

FABACEAE

28. Plants caulescent; leaves conspicuously glandular-dotted under magnification; petals white or yellowish; keel shorter than banner and wings; pod with hooked prickles **Glycyrrhiza**
28. Plants not as above
29. Keel petal narrowed at tip to a definite slender beak; plants either acaulescent or with reflexed pods (also see *Astragalus miser*) **Oxytropis**
29. Keel petal not beaked; plants caulescent or not; pods various
30. Plants with 1 seeded pods; petals pink to lavender with reddish-purple lines; wings less than half as long as keel; keel equaling or exceeding banner; calyx lobes awl-shaped, longer than tube **Onobrychis**
30. Plants not as above
31. Plants rhizomatous, usually over 4dm high; petals red to pinkish-brown, often drying purplish; keel, wings, and banner subequal; style hairy at least on upper half; pods stipitate, bladdery-inflated **Sphaerophysa**
31. Plants not as above
32. Fruit a loment; keel usually exceeding or equaling banner and wings **Hedysarum**
32. Fruit a legume; keel usually not exceeding or equaling both banner and wings **Astragalus**

Amorpha False Indigo

Shrubs or subshrubs; leaflets mucronate at tip; flowers in spike-like racemes; petals solitary (blue-purple banner only); stamens united at very base; pod 1 or 2 seeded, glandular-dotted.

1. Plants mostly less than 1m high; leaves nearly sessile, the petiole usually shorter than the width of the lowest leaflet; leaflets 20mm or less long; sandy plains, hills, and open woods; Cr,Co,La **A. canescens** Pursh
1. Plants mostly over 1m high; leaves petioled, the petiole usually longer than the width of the lowest leaflet; some leaflets 18mm or more long; meadows and stream banks; Sh,Cr,SE **A. fruticosa** L.

Astragalus Milkvetch; Locoweed

Perennials (rarely annual); flowers in racemes, rarely solitary or paired; stamens 10, diadelphous.

1. Leaves reduced to linear or oblanceolate phyllodia and apparently simple **GROUP I**
1. Leaves compound with 3 or more leaflets **GROUP II**
2. Most leaves with only 3 leaflets **GROUP II**
2. Most leaves with 5 or more leaflets
3. Leaflets awl-shaped, all continuous with the rachis and mucronate or spinulose-tipped; raceme 1-3 flowered, subsessile or short peduncled; banner 4-9mm long **A. kentrophyta** Gray
4. Hairs of leaves all attached at their base (basifixed); petals mostly purplish; slopes and ridges mostly in or near mountains; NW,B,H,NEC,CI,CW,F,SW,Cn var. **tegetarius** (Wats.) Dorn
4. Hairs of leaves, or some of them, usually attached away from base leaving 2 free ends (dolabriform), 1 end often very short; petals mostly whitish; plains and basins
5. Leaflets glabrous or glabrate on upper surface; sandy plains; Pa,B,Wa,J,Su, F,Ni,Sr,SE var. **kentrophyta**
5. Leaflets equally hairy on both sides
6. Pods ovate or lance-acuminate in outline, beaked; stems elongate, mostly erect or ascending, some internodes often longer than leaves; desert hills; Sr var. **elatus** Wats.

FABACEAE

6. Pods ovoid-lenticular, beakless below style or nearly so; stems usually short, mostly prostrate, internodes mostly shorter than leaves; sandy or chalky desert hills; Su,F,Na,SW,Cn var. **jessiae** (Peck) Barneby
3. Leaflets not as above; flowers various
7. Hairs of leaflets attached at or toward middle of hair, not at base (1 free end sometimes very short, use magnification) **GROUP III**
7. Hairs of leaflets attached at base of hair (leaves rarely glabrous)
8. Mature pods present **GROUP IV**
9. Pods with 2 cells or nearly so **GROUP V**
9. Pods with 1 cell
8. Mature pods lacking, flowers present
10. Stipules not united on side of stem opposite petiole (rarely a few very nearly united or the plants acaulescent and densely tufted and this difficult to detect)
11. Banner 14.5mm or less long; calyx tube mostly less than 4.5mm long but occasionally to 5.8mm long **GROUP VI**
11. Banner 15mm or more long; calyx tube mostly 5mm or more long **GROUP VII**
10. Stipules, at least the lower ones, united on side of stem opposite petiole
12. Banners mostly 14mm or more long **GROUP VIII**
12. Banners mostly less than 14mm long **GROUP IX**

GROUP I

1. Stems lacking or to 2cm long, the leaves all basal or nearly so
2. Banner 10.5-16mm long; calyx 4.5-7mm long; barren hills and ridges, often limestone; Cl,F,Na,Sr,SC **A. simplicifolius** (Nutt.) Gray
2. Banner 5-9.5mm long; calyx 2.5-5mm long
3. Pod laterally compressed, keeled at both sutures; banner 6-9.5mm long; plains, hills, and slopes; Pa,NWC,NEC,NE,C,S **A. spatulatus** Sheld.
3. Pod trigonously compressed, keeled only at the ventral suture and grooved dorsally; banner 5-7mm long; rocky hills and ridges; CW **A. drabelliformis** Barneby
1. Stems elongate
4. Calyx tube 2-3.5mm long, the teeth about 1/3 or more as long as tube; pods oblong-ellipsoid, much inflated; sandy hills and plains; J,Cl,F,Na,Co,Sr,Cn,G,La **A. ceramicus** Sheld. var. **filifolius** (Gray) Hermann
4. Calyx tube 3.2-5.4mm long, the teeth mostly much less than 1/3 as long as tube; pods somewhat linear or oblong and compressed
5. Pod oblong, mostly 10-17mm long, 4-6 times as long as wide; leaflets often broader than linear; meadows and stream banks; type from Green River Basin ? **A. diversifolius** Gray
5. Pod linear, mostly 20-50mm long, 8-18 times as long as wide; leaflets narrowly linear; hills and slopes; T,H,Wa,CW,F,SW,Cn **A. convallarius** Greene

GROUP II

1. Plants with many of the leaves apparently simple **See GROUP I**
1. Plants with essentially all the leaves with 3 leaflets
2. Calyx tube 1.5-5mm long; banner 5-16.5mm long
3. Calyx 2.5-4.2mm long; banner 5-8mm long; barren plains and hills **A. sericoleucus** Gray
4. Stipules pilose dorsally; racemes (2)3-5 flowered; stems often elongate-creeping forming loose mats; F,CE,SC,SE var. **sericoleucus**
4. Stipules mostly glabrous dorsally except upper margin; racemes mostly 2 flowered; stems mostly very short forming dense cushions; Su,F,Na,Sr,Cn var. **aretioides** Jones
3. Calyx 4.5-10.5mm long; banner 8.3-16.5mm long

FABACEAE

5. Keel 4.5-7.2mm long; calyx tube 1.5-3.8mm long; lower stipules pilose dorsally; plains and hills; A,La **A. tridactylicus** Gray
5. Keel 7.5-10.5mm long; calyx tube 3.6-6.5mm long; lower stipules sometimes glabrous dorsally
6. Leaves all with 3 leaflets; clay hills; NEC,Cl,We,CE **A. barrii** Barneby
6. Leaves in part with more than 3 leaflets; rocky hills; Li,SW **A. calycosus** Torrey ex Wats.
2. Calyx tube 5.5-16mm long; banner 12-28mm long
7. Banner oblanceolate to spatulate, tapering evenly from tip to base; leaves 1-10cm long; often loosely matted **A. gilviflorus** Sheld.
8. Flowers white or ochroleucous, sometimes tipped with purple; hills and ridges; Pa,NWC,NEC,NE,Su,F,Na,Ni,SE var. **gilviflorus**
8. Flowers purple; rocky hills; F var. **purpureus** Dorn
7. Banner fiddle-shaped, with an oblanceolate blade superimposed on an oblanceolate claw of the same length and width; leaves 0.7-3.5cm long; densely matted
9. Petals glabrous dorsally or nearly so; ovules 6-14
10. Petals predominantly yellow, sometimes white in part or with purplish markings; ovules 11-14; rocky or clay hills and ridges; Sr **A. proimanthus** Barneby
10. Petals predominantly white, usually lined or tinged with lavender, often drying yellowish; ovules 6-8; rocky calcareous slopes and ridges; Pa undescribed taxon
9. Petals all villous dorsally; ovules 8-9; barren hills and ridges, often limestone; Pa,NWC,J,NE,F,CE,SC,Pl,La **A. hyalinus** Jones

GROUP III

1. Stipules, at least the lower ones, connate on side of stem opposite petiole; plants all with leafy stems
2. Leaflets suborbicular-obcordate to obovate, 1-2 times as long as wide; sandy desert; NWC,F,Sr **A. oreganus** Nutt.
2. Leaflets linear to oblong, elliptic, or ovate, mostly over 2 times as long as wide
3. Pods present
4. Pods with 1 locule
5. Pods ovoid to oblong-ovoid, somewhat dorsiventrally compressed; desert hills and alkaline flats; CW,F,SW,SC **A. flavus** Nutt.
5. Pods linear to linear-oblanceolate, laterally compressed to subterete **A. miser** Dougl.
6. Leaflets of upper leaves linear or linear-elliptic; flowers whitish except for tips; ovules 7-11; hills and slopes; Y,T,CW,F,Na,SW,Cn var. **praeteritus** Barneby
6. Leaflets of upper leaves often elliptic or oblanceolate; flowers often purplish; ovules 12-16; woods, slopes, and meadows; NW,NWC,NEC,Cl,CW,F,Na,Co,SW,SC var. **decumbens** (Nutt. ex T.& G.) Cronq.
4. Pods with 2 locules
7. Stems arising many together from a root crown or branching caudex; plains, hills, and slopes; Y,Pa,B,H,NEC,NE,F,CE,Sr,SC,SE **A. laxmannii** Jacq. var. **robustior** (Hook.) Barneby & Welsh
7. Stems arising singly or few together from oblique or creeping rhizomes; stream banks and meadows **A. canadensis** L.
8. Ovary and pod glabrous; pod not grooved dorsally; Y,T,NEC,Cr,F,Co,Ni,SC,Pl,La var. **canadensis**
8. Ovary and usually the pod hairy; pod grooved dorsally; NW,H,CW,F,SW,A var. **brevidens** (Gand.) Barneby
3. Pods lacking
9. Stems arising singly or few together from oblique or creeping rhizomes

FABACEAE

10. Leaflets 7mm or less wide; stems rarely as much as 2mm wide; keel 6-10mm long (See lead 6 above for varieties) **A. miser** Dougl.
10. Leaflets, or many of them, usually over 7mm wide; stems often over 3mm wide; keel 9.5-13.5mm long; stream banks and meadows (See lead 8 above for varieties) **A. canadensis** L.
9. Stems densely caespitose from a branched rootstock or caudex
11. Banners 13-19.5mm long; wings 10.6-17.5mm long
12. Petals yellow to cream; keels 8-10mm long; desert hills and alkaline flats; CW,F,SW,SC **A. flavus** Nutt.
12. Petals usually purplish; keels mostly 9.5-15mm long; plains, hills, and slopes; Y,Pa,B,H,NEC,NE,F,CE,Sr,SC,SE
A. laxmannii Jacq. var. **robustior** (Hook.) Barneby & Welsh
11. Banners 5.5-13mm long; wings 5-10.6mm long
13. Calyx tube 3.7-5.2mm long; petals sometimes yellow; desert hills and alkaline flats; CW,F,SW,SC **A. flavus** Nutt.
13. Calyx tube 1.7-3.5mm long; petals usually not yellow, sometimes ochroleucous (See lead 6 above for varieties) **A. miser** Dougl.
1. Stipules not connate on side of stem opposite petiole; plants sometimes without stems
14. Calyx tube 6.5mm or more long
15. Leaflets mostly obovate to suborbicular, rounded or notched at tip; pods usually mottled, with a leathery endocarp and papery exocarp with spongy tissue between; desert hills; Pa,NWC,Li,F,Na,SW **A. chamaeleuce** Gray
15. Leaflets mostly elliptic to obovate, many usually acute or subacute at tip; pods not as above; plains and hills; NWC,NEC,NE,F,CE,SC,SE **A. missouriensis** Nutt.
14. Calyx tube less than 6.5mm long
16. Plants acaulescent or essentially so; wing petals deeply cleft or toothed at tip; pods with 2 locules or nearly so; rocky hills; Li,SW **A. calycosus** Torrey ex Wats.
16. Plants caulescent, or if not, the wing petals entire; pods with 1 or 2 locules
17. Plants subacaulescent; wings 7-12mm long; pods with 1 locule; plains and hills; Pa,NWC,NEC,NE,F,CE,SC,SE **A. lotiflorus** Hook.
17. Plants caulescent; wings mostly over 12mm long; pods with 2 locules or nearly so; plains, hills, slopes, and bottomlands; Y,T **A. terminalis** Wats.

GROUP IV

1. Pods glabrous or nearly so
2. Calyx tube 2-3mm long; burned forest and clear-cuts; T,CW
A. paysonii (Rydb.) Barneby
2. Calyx tube 3mm or more long
3. Pods about 2-3mm wide, mostly 6 times or more as long as wide; plains and hills; Y,Pa,H,Wa,NEC,NE,Su,F,CE,Sr,SC,SE **A. drummondii** Dougl. ex Hook.
3. Pods about 7-20mm wide, mostly less than 3 times as long as wide
4. Pods broadly rounded at tip when mature, usually subglobose; plains, hills, and slopes **A. crassicaarpus** Nutt.
5. Herbage somewhat cinereous with hairs mostly 0.5-1.1mm long; inflorescence somewhat pilose; calyx tube usually 5.5-8mm long; Sh,Cr,We,CE,A,G
var. **crassicaarpus**
5. Herbage strigulose with hairs mostly 0.3-0.7mm long; inflorescence mostly strigulose; calyx tube usually 7-10mm long; NEC,NE,CE,SC,Pl,La
var. **paysonii** (Kelso) Barneby
4. Pods somewhat gradually tapering to tip, not subglobose
6. Stems densely hairy with spreading or ascending hairs often well over 1mm long; plains and hills; G,La **A. mollissimus** Torrey
6. Stems glabrous to moderately hairy with mostly appressed hairs well under 1mm long; sagebrush hills **A. lentiginosus** Dougl. ex Hook.
varieties on next page

FABACEAE

7. Keel 6-9.5mm long; calyx 4-6.5mm long; Li,U
 var. **salinus** (Howell) Barneby
7. Keel 10-15mm long; calyx 7-12.5mm long; H,Wa,CW,F,SW
 var. **chartaceus** Jones
1. Pods hairy
8. Pods mostly about 10mm wide or more, about 1.5-2 times as long
9. Calyx 2.5-4.5mm long; talus or rocky slopes, usually limestone; Pa
A. platytropis Gray
9. Calyx 6.5-13mm long
10. Leaflets conspicuously reticulate-veined, some usually over 2cm long;
 meadows and disturbed areas; Pa,T,B,Sh,Li,F,Sr,Pl,La **A. cicer** L.
10. Leaflets not reticulate veined, 1.5cm or less long; plains and hills; NEC,NE,
 Na,Ni **A. plattensis** Nutt.
8. Pods mostly about 2-5mm wide, often over twice as long
11. Pods in a dense subglobose head
12. Pods mostly 1cm or less long; moist meadows and stream banks; NW,H,NEC,
NE,CW,F,Na,SW,SC,Pl,La **A. agrestis** Dougl. ex G. Don
12. Pods mostly 1.5cm or more long; moist, usually sandy or gravelly places; F
A. tibetanus Benth. ex Bunge
11. Pods in a somewhat loose raceme, usually pendulous at maturity
13. Stipules not united on side of stem opposite petiole; pod with whitish hairs;
 burned forest and clear-cuts; T,CW **A. paysonii** (Rydb.) Barneby
13. Stipules, at least the lower ones, united on side of stem opposite petiole; pod
 often with blackish hairs; woods, slopes, and meadows in mountains; NW,
NWC,NEC,Cr,We,CW,F,Na,Co,Sr,SC **A. alpinus** L.

GROUP V

1. Pods thick woolly-hairy, the hairs concealing the pod surface
2. Body of pod about 3-4 times as long as wide (excluding hairs), the hairs as long as
 the pod's diameter or nearly so; leaflets mostly obovate and obtuse; petals purple;
 desert hills; T,Li,U **A. utahensis** (Torrey) T.& G.
2. Body of pod about twice as long as wide, the hairs about half as long as pod's
 diameter; leaflets often elliptic and acute or subacute; petals whitish or yellowish;
 plains and hills; N,C,SW,SC,Pl,G **A. purshii** Dougl. ex Hook.
1. Pods glabrous or hairy but not thick woolly-hairy with the hairs concealing the pod
 surface
3. Plants annual or rarely biennial; calyx tube 1.5-2.4mm long; usually sandy plains
 and hills; Pa,NWC,J,CW,F,Na,Sr,Cn **A. geyeri** Gray
3. Plants perennial; calyx tube variable
4. Pods inflated, thin and papery in texture, mostly ovoid to obovoid
5. Pods with a stipe at least as long as calyx tube
6. Leaflets filiform to narrowly oblong, 3mm or less wide; pods usually purple
 mottled; sandy plains and hills; J,Cl,F,Na,Co,Sr,Cn,G,La
A. ceramicus Sheld. var. **filifolius** (Gray) Hermann
6. Leaflets ovate to lance-oblong or elliptic, some over 3mm wide; pods usually
 not purple mottled
7. Pods mostly well over 5mm wide; some leaflets over 25mm long; some
 stipules usually over 1cm long; meadows, woods, and stream banks; Y,Pa,
NWC,NEC **A. americanus** (Hook.) Jones
7. Pods mostly 5mm or less wide; leaflets 25mm or less long; stipules less
 than 1 cm long
8. Pod strongly grooved dorsally; woods, slopes, and meadows in
 mountains; NW,NWC,NEC,Cr,We,CW,F,Na,Co,Sr,SC **A. alpinus** L.
8. Pod scarcely or not at all grooved dorsally; stream banks, meadows, and
 thickets; T,CW **A. robbinsii** (Oakes) Gray var. **minor** (Hook.) Barneby
5. Pods without a stipe or the stipe shorter than calyx tube

FABACEAE

9. Leaflets mostly less than 5mm long and 1.5mm wide, if longer, then very irregular and few; pods usually subglobose, often purplish mottled, glabrous or sparsely hairy
10. Leaves with normally developed leaflets, these numerous
- A. jejunos** Wats.
11. Flowers usually purplish; terminal leaflet somewhat continuous with rachis; leaves mostly all basal or nearly so; rocky hills and ridges; CW, SW, Cn var. **jejunos**
11. Flowers white, sometimes purplish tinged; terminal leaflet jointed; leaves often on elongate stems; barren hills; B var. **articulatus** Dorn
10. Leaves with only a few irregular leaflets, many of the leaves reduced to phyllodia; sandy plains and hills; J, Cl, F, Na, Co, Sr, Cn, G, La
- A. ceramicus** Sheld. var. **filifolius** (Gray) Hermann
9. Leaflets usually longer or wider; pods usually not as above
12. Pods mostly over 3.5cm long when mature, glabrous to very sparsely hairy; plains and hills; Su, F, Co, SW, Cn, Pl **A. megacarpus** (Nutt.) Gray
12. Pods mostly less than 2cm long, often densely hairy
13. Stipules all free on side of stem opposite petiole (rarely a few very nearly united)
14. Pods barely if at all exceeding the leaves, somewhat crowded, 5cm or less between upper and lower pods; desert hills; CW, F, Sr, Cn
- A. pubentissimus** T. & G.
14. Pods usually much exceeding leaves, somewhat scattered, over 5cm between upper and lower pods
15. Pods sessile or nearly so, the body 5-13mm long; stream banks, meadows, and woods; NW, B, H, NEC, CW, F, SC, La
- A. eucosmus** Robins.
15. Pods with a stipe 1-5mm long, the body and stipe usually 13mm or more long **See lead 8 above**
13. Stipules, at least the lower ones, definitely united on side of stem opposite petiole **See lead 8 above**
16. Pods with a stipe 1-5mm long **See lead 8 above**
16. Pods usually sessile or nearly so
17. Body of pod usually over 1cm long at maturity, mostly over 3 times as long as wide; plains and hills; NE, Sr, SC, Pl, La
- A. flexuosus** (Hook.) Dougl. ex G. Don
17. Body of pod less than 1cm long at maturity, about 1-3 times as long as wide
18. Pods somewhat crowded, 5cm or less between upper and lower pods, mostly spreading; meadows and stream banks; Su, F, Sr, SC
- A. bodinii** Sheld.
18. Pods somewhat scattered, over 5cm between upper and lower pods, mostly reflexed; stream banks, meadows, and woods; NW, B, H, NEC, CW, F, SC, La **A. eucosmus** Robins.
4. Pods not inflated, or if so, then tough-leathery or woody or fleshy, usually elliptic, linear, or oblong and often compressed laterally or dorsiventrally
19. Pod with a stipe as long as or longer than calyx tube
20. Pods compressed laterally
21. Lower stipules lacking a dark band at base; pod usually with a much reduced septum; calyx 4-8mm long, the tube mostly 2.7-6.5mm long; ovules 8-20
22. Calyx tube 4-6.5mm long; desert hills; SW
- A. coltonii** Jones var. **moabensis** Jones
22. Calyx tube 2.7-4mm long; rocky slopes and meadows; NW, H, J, Cr, We, CW, F, Na, Ni, Sr, SC, Pl, La
- A. australis** (L.) Lam. var. **glabriusculus** (Hook.) Isely

FABACEAE

21. Lower stipules usually with a dark band at base; pod lacking a septum; calyx 2.5-5mm long, the tube mostly 2-2.7mm long; ovules 3-9; plains, meadows, and slopes; NW,B,H,J,NE,C,S **A. tenellus** Pursh
20. Pods compressed dorsiventrally or trigonously
23. Pods compressed dorsiventrally, the dorsal side convex, the ventral side depressed or 2 grooved **A. bisulcatus** (Hook.) Gray
24. Body of mature pod less than 1cm long, prominently cross rugulose including the angles; desert hills; Li,SW,Cn
var. **haydenianus** (Gray) Barneby
24. Body of mature pod often over 1cm long, faintly cross rugulose at most
25. Flowers ochroleucous, often purple tipped, 10-14mm long; ovules 2-5 pair; barren hills and flats; Wa,CW,F,SW,Cn var. **major** (Jones) Welsh
25. Flowers purplish, 13-18mm long; ovules mostly 5-7 pair; plains and hills; Pa,T,NWC,NEC,NE,C,SW,SC,Pl,La var. **bisulcatus**
23. Pods compressed trigonously, the 3 sides all convex, flat, or concave
26. Pod strongly trigonous, the 3 sides flat or concave; calyx 7-19mm long
A. racemosus Pursh
27. Body of mature pod 1-2cm long, (4)5-8mm wide, less than 4 times as long as wide; leaflets 9-19; barren hills and washes; Su,U
var. **treleasei** Porter
27. Body of mature pod (1.5)2-3cm long, 3-6mm wide, over 4 times as long as wide; leaflets of upper leaves mostly 17-31
28. Calyx 7-9(10.5)mm long, the teeth 1.5-3.5mm long; plains and hills; We,Ni var. **racemosus**
28. Calyx (9)10-19mm long, the teeth 4.5-10mm long; plains and hills; Ni var. **longisetus** Jones
26. Pod obtusely trigonous, the sides mostly convex or sometimes grooved dorsally; calyx 3-7mm long **See lead 8 above**
19. Pod without a stipe or stipe shorter than calyx tube
29. Pods compressed laterally, usually strongly so
30. Pods mostly 6-11mm long; hills and rocky slopes; Y,Pa,B,H,Sh,Cl,Na
A. vexilliflexus Sheld.
30. Pods mostly 12-40mm long
31. Pods mostly 12-21mm long, often partially filled between the seeds with criss-crossing fibrous strands
32. Leaflets 9-25; plains and hills; NE,Sr,SC,Pl,La
A. flexuosus (Hook.) Dougl. ex G. Don
32. Leaflets 1-7; meadows and stream banks; type from Green River Basin **A. diversifolius** Gray
31. Pods mostly 20-40mm long, lacking fibrous strands
33. Leaflets mostly linear, many leaves usually lacking lateral leaflets; root crown usually well underground; hills and slopes; T,H,Wa,CW,F,SW,Cn **A. convallarius** Greene
33. Leaflets linear to oval, the leaves usually all with lateral leaflets; root crown usually superficial **A. miser** Dougl.
34. Leaflets mostly 7-11, hairy on upper surface; banner 6-8mm long; pod hairy; ovules 8-12; hills and slopes; T,CW,SW,Cn
var. **tenuifolius** (Nutt.) Barneby
34. Leaflets mostly 11-21, glabrous or glabrate on upper surface; banner 5-13mm long; pod glabrous or glabrate, or if hairy, ovules 13-19
35. Ovary and pod usually hairy; ovules 13-19; woods and slopes; Li,F,SW,SC var. **oblongifolius** (Rydb.) Cronq.
35. Ovary and pod glabrous (glabrate); ovules 6-11; woods and slopes; NW,H,CW,F var. **hylophilus** (Rydb.) Barneby
29. Pods terete or subterete or compressed dorsiventrally or trigonously

FABACEAE

36. Stipules not united on side of stem opposite petiole (stems rarely very short and this difficult to determine)
37. Plants acaulescent or subacaulescent
38. Pods 2.5-4.5cm long, 0.9-1.8cm wide; leaflets often over 8mm long and 4mm wide; plains and hills; Pa,B,H,F,SC,Pl,La **A. shortianus** Nutt.
38. Pods 1.5-3.2cm long, 0.5-1.2cm wide; leaflets mostly 8mm or less long and 4mm or less wide **A. argophyllus** Nutt.
39. Banner bright purple in large part in upper half, some usually 22-24mm long; meadows, woods, and stream banks; Pa,T,CW,F,SW
var. **argophyllus**
39. Banner usually pale purple mostly near tip, 18-22mm long; rocky sagebrush; Li,F,SW
var. **martinii** Jones
37. Plants caulescent
40. Pods glabrous or nearly so, strongly trigonously compressed, the 3 sides flat or concave, often 4 or more times as long as wide (See lead 27 above for varieties) **A. racemosus** Pursh
40. Pods not as above
41. Pods 4-13mm long, 2.3-5.5mm wide, usually pendulous; stream banks, meadows, and woods; NW,B,H,NEC,CW,F,SC,La
A. eucosmus Robins.
41. Pods mostly 15mm or more long and 5mm or more wide, often not pendulous
42. Stems, at least in part, with long spreading hairs which are usually about 1mm or more long; rocky hills and open woods; A,La
A. parryi Gray
42. Stems with mostly shorter appressed hairs
43. Leaflets glabrous or sparsely hairy on at least 1 side, greenish
44. Leaflets obovate or oblanceolate; calyx 6.5-8.5mm long; pods obcompressed; ovules 27-32; plains and hills; Y,Pa,NWC,NEC,Cl,CW,F,Na,SW,Cn
A. cibarius Sheld.
44. Leaflets mostly ovate to lance-oblong; calyx 4-7mm long; pods obtusely trigonous; ovules 6-10; stream banks, meadows, and thickets; T,CW
A. robbinsii (Oakes) Gray var. **minor** (Hook.) Barneby
43. Leaflets moderately to densely hairy on both sides, often silvery (See lead 39 above for varieties) **A. argophyllus** Nutt.
36. Stipules, at least the lower ones, united on side of stem opposite petiole
45. Racemes 1-6 flowered
46. Plants with a thick taproot; meadows and stream banks; Su,F,Sr,SC
A. bodinii Sheld.
46. Plants with a very slender taproot
47. Pods ascending or spreading; alpine and subalpine, usually on limestone; T,CW
A. shultziorum Barneby
47. Pods pendulous; stream banks and meadows; Cn
A. leptaleus Gray
45. Racemes, or some of them, 7 or more flowered, often only the pedicels remaining in fruit
48. Calyx tube 4.5-10mm long; banner usually 13.5mm or more long
49. Leaflets all decurrent into the rachis on lower side (not jointed or petiolulate)
50. Pods erect or ascending; ovules 14-23; plains and hills; Pa,NWC,F,Na,Co,Sr,Cn
A. grayi Parry ex Wats.
50. Pods deflexed; ovules 20-32
51. Leaflets often involute, glabrous or essentially so on upper surface, hairy beneath; plains and hills; J,Cl,F,CE,Sr,SC,SE
A. pectinatus (Hook.) Dougl. ex G. Don

FABACEAE

51. Leaflets not involute, usually about equally hairy on both sides; desert hills; F,Na,Sr **A. nelsonianus** Barneby
49. Leaflets all jointed to rachis
52. Body of pod dorsiventrally compressed, the dorsal side low-convex, the ventral side depressed or 2 grooved (See lead 24 above for varieties) **A. bisulcatus** (Hook.) Gray
52. Body of pod trigonously compressed, all 3 sides flat or concave (See lead 27 above for varieties) **A. racemosus** Pursh
48. Calyx tube 1.4-4.3mm long; banner 4.5-13mm long
53. Stems arising from buried points of renewal on the underground root crown or rhizome-like caudex branches
54. Pods 4-9mm long; ovules 5-9; plains and hills; Pa,B,NEC,NE,CE,SC,SE **A. gracilis** Nutt.
54. Pods mostly 12-21mm long; ovules 14-20; plains and hills; NE,Sr,SC,Pl,La **A. flexuosus** (Hook.) Dougl. ex G. Don
53. Stems arising together from a shallow or surface root crown or caudex
55. Pods somewhat crowded, 5cm or less between upper and lower pods, mostly spreading; meadows and stream banks; Su,F,Sr,SC **A. bodinii** Sheld.
55. Pods somewhat scattered, over 5cm between upper and lower pods, mostly reflexed
56. Pods sessile or nearly so, the body 5-13mm long; stream banks, meadows, and woods; NW,B,H,NEC,CW,F,SC,La **A. eucosmus** Robins.
56. Pods with a stipe 1-5mm long, the body and stipe often 13mm or more long **See lead 8 above**

GROUP VI

1. Banners mostly 5-7.5mm long
2. Plants annual or rarely biennial; mostly sandy plains and hills; Pa,NWC,J,CW,F,Na,Sr,Cn **A. geyeri** Gray
2. Plants perennial
3. Ovules 4-8; banners 5.5-7.5mm long, often purple; stream banks, meadows, and woods; NW,B,H,NEC,CW,F,SC,La **A. eucosmus** Robins.
3. Ovules 8-10; banners 7-9mm long, usually whitish; burned forests and clear-cuts; T,CW **A. paysonii** (Rydb.) Barneby
1. Banners mostly 7.5-14.5mm long
4. Leaflets, or some of them, at least 25mm long and 9mm wide; some stipules usually 1cm long or more; meadows, woods, and stream banks; Y,Pa,NWC,NEC **A. americanus** (Hook.) Jones
4. Leaflets usually all less than 25mm long, sometimes over 9mm wide; stipules mostly less than 1cm long
5. Plants less than 2dm high, the leaflets conspicuously hairy
6. Petals purple to pinkish-purple, the banner striate; desert hills; CW,F,Sr,Cn **A. pubentissimus** T.& G.
6. Petals white or ochroleucous, sometimes tipped with purple or pink, the banner usually not striate; rocky slopes and meadows; NW,H,J,Cr,We,CW,F,Na,Ni,Sr,SC,Pl,La **A. australis** (L.) Lam. var. **glabriusculus** (Hook.) Isely
5. Plants usually over 2dm high, the leaflets often glabrous or nearly so
7. Keel 4.5-5.5mm long; burned forests and clear-cuts; T,CW **A. paysonii** (Rydb.) Barneby
7. Keel 5.5-15mm long
8. Calyx 8.5-12.5mm long; sagebrush hills; H,Wa,CW,F,SW **A. lentiginosus** Dougl. ex Hook. var. **chartaceus** Jones
8. Calyx usually 4-8mm long

FABACEAE

9. Petals pink-purple to purple, keel 9-13mm long; desert hills; SW
A. coltonii Jones var. **moabensis** Jones
9. Petals whitish to purple, keel 5.5-9(9.5)mm long
10. Ovules 16-26; ovary and young pods sessile; sagebrush hills; Li,U
A. lentiginosus Dougl. ex Hook. var. **salinus** (Howell) Barneby
10. Ovules 8-16; ovary and young pods often stipitate
11. Wings notched at tip; stipules usually hairy on back; rocky slopes
 and meadows; NW,H,J,Cr,We,CW,F,Na,Ni,Sr,SC,Pl,La
A. australis (L.) Lam. var. **glabriusculus** (Hook.) Isely
11. Wings mostly entire; stipules usually glabrous or nearly so on back
 (sometimes ciliate-margined); stream banks, meadows, and thickets;
T,CW **A. robbinsii** (Oakes) Gray var. **minor** (Hook.) Barneby

GROUP VII

1. Ovaries and young pods glabrous
2. Stems and leaves hirsute, the longest hairs 1-2mm long
3. Petals purple to yellowish; keel 14-18mm long; ovules 26-37; plains and hills;
G,La **A. mollissimus** Torrey
3. Petals white or cream, drying yellowish; keel 12-15mm long; ovules 14-26;
 plains and hills; Y,Pa,H,Wa,NEC,NE,Su,F,CE,Sr,SC,SE
A. drummondii Dougl. ex Hook.
2. Stems and leaves mostly strigillose or glabrous, the longest hairs less than 1mm
 long
4. Ovules 16-32; stems glabrous or glabrate; sagebrush hills (See GROUP IV, lead
 7 for varieties) **A. lentiginosus** Dougl. ex Hook.
4. Ovules either 12-22 or 40-68; stems hairy or glabrous
5. Ovules 12-22; calyx usually gibbous at base
6. Petals pink-purple or purple; desert hills; SW
A. coltonii Jones var. **moabensis** Jones
6. Petals white or ochroleucous (See GROUP V, lead 27 for varieties)
A. racemosus Pursh
5. Ovules 40-68; calyx usually not gibbous at base; plains, hills, and slopes (See
 GROUP IV, lead 5 for varieties) **A. crassicaarpus** Nutt.
1. Ovaries and young pods hairy
7. Plants from the eastern half of Wyoming
8. Stems with long spreading hairs
9. Flowers (10)15-40; keel 14-18mm long; leaflets 5-35mm long; plains and hills;
G,La **A. mollissimus** Torrey
9. Flowers 3-15; keel 11.5-16mm long; leaflets 2-15(20)mm long
10. Petals mostly white; anthers usually 0.7-0.85mm long; rocky hills and open
 woods; A,La **A. parryi** Gray
10. Petals mostly purple or purplish; anthers 0.4-0.7mm long; plains and hills;
NEC,NE,Na,Ni **A. plattensis** Nutt.
8. Stems with appressed hairs or glabrous or the plants acaulescent or
 subacaulescent
11. Hairs of calyx blackish
12. Calyx tube 5-6.5mm long; flowers 4-14 per raceme; ovules 27-32; plains
 and hills; Y,Pa,NWC,NEC,Ci,CW,F,Na,SW,Cn **A. cibarius** Sheld.
12. Calyx tube 6-12mm long; flowers 1-6 or rarely 8 per raceme; ovules 20-54
13. Leaflets densely hairy on both surfaces; plains and hills; N,C,SW,SC,Pl,G
A. purshii Dougl. ex Hook.
13. Leaflets glabrous or sparsely hairy at least on 1 surface; plains and hills;
Su,F,Co,SW,Cn,Pl **A. megacarpus** (Nutt.) Gray
11. Hairs of calyx white or yellowish
14. Plants acaulescent or subacaulescent, usually densely tufted

FABACEAE

15. Leaflets usually densely to moderately hairy on both surfaces; flowers 1-40
 16. Flowers 1-6; petals white to ochroleucous, often tipped with purple; plains and hills; N,C,SW,SC,PI,G **A. purshii** Dougl. ex Hook.
 16. Flowers (5)7-40; petals purple to yellowish
 17. Pubescence of soft, often yellowish hairs usually over 1mm long; flowers 10-40; plains and hills; G,La **A. mollissimus** Torrey
 17. Pubescence of stiff, whitish hairs usually less than 1mm long; flowers 5-16; plains and hills; Pa,B,H,F,SC,PI,La **A. shortianus** Nutt.
 15. Leaflets glabrous or sparsely hairy at least on 1 surface; flowers 3-8; plains and hills; Su,F,Co,SW,Cn,PI **A. megacarpus** (Nutt.) Gray
 14. Plants caulescent, not densely tufted
 18. Middle and upper stipules herbaceous; flowers mostly (3)6-15 per raceme; plains and hills; NEC,NE,Na,Ni **A. plattensis** Nutt.
 18. Middle and upper stipules not herbaceous; flowers mostly 3-5(8) per raceme; plains and hills; Su,F,Co,SW,Cn,PI **A. megacarpus** (Nutt.) Gray
 7. Plants from the western half of Wyoming
 19. Calyx tube less than 8.5mm long
 20. Plants caulescent, the stems usually 6cm or more long
 21. Flowers mostly equaling or exceeding the leaves; petals ochroleucous to purple; plains and hills; Y,Pa,NWC,NEC,Cl,CW,F,Na,SW,Cn **A. cibarius** Sheld.
 21. Flowers mostly exceeded by the leaves; petals usually whitish; sagebrush hills (See GROUP IV, lead 7 for varieties) **A. lentiginosus** Dougl. ex Hook.
 20. Plants acaulescent or subacaulescent, the stems rarely to 5cm long
 22. Flowers 3-5 or rarely 8 per raceme, often white or yellowish; leaflets usually glabrate; plains and hills; Su,F,Co,SW,Cn,PI **A. megacarpus** (Nutt.) Gray
 22. Flowers (5)7-16 per raceme, purple or pinkish-purple; leaflets conspicuously hairy; plains and hills; Pa,B,H,F,SC,PI,La **A. shortianus** Nutt.
 19. Calyx tube 8.5mm or more long
 23. Calyx sparsely pubescent with very short, mostly black-outlined, non-overlapping hairs; plains and hills; Su,F,Co,SW,Cn,PI **A. megacarpus** (Nutt.) Gray
 23. Calyx mostly densely pubescent with long, overlapping hairs
 24. Petals white or yellowish, the keel or wings sometimes tipped with purple
 25. Hairs of leaflets mostly loose and tangled; leaflets mostly 7-15 per leaf; plains and hills; N,C,SW,SC,PI,G **A. purshii** Dougl. ex Hook.
 25. Hairs of leaflets mostly stiff and straight; leaflets mostly 11-19 per leaf (See GROUP V, lead 39 for varieties) **A. argophyllus** Nutt.
 24. Petals purple or pinkish-purple
 26. Banner (21)24-31mm long; stipules often densely hairy, the surface concealed by the hairs or nearly so; desert hills; T,Li,U **A. utahensis** (Torrey) T.& G.
 26. Banner 18-24mm long; stipules moderately hairy to glabrate, the surface not concealed by the hairs
 27. Flowers 2-8; leaves 12cm or less long; leaflets 12mm or less long; pubescence of calyx and herbage usually similar (See GROUP V, lead 39 for varieties) **A. argophyllus** Nutt.
 27. Flowers (5)7-16; leaves often over 12cm long; leaflets often over 12mm long; calyx villous, contrasting with the silvery-strigose herbage; plains and hills; Pa,B,H,F,SC,PI,La **A. shortianus** Nutt.

GROUP VIII

1. Leaflets confluent with rachis, at least on lower side, not jointed, linear to oblong-ob lanceolate, many 2-6cm long

FABACEAE

2. Stems erect to ascending; ovules mostly 14-22; banner 14-22.5mm long; leaflets oblong-oblongate to linear, not involute; plains and hills; Pa,NWC,F,Na,Co,Sr,Cn
A. grayi Parry ex Wats.
2. Stems often prostrate or decumbent to ascending; ovules mostly 22-32; banner 21-30mm long; leaflets often linear and involute
3. Leaflets often involute, glabrous or essentially so on upper surface, hairy beneath; plains and hills; J,Cl,F,CE,Sr,SC,SE
A. pectinatus (Hook.) Dougl. ex G. Don
3. Leaflets not involute, usually about equally hairy on both sides; desert hills; F, Na,Sr
A. nelsonianus Barneby
1. Leaflets jointed to rachis, often not linear to oblong-oblongate, the length variable
4. Leaves and stems hirsute with long, spreading, minutely bulbous-based hairs over 1mm long; flowers white to ochroleucous, 14-35 per raceme; plains and hills; Y,Pa,H,Wa,NEC,NE,Su,F,CE,Sr,SC,SE
A. drummondii Dougl. ex Hook.
4. Leaves and stems usually not hirsute as above; flowers white, ochroleucous, or purple, 3-80 per raceme
5. Flowers 3-15 per raceme, purplish or at least purple tinged
6. Leaflets 29 or more on some leaves; moist, usually sandy or gravelly places; F
A. tibetanus Benth. ex Bunge
6. Leaflets 23(27) or fewer
7. Ovules 14-26; stems and leaves sometimes glabrous or glabrate; moist meadows and stream banks; NW,H,NEC,NE,CW,F,Na,SW,SC,Pl,La
A. agrestis Dougl. ex G. Don
7. Ovules 28-48; stems and leaves hairy; plains and hills; NEC,NE,Na,Ni
A. plattensis Nutt.
5. Flowers mostly 16-80 per raceme, or if fewer, then flowers ochroleucous
8. Flowers erect or ascending, ochroleucous; meadows and disturbed areas; Pa, T,B,Sh,Li,F,Sr,Pl,La
A. cicer L.
8. Flowers soon drooping, white or ochroleucous to purplish
9. Petals purple, more rarely white or ochroleucous; calyx tube 2.8-5.7mm long; ovules 5-15 (See GROUP V, lead 24 for varieties)
A. bisulcatus (Hook.) Gray
9. Petals white or ochroleucous; calyx tube 4.5-9mm long; ovules 12-22; (See GROUP V, lead 27 for varieties)
A. racemosus Pursh

GROUP IX

1. Terminal leaflet, and often all leaflets, confluent with rachis, or the terminal leaflet somewhat filiform and much longer than the uppermost lateral pair of leaflets, or some of the leaves reduced to linear phyllodia
2. Leaves with mostly 1-7 leaflets
3. Calyx tube 2-3.5mm long, the teeth about 1/3 or more as long as tube; sandy plains and hills; J,Cl,F,Na,Co,Sr,Cn,G,La
A. ceramicus Sheld. var. **filifolius** (Gray) Hermann
3. Calyx tube 3.2-5.4mm long, the teeth mostly much less than 1/3 as long as tube
4. Pod oblong, mostly 10-17mm long, 4-6 times as long as wide; leaflets often broader than linear; meadows and stream banks; type from Green River Basin
A. diversifolius Gray
4. Pod linear, mostly 20-50mm long, 8-18 times as long as wide; leaflets narrowly linear; hills and slopes; T,H,Wa,CW,F,SW,Cn
A. convallarius Greene
2. Leaves with mostly 7-21 leaflets
5. Plants mostly less than 10cm high; leaflets mostly 1-5mm long and 1.5mm or less wide; rocky hills and ridges; CW,SW,Cn
A. jejunus Wats. var. **jejunus**
5. Plants often over 10cm high; leaflets longer and/or wider than above

FABACEAE

6. Keels 4-5.7(6.5)mm long; stems somewhat woody at base; at least the lower stipules often with a dark band at their base; ovules 3-9; plains, meadows, and slopes; NW,B,H,J,NE,C,S **A. tenellus** Pursh
6. Keels 5.9-11mm long; stems not woody at base; stipules lacking dark bands; ovules 6-19 (See GROUP V, lead 34 for varieties) **A. miser** Dougl.
1. Terminal leaflet and lateral leaflets all jointed to rachis, the terminal leaflet not filiform and much longer than uppermost lateral leaflets nor the leaves reduced to phyllodia
7. Stems arising from buried points of renewal on an underground root crown or rhizome-like caudex branches
8. Keel slightly longer and nearly twice as wide as the whitish wings; woods, slopes, and meadows in mountains; NW,NWC,NEC,Cr,We,CW,F,Na,Co,Sr,SC **A. alpinus** L.
8. Keel not as above
9. Racemes 1-6 flowered
10. Keel 5.5-7.5mm long; stream banks and meadows; Cn **A. leptaleus** Gray
10. Keel 8.5-9.5mm long; alpine and subalpine, usually limestone; T,CW **A. shultziorum** Barneby
9. Racemes 6-40 flowered
11. Calyx tube 1.5-2.7mm long; banner 5-8.5mm long; plains and hills; Pa,B,NEC,NE,CE,SC,SE **A. gracilis** Nutt.
11. Calyx tube 2.7-6mm long; banner 7.5-14mm long
12. Calyx 3.5-6mm long; leaflets mostly less than 2cm long; plains and hills; NE,Sr,SC,Pl,La **A. flexuosus** (Hook.) Dougl. ex G. Don
12. Calyx 6.5-9mm long; some leaflets usually over 2cm long; meadows and disturbed areas; Pa,T,B,Sh,Li,F,Sr,Pl,La **A. cicer** L.
7. Stems arising together from a determinate root crown or caudex near or above ground surface
13. Calyx tube 1.4-2.2mm long
14. Keels mostly 6-10.5mm long, often somewhat beaked
15. Stems lacking or to 3cm long; keel not beaked; talus or rocky slopes, usually limestone; Pa **A. platytropis** Gray
15. Stems to 3dm long; keel somewhat beaked (See GROUP V, lead 34 for varieties) **A. miser** Dougl.
14. Keels mostly 3-6mm long, blunt
16. Ovary and young fruit densely hairy, sessile or nearly so; flowers 3-7(11) per raceme
17. Calyx (2)2.5-4.5mm long; flowers often pink-purple, occasionally white; young fruits strongly flattened; hills and rocky slopes; Y,Pa,B,H,Sh,Cl,Na **A. vexilliflexus** Sheld.
17. Calyx 2-3mm long; flowers white, often tinged with purple; young fruits not flattened; barren hills; B **A. jejunos** Wats. var. **articulatus** Dorn
16. Ovary and young fruit glabrous or nearly so, conspicuously stipitate; flowers 4-20 per raceme; plains, meadows, and slopes; NW,B,H,J,NE,C,S **A. tenellus** Pursh
13. Calyx tube 2.3-5.7mm long
18. Racemes mostly 25-80 flowered
19. Leaves 3-14cm long; leaflets 11-35; flowers 25-80; stems to 5dm long **A. bisulcatus** (Hook.) Gray
20. Flowers 10mm or less long, ochroleucous, sometimes purple-tipped; desert hills; Li,SW,Cn var. **haydenianus** (Gray) Barneby
20. Flowers 10-18mm long, ochroleucous to purplish **See GROUP V, lead 25**
19. Leaves 1-7cm long; leaflets 7-15; flowers 2-30; stems to 2.5dm long; rocky slopes and meadows; NW,H,J,Cr,We,CW,F,Na,Ni,Sr,SC,Pl,La **A. australis** (L.) Lam. var. **glabriusculus** (Hook.) Isely
18. Racemes mostly 2-20(25) flowered

