

## WILD AND CULTIVATED CLOVERS OF OHIO.

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FABACEAE—Bean Family.

Sub-family—FABATAE.

Tribe—**Trifolieae**—Clovers.

Stamens diