

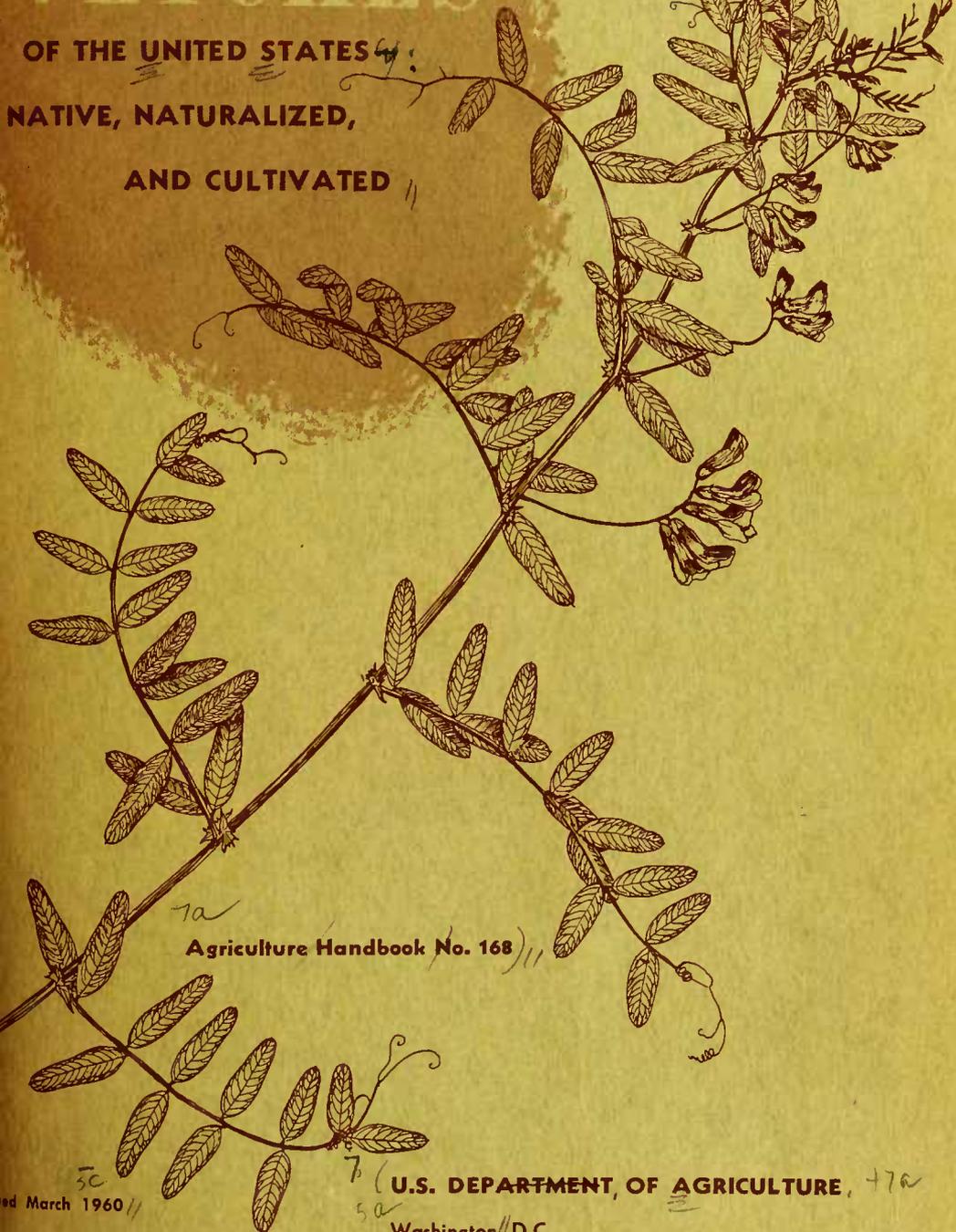
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VETCHES

OF THE UNITED STATES
NATIVE, NATURALIZED,
AND CULTIVATED



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VETCHES IN THE UNITED STATES—

Native, Naturalized, and Cultivated

By F. J. HERMANN, senior botanist, Crops Research Division,
Agricultural Research Service

Vetches (species of *Vicia*) form one of the most economically important genera of legumes. The cultivated species are particularly palatable and nourishing to domestic livestock and are useful as cover crops; the native species, among the most useful ones for wildlife, are used extensively in the West for grazing; and all species are important for their nitrogen-fixing ability.

An increasing number of exotic vetches are coming into cultivation for forage in the United States; among the most recent ones is the woollypod vetch (*Vicia dasycarpa*). About 35 species of *Vicia*, several with pronounced varieties, are now commonly found in this country. Because many of the species are difficult to distinguish from one another, and because none of the keys so far published covers even half the species, the following complete key and detailed descriptions and illustrations of all the species are presented to bring out additional distinguishing characters. Distribution of each native species, based on material in the United States National Herbarium, is shown on a map accompanying the illustration of that species.

Another genus of legumes *Lathyrus* (the wild peas), resembles *Vicia* so closely in general appearance as to be frequently confused with it. The true vetches may be readily distinguished from the wild peas by their thread-like, cylindrical style which is bearded with a tuft or ring of hairs at the tip, in contrast with the flattened style bearded down the inner face in *Lathyrus*. Furthermore, in *Vicia* the wing petals are united with the keel of the corolla, whereas in *Lathyrus* they are free or nearly so.

Key to Species

- 1a. Leaves without tendrils; plants erect.
 - 2a. Pod constricted between the seeds; leaflets 7 to 15 pairs----- 1. *V. ervilia*.
 - 2b. Pod not constricted between the seeds; leaflets 1 to 3 pairs.
 - 3a. Annual; stem thick, 4-angled; leaflets fleshy, blue-green, oval, obtuse; peduncles 2- to 4-flowered; pod large, 8 to 20 cm. long, 1 to 3 cm. wide, tumid; seeds large, 2 to 3 cm. in diameter----- 2. *V. faba*.
 - 3b. Perennial; stem slender, terete; leaflets thin, bright green, ovate-acuminate; peduncles 3- to 40-flowered; pod small, 2 to 4 cm. long, less than 1 cm. wide; seeds small, 3 to 3.5 mm. in diameter.
 - 4a. Leaflets 1 to 3 pairs; peduncles 3- to 8-flowered; calyx-teeth acuminate, reflexed, 3 to 6 mm. long; pod 7 to 9 mm. wide, black at maturity----- 3. *V. oroboides*.
 - 4b. Leaflets consistently 1 pair, peduncles (2) 4- to 40-flowered; at least the upper calyx-teeth short, broad and obtuse to mucronate, erect, 0.5 to 1 mm. long; pod 5 mm. wide, pale brown----- 4. *V. unijuga*.
- 1b. Leaves tendril-bearing; plants usually climbing or reclining (except *V. narbonensis*).
 - 5a. Peduncle, if present, much shorter than the leaflets; flowers few (often solitary or paired), sessile or subsessile in the upper leaf-axils.
 - 6a. Calyx-teeth subequal, linear to lanceolate, half as long as the tube or longer.
 - 7a. Tendrils all simple; flowers 5 to 8 mm. long, solitary; calyx 4 to 6 mm. long; seeds quadrangular, verrucose----- 5. *V. lathyroides*.
 - 7b. Tendrils mostly forking; flowers 10 to 35 mm. long, mostly 2 to 5; calyx 9 to 17 mm. long; seeds globose to flattened-orbicular, smooth.
 - 8a. Calyx-teeth (at least the upper) much shorter than the tube; flowers (1.5) 2 to 3.5 cm. long, yellow or yellow suffused with violet.

- 9a. Pod glabrous or short-pubescent; flowers 2.5 to 3.5 cm. long; calyx pilose, the teeth subequal----- 6. *V. grandiflora*.
- 9b. Pod with long, stiff hairs, pustulate at the base; flowers (1.5) 2 to 2.7 cm. long; calyx glabrous or nearly so, the lower teeth nearly equaling to much longer than the tube, 2 to 3 times as long as the upper----- 7. *V. lutea*.
- 8b. Calyx-teeth and tube subequal; flowers 1 to 3 cm. long, purple to whitish or ochroleucous.
- 10a. Standard glabrous on the back; calyx-teeth lanceolate.
- 11a. Pod pale brown at maturity; flowers 1.8 to 3 cm. long; leaflets chiefly oblong to obovate; nectaries on calyx-teeth conspicuous, yellowish brown----- 8. *V. sativa*.
- 11b. Pod almost black at maturity; flowers 1 to 1.8 cm. long; leaflets chiefly linear (except in var. *segetalis*); nectaries on calyx-teeth usually inconspicuous, pale-stramineous.
9. *V. angustifolia*.
- 10b. Standard densely appressed-villous on the back; calyx-teeth subulate----- 10. *V. pannonica*.
- 6b. Calyx-teeth very unequal, the upper two short-triangular, less than half as long as the tube.
- 12a. Leaflets mostly 4 to 10 pairs; flowers 8 to 15 mm. long, deep blue, purple-striped; pod stipitate, 18 to 35 mm. long; seeds globose; perennial--- 11. *V. sepium*.
- 12b. Leaflets 1 to 3 pairs; flowers 15 to 25 mm. long, purple; pod sessile, 40 to 70 mm. long; seeds subglobose or compressed-orbicular; annual.
12. *V. narbonensis*.
- 5b. Peduncle well-developed, nearly equaling to much exceeding the leaflets; flowers 1 to many.
- 13a. Corolla 2 to 9 mm. long; racemes 2- to 8(13)-flowered, or flowers solitary.
- 14a. Leaflets (4 to 6) broadly elliptic to oval or oblanceolate; pods short (10 to 13 mm.), 1- to 2-seeded; native to Florida----- 13. *V. floridana*.

- 14b. Leaflets either linear to elliptic-oblong or, if broader, pods longer, more than 2-seeded.
- 15a. Corolla 2 to 6 mm. long; pods 6 to 20 mm. long, 1- to 4-seeded; plant annual.
- 16a. Peduncle 8- to 13-flowered; calyx-lobes less than half the length of the tube; pod 20 mm. long, 1-seeded; native to Georgia, Alabama, and South Carolina----- 14. *V. hugeri*.
- 16b. Peduncle 1- to 8-flowered; calyx-lobes half the length of the tube or longer; pod 6 to 16 mm. long, 2- to 4-seeded.
- 17a. Calyx-lobes equal or nearly so; pod pubescent, 6 to 10 mm. long; peduncle 3- to 8-flowered----- 15. *V. hirsuta*.
- 17b. Calyx-lobes unequal; pod glabrous, 10 to 16 mm. long; peduncle 1- to 6-flowered.
- 18a. Peduncle 2- to 6-flowered; leaflets 12 to 20; pod oblique at the tip, 2-seeded. 16. *V. disperma*.
- 18b. Peduncle 1- to 2-flowered; leaflets 4 to 10; pod evenly rounded at the tip, 4-seeded----- 17. *V. tetrasperma*.
- 15b. Corolla 5 to 9 mm. long; pods (15) 20 to 40 mm. long, 4- to 8-seeded; plant perennial or winter annual.
- 19a. Leaflets 2 to 6; corolla 7 to 9 mm. long.
- 20a. Calyx-lobes minute, much less than half the length of the tube; peduncles 4- to 10-flowered; plant glabrous or nearly so; southeastern United States----- 18. *V. acutifolia*.
- 20b. Calyx-lobes equaling the tube; peduncles 1- to 2-flowered; plant villous; southwestern United States----- 19. *V. leucophaea*.

- 19b. Leaflets 3 to 12; corolla 5 to 7 mm. long; calyx-lobes half the length of the tube or longer.
- 21a. Peduncles 1- to 2-flowered; calyx-lobes equal or subequal, shorter than or equaling tube.
- 22a. Calyx-lobes deltoid, 0.5 to 1 mm. long, much shorter than the tube; plant slender; peduncles in fruit 2 cm. long; stipules moderately unequal; Florida to Texas, Missouri, and Tennessee----- 20. *V. minutiflora*.
- 22b. Calyx-lobes lanceolate, 2 mm. long, equaling the tube; plant much more robust and more pubescent (especially calyx and pod); peduncles in fruit 3 cm. long; stipules strikingly unequal; Texas and Oklahoma----- 21. *V. reverchonii*.
- 21b. Peduncles (1)3- to 12-flowered; calyx-lobes unequal or subequal, lance-subulate, the longer equaling or exceeding the tube.
- 23a. Peduncles (2)5- to 12-flowered, at anthesis more than half the length of the leaves; calyx-lobes markedly unequal, only the lower as long as the tube; flowers broad and showy----- 22. *V. ludoviciana*.
- 23b. Peduncles 1- to 4(5)-flowered, at anthesis half the length of the leaves or less; flowers narrow, rather inconspicuous.
- 24a. Corolla 4.5 to 7 mm. long; upper calyx-teeth not appreciably shorter or broader at the base than the lower; peduncles (1) 2- to 5-flowered----- 23. *V. leavenworthii*.
- 24b. Corolla 6 to 9 mm. long; upper calyx-teeth much shorter and broader at the base than the lower; peduncles 1- to 2-flowered----- 24. *V. exigua*.

- 13b. Corolla more than 9 mm. long or else racemes (3) 10- to 40-flowered.
- 25a. Flowers 5 to 7 mm. long; New Mexico and Arizona----- 25. *V. pulchella*.
- 25b. Flowers 8 to 15 mm. long.
- 26a. Stipules dissimilar, one entire, sessile, the other lacinate, petioled; peduncles 1-flowered.
26. *V. articulata*.
- 26b. Stipules alike; peduncles 2- to many-flowered.
- 27a. Mature inflorescences equaling or exceeding the subtending leaves, many-flowered; flowers 0.8 to 1.5 cm. long.
- 28a. Flowers 8 to 12 mm. long, scattered in loose racemes; calyx-teeth deltoid, subequal; corolla white, the keel blue-tipped.
27. *V. caroliniana*.
- 28b. Flowers 10 to 15 mm. long, overlapping in dense racemes; at least the lower calyx-teeth lance-attenuate to subulate; corolla blue, violet or violet and white.
- 29a. Calyx strongly gibbous at the base, the pedicel appearing ventral; lower calyx-teeth linear-acicular; blade of standard less than half as long as the claw; hilum $\frac{1}{6}$ of the circumference of the seed or less; annual or biennial.
- 30a. Raceme spreading-villous; lowest calyx-lobe long villous, 2 to 5 mm. long----- 28. *V. villosa*.
- 30b. Raceme appressed-pilose; lowest calyx-lobe short-pubescent to glabrescent, 1 to 2(2.5) mm. long----- 29. *V. dasycarpa*.
- 29b. Calyx slightly, if at all, gibbous at the base, the pedicel basal; lower calyx-teeth lance-attenuate; blade of standard equaling or exceeding the claw; hilum $\frac{1}{2}$ to $\frac{1}{3}$ of the circumference of the seed; perennial.

- 31a. Blade of standard as long as the
claw----- 30. *V. cracca*.
- 31b. Blade of standard twice as long as the
claw----- 31. *V. tenuifolia*.
- 27b. Mature inflorescence shorter than the subtend-
ing leaves, 2- to 12-flowered; flowers (1.2)1.5
to 2 cm. long.
- 32a. Flowers yellowish, tinged with red or brown,
or purple-red fading to dark purple.
- 33a. Leaflets 18 to 26; leaves and stems glab-
rous to weakly pubescent; pods glabrous;
whole plant usually turning black in
drying; native perennial (California to
Alaska)----- 32. *V. gigantea*.
- 33b. Leaflets 10 to 16; leaves and stems silky-
villous; pods pubescent; plant not turning
black in drying; introduced annual (nat-
uralized in California)---- 33. *V. benghalensis*.
- 32b. Flowers lavender, violet or bluish purple;
leaflets 8 to 18.
- 34a. Peduncles 1- to 2-flowered; pod 40 by 10
mm.; cultivated annual----- 34. *V. monantha*.
- 34b. Peduncles 3- to 9-flowered; pod 25 by 7
mm.; native perennial----- 35. *V. americana*.

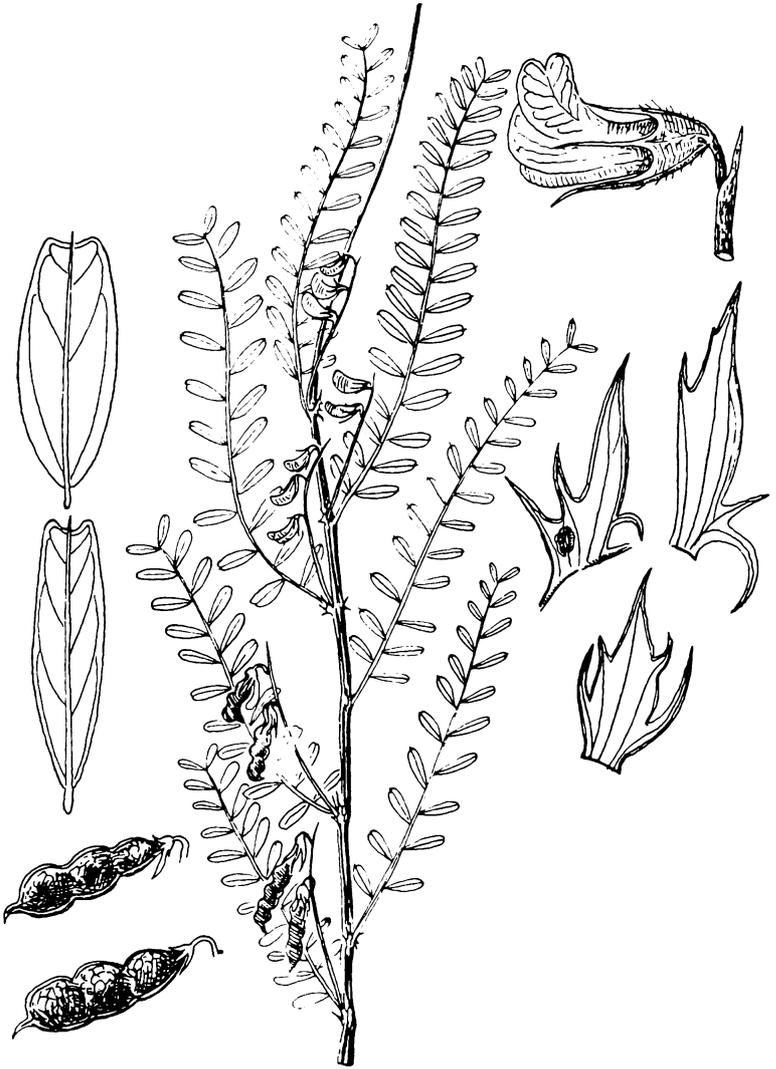


FIGURE 1.—Bitter vetch (*Vicia ervilia*).
(From Guinea, Estudio Botanico de las Vezas y Arvejas Españolas.)

1. *Vicia ervilia* (L.) Willd.

BITTER VETCH.

(Fig. 1.)

Vicia ervilia (L.) Willd., Sp. Pl. 3: 1103. 1803.*Ervum ervilia* L., Sp. Pl. 738. 1753.

Erect, glabrate annual, 2 to 7 dm. high; leaves elongate, without tendrils, the rachis terminating in a point; leaflets 14 to 30, linear or linear-oblong, 4 to 15 mm. long, 1 to 4 mm. wide, the apex rounded or shallowly emarginate, entire; stipules small, acuminate, semihastate and more or less dentate; racemes 1- to 4-flowered, much shorter (1.5 to 4 cm. long) than the subtending leaves; flowers 7 to 9 mm. long, pale rose-colored to whitish with violet veins, nodding on short pedicels; calyx campanulate, the teeth acicular, somewhat longer than the tube; pod nearly moniliform, 15 to 25 mm. long, 4 to 5 mm. wide, 3- to 4-seeded; seeds triangular-globose, pale maroon to reddish gray, 3.5 to 5.5 mm. in diameter, hilum small, about $\frac{1}{12}$ the circumference of the seed.

Southern Europe. Cultivated in the Pacific Northwest; produces heavy seed crops; used for stock feed.



FIGURE 2.—Broad bean (*Vicia faba*).
(From Hegi, *Illustrierte Flora von Mitteleuropa*, Carl Hauser Verlag, Munich.)

2. ***Vicia faba* L.**

BROAD BEAN (HORSE BEAN).

(Fig. 2.)

Vicia faba L., Sp. Pl. 737. 1753.

Coarse, erect, glabrous, very leafy annual, 5 to 20 dm. high; leaves fleshy, glaucous, turning black in drying, without tendrils; leaflets 2 to 6, oval, 4 to 10 cm. long, 1 to 3 cm. wide, obtuse, apiculate; stipules large, semisagittate, entire or shallowly dentate; racemes 2- to 4-flowered, very short-peduncled; flowers large (2 to 3 cm. long), white blotched with deep maroon or blackish violet; pod large (8 to 20 cm. long, 1 to 3 cm. wide), plump, 2- to 4-seeded; seeds usually large (12 to 35 mm. in diameter) and strongly compressed, but in some races nearly globose and about 7 to 9 mm. in diameter, red-brown, purplish, greenish or black, sometimes spotted with gray; the hilum large, terminal, blackish, about $\frac{1}{6}$ to $\frac{1}{5}$ the circumference of the seed.

Northern Africa and southwestern Asia. Cultivated for its seed which is used as a vegetable; the small-seeded varieties are used mainly for stock feed or sometimes for green manure.



FIGURE 3.—Broad-leaved vetch (*Vicia oroboides*).
(From Hegi, *Illustrierte Flora von Mitteleuropa*, Carl Hauser Verlag, Munich.)

3. *Vicia oroboides* Wulfen BROAD-LEAVED VETCH.
(Fig. 3)

Vicia oroboides Wulfen, in Jacq. Coll. 4:323. 1790.

Orbus lathyroides Sibth. & Smith, Fl. Graec. Prod.
2: 63. 1806.

Erect, mostly simple, glabrous or somewhat pubescent perennial, 2.5 to 5 dm. high; leaves with (2) 4 to 7 leaflets, without tendrils, the rachis prolonged as a bristle; petioles 0.3 to 3 cm. long; leaflets very large, 4 to 7 cm. long, 3 to 4.5 cm. wide, ovate-lanceolate, the margins usually short-ciliate; stipules small, narrow, semisagittate; racemes short-peduncled, 3- to 8-flowered; flowers yellowish white to pale yellow, 14 to 19 mm. long; calyx oblique, campanulate, gibbous at the base, the spreading-reflexed teeth lanceolate, 3 to 6 mm. long (occasionally rudimentary), about equaling the tube in length; pods divaricate, linear-oblong, 3 to 4 cm. long, 7 to 9 mm. wide, glabrous, black at maturity; seeds ovoid or globose, reddish brown, sometimes mottled with purplish, 3 to 3.5 mm. in diameter, the hilum about $\frac{3}{8}$ the circumference of the seed.

Southeastern Europe; said to be cultivated as an ornamental (L. H. Bailey), although all material seen from American gardens under this name has been *V. unijuga*.



FIGURE 4.—Two-leaved vetch (*Vicia unijuga*).

4. *Vicia unijuga* A. Br.

TWO-LEAVED VETCH.

(Fig. 4)

Vicia unijuga A. Br; Ann. Sci. Nat., Bot. Ser. 4, 1: 366. 1854.

Orobus lathyroides L., Sp. Pl. 728. 1753, not *Vicia lathyroides* L., l.c. 726.

Glabrescent perennial; stems erect-ascending, 5 to 10 dm. high; leaves short-petioled, bearing two sessile leaflets, without tendrils; leaflets large, thick-chartaceous; oblong oval to broadly ovate-lanceolate, 2.5 to 8 cm. long, 0.7 to 3 cm. wide, acute to abruptly obtuse, mucronate; stipules dentate, extremely variable in size and shape, usually large, broadly semihastate; racemes 2- to 40-flowered, secund; flowers 10 to 14 mm. long, purple; calyx oblique-campanulate, gibbous at the base, the teeth short-triangular or the lowest sometimes prolonged acicular, 0.5 to 1 mm. long, sharply acute to blunt; pod stipitate, elliptic-lanceolate, 1.8 to 2.75 cm. long, 5 mm. wide, glabrous, pale brown, few-seeded; seeds subglobose, elliptic-oblong, about 3 to 4.5 mm. in diameter, reddish brown to velvety black, obscurely mottled with purple, the hilum black, encircling nearly half of the seed.

Eastern Siberia, Manchuria, China, Japan. Cultivated for forage.

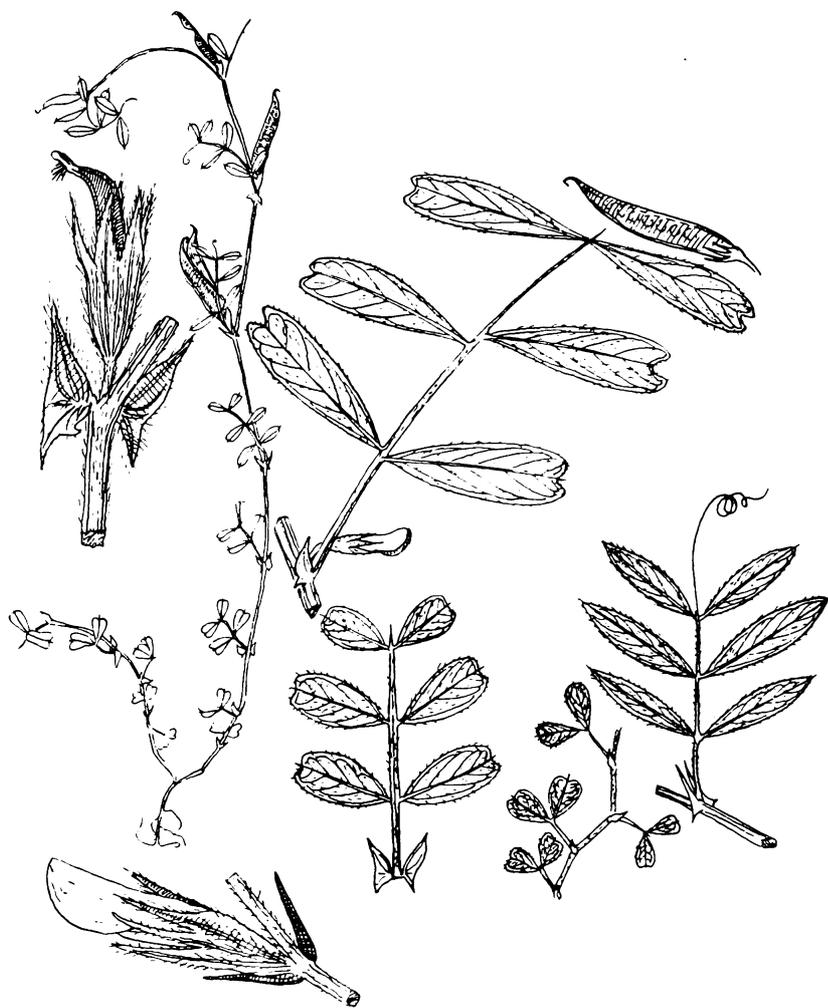


FIGURE 5.—Spring vetch (*Vicia lathyroides*).
(From Guinea, Estudio Botanico de las Vezas y Arvejas Españolas.)

5. *Vicia lathyroides* L.

SPRING VETCH.

(Fig. 5.)

Vicia lathyroides L., Sp. Pl. 736. 1753.

Low, slender annual or winter annual; stems reclining to erect, 5 to 25 cm. long; leaves small, terminated by an usually undivided tendril; leaflets 4 to 8, narrowly obovate to elliptic-linear, 2 to 15 mm. long, generally apiculate; stipules semisagittate, entire; flowers solitary (rarely paired), subsessile in the axils of the leaves, 5 to 8 mm. long, violet fading to white; calyx-teeth lanceolate-subulate, about equaling the obconic tube; pod somewhat compressed, linear, 1.5 to 3 cm. long, 3 to 4 mm. wide, more or less divaricate, glabrous, 6- to 7-seeded; seeds quadrate, verrucose, 1.5 to 2 mm. in diameter, reddish maroon, grayish brown or blackish, hilum minute.

Europe; locally adventive in sandy grassland, on edges of fields and sandy beaches from Nantucket Island, Massachusetts, to Virginia and North Carolina.

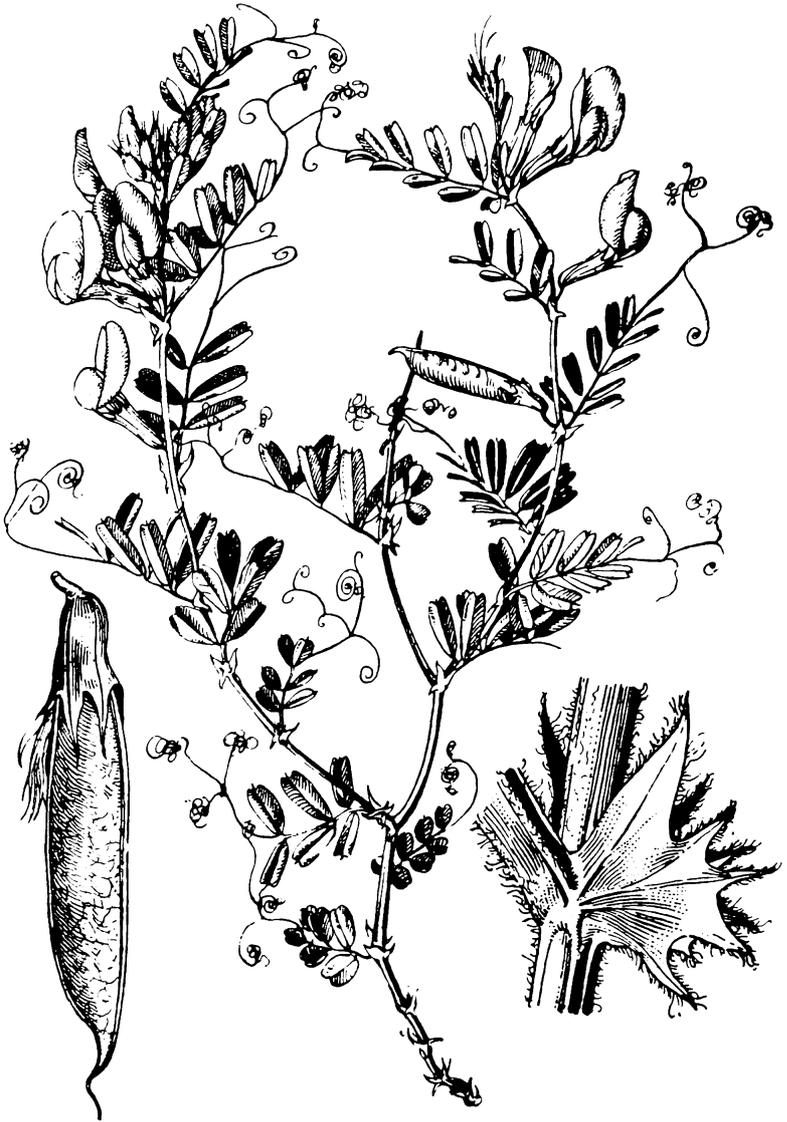


FIGURE 6.—Bigflower vetch (*Vicia grandiflora* var. *kitaibeliana*).
(From Hegi, *Illustrierte Flora von Mitteleuropa*, Carl Hauser Verlag, Munich.)

6. *Vicia grandiflora* var. *kitaibeliana* W. Koch

BIGFLOWER VETCH.

(Fig. 6.)

Vicia grandiflora Scop. var. *kitaibeliana* W. Koch., Syn.
ed. 1. 197. 1835.

V. sordida Waldst. & Kit., Pl. Rar. Hung. 2:143.
1805.

V. grandiflora var. *sordida* (Waldst. & Kit.) Griseb.,
Spic. Fl. Rum. Bith. 1:78. 1843.

Annual; stems slender, ascending, up to 6 dm. long, spreading pubescent to glabrate; leaves with 6 to 14 leaflets and slender, branched tendrils; leaflets oblong to linear, 1 to 2 cm. long; stipules semisagittate; flowers 1 or 2, subsessile, 2.5 to 3.5 cm. long, yellow or yellowish often suffused or marked with violet; calyx-tube sparsely pilose, 6 to 9 mm. long, the subequal, linear-subulate teeth pilose, half to two-thirds as long as the tube; pod compressed, glabrous or glabrate, 3.5 to 5 cm. long, becoming black; seeds compressed-globose, 3 to 3.5 mm. long, brown with indistinct black spots, the hilum raised, white, encircling $\frac{3}{4}$ of the seed.

Southwestern Europe and western Asia. Naturalized along roadsides, in open woods and cultivated fields, Delaware to Alabama and Mississippi. The typical form of the species (*V. grandiflora* Scop., Fl. Carn. ed 2, 2: 65. 1772) has ovate to obcordate, rather than oblong to linear, leaflets, and evidently does not occur in America (cf. L. Shinnars, Castanea 21: 151. 1956).

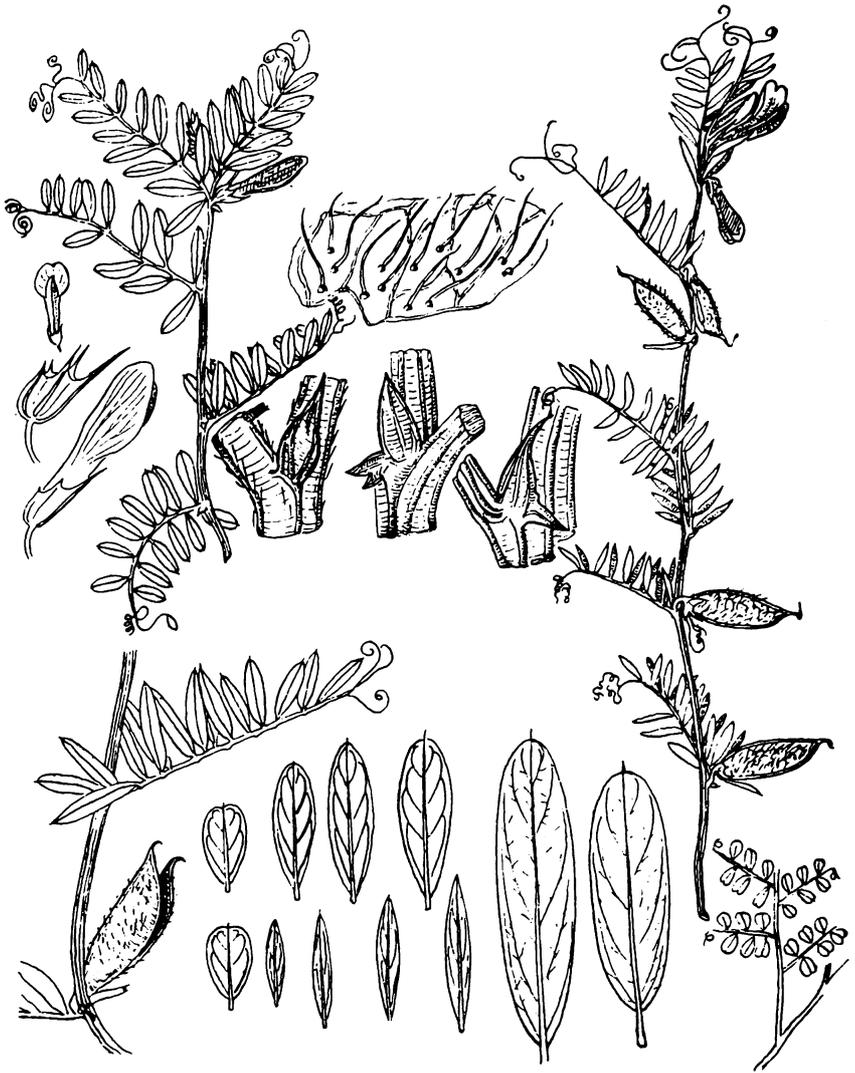


FIGURE 7.—Yellow vetch (*Vicia lutea*).
(From Guinea, Estudio Botanico de las Vezas y Arvejas Españolas.)

7. *Vicia lutea* L.

YELLOW VETCH.

(Fig. 7)

Vicia lutea L., Sp. Pl. 736. 1753.*V. hirta* Balb. in Pers., Synop. 2: 308. 1807.*V. lutea* var. *hirta* (Balb.) Loisel., Fl. Gal. 462. 1807.*V. lutea* var. *muricata* Ser. in DC., Prodr. 2: 363. 1825.*V. lutea* subsp. *muricata* (Ser.) E. Guinea, Estud. Bot. de las Vezas y Arvejas Españolas, 57. 1953.

Glabrous to sparingly hirsute annual; stems diffuse and more or less climbing, 2 to 6 dm. long; leaves mostly sessile, with 6 to 16 leaflets and terminated by forking (the lower usually simple) tendrils; leaflets of the upper leaves lanceolate-linear to oblong, their apices from rounded to attenuate and mucronate, about 2 cm. long by 3.5 mm. wide, those of the lower leaves more or less obovate, 5 to 10 mm. long; stipules minute, from ovate-triangular to semisagittate or bilobed, the lower surface of one bearing a large purplish nectary; flowers usually solitary, sometimes 2 or 3, in the axils of the leaves, short-pedicelled, 2 to 2.7 cm. long, pale citron-yellow to bright yellow, sometimes lightly tinged with violet; calyx campanulate, very oblique, glabrous (the teeth sometimes sparsely pilose) the lowermost tooth exceeding the tube and 2 to 3 times the length of the upper teeth; pod oblong, stipitate, somewhat flattened, 2.5 to 3 cm. long, 7 to 10 mm. wide, maroon-olive to black at maturity, pustulate-hirsute; seeds somewhat compressed-globose, 3 mm. in diameter, blackish and more or less mottled or velvety to completely black; hilum linear, whitish, encircling $\frac{1}{6}$ to $\frac{1}{5}$ of the seed.

Central and southern Europe; western Asia and northern Africa. Locally established as a roadside weed in Marin County, California. (J. T. Howell: Marin Flora, 178. Univ. of Calif. Press, Berkeley, 1959.)

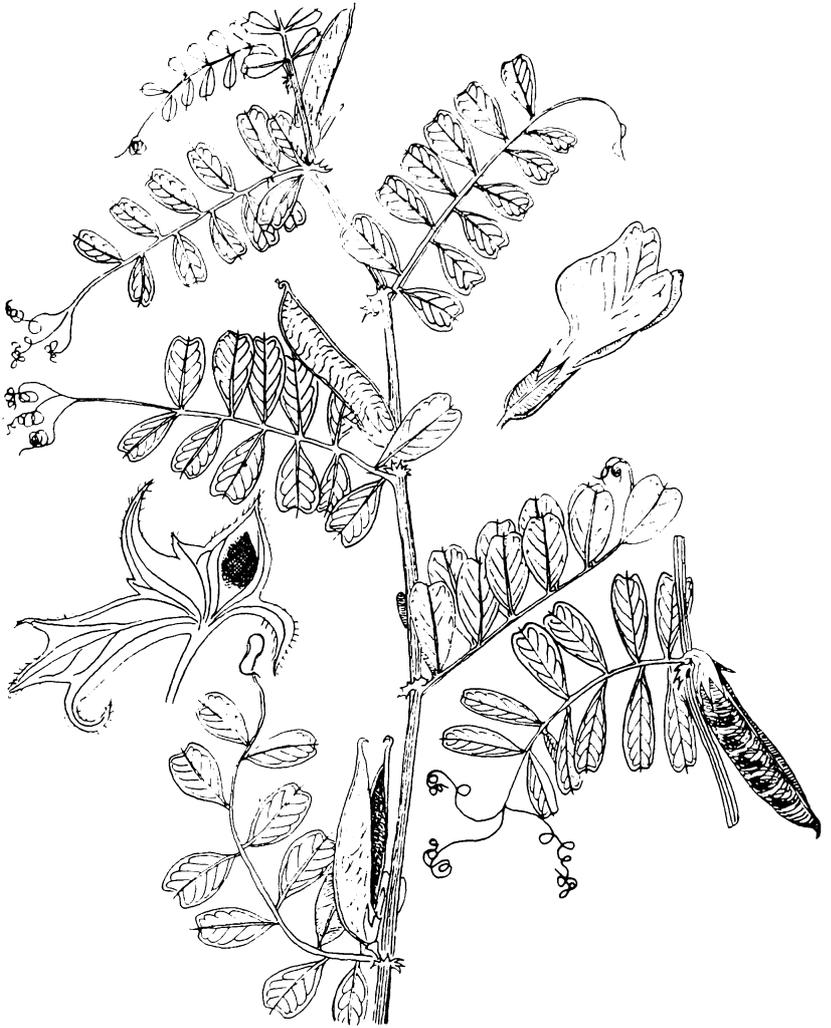


FIGURE 8.—Common vetch (*Vicia sativa*).
(From Guinea, Estudio Botanico de las Vezas y Arvejas Españolas.)

8. **Vicia sativa** L. COMMON VETCH (SPRING VETCH).
(Fig. 8)

Vicia sativa L., Sp. Pl. 736. 1753.

Glabrescent annual; stems slender, angled, simple or branched below, up to a meter long, erect-ascending or climbing; leaves with 8 to 16 leaflets terminating in a branched tendril; leaflets oblong to elliptic or obovate, 1.5 to 3.5 cm. long, 5 to 15 mm. wide, truncate to emarginate and mucronate at the apex; stipules semisagittate, usually sharply serrate, the lower surface bearing a purplish nectary; flowers mostly paired in the upper axils, subsessile, 1.8 to 3 cm. long, violet-purple or rarely white; calyx 10 to 15 mm. long, the tube campanulate, 5 to 7 mm. long, the teeth subequal, linear-subulate, 3 to 9 mm. long, the three lower ones bearing a conspicuous yellowish-brown nectary on the outer face; pod nearly cylindrical to somewhat compressed, torulose, 2.5 to 7 cm. long, 5 to 8 mm. wide, brown, 4- to 12-seeded; seeds globose or somewhat compressed, 3 to 5 mm. in diameter, smooth, dull or velvety, greenish gray to maroon or black, rarely yellowish white; hilum narrow, encircling $\frac{1}{6}$ to $\frac{1}{5}$ of the seed.

Europe. Cultivated for forage; sometimes escaped along roadsides and in waste places from Newfoundland to Minnesota, south to Georgia and California, but frequent only on the west coast, especially in California. Most herbarium material of naturalized plants referred to this species is *V. angustifolia*.

8a. **Vicia sativa** var. **linearis** Lange

Vicia sativa var. *linearis* Lange, in Meddel. Kjöb. And.
Act. 7: 184. 1865.

Leaflets of the upper leaves linear and emarginate or apiculate.

Introduced from Europe. Locally escaped in old fields and waste places from Quebec to Virginia and westward.

9. *Vicia angustifolia* L.

NARROW-LEAVED VETCH.

(Fig. 9)

Vicia angustifolia L., Amoen. Acad. 4: 105. 1759.*V. sativa* β *angustifolia* Wahlenb., Fl. Carp. 218. 1814.

Glabrous or glabrate annual; stems decumbent, ascending, angular, 1 to 6 dm. long, usually branched only at the base; leaves with usually 4 to 10 (rarely 12) leaflets, those of the lower leaves oblong and truncate, of the upper linear to narrowly elliptic, or lance-attenuate, 1.5 to 3 cm. long, 1 to 4 mm. wide; stipules semisagittate, serrate or the upper entire, often lacking a nectary; flowers commonly paired in the upper axils, 1 to 1.8 cm. long, blue or violet varying to white; calyx 7 to 11 mm. long, the tube campanulate, 4 to 6 mm. long, the teeth linear-lanceolate, about equal, 3 to 6 mm. long, the three lower ones bearing a usually inconspicuous pale-stramineous nectary on the outer face; pod very dark brown to almost black at maturity, terete; seeds similar to those of *V. sativa*.

Europe. Cultivated for forage and commonly naturalized in the United States in waste ground, along roadsides, etc., but occurring mostly as a weed, especially in grainfields, from Maine to Florida, west to Washington and California.

9a. *Vicia angustifolia* var. *segetalis* (Thuill.) Koch*Vicia angustifolia* var. *segetalis* (Thuill.) Koch, Syn. 197. 1835.

Leaflets of the upper leaves oblong to oblong-obovate, 2 to 9 mm. wide, the apex truncate or emarginate and mucronate.

Europe. Range of the typical form in the United States.

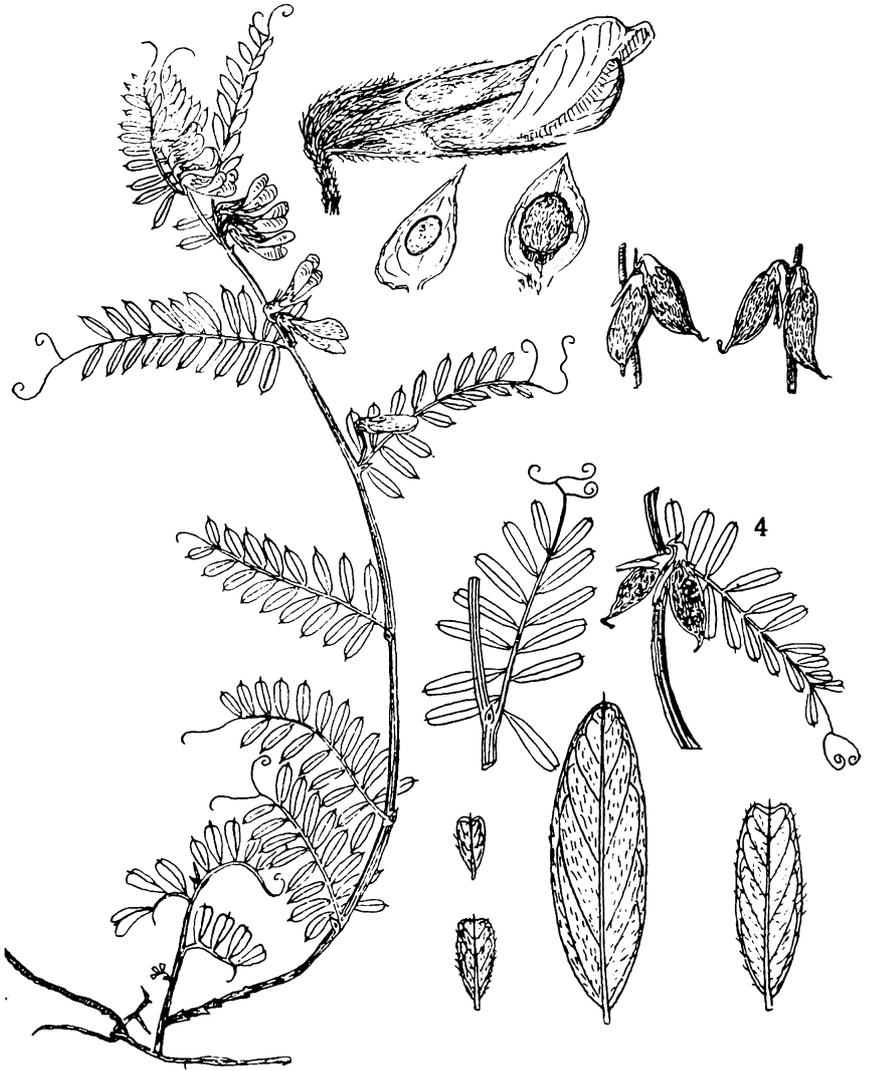


FIGURE 10.—Hungarian vetch (*Vicia pannonica*).
(From Guinea, Estudio Botanico de las Vezas y Arvejas Españolas.)

9b. ***Vicia angustifolia* var. *uncinata*** (Desv.) Rouy

Vicia angustifolia var. *uncinata* (Desv.) Rouy in Rouy & Foucoud, Fl. France 5: 213. 1900.

Leaflets of the upper leaves narrowly linear, 1 to 2 mm. wide, the apex truncate or abruptly narrowed.

Europe. Locally naturalized, Newfoundland to Virginia.

10. ***Vicia pannonica*** Crantz

HUNGARIAN VETCH.

(Fig. 10.)

Vicia pannonica Crantz, Strip. Austr., ed. 2, fasc. 5: 393. 1769.

Pilose to villous annual; stems reclining, erect or climbing, 3 to 8 dm. long; leaves short-pedicelled to sessile, 5 to 8 cm. long, soft villous, with 10 to 20 leaflets, terminating in a branched to simple or rudimentary tendril; leaflets linear to obovate but chiefly oblong-elliptic, 10 to 20 mm. long, 2 to 6 mm. wide, the apex rounded or truncate to emarginate, mucronate; stipules minute, ovate-lanceolate to semisagittate, entire, acute, bearing a large purplish nectary on the lower surface; racemes 2- to 4-flowered, nearly sessile in the upper axils; flowers rather large, 15 to 18 mm. long, ochroleucous or purplish tinged, the standard finely streaked with reddish purple, villous on the back; calyx tubular-campanulate, 9 to 11 mm. long, oblique at the base, densely villous, the teeth linear-subulate, subequal but the lower noticeably longer than the upper and equaling the tube; pod oblong, 20 to 30 mm. long, 7 to 10 mm. wide, stipitate, purplish, silky-villous, 2- to 8-seeded; seeds more or less globose to strongly flattened, purplish, sometimes spotted with black, rough-velvety, the hilum linear, whitish, encircling $\frac{1}{6}$ to $\frac{1}{4}$ of the seed.

Central Europe. Cultivated in the Pacific Northwest, especially western Oregon, for hay, silage, green manure, pasture and as a seed crop; established in waste ground in the Willamette Valley, Oreg., and Sonoma County, Calif.

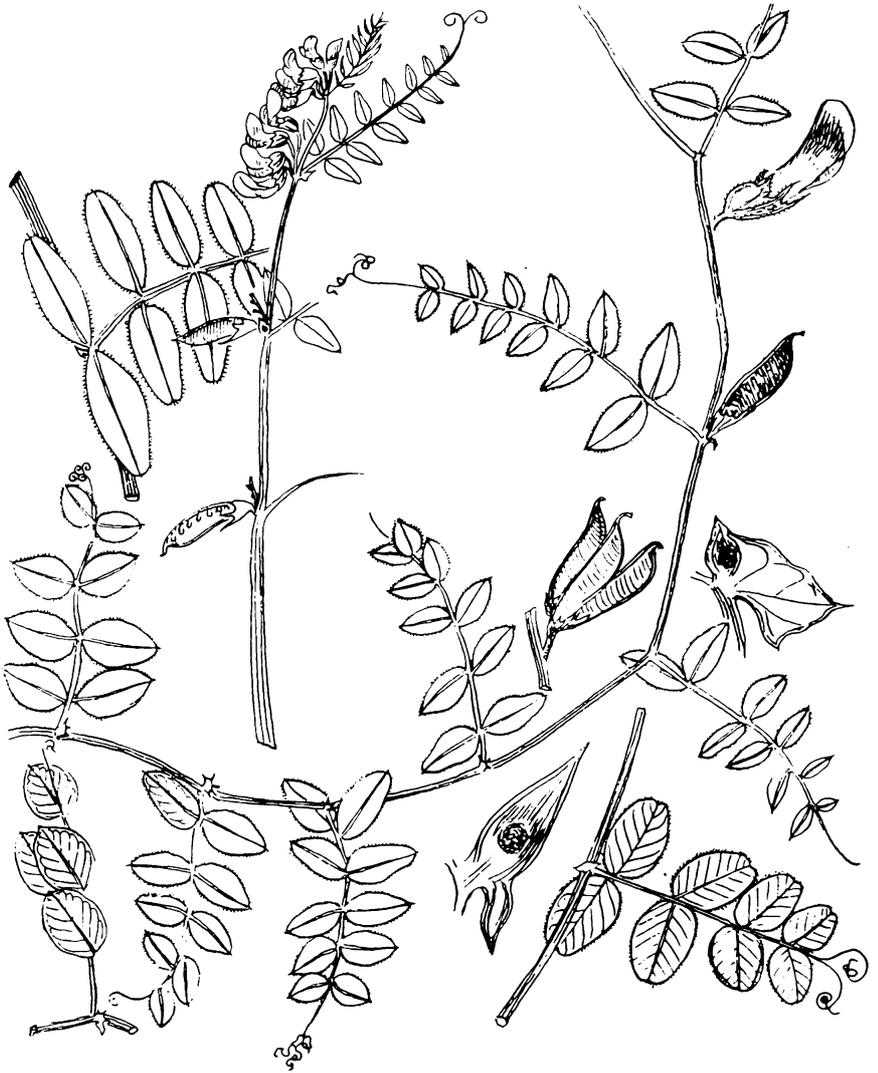


FIGURE 11.—Hedge vetch (*Vicia sepium*).
(From Guinea, Estudio Botanico de las Vevas y Arvejas Españolas.)

11. **Vicia sepium** L.

HEDGE VETCH.

(Fig. 11.)

Vicia sepium L., Sp. Pl. 737. 1753.

Pilose or glabrate perennial with long, slender, tuber-bearing stolons; stems angular, branched, erect or climbing, 3 to 10 dm. long; leaves with 8 to 16 subsessile leaflets, terminating in a branched tendril; leaflets oval or ovate-oblong (rarely narrowly elliptic), 8 to 25 mm. long, 5 to 12 mm. wide, rounded at the base, the apex obtuse and mucronate or emarginate; stipules very small, semi-sagittate to ovate, more or less dentate and bearing a concave nectary on the lower surface; flowers 2 to 6 in subsessile axillary clusters, short-pedicelled, 8 to 15 mm. long, reddish violet to violet-blue, deep blue or rarely white, the standard striped with deep purple; calyx irregular, the tube short, 4 to 5 mm. long, more or less brown-villous, the teeth very unequal, the upper short and triangular, the lower about half as long as the tube; pod linear, 18 to 35 mm. long, 6 to 8 mm. wide, stipitate, compressed, glabrescent, black at maturity, 3- to 6-seeded; seeds globose, somewhat compressed, 3 to 4 mm. in diameter, yellowish, reddish, gray or greenish gray with blackish spots to entirely black, the hilum encircling $\frac{1}{2}$ to $\frac{3}{4}$ of the seed.

Europe. Locally naturalized in old fields and along roadsides, Newfoundland to Ontario, south to New Brunswick and northern New England.

11a. **Vicia sepium** var. **montana** Koch*Vicia sepium* var. *montana* Koch, Syn. 196. 1835.

Leaflets elliptic-lanceolate to narrowly ovate, the apex acute.

Europe. Locally naturalized in Quebec and Maine.

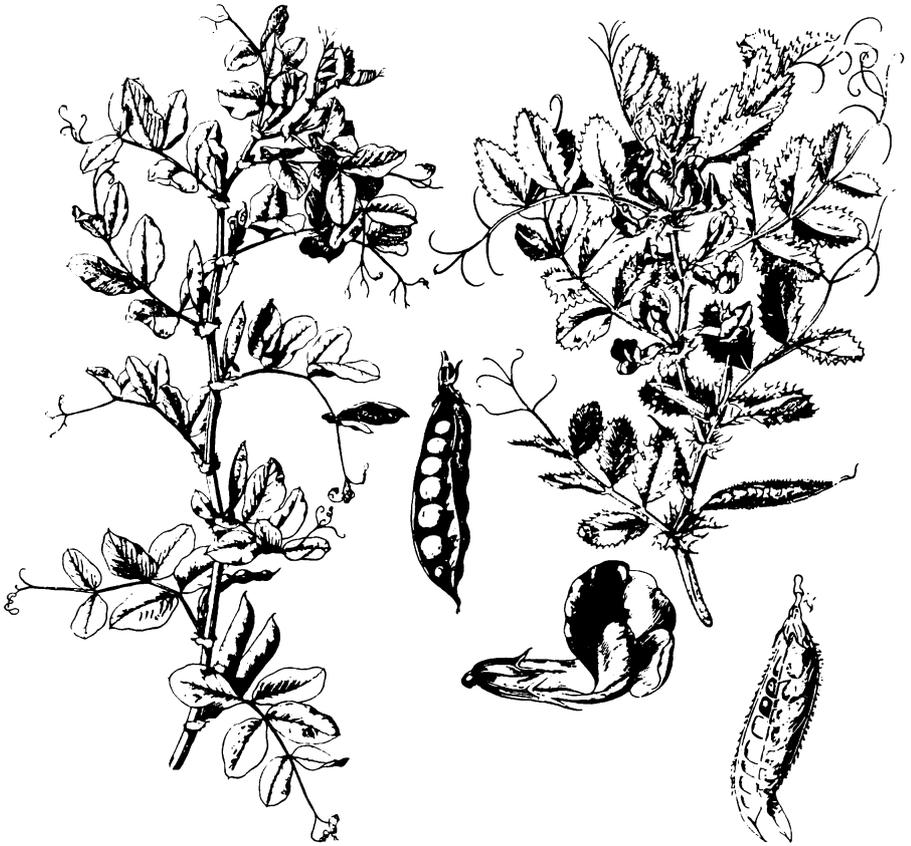


FIGURE 12.—Narbonne vetch (*Vicia narbonensis*, on left, and forma *serratifolia*, on right).

(From Hegi, *Illustrierte Flora von Mitteleuropa*, Carl Hauser Verlag, Munich.)

12. **Vicia narbonensis** L.

NARBONNE VETCH.

(Fig. 12.)

Vicia narbonensis L., Sp. Pl. 737. 1753.

Coarse, pubescent or glabrate annual; stems erect, 4-angled, 3 to 6 dm. high; leaves ample, with 2 to 6 leaflets, the upper terminating in a usually forked tendril; leaflets fleshy, obovate to broadly elliptic, 3 to 6 cm. long, 2 to 3.5 cm. wide, entire; stipules very large, semicordate, occasionally entire, usually dentate, the upper often bearing a nectary; flowers 1 to 5, short-pedicelled in the axils, 15 to 25 mm. long, purplish (drying black); calyx-teeth triangular, the lowermost about twice as long as the upper and equaling the tube; pod sessile, linear-oblong, 40 to 70 mm. long, 10 to 15 mm. wide, plump, the sutures pectinate with pustulate-based bristles, 4- to 6-seeded; seeds subglobose or compressed-orbicular, 5 to 6 mm. in diameter, obscurely velvety in appearance, purplish violet to black, the hilum whitish, short, oblong.

Southern Europe. Cultivated for forage, locally established as a weed in Maryland and the District of Columbia.

12a. **Vicia narbonensis** f. **serratifolia** (Jacq.) F. J. Hermann, comb. nov.*Vicia serratifolia* Jacq., Fl. Austr. append. 30, t. 8. 1778.

V. narbonensis var. *serratifolia* (Jacq.) Ser. in DC., Prodr. 2: 365. 1825.

Leaves strongly serrate; stipules incised-dentate.

Range and occurrence of the typical form.

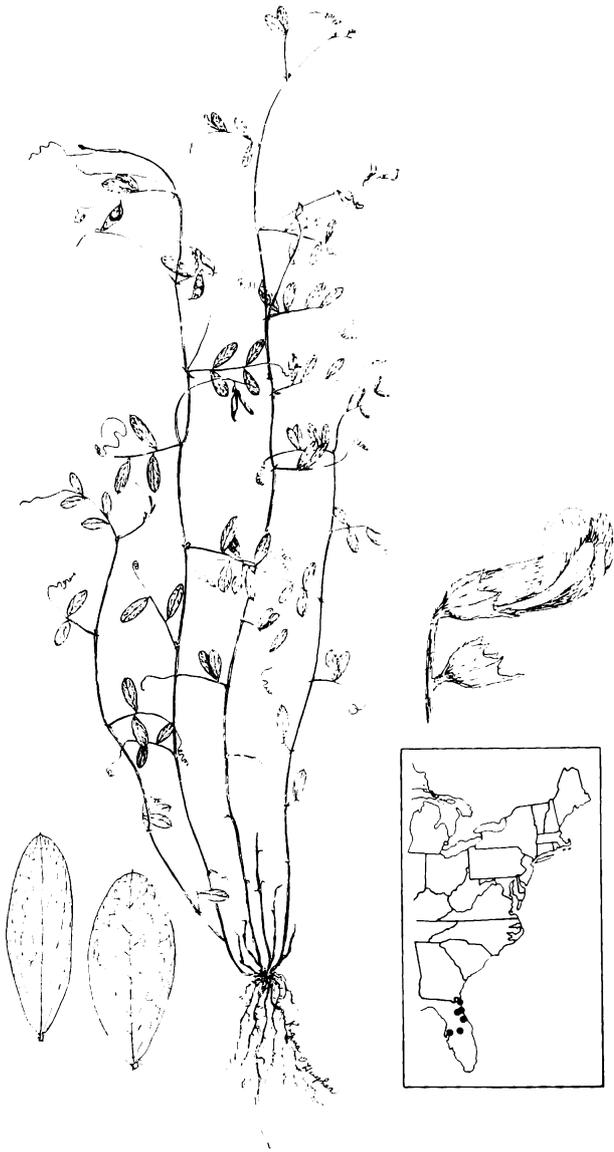


FIGURE 13.—Florida vetch (*Vicia floridana*).

13. *Vicia floridana* S. Wats.

FLORIDA VETCH.

(Fig. 13.)

Vicia floridana S. Wats., Amer. Acad. Proc. 14:292.
1879.

Delicate glabrous or glabrate perennial; stems weak, reclining, simple or sparingly branched, 3 to 8 dm. long; leaves 3 to 5 cm. long, bearing 4 to 6 leaflets and terminated by very slender tendrils; leaflets thin, broadly elliptic to oblong-oblongate, 5 to 15 mm. long, mucronulate; peduncles shorter than the subtending leaves, 1- to 5-flowered, sparingly glandular above; flowers 5 to 6 mm. long, white or bluish, on pedicels 1 mm. long, calyx more or less glandular, the tube campanulate, the lobes triangular, much shorter than the tube; pods short, broadly oblong, oblique-beaked, 1 to 1.3 cm. long, 1- to 2-seeded; seeds compressed-globose, purplish black, 3 mm. in diameter, the narrow hilum encircling $\frac{1}{2}$ to $\frac{3}{4}$ of the seed.

In sandy soil, Florida.

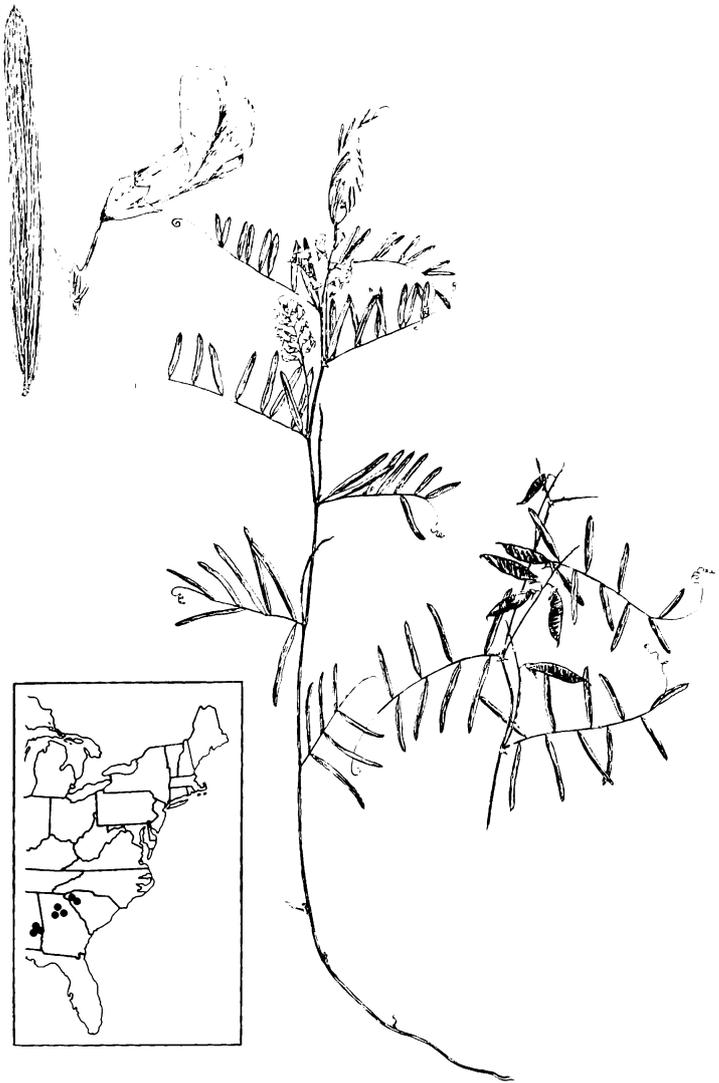


FIGURE 14.—Vetchling (*Vicia hageri*).

14. **Vicia hugeri** Small

VETCHLING.

(Fig. 14)

Vicia hugeri Small, Torr. Bot. Club Bul. 24: 490. 1897.

Very slender, sparsely puberulent or glabrate perennial; stems usually ascending, occasionally decumbent or reclining, 3 to 7 dm. long, sometimes branched above; leaves 4 to 8 cm. long, bearing 10 to 20 (average 14) leaflets and terminated by a simple or forked tendril; leaflets linear, 2 to 3.5 cm. long, mucronulate, rounded at the base and short-petioled; peduncles 5 to 8 cm. long, (6) 8- to 13-flowered; flowers mostly secund, 5 to 7 mm. long, white or pale blue, on pedicels 1.5 to 2 mm. long; calyx campanulate, the lobes triangular, acute, $\frac{1}{4}$ to $\frac{1}{3}$ as long as the tube; pods oblong, oblique-tipped, 18 to 22 mm. long, 1-seeded; seeds compressed-orbicular, velvety black, 2.5 to 3 mm. in diameter, the hilum encircling $\frac{3}{4}$ of the seed.

Open woods in the Piedmont area—Georgia, Alabama, and South Carolina.

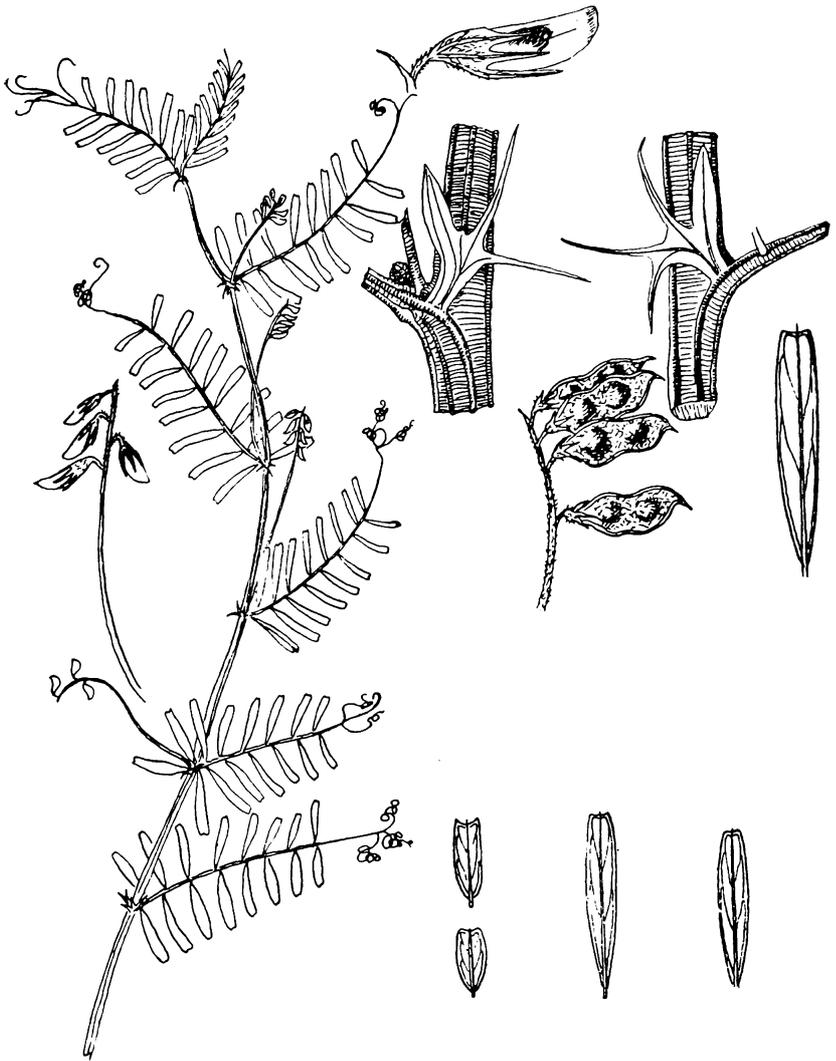


FIGURE 15.—Tiny vetch (*Vicia hirsuta*).
(From Guinea, Estudio Botanico de las Vezas y Arvejas Españolas.)

15. **Vicia hirsuta** (L.) S. F. Gray

TINY VETCH (HAIRY VETCH).

(Fig. 15)

Vicia hirsuta (L.) S. F. Gray, Nat. Arr. Brit. Pl. 2: 614.
1821; Koch, Syn. Fl. Germ. 191. 1837.

Ervum hirsutum L., Sp. Pl. 738. 1753.

Vicia mitchelli Raf., Préc. Découv. 37. 1814.

Glabrate or sparingly pubescent annual; stems slender, tetragonal and striate, usually branched at the base, decumbent or climbing, 2 to 7 dm. long; leaves 2 to 8 cm. long, sessile, bearing (8) 12 to 16 leaflets and terminating in a slender, usually forked tendril; leaflets linear, narrowly oblong or narrowly elliptic, 5 to 18 mm. long, usually truncate or emarginate, mucronate; peduncles mostly shorter than the subtending leaves, 3- to 5(8)-flowered; flowers very small, 2 to 4 mm. long, whitish blue to purplish blue, on pedicels 1 to 2 mm. long; calyx minutely pubescent, the linear-subulate teeth subequal, 1 to 1.5 mm. long, somewhat longer than the tube; pods oblong, 6 to 10 mm. long, 3 to 4 mm. wide, oblique at both ends, hirsute, 2-seeded; seeds subglobose to compressed-orbicular, 1.5 to 3 mm. in diameter, greenish straw-colored to pale reddish brown or chestnut, usually more or less mottled with purple, the hilum encircling about half the seed.

Europe. Naturalized along roadsides and in fields and waste places from Quebec to British Columbia, south to Georgia and California.

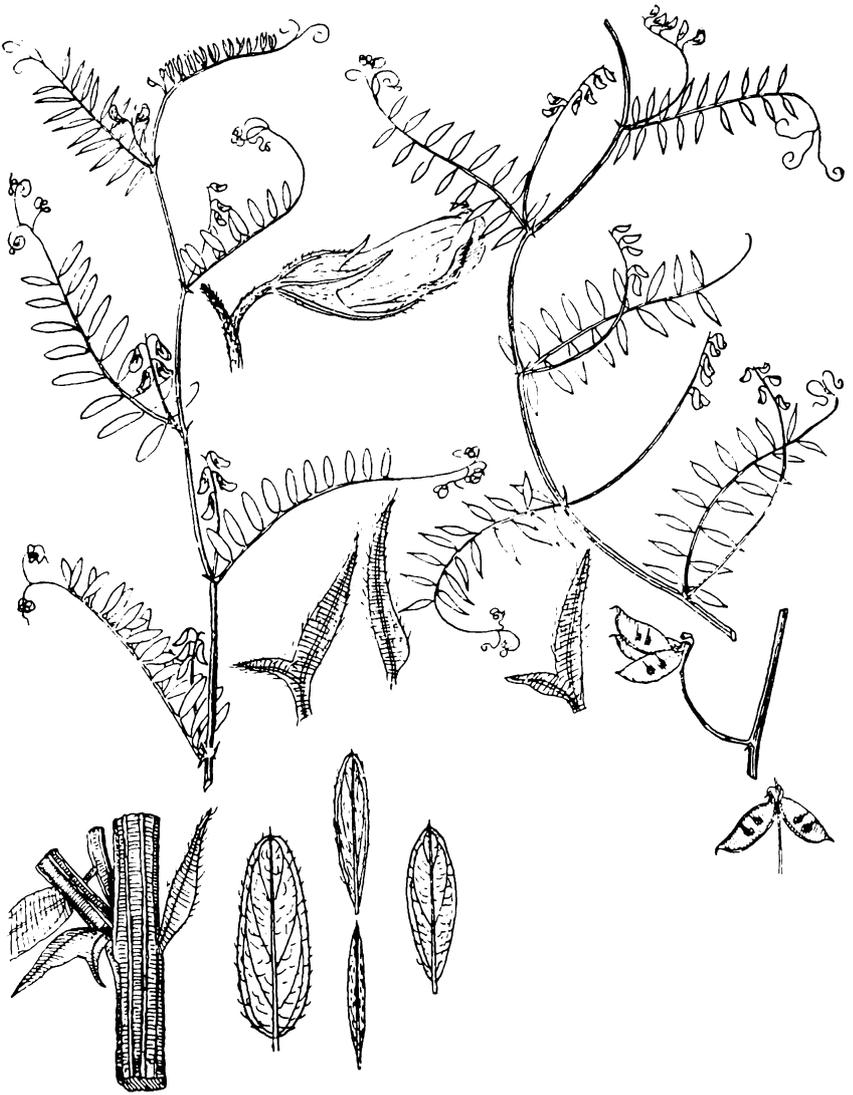


FIGURE 16.—Two-seeded vetch (*Vicia disperma*).
(From Guinea, Estudio Botanico de las Vezas y Arvejas Españolas.)

16. *Vicia disperma* DC.

TWO-SEEDED VETCH.

(Fig. 16.)

Vicia disperma DC., Cat. Hort. Monsp. 154. 1813.

Sparsely pubescent annual; stems slender and weak, angled, climbing, 2 to 6 dm. long; leaves 3 to 6 cm. long, short-petioled, bearing 12 to 20 leaflets and terminating in a forked tendril; leaflets narrowly elliptic to linear-oblong, 7 to 12 mm. long, the apex blunt to acute and mucronulate; stipules small, semisagittate or linear-lanceolate, acute, entire; peduncles usually shorter than the leaves, 2- to 6-flowered, aristate; flowers very small, 4 to 5 mm. long, blue, short-pedicelled; calyx-teeth unequal, the upper two short and connivent, the lower linear-subulate, exceeding the tube; pods small, oblong-subrhomboidal, 12 to 16 mm. long, 5 to 7 mm. wide, glabrous, tawny, short-stipitate, 2-seeded; seeds large, 4 to 4.5 mm. in diameter, compressed-orbicular, purplish black, the hilum encircling about $\frac{1}{6}$ of the seed.

Southern Europe. Locally introduced at Berkeley, California, Cooplis (sic), Mississippi and on ballast at Mobile, Alabama.

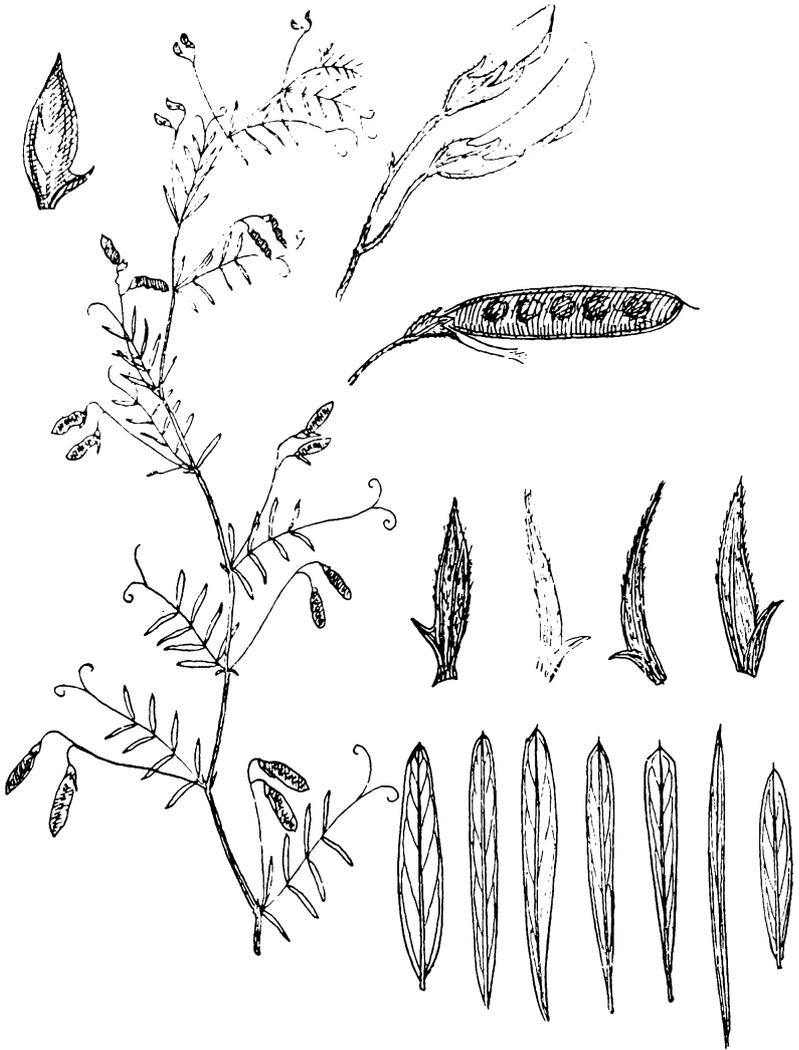


FIGURE 17.—Sparrow vetch (*Vicia tetrasperma*).
(From Guinea, Estudio Botanico de las Vezas y Arvejas Españolas.)

17. *Vicia tetrasperma* (L.) Moench

SPARROW VETCH (SLENDER VETCH; LENTIL TARE).
(Fig. 17.)

Vicia tetrasperma (L.) Moench, Meth. 148. 1794.

Ervum tetraspermum L., Sp. Pl. 738. 1753.

Delicate annual, glabrous or occasionally sparsely pilose; stems very slender, branched, often matted, decumbent, or climbing, 1 to 5 dm. long; leaves from shorter to longer than the internodes, bearing 4 to 10(12) leaflets and terminated by a single or branched tendril; leaflets narrowly oblong or prolonged-elliptic, 5 to 20 mm. long, 0.5 to 3 mm. wide, the apex rounded (rarely acute) and mucronulate; stipules semisagittate, entire; peduncles filiform, longer than the leaflets, when fruiting equaling the leaves, not aristate, bearing usually 1 to 2 (very rarely 3 to 4) flowers; flowers lilac veined with purple to bluish white, 4 to 9 (mostly about 4) mm. long; calyx-teeth unequal, the lower lanceolate, about equaling the tube, the upper triangular, much shorter; pods flat, glabrous, short, 10 to 15 mm. long, 3 to 5 mm. wide, oblong, subequally rounded from both sutures to the blunt tip, pale brown, 3 to 6 (usually 4)-seeded; seeds subglobose, from greenish gray to purplish black, 1.5 to 2 mm. wide, the linear yellowish hilum encircling $\frac{1}{5}$ to $\frac{1}{4}$ of the seed.

Eurasia. Naturalized in fields, waste places and along roadsides from Newfoundland and Quebec to Ontario, south to Florida and Mississippi.



FIGURE 18.—Sand vetch (*Vicia acutifolia*).

17a. *Vicia tetrasperma* var. *gracilis* (Loisel.) Aschers. & Graebn.

Vicia tetrasperma var. *gracilis* (Loisel.) Aschers. & Graebn. Fl. Nordostd. Flachl. 449. 1898.

Vicia gracilis Loisel., Fl. Gall. (ed. 1) 460. 1806.

Ervum tenuissimum M. Bieb., tab. no. 24, 1798?;
Pers., Syn. 2: 309. 1807.

E. hirsutum β *gracile* DC., Prodr. 2: 367. 1825.

Leaflets of the upper leaves usually linear-acuminate, up to 25 mm. long; racemes 1- to 4-flowered; fruiting peduncles exceeding the leaves, up to 8 cm. long; flowers about 8 mm. long; pods 4- to 6(8)-seeded.

Southern and western Europe. Locally naturalized in New England, New York, and Oregon.

18. *Vicia acutifolia* Ell.*

SAND VETCH.

(Fig. 18)

Vicia acutifolia Ell., Sketch 2: 225. 1824.

Glabrous or glabrate perennial; stems branched at the base, the branches 5 to 12 dm. long, spreading or climbing; leaves 2 to 6 cm. long, bearing usually 4 (2 to 6) leaflets, terminated by a simple or branched tendril; leaflets linear to linear-oblong, 1.5 to 4 cm. long, acute or mucronate, narrowed at the base; peduncles longer than the leaves, 4- to 10-flowered; flowers 7 to 8 mm. long, pale blue, the standard purple-tipped, on pedicels 1 to 2 mm. long; calyx often minutely pubescent, the tube oblique, the teeth triangular, unequal, the lower longer than the

*An additional native vetch, *Vicia ocalensis* Godfrey & Kral (Rhodora 60: 256. 1958), was described after the present account went to press. It is known only from Marion County, Florida, and resembles a robust *Vicia acutifolia*; but the leaflets are mostly 6 instead of 4 in number, 3 to 4 mm. in width rather than 1 to 2 mm.; the flowers are 9 to 12 mm. long rather than 7 to 8 mm.; and the pods are 4 to 4.5 cm. long and 7 to 8 mm. wide instead of 2.3 to 2.5 cm. long and 5 mm. wide.

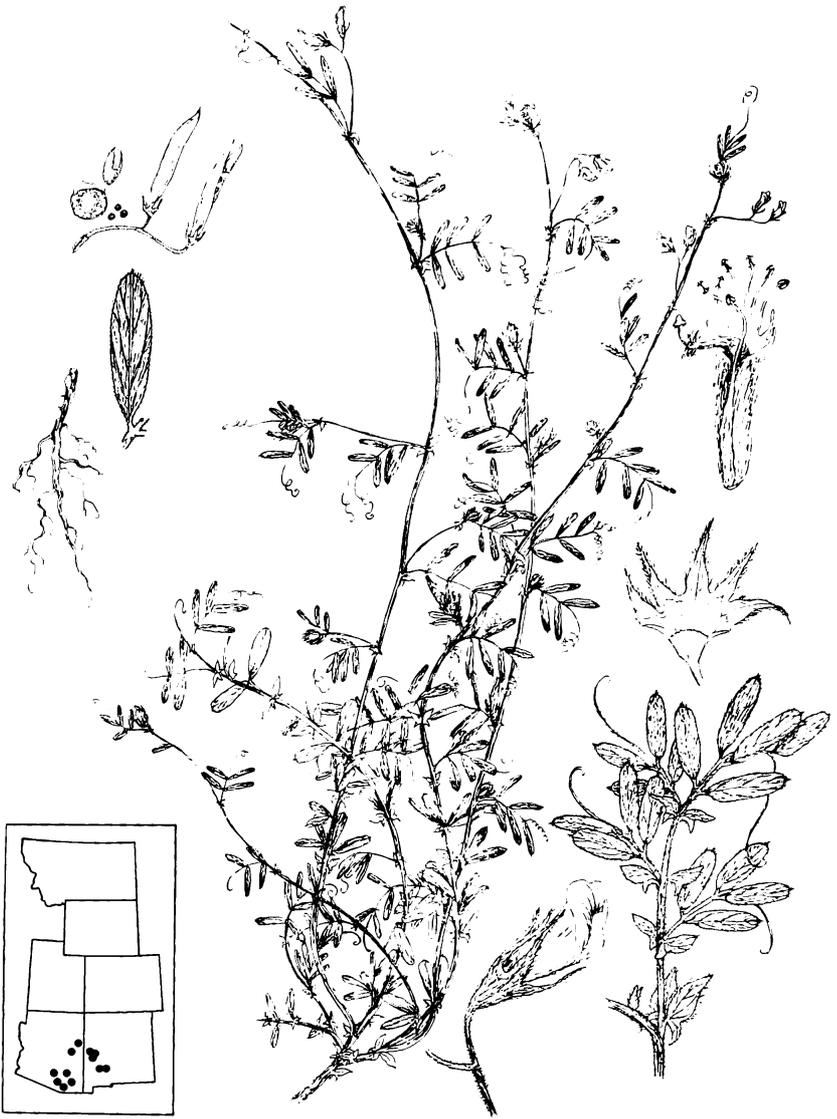


FIGURE 19.—Mogollon vetch (*Vicia leucophaea*).

upper but shorter than the tube; pods stipitate, linear-oblong, oblique and acute at both ends, 2.3 to 2.5 cm. long, 4- to 8-seeded; seeds compressed-orbicular, 2 to 2.5 mm. in diameter, purplish black, the hilum encircling $\frac{2}{3}$ of the seed.

In sandy soil, low calcareous hammocks, swamps, and ditches, mostly near the coast in Georgia, Florida, and Alabama.

19. ***Vicia leucophaea*** Greene

MOGOLLON VETCH.

(Fig. 19)

Vicia leucophaea Greene, Bot. Gaz. 6: 217. 1881.

Villous perennial; stems quadrangular, 3 to 8 dm. long, usually branched at the base, erect, reclining or climbing; leaves short, 1.5 to 4 cm. long, short-petioled, bearing 6 (rarely 8) leaflets and terminated by a usually simple tendril; leaflets linear-lanceolate to elliptic-oblong, 7 to 20 mm. long, 1 to 3 mm. wide (those of the basal leaves sometimes obovate and truncate, up to 6 mm. wide), the apex mostly rounded and mucronulate, sometimes acute; stipules semisagittate, the upper lanceolate; peduncles slender, about equaling the leaves, 1- to 2-flowered; flowers whitish, the veins of the standard and tips of the keel purple, 7 to 9 mm. long, appearing from July to September; calyx campanulate, villous, the tube about 2.5 mm. long, the teeth subequal, lanceolate, spreading, about 3 mm. long; pods sessile, 2.5 to 4 cm. long, lanceolate-oblong, appressed-villous, 6- to 9-seeded; seeds compressed-orbicular, 2.5 mm. in diameter, reddish brown, the hilum encircling about $\frac{1}{4}$ of the seed.

Southwestern New Mexico and southeastern Arizona, chiefly in the mountains (Transition Zone).

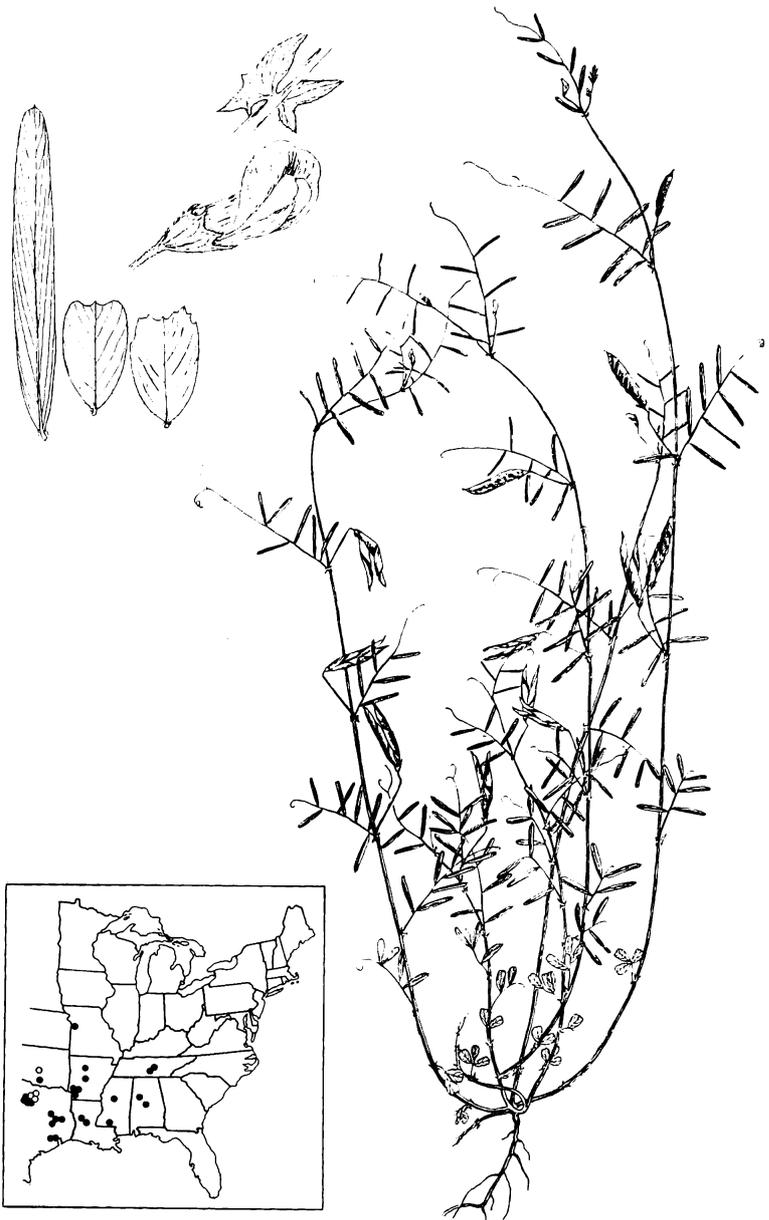


FIGURE 20.—Pygmy-flowered vetch (*Vicia minutiflora*). Map shows range of *V. minutiflora* (●) and *V. reverchonii* (○).

20. **Vicia minutiflora** Dietr. PYGMY-FLOWERED VETCH.
(Fig. 20)

Vicia minutiflora Dietr., Syn. Pl. 4: 1107. 1847.

V. micrantha Nutt. ex Torr. & Gray, Fl. N. Amer.
2: 271. 1838, not Lowe, Cambridge Phil. Soc.
Trans. 4: 33. 1831, nor Hook. & Arn., Bot. Misc.
4: 197. 1833.

Glabrate or minutely pubescent winter annual, perhaps becoming perennial in the South; stems slender, branched, reclining or climbing, 3 to 8 dm. long; leaves relatively few and distant, 2 to 6 cm. long, bearing 4 to 6 leaflets and terminated by a simple or branched tendril; leaflets linear-elongate to narrowly oblong, 1 to 3.5 cm. long (those of the lower leaves sometimes obovate and 5 to 12 mm. long), the apex acute to rounded and mucronulate; stipules semisagittate, the upper lanceolate, subequal or one of the pair up to twice as broad as the other; peduncles shorter than the leaves, 5 to 20 mm. long, 1- (rarely 2-) flowered (the flower terminal when solitary), usually rigid and ascending-divaricate; flowers pale blue or purplish white, 5 to 6 (8) mm. long; calyx sparsely villous, the tube 1.5 to 2 mm. long, the teeth triangular, 1 to 1.5 mm. long, much shorter than the tube, subequal, the upper usually somewhat shorter and broader; pods flat, glabrous, narrowly oblong-falcate, 2 to 3 cm. long, 4 to 4.5 mm. wide, 4 to 12 (usually 6 to 8) seeded; seeds subglobose, 2 mm. in diameter, blackish purple, the hilum encircling $\frac{5}{8}$ of the seed.

Woods, thickets, and river banks, Florida to Texas, north to Tennessee and Missouri.



FIGURE 21.—Reverchon vetch (*Vicia reverchonii*).

21. **Vicia reverchonii** S. Wats. REVERCHON VETCH.
(Figs. 20 (map), 21)

Vicia reverchonii S. Wats., Amer. Acad. Proc. 14: 29.
1879.

V. minutiflora f. *reverchonii* (S. Wats.) Shimmers,
Field & Lab. 16: 21. 1948.

Low, spreading-pubescent, stoutish winter annual (?); stems branched at the base, the branches ascending, decumbent or reclining, 2 to 4 dm. long; leaves numerous, 1.5 to 5 cm. long, subsessile to short-petioled, bearing (±) 6 to 10 leaflets, terminating in a simple or branched tendril; leaflets elliptic to broadly oblong-cuneate or obovate, 5 to 17 mm. long, 3 to 7 mm. wide, more or less villous on both surfaces, the apex from rounded and mucronulate to truncate-emarginate; stipules very unequal, one of the pair broadly semisagittate and often 4 times as broad as the other which is lanceolate or very narrowly semisagittate; peduncles stout, equaling or shorter than the leaves, 5 to 35 mm. long, 1-flowered; flowers blue or bluish, 5 to 7 mm. long; calyx villous, the tube 2 mm. long, the teeth lanceolate, equal, 2 mm. long, equaling the tube; pods flat, appressed-villous, oblong-falcate, 2.5 to 3 cm. long, 4.5 to 5 mm. wide, 4- to 6-seeded; seeds globose, 2 mm. in diameter, purplish brown mottled with purplish black, the hilum encircling about $\frac{5}{8}$ of the seed.

Sandy prairies; known only from the vicinity of Dallas, Texas, and Wewoka, Oklahoma (both localities between 96° and 97° longitude).

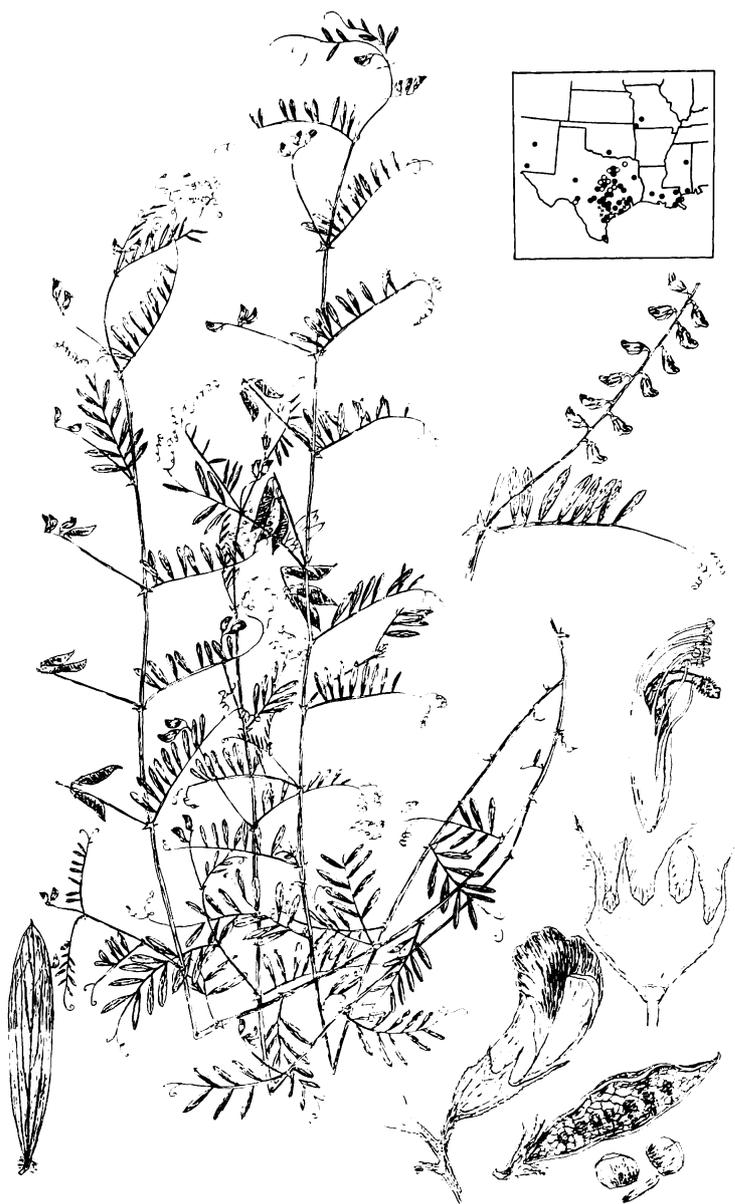


FIGURE 22.—Deerpea vetch (*Vicia ludoviciana*). Map shows range of *V. ludoviciana* (●); var. *laxiflora* (○); and var. *texana* (×).

22. *Vicia ludoviciana* Nutt.

DEERPEA VETCH.

(Fig. 22)

Vicia ludoviciana Nutt., in Torr. & Gray, Fl. N. Amer. 1: 271. 1838.

Rather stout to slender, glabrous winter annual; stems angled, branched at the base, decumbent or climbing, 3 to 10 dm. long; leaves 3 to 9 cm. long, bearing 6 to 12 leaflets, the rachis terminating in a usually forked tendril; leaflets linear-oblong or elliptic to oval, 6 to 25 mm. long, the apex rounded or emarginate, sometimes mucronulate; stipules semisagittate, usually more or less unequal; peduncles shorter than to exceeding the leaves, 2 to 4 cm. long, bearing 2 to 12 flowers; flowers lavender-blue, 5 to 8 mm. long, the folded standard 2.5 to 4 mm. high in the typical form; calyx somewhat pilose, the tube 1 to 2 mm. long, the teeth unequal, the lower subulate and equaling the tube, the upper shorter and broader; pods flat, glabrous, oblong, oblique at both ends, 2 to 3 cm. long, 4- to 8-seeded; seed subglobose to compressed-suborbicular, 2.2 to 2.5 mm. in diameter, brownish gray mottled with dark purple, the hilum encircling $\frac{1}{4}$ to $\frac{1}{3}$ of the seed.