FABACEAE

21. Keel 6-10.5mm long
22. Petals often whitish or ochroleucous and purple-tipped; keel sometimes beak-like at tip; ovules 6-19
23. Ovary and young pod strongly stipitate, usually glabrous; rocky slopes and meadows; NW,H,J,Cr,We,CW,F,Na,Ni,Sr,SC,Pl,La
A. australis (L.) Lam. var. **glabriusculus** (Hook.) Isely
23. Ovary and young pod usually sessile, hairy or glabrous
24. Stems lacking or to 3cm long; keel not beaked; talus or rocky slopes, usually limestone; Pa **A. platytropis** Gray
24. Stems to 3dm long; keel somewhat beaked (See GROUP V, lead 34 for varieties) **A. miser** Dougl.
22. Petals purple to reddish-lilac (very rarely whitish); keel blunt at tip; ovules 2-10
25. Leaflets usually pointed at tip, often with a very short bristle; lower stipules usually strongly connate-sheathing; meadows and stream banks; Su,F,Sr,SC **A. bodinii** Sheld.
25. Leaflets usually rounded or slightly notched at tip; lower stipules usually obscurely connate-sheathing
26. Keel shorter and little or no wider than wings, much shorter than banner; stream banks, meadows, and thickets; T,CW
A. robbinsii (Oakes) Gray var. **minor** (Hook.) Barneby
26. Keel longer than or as long as and wider than wings, equaling or a little shorter than banner; woods, slopes, and meadows in mountains; NW,NWC,NEC,Cr,We,CW,F,Na,Co,Sr,SC **A. alpinus** L.
21. Keel 4-6mm long
27. Petals purple to reddish-lilac; banners mostly 8-12mm long; wings mostly 7-10mm long; keels mostly 5.5-9mm long; meadows and stream banks; Su, F,Sr,SC **A. bodinii** Sheld.
27. Petals purple, whitish, or creamy; banners mostly 5.5-8.8mm long; wings mostly 5-7.5mm long; keels mostly 4-5.7mm long
28. Stems somewhat woody at base; lower stipules usually with dark bands at base; plains, meadows, and slopes; NW,B,H,J,NE,C,S
A. tenellus Pursh
28. Stems not woody at base; stipules lacking dark bands; stream banks, meadows, and woods; NW,B,H,NEC,CW,F,SC,La **A. eucosmus** Robins.

Caragana Caragana

Shrubs with prickles near base of buds; leaves even-pinnate with 6-12 leaflets, terminal leaflet none; flowers 1-4 per axil, yellow; stamens 10, diadelphous; pod terete, several seeded.

C. arborescens Lam.

Disturbed areas; Pa,T,Sh,Su,F,A,La

Coronilla Crown Vetch

Glabrous perennial; leaflets 9-25; flowers in head-like umbels; petals clawed; keel beaked; fruit a linear loment.

C. varia L.

Disturbed areas; T,Su,G

Dalea Prairie Clover

Glandular-punctate perennials; flowers in terminal and/or axillary spikes; pod 1 or 2(3) seeded.

1. Fertile stamens 9 or 10

2. Stem and leaves glabrous; petals white or cream; plains, hills, and roadsides; Cr, We **D. enneandra** Nutt.

2. Stem and leaves hairy; petals yellow; plains and hills; Pl **D. aurea** Nutt. ex Pursh

1. Fertile stamens 5, alternating with 4 petals which are sometimes staminode-like

Variety is the only infraspecific rank included in accordance with Article 4 of the International Code. The rank of subspecies is reserved for groups of related varieties when relationships are being represented. Relationships are beyond the scope of this treatment. The appendix includes taxonomic notes as well as new combinations that were necessary for this treatment. Some synonymy can be found in the index, mostly for changes made in this edition.

Standardized abbreviations sometimes have a disadvantage in that they lose continuity with the older literature. Details on authors and references can be found in other places. Standardization tends to lose touch with history and introduces bureaucracy. Historical conventions are used herein for most author names.

The illustrations are again those of Jane L. Dorn. Use of the facilities of the Rocky Mountain Herbarium at the University of Wyoming is gratefully acknowledged. The following are thanked for their help: Ronald Hartman, Curator of the Rocky Mountain Herbarium, for providing extensive support and facilities while working on this revision; Ernie Nelson, Manager of the Rocky Mountain Herbarium, for locating specimens and literature and assisting in many other ways; Walter Fertig, Wyoming Natural Diversity Database, for bringing new records and literature to my attention, suggesting revisions to the keys, and who may or may not get your thanks for talking me into doing this revision; Richard Brummitt, Royal Botanic Gardens, Kew, for help with identifying *Calystegia macounii*; Jennifer Whipple, Yellowstone National Park, for allowing examination of her collections so that 11 additional state records could be included here; Stuart Markow for pointing out key leads that needed improvement or revision and for bringing new records to my attention; Patsy Douglas, Center for Environmental Management of Military Lands, for allowing examination of several state records; Mary Barkworth, Utah State University, for supporting my making new combinations in *Piptatherum* even though both of us agree that *P. exiguum* may need to be placed elsewhere in the future; the curators of GH, NY, and PH for searching for a Nuttall type; the curator of BM for loaning a Nuttall type; and others, particularly at the Rocky Mountain Herbarium, who provided assistance in smaller ways.

R. Dorn, September 2001

Key to County Distributions

A = Albany	F = Fremont	Na = Natrona	Su = Sublette
B = Big Horn	G = Goshen	Ni = Niobrara	T = Teton*
Cl = Campbell	H = Hot Springs	Pa = Park*	U = Uinta
Cn = Carbon	J = Johnson	Pl = Platte	Wa = Washakie
Co = Converse	La = Laramie	Sh = Sheridan	We = Weston
Cr = Crook	Li = Lincoln	Sr = Sweetwater	Y = Yellowstone Park

* excluding Y

NW = Yellowstone Park, Park, Teton

NWC = Big Horn, Hot Springs, Washakie

NEC = Sheridan, Johnson

NE = Campbell, Crook, Weston

N = NW, NWC, NEC, NE

CW = Lincoln, Sublette

F = Fremont

CE = Natrona, Converse, Niobrara

C = CW, F, CE

SW = Uinta, Sweetwater

SC = Carbon, Albany

SE = Platte, Goshen, Laramie

S = SW, SC, SE

Distributions are given like reading a page:
west to east across the north,
west to east across the central,
and west to east across the south
as in the sequence immediately to the left.