common, White Pines Forest State Park, *Alice L. Hills 3442-0*, 8 July 1942. PEORIA CO.: Low, rich woods near Princeville, *V. H. Chase 939*, 14 October 1900. RICHLAND CO.: Turkey Creek, w. of Elbow, *R. Ridgway 1192*, 24 August 1920. STARK CO.: Rich stream banks, SE¼, Sec. 30, Valley Twp., *V. H. Chase*, 22 August 1895. WABASH CO.: Wet, sandy, black soil, border of quagmire, near Patton, *J. Schneck*, August, 1900.

37. GALACTIA P.Br.

Galactia volubilis (L.) Britton in Mem. Torr. Club 5:208 (1894); Jones (1950) 182.

Hedysarum volubile L. Sp. Pl. 750 (1753).

Galactia mollis sensu Forbes (1870) 352; Patterson (1876) 12; Flagg & Burrill (1878) 233; Brendel (1887) 84.—Non Michx. (1803).

Galactia volubilis var. *mississippiensis* Vail in Bull. Torr. Club 22:508 (1895); Fernald (1950) 939.

Galactia mississippiensis (Vail) Rydb. Fl. Pr. & Pl. 493 (1932); Jones (1945a) 170; Bailey (1949) 52.

Type Locality: "Habitat in America septentrionali."

Range: Fla.—Tex.—Okla.—Mo.—N.Y.

Perennial vine, prostrate or climbing; stems finely hirsute to downy-pubescent; leaflets 3, oval to lanceolate, 2-5 cm. long, glabrous or puberulent above, finely appressed-pubescent beneath; racemes axillary, loose-flowered; flowers lilac-colored, 8-10 mm. long; legume linear, 2-5 cm. long, 4-5 mm. wide, finely appressed-pubescent.—Milk Pea.

G. volubilis var. *mississippiensis* Vail is a form which has been set apart chiefly by having leaflets "pilose on both surfaces." Of eight speci-

mens of *G. volubilis* from Illinois in the University of Illinois Herbarium, the leaflets of three specimens are nearly uniformly glabrous above. The remaining five specimens show varying degrees of minute appressed pubescence on the upper surfaces of the leaflets, but in no case was this pubescence as marked above as below.

In dry soil, southern Illinois.

Specimens Examined: POPE CO.: In rocky woods 3 mi. n.e. of Herod, *G. S. Winterringer 1478*, 16 August 1948. UNION CO.: A. B. Seymour, August 1880; "Southern Illinois," *F. Brendel.*

Pueraria lobata (Willd.) Ohwi [*P. thunbergiana* (Sieb. & Zucc.) Benth.], commonly known as kudzu or kudzu-vine, has been introduced into southern Illinois from eastern Asia as a forage crop, an ornamental climber, and as an aid in erosion control along roadsides. The plant is normally high-climbing, with stems which may become ligneous under favorable growing conditions. The leaves are large, pinnately trifoliolate, the leaflets entire or coarsely palmately lobed, up to 2 dm. in length. Young growth is copiously pilose; mature leaves show less conspicuous soft, white, appressed pubescence. Flowers are 12-18 mm. long, in axillary racemes hidden by the leaves, reddish-purple, and fragrant. Legumes are long, narrow, somewhat flattened, and many-seeded.

P. lobata grows rapidly and tends to form a dense covering over everything in its pathway when its growth is not controlled. There is evidence that the plant has persisted in southern Illinois for some time as an escape, and may eventually establish itself as a permanent member of the flora of the state.

The writer has seen the following Illinois specimens: JACKSON CO.: Roadside, occasional, Carbondale, *G. D. Fuller*, 24 October 1941. UNION CO.: Roadside, occasional, State Forest, *G. D. Fuller* 24 October 1941; covering large area on roadside, Jonesboro, *H. E. Ahles 4716*, 29 July 1951. The latter specimen was taken in flower.

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