Thickets, rich woods and sandy pine lands, Florida to Texas, north to southwestern Missouri, Oklahoma, and New Mexico.

Two varieties, generally poorly marked because of the preponderance of intermediate forms, have been designated as follows:

22a. **Vicia ludoviciana** var. **texana** (Torr. & Gray)
Shinners

Vicia ludoviciana var. *texana* (Torr. & Gray) Shinners,
Field & Lab. 16:23. 1948.

V. caroliniana var. *texana* Torr. & Gray, Fl. N.
Amer. 1:271. 1838.

V. texana (Torr. & Gray) Small, Fl. Southeastern
U.S. 656, 1332. 1903.

Smaller and more delicate, sparingly pubescent to nearly glabrous; peduncles very slender; racemes generally compactly but few (1 to 6)-flowered; flowers 5 to 6.5 mm. long, the folded standard 1.8 to 2.5 mm. high.

Mississippi to Texas, chiefly on the gulf coast and Rio Grande Plain.

22b. *Vicia ludoviciana* var. *laxiflora* Shinnery

Vicia ludoviciana var. *laxiflora* Shinnery, Field & Lab.
16:25. 1948.

Plants sparingly to rather densely grayish pubescent; racemes loose, 3- to 13-flowered, the flowers rather widely spaced; flowers 5.5 to 8 mm. long, the folded standard 1.5 to 2.5 mm. high, narrower and paler than in the typical form.

As pointed out by Dr. Shinnery, dwarfed plants, or fruiting plants with few pods, are almost impossible to distinguish from *V. leavenworthii*.

Limestone areas of the Grand Prairie and Edwards Plateau, east-central Texas.



FIGURE 23.—Leavenworth vetch (*Vicia leavenworthii*).

23. *Vicia leavenworthii* Torr. & Gray

LEAVENWORTH VETCH.

(Fig. 23)

Vicia leavenworthii Torr. & Gray, Fl. N. Amer. 1: 271.
1838.

Glabrescent to sparsely pilose or puberulent winter annual, strigillose when young; stems quadrangular, usually much branched and spreading at the base, reclining or climbing, 3 to 6 dm. long; leaves 3 to 6 cm. long, bearing (8) 10 to 14 leaflets, terminating in a forked tendril; leaflets narrowly elliptic-lanceolate to oblong, oval or oblanceolate, 5 to 12 mm. long, the apex acute to rounded and mucronulate or shallowly emarginate; stipules mostly lanceolate, occasionally narrowly semi-sagittate; peduncles from shorter than to exceeding the subtending leaves, (1-) 2- to 5-flowered; flowers bluish lavender, 4.5 to 7 mm. long; calyx pubescent, the tube turbinate, 1 to 1.5 mm. long, the teeth subequal, lance-subulate, about equaling to longer than the tube; pods flattish, glabrous, oblong, oblique at both ends, 2 to 2.5 cm. long, 5 to 7 mm. wide, 4- to 6-seeded; seeds compressed-suborbicular, 2 to 2.5 mm. in diameter, purplish brown, the hilum encircling about $\frac{1}{4}$ of the seed.

In dry soil, southwestern Missouri and Arkansas to Texas. Abundant on the Edwards Plateau of Texas, where it is much sought after by livestock. A particularly valuable early spring forage plant, appearing even before needlegrass and when no other forage is available. It has been successfully cultivated for forage and also provides an excellent green manure.



FIGURE 24.—Slender vetch (*Vicia exigua*). Map shows range of *V. exigua* (●) and var. *hassei* (○).

24. *Vicia exigua* Nutt.

SLENDER VETCH.

(Fig. 24)

Vicia exigua Nutt. in Torr. & Gray, Fl. N. Amer. 1: 272.
1838.

V. thurberi S. Wats., Amer. Acad. Proc. 25: 129
1890.

V. producta Rydb., Torr. Bot. Club Bul. 28: 500.
1901.

V. leavenworthii var. *occidentalis* Shinnery, Field &
Lab. 16: 22. 1948.

Glabrous or sparsely strigose, very slender perennial or winter annual; stems decumbent, ascending or erect, usually branching at the base, 2 to 7 dm. long; leaves rather distant, 2 to 6 cm. long, bearing 4 to 12 leaflets, terminating in a usually branched tendril; leaflets narrowly linear to oblong, 5 to 25 mm. long, from rounded to acute or rarely emarginate and mucronate at the apex, glabrous or occasionally sparsely strigose; stipules narrow, semisagittate, entire or incisedly serrate; peduncles slender, 2 to 4 cm. long, shorter than the leaves, 1- to 2-flowered, aristate; flowers yellowish white to purplish, (5) 6 to 8 (9) mm. long, appearing from March to May in the South, April to June in the North; calyx sparingly hirsute-strigose, the teeth lanceolate, broad at the base, from somewhat shorter than to equaling the tube, the upper teeth shorter than the lower and broader-based; pods oblong, oblique at the tip, 2 to 3 cm. long, 4 to 6 mm. wide, glabrous, 4- to 7-seeded; seeds compressed-suborbicular, 2.5 to 3 mm. in diameter, purplish black, the hilum short, encircling $\frac{1}{5}$ of the seed.

Thickets, open woods, especially amongst brush, and stony or sandy fields, Colorado and Utah to southern Oregon and California, south to Texas, New Mexico, and Arizona.

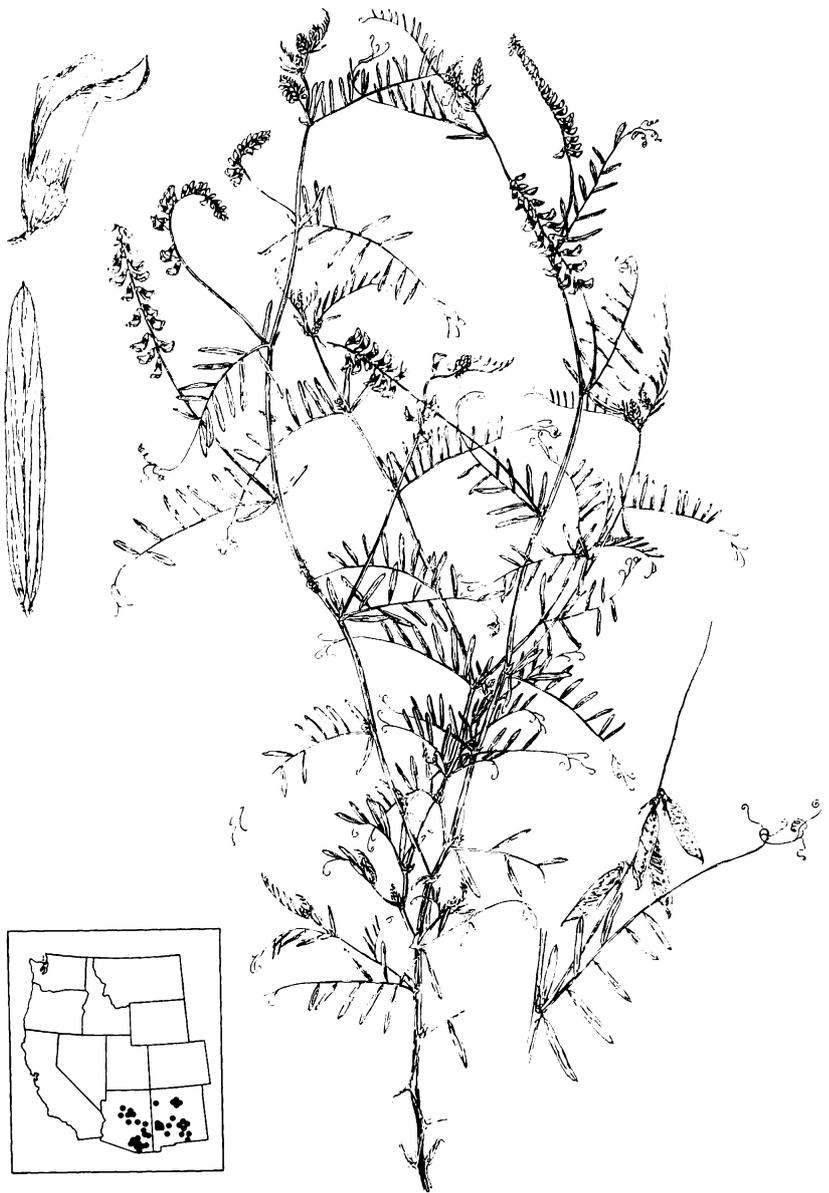


FIGURE 25.—Showy vetch (*Vicia pulchella*).

24a. ***Vicia exigua* var. *hassei*** (S. Wats.) Jeps.

Vicia exigua var. *hassei* (S. Wats.) Jeps., Fl. W. Middle Calif. 296. 1901.

V. hassei S. Wats., Amer. Acad. Proc. 25: 129. 1890.

Stouter; leaflets broader, many deeply notched at apex. Orange and Los Angeles Counties, California, north to central California.

25. ***Vicia pulchella*** H. B. K.

SHOWY VETCH.

(Fig. 25)

Vicia pulchella H. B. K. Nov. Gen. & Sp. 6:499. 1824.

Vicia melilotoides Woot. & Standl., Contr. U.S. Natl. Herb. 16: 141. 1913.

Short-pilose to glabrate perennial; stems angled, 3.5 to 8 dm. long, decumbent, ascending or climbing; leaves 4 to 11 cm. long, bearing 10 to 16 leaflets, terminated by a forking tendril; leaflets elliptic to linear-oblong or oblong-lanceolate, 7 to 30 mm. long, the apex obtuse and mucronate to acute; stipules lanceolate to narrowly sagittate; peduncles 2.5 to 15 cm. long, shorter than to much exceeding the leaves, (6-) 8- to 25-flowered; flowers cream-white often with the keel purple-tipped and the standard purple veined to bluish purple, 5 to 7 mm. long; calyx oblique-campanulate, more or less appressed-pilose, 3 mm. long, the teeth short, broadly triangular, the blunt upper teeth shorter than the acute to acuminate lowermost tooth, all much shorter than the tube; pods oblong, oblique-tipped, stipitate, 20 to 35 mm. long, 5 to 8 mm. wide, glabrous, 5- to 9-seeded; seeds compressed-subglobose, 2.5 to 2.75 mm. in diameter, purplish black, the hilum encircling about $\frac{1}{4}$ of the seed.

Thickets, pine woods, open stony hillsides and moist meadows, especially in the mountains (Transition Zone), New Mexico, Arizona, and Mexico. (Reported by Kearney, and by Wootton and Standley from west Texas, but no material seen from that State.)

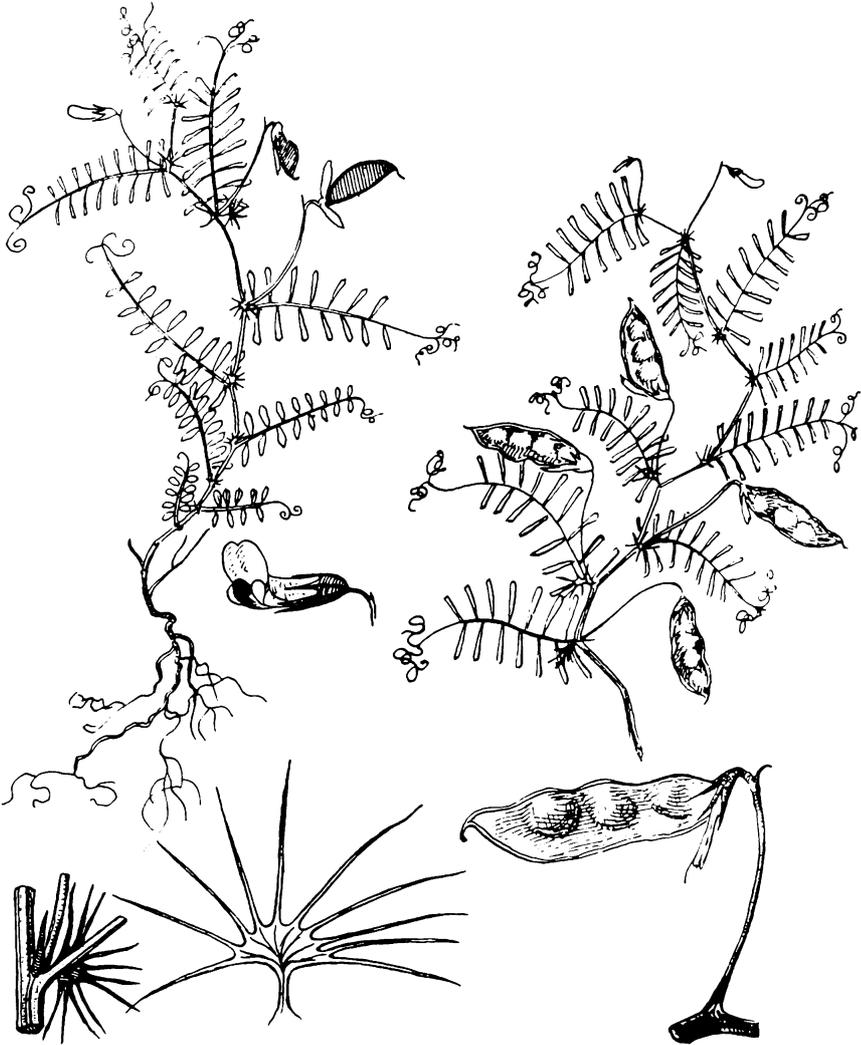


FIGURE 26.—*Monantha vetch* (*Vicia articulata*).
(From Guinea, Estudio Botanico de las Vezas y Arvejas Españolas.)

26. *Vicia articulata* Hornem.

MONANTHA VETCH: ONE-FLOWERED VETCH.
(Fig. 26)

Vicia articulata Hornem., Enum. Pl. Hort. Hafn. 41.
1807.

V. monanthos Desf., Fl. Atl. 2:165. 1800, not Retz.,
1783.

V. multifida Wall., Fl. Hal., Sup. 3:85. 1815.

Slender, glabrous annual; stems simple to profusely branched, reclining, erect or climbing, angled, 2 to 7 dm. long; leaves 4 to 7 cm. long, bearing 10 to 16 leaflets and terminated by a branched tendril; leaflets linear to narrowly oblong (those of the lowermost leaves sometimes elliptic-oval), 6 to 15 mm. long, 1 to 3 mm. wide, the apex rounded and mucronate to truncate or deeply re-tuse; stipules totally dissimilar, one of the pair very small, sessile, undivided and linear, the other large, conspicuously petioled, incisely digitate to form 3 to 9 (12) subulate to filiform teeth; peduncles slender, erect-ascending, 2 to 6 cm. long, from shorter than to about equaling the leaves, 1-flowered, aristate; flowers whitish blue, or pale lavender, the keel tipped with purplish black, 10 to 15 mm. long; calyx about half the length of the corolla, campanulate, the subequal, lance-subulate teeth twice the length of the tube; pods substipitate, flat, short-oblong, 15 to 30 mm. long, 6 to 8 mm. wide, oblique-beaked, glabrous or finely pilose, yellowish brown, 2- to 4-seeded; seeds compressed-suborbicular, 5 to 6.5 mm. in diameter, blackish purple, the hilum very short, white, about $\frac{1}{8}$ of the circumference of the seed.

Southern Europe. Cultivated for green manure in orchards of Florida and southern Georgia and mainly for seed in northwestern California and western Oregon; not very winter hardy.

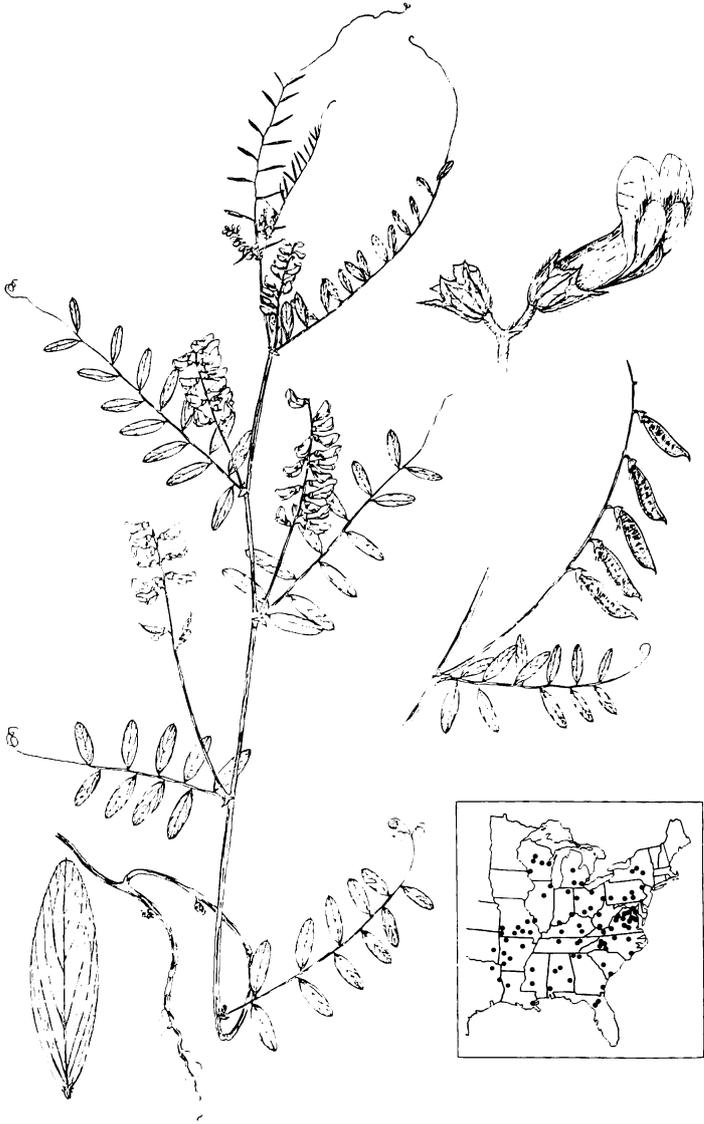


FIGURE 27.—Pale vetch (*Vicia caroliniana*)

27. *Vicia caroliniana* Walt.PALE VETCH (WOOD VETCH).
(Fig. 27)*Vicia caroliniana* Walt., Fl. Carol. 182. 1788.*V. parviflora* Michx., Fl. Bor. Amer. 2: 69. 1803.

Slender perennial; stems trailing or climbing, up to a meter long; leaflets 10 to 24, elliptic to oblong or oblong-lanceolate, obtuse, mucronulate, usually with 5 to 7 lateral veins on each side; stipules lanceolate or semi-sagittate, entire; peduncles elongate; racemes, including the peduncle, 6 to 10 cm. long, bearing 7 to 20 loosely disposed, pedicelled flowers, 8 to 12 mm. long; calyx nearly regular, the tube 2 to 2.7 mm. long, the lobes subequal, broadly triangular, about as broad as long (less than 1 mm.); corolla white, the keel tipped with blue; pod stipitate, narrowly oblong, obliquely long-beaked, 1.5 to 3 cm. long; seeds compressed-suborbicular or subglobose, 2.5 to 4 mm. in diameter, violet brown to blackish, the hilum encircling $\frac{3}{4}$ of the circumference.

Rich woods, thickets and shores, New York and southern Ontario to Minnesota, south to Florida and Texas.



FIGURE 28.—Hairy vetch (*Vicia villosa*).
(From Guinea, Estudio Botanico de las Vezas y Arvejas Españolas.)

28. *Vicia villosa* Roth

HAIRY VETCH; WOOLLY VETCH; WINTER VETCH.
(Fig. 28.)

Vicia villosa Roth, Tent. Fl. Germ. 2: 182. 1789.

V. villosa f. *albiflora* (Schur) Gams, in Hegi, Fl. Mitteleuropa 4(3): 1536. 1924.

V. villosa f. *rosea* Sherff, Bot. Leaflet Sherff, No. 7: 24. 1952.

Annual or biennial; stems spreading-villous, up to a meter long; leaflets usually 10 to 20, narrowly oblong to linear-lanceolate, obtuse and mucronate to acute, 1 to 2.5 cm. long; peduncles elongate; racemes dense, 10- to 40-flowered, secund, plumose in bud; flowers 12 to 20 mm. long; calyx irregular, villous, the tube 2.3 to 4 mm. long, gibbous at the base on the upper side, the pedicel apparently inserted ventrally, the lower teeth linear-acicular, long-villous, 2 to 5 mm. long, the upper linear-triangular 0.8 to 1.5 mm. long; corolla violet and white to rose colored or white, slender, the blade of the glabrous standard less than half as long as the claw; pod oblong, 2 to 3 cm. long, 7 to 10 mm. broad, obliquely beaked; seeds globose, 3 to 4.5 mm. in diameter, black, the hilum encircling $\frac{1}{4}$ of the circumference.

Cultivated; naturalized from Europe along roadsides, in fields and waste land from Maine to Montana, south to Georgia and California.

Agronomists, basing their observations chiefly upon seedling and seed characteristics, are not fully in agreement with taxonomists in referring the so-called "smooth hairy" vetch (var. *glabrescens*) to the following species, *V. dasycarpa*, as is done here, rather than to the present species, and its correct taxonomic position must await further cooperative studies. Harry A. Schoth, Oregon Agricultural Experiment Station, is of the opinion that in the Pacific Northwest better than 95 percent of the hairy vetch grown for all purposes is of the smooth type.

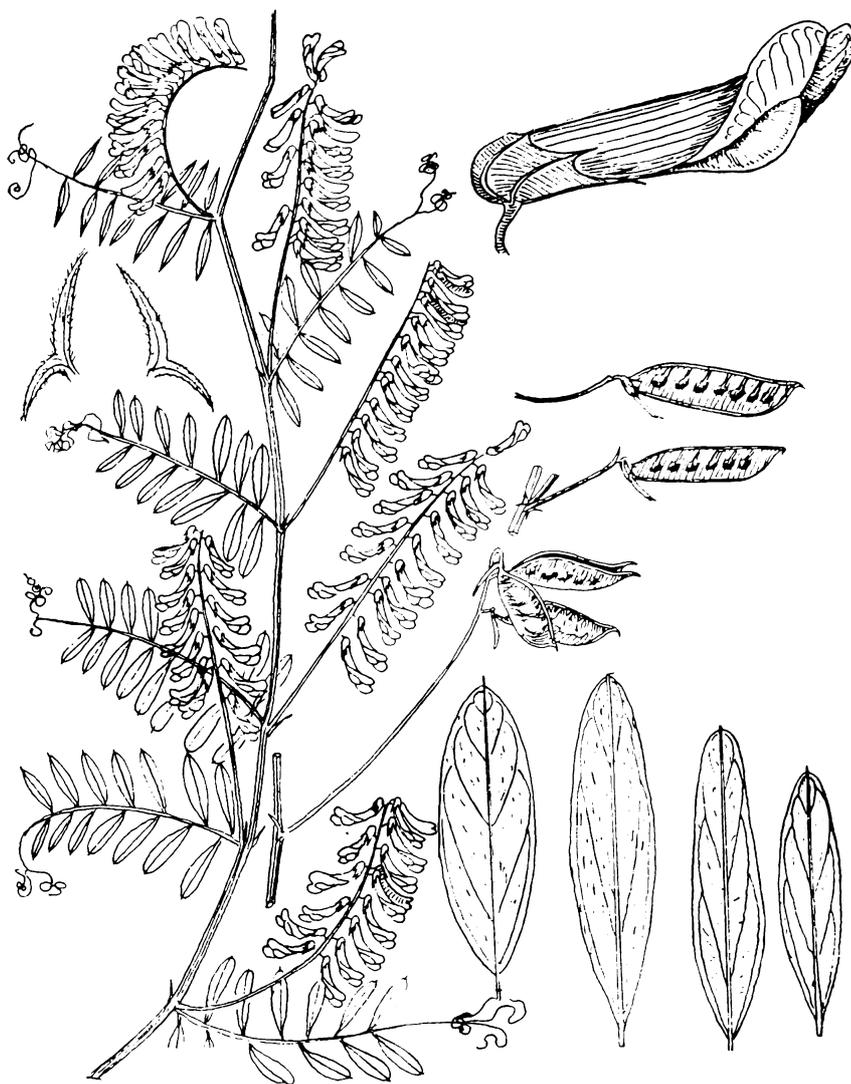


FIGURE 29.—Woollypod vetch (*Vicia dasycarpa*).
(From Guinea, Estudio Botanico de las Vevas y Arvejas Españolas.)

29. *Vicia dasycarpa* Ten.

WOOLLYPOD VETCH (SMOOTH VETCH).
(Fig. 29.)

Vicia dasycarpa Ten., Viagg. Abrezz. 81. 1829.

V. varia Host, Fl. Austr. 2: 332. 1831.

V. villosa var. *glabrescens* Koch, Syn. 194. 1835
(ed. 1); 214. 1843 (ed. 2).

V. dasycarpa var. *glabrescens* (Koch) Beck in
Reichenb. Icones 22: 199. 1903.

Annual, rarely perennial; very similar to *V. villosa* but differing in its appressed-pubescent or glabrate stem and foliage, in its fewer (usually only 5 to 15)-flowered racemes not plumose in bud and in its shorter (1 to 2 mm. long), glabrescent lower calyx-teeth; seeds subglobose to oval-oblong, 4 to 5 mm. in diameter, dull blackish brown to velvety black, sometimes obscurely mottled, the hilum encircling about $\frac{1}{4}$ of the seed.

Naturalized from Europe along roadsides, in fields and waste places at many scattered localities from Maine to Montana, south to Georgia, Missouri, and California.

Distinction is sometimes made between the woollypod vetch (*Vicia dasycarpa*) and the smooth or "smooth hairy" vetch (*V. dasycarpa* var. *glabrescens*), a race that was formerly considered a variant of the hairy vetch (*V. villosa*). In the typical form of the woollypod vetch, the leaflets tend to be obtuse and as much as 4 to 6 mm. wide, the racemes mostly only 6- to 12-flowered and longer than the leaves, the flowers usually less than 15 mm. long, the pods about 40 by 10 mm., often finely hairy, seeds globose. In the smooth vetch, the leaflets are commonly acute and only about 2 to 4 mm. wide, the racemes generally many-flowered and hardly longer than the leaves, the flowers about 15 to 17 mm. long, the longest pods about 9 mm. wide, seeds oval to subglobose. The two races are connected by numerous intermediate forms, however, so that their separation is often impracticable.

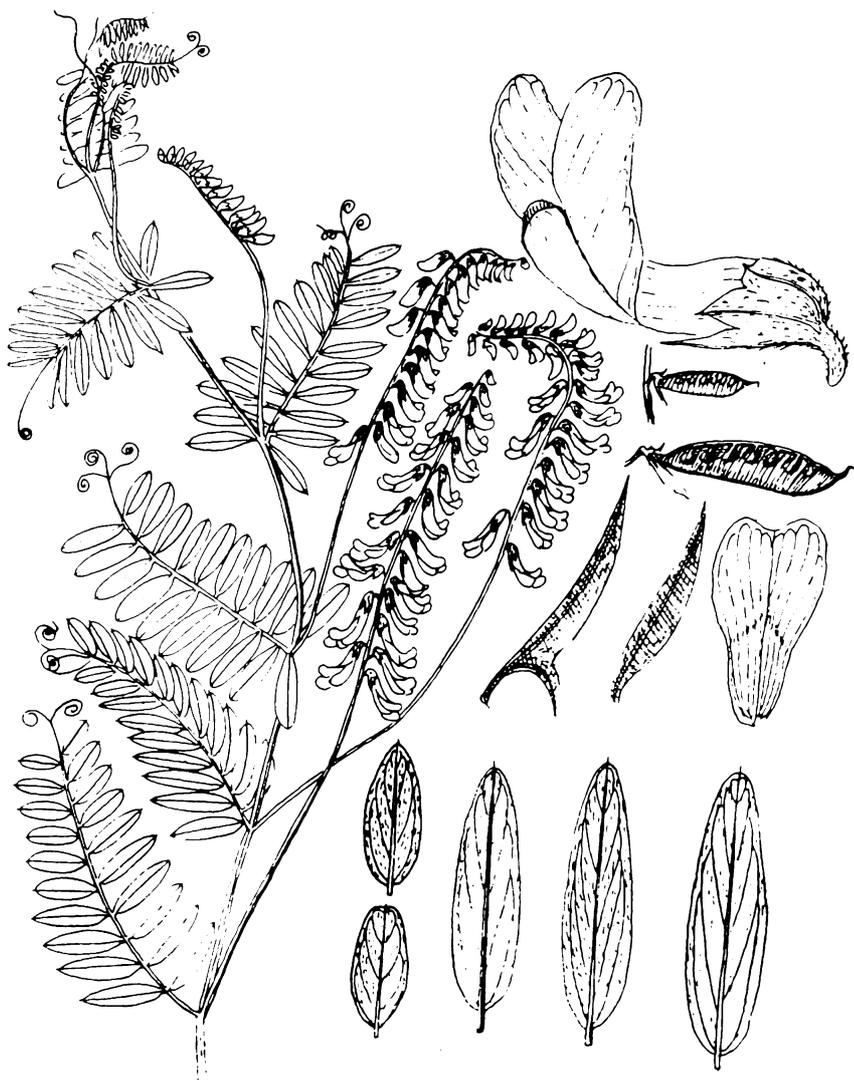


FIGURE 30.—Bird vetch (*Vicia cracca*).
(From Guinea, Estudio Botanico de las Vezas y Arvejas Españolas.)

30. *Vicia cracca* L. BIRD VETCH (TUFTED VETCH).
(Fig. 30.)

Vicia cracca L., Sp. Pl. 735. 1753.

V. semicincta Greene, Erythea 3:17. 1895.

V. cracca f. *albida* (Peters.) Gams in Hegi, Fl. Mitteleuropa 4(3):1531. 1924.

Perennial; stems striate, angular, appressed-pubescent, climbing or trailing, up to 2 m. long; leaflets 16 to 24, narrowly oblong to linear or elliptic, 10 to 30 mm. long, 3 to 5 mm. wide, mucronate, appressed-pilose or silky to glabrate; stipules semisagittate, entire; racemes long-peduncled, densely 20- to 50-flowered, secund, equaling to one and a half times the length of the subtending leaf; flowers crowded, reflexed, 8 to 12 mm. long; calyx short (2 to 3 mm. long), gradually rounded or slightly gibbous at the base on the upper side, its upper teeth broadly triangular, 0.3 to 0.6 mm. long, the lower lance-attenuate 1.3 to 2.5 mm. long; corolla blue violet or purple, occasionally lilac or rarely whitish, the blade of the standard about equaling the claw; pod narrowly rhomboid, 2 to 3 cm. long, 5 to 6 mm. wide; seeds 4 to 8, globose, 2.5 to 3 mm. in diameter, dark grayish brown, occasionally mottled with purple, the hilum encircling $\frac{1}{4}$ to $\frac{1}{3}$ of the circumference.

Fields, thickets, roadsides, and shores from Newfoundland to British Columbia, south to Virginia, Illinois and Washington; also in Eurasia. Possibly native in the northern part of our range but only introduced from Massachusetts and Indiana southward.



FIGURE 31.—Bramble vetch (*Vicia tenuifolia*).
(From Guinea, Estudio Botanico de las Vezas y Arvejas Españolas.)

31. ***Vicia tenuifolia*** Roth

BRAMBLE VETCH.

(Fig. 31.)

Vicia tenuifolia Roth, Tent. Fl. Germ. 1: 309. 1788.*V. cracca* subsp. *tenuifolia* (Roth) Gaudin, Fl. Helv. 4: 507. 1829.*V. cracca* var. *angustissima* Neilr., Fl. Nieder-Oesterr. 959. 1859.*V. cracca* var. *tenuifolia* (Roth) G. Beck, Fl. Nieder-Oesterr. 880. 1892.

Perennial; very similar to *V. cracca* but differing in having the long-peduncled, fewer-flowered (10 to 25) racemes about twice the length of the leaves, and larger flowers (12 to 16 mm. long) with the blade of the standard twice the length of the claw. Leaflets 2 to 4 mm. wide; seeds subglobose to elliptic-ovoid, up to 4 mm. long, purplish brown, the hilum encircling $\frac{1}{5}$ to $\frac{1}{4}$ of the seed.

Locally established in cultivated land, Wisconsin; naturalized from Europe.

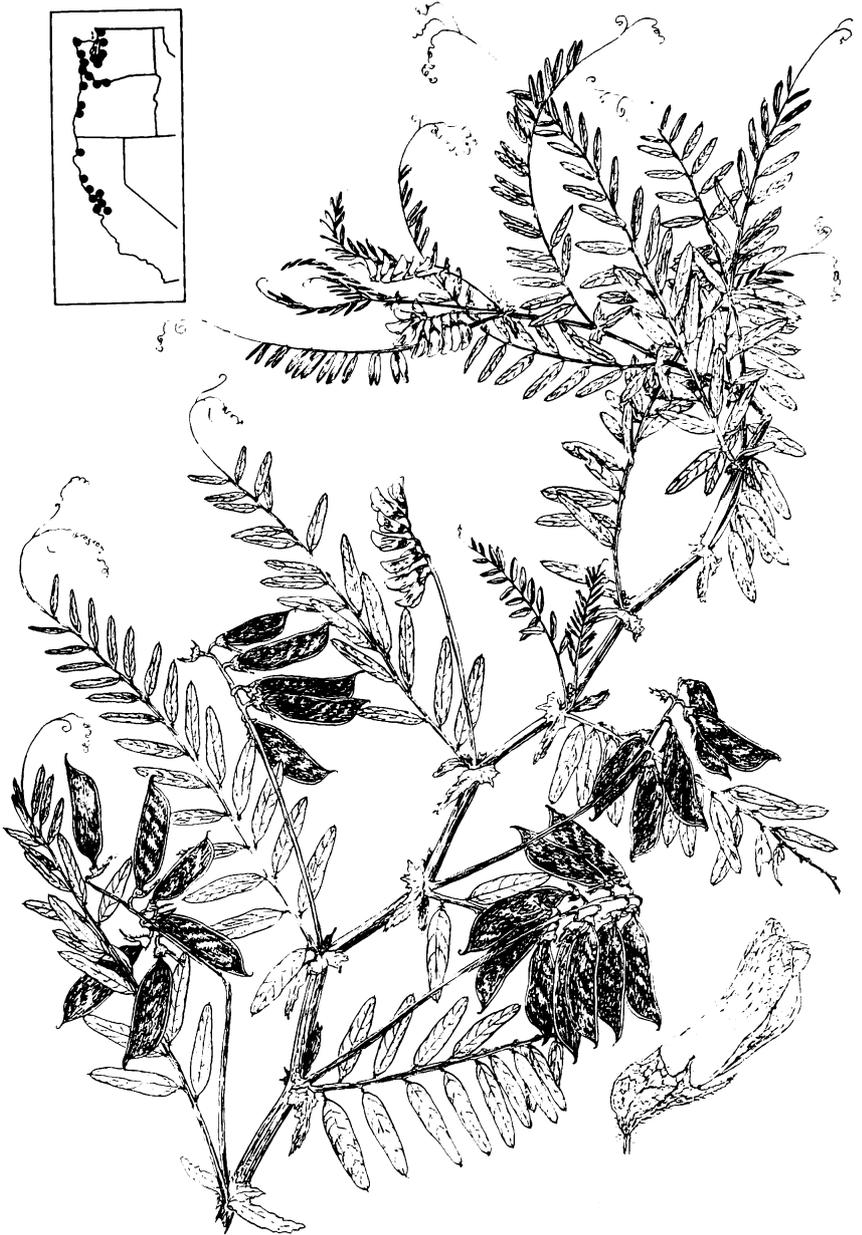


FIGURE 32.—Giant vetch (*Vicia gigantea*).

32. *Vicia gigantea* Hook.

GIANT VETCH.

(Fig. 32)

Vicia gigantea Hook., Fl. Bor. Amer. 1:157. 1839.*Lathyrus cinctus* S. Wats., Amer. Acad. Proc.
23:263. 1889.

Perennial, the whole plant turning dark in drying; stems stout, somewhat fistulous, sparingly pubescent, ascending or climbing, 6 to 12 dm. high; leaves 10 to 12 cm. long, the leaflets 18 to 26, narrowly oblong to oblong-lanceolate, rounded or obtuse at the mucronulate apex, 15 to 35 mm. long, somewhat strigose; peduncles shorter than the leaves; racemes densely flowered, one-sided; flowers reddish purple to pale saffron, 11 to 13 mm. long; calyx short, the lower teeth about equaling the tube, the upper very short to almost obsolete; pod oblong, 3 to 4 cm. long, glabrous; seeds 3 to 4, subglobose, purplish black to velvety black, 5 to 6 mm. in diameter, the hilum encircling $\frac{3}{4}$ or more of the circumference.

Along streams and on borders of swamps near the coast, southern Alaska to San Luis Obispo County, California, extending inland to the Willamette Valley, Oregon.

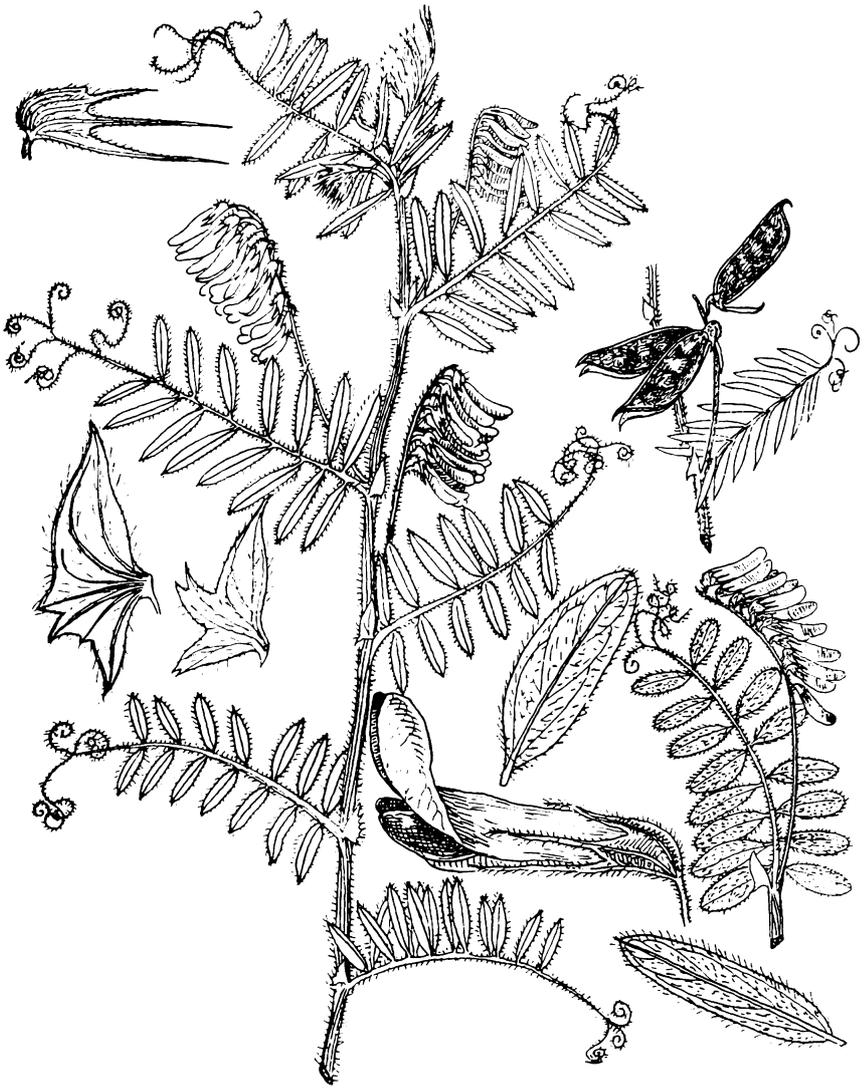


FIGURE 33.—Purple vetch (*Vicia benghalensis*).
(From Guinea, Estudio Botánico de las Vezas y Arvejas Españolas.)

33. *Vicia benghalensis* L.

PURPLE VETCH.

(Fig. 33)

Vicia benghalensis L., Sp. Pl. 736. 1753.*V. atropurpurea* Desf., Fl. Atlant. 2: 164. 1800.

Annual or biennial, rarely perennial, softly white-hairy; stems weak, angular, and striate, 1 to 2 m. long; leaves all bearing prominent, branched tendrils; leaflets 10 to 16, oval to oblong-linear, 2 to 3 cm. long, usually blunt but mucronate; stipules rather large, semisagittate, dentate; flowers 2 to 12, large (13 to 18 mm.), in a rather close, secund raceme, all opening at the same time; calyx not, or only slightly, gibbous at the base, the teeth prolonged, subulate, the lower 3 to 4 mm., the upper 2 to 3 mm. long; corolla narrow, whitish at the base, dark purple above, the blade of the standard much shorter than the claw; pod narrowly oblong, broad, 25 to 35 mm. by 8 to 12 mm., pubescent; seeds 4 to 5, compressed subglobose, to subquadrate, 4 to 5 mm. in diameter, velvety black with a prominent white hilum encircling $\frac{1}{5}$ of the seed.

Native of southern Europe; cultivated for cover and green-manuring, particularly on the Pacific coast; locally established along many roadsides in California.

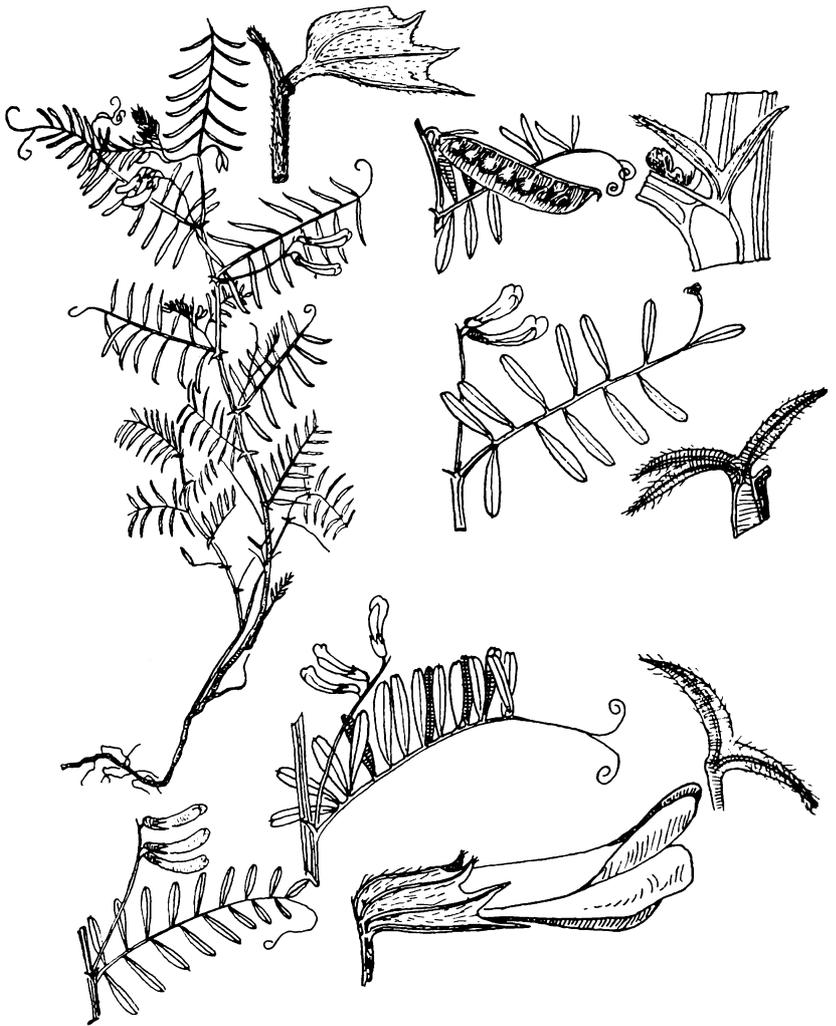


FIGURE 34.—Bard vetch (*Vicia monantha*).
(From Guinea, Estudio Botanico de las Vevas y Arvejas Españolas.)

34. ***Vicia monantha*** Retz.

BARD VETCH.

(Fig. 34.)

Vicia monantha Retz., Obs. 3: 39. 1783.*V. calcarata* Desf., Fl. Atlant. 2: 166. 1800.

Slender, glabrous annual; stems angular, prostrate or climbing, 2 to 4 dm. long; leaflets 8 to 16, linear-lanceolate to oblong-elliptic; stipules entire, semisagittate, sometimes with one of the lobes bifid; peduncles filiform, shorter than the leaves, aristate, generally 2- (1 to 3)-flowered; calyx sparingly appressed-villous, about one-fourth the length of the corolla, the teeth small, subequal, triangular, the upper pair somewhat connivent; corolla blue, 12 to 20 mm. long; pod oblong, 35 to 45 mm. long, 9 to 11 mm. wide; seeds 5 to 7, compressed suborbicular, 4 to 6 mm. in diameter, dark chestnut brown to purplish black, sometimes mottled, the hilum small, encircling about $\frac{1}{8}$ to $\frac{1}{6}$ of the circumference of the seed.

Southern Europe and eastern Asia. Cultivated in southwestern United States.



FIGURE 35.—American vetch (*Vicia americana*): a, var. *villosa*; b, var. *minor*; c, var. *truncata*.

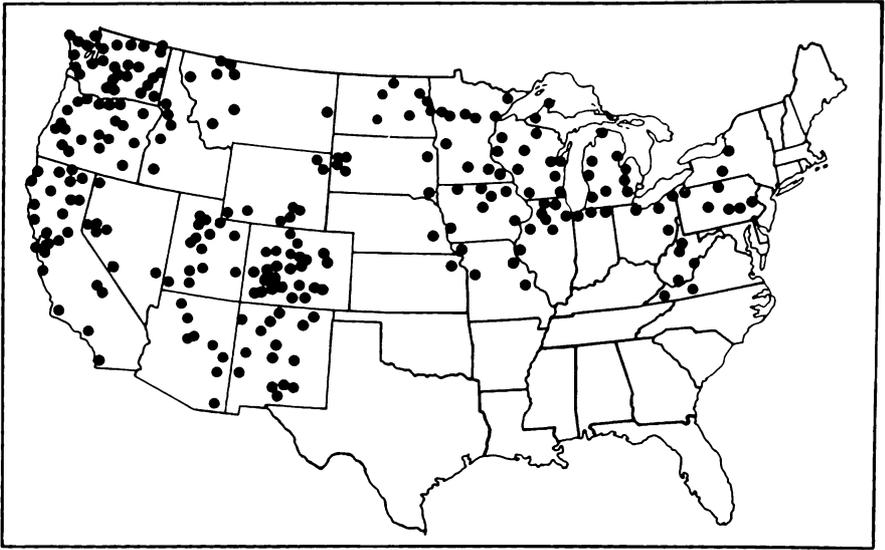
35. *Vicia americana* Muhl.AMERICAN VETCH.
(Fig. 35; Maps 1-5.)*Vicia americana* Muhl. *ex* Willd., Sp. Pl. 3:1096. 1803.

Perennial; stems glabrous or pubescent, trailing or climbing, up to 1 m. long; leaflets 8 to 18, linear to oval mostly 1.5 to 3.5 cm. long, 1 to 14 mm. wide, the lateral veins prominent beneath in drying, the apex rounded to truncate or emarginate; stipules mostly sharply serrate; racemes shorter than the subtending leaves, loose, 3- to 9-flowered; flowers bluish purple, 15 to 28 mm. long; calyx-tube oblique, 3.5 to 5.5 mm. long, the teeth variable, variously unequal, the lower usually lance-attenuate, 1.2 to 4 mm. long, the upper short and broad; pod 2.5 to 3.5 cm. long; seeds subglobose, 3 to 4 mm. long, olive-brown to deep violet-brown, the hilum encircling $\frac{1}{4}$ to $\frac{1}{3}$ of the circumference of the seed.

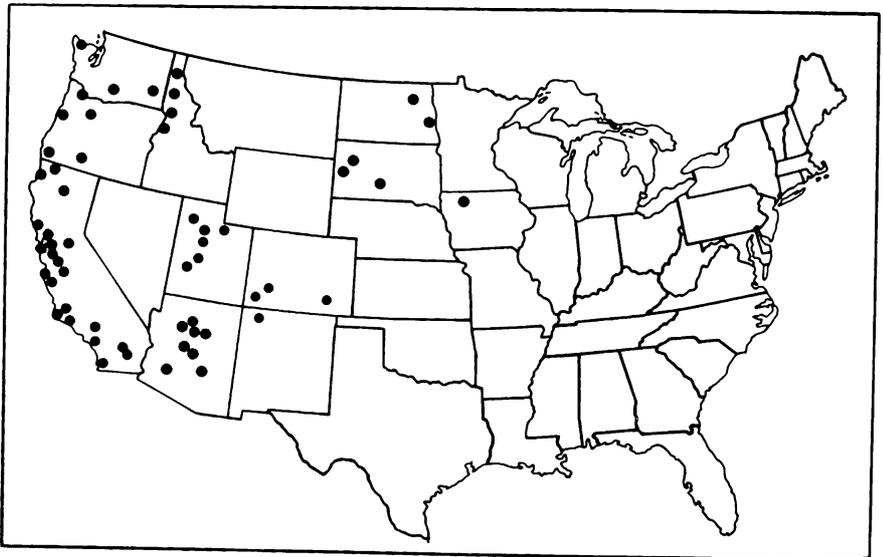
A very polymorphic species, most of the forms falling readily into the five following varieties.

Key to Varieties of American Vetch

- 1a. Leaflets thin, broad (4 to 14 mm.), ovate or oval to broadly elliptic.
 - 2a. Apex of leaflets rounded to more or less emarginate, usually entire.
 - 3a. Plant glabrous to sparingly pilose; apex of leaflets rounded, entire---35a. var. *americana*.
 - 3b. Plant pubescent; apex of leaflets rounded to more or less emarginate, occasionally denticulate-----35b. var. *oregana*.
 - 2b. Apex of leaflets truncate and emarginate, usually also denticulate; plant glabrous or glabrate-----35c. var. *truncata*.
- 1b. Leaflets thick.
 - 4a. Plant pilose; leaflets broad (4 to 12 mm.), elliptic to cuneate-obovate, apex truncate, more or less denticulate-----35d. var. *villosa*.



MAP 1.—Range of *Vicia americana* var. *americana*.



MAP 2.—Range of *Vicia americana* var. *truncata*.

4b. Plant glabrous to somewhat pilose; leaflets narrow (1 to 4 mm.), linear to narrowly oblong, apex rounded or truncate, entire-----35e. var. *minor*.

35a. ***Vicia americana* var. *americana*** (Map 1.)

Vicia sylvatica Nutt., Gen. 2:97. 1818, not L. 1753.

V. copelandii Eastw., Torrey Bot. Club Bul. 32:197. 1905.

V. hypolasia Greene, Leaflet Bot. Obs. and Crit. 2:268. 1912.

Plant glabrous to sparsely pilose; leaflets thin, broad, ovate or oval to broadly elliptic or oblong, 4 to 14 mm. wide, obtuse to broadly rounded at the entire apex, mucronate, the conspicuously branching lateral veins numerous and forming a 45° angle with the midrib.

Meadows, thickets, shores, grassy valleys, and foothills, Quebec to Alaska, south to Virginia, Indiana, Arkansas; New Mexico and California.

35b. ***Vicia americana* var. *oregana*** (Nutt.) A. Nels.
(Map 3.)

Vicia americana var. *oregana* (Nutt.) A. Nels., Man. Bot. Rocky Mts. 301. 1909.

Vicia oregana Nutt. in Torr. & Gray, Fl. N. Amer. 1:270. 1838.

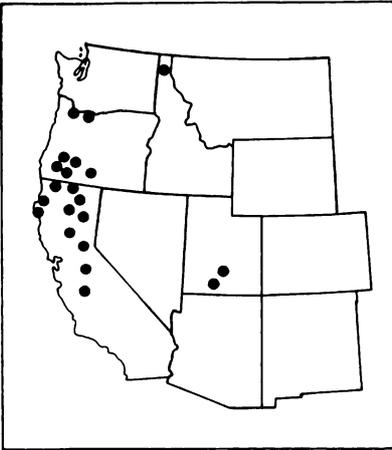
Lathyrus dissitifolius Nutt., l.c. 277.

Vicia dissitifolia (Nutt.) Rydb., Torr. Bot. Club Bul. 33:144. 1906.

V. vexillaris Green, Leaflet Bot. Obs. and Crit. 2:269. 1912.

V. americana subsp. *oregana* (Nutt.) Abrams, Ill. Fl. Pacific States 2:617. 1944.

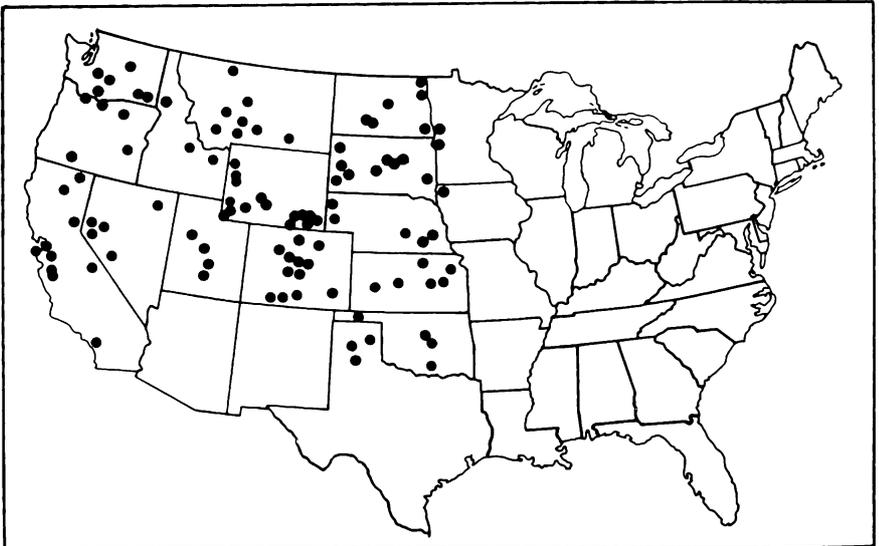
Plant more or less pubescent; leaflets thin, oblong-elliptic to ovate-elliptic, apex rounded to emarginate (in Oregon and California, often also denticulate).



MAP 3.—Range of *Vicia americana* var. *oregana*.



MAP 4.—Range of *Vicia americana* var. *villosa*.



MAP 5.—Range of *Vicia americana* var. *minor*.

Grassy slopes in open woods, British Columbia to southern California, east to Saskatchewan, Idaho and southern Utah.

35c. **Vicia americana** var. **truncata** (Nutt.) Brewer
(Map 2.)

Vicia americana var. *truncata* (Nutt.) Brewer in Brewer & Wats., Bot. Calif. 1:158. 1876.

V. truncata Nutt. in Torr. & Gray, Fl. N. Amer. 1:270. 1838.

V. pumila Heller, Muhlenbergia 2:88. 1905.

V. washingtonensis Suksd., West Amer. Scientist 15:59. 1906.

Plant glabrous to glabrate; leaflets thin to somewhat thick, broad, the apex truncate and emarginate, usually also 3 to 5 denticulate.

Range and habitat about the same as that of var. *oregana*, but more frequent and extending eastward to North Dakota and Iowa.

35d. **Vicia americana** var. **villosa** (Kell.) F. J. Hermann, comb. nov.
(Map 4.)

Vicia truncata var. *villosa* Kell., Calif. Acad. Sci. Proc. 1:57. 1855.

V. californica Greene, Fl. Francisc. 3. 1891.

V. durbrowii Eastw., Torrey Bot. Club Bul. 32:196. 1905.

V. californica var. *madrensis* Jeps., Fl. Calif. 2:386. 1936.

Plant pilose, usually low; leaflets rather thick, broad, elliptic to cuneate-obovate, the margin sometimes serrate above base, truncate and more or less denticulate at apex.

Often closely resembling var. *oregana*. It can usually be distinguished from the latter by its shorter and broader calyx-lobes, the lowermost averaging 0.75 to 1.5

mm. long as compared with 2 to 4 mm. in var. *oregana*, but intermediates between the two varieties are frequent.

Sparsely wooded mountain slopes, southern Oregon to southern California.

35e. ***Vicia americana* var. *minor* Hook.** (Map 5.)
Vicia americana var. *minor* Hook., Fl. Bor. Am. 1:157.
 1834.

V. tridentata Schwein, in Long, Exped. Winnep.
 2:392. 1825.

V. sparsifolia Nutt. in Torr. & Gray, Fl. N. Amer.
 1:270. 1838.

Lathyrus linearis Nutt. in Torr. & Gray, Fl. N.
 Amer. 1:276. 1838.

Vicia americana var. *angustifolia* Nees. in Wied-
 Neuweid, Reise inn. Nord. Amer. 2:434. 1841.

V. trifida Dietr., Syn. Pl. 4:112. 1847.

V. americana var. *linearis* (Nutt.) S. Wats., Amer.
 Acad. Proc. 11:134. 1875.

V. linearis (Nutt.) Greene, Fl. Francisc. 3. 1891.

V. caespitosa A. Nels., Torrey Bot. Club Bul. 25:373.
 1898.

V. americana var. *pallida* Suksd., Deutsche Bot.
 Monats. 18:26. 1900.

V. linearis var. *caespitosa* A. Nels., Coult. & Nels.,
 Man. Bot. Rocky Mts. 301. 1909.

V. callianthema Greene, Leaflet Bot. Obs. and Crit.
 2:269. 1912.

Plant glabrous to sparsely pilose, usually low; leaflets thick, narrow (1 to 4 mm. wide), linear to linear-oblong, the apex rounded or truncate, entire, the few lateral veins scarcely branched and forming a very narrow angle with the midrib.

Prairies, plains and open wooded slopes, Pacific coast eastward to Minnesota, South Dakota, Iowa, Kansas and Oklahoma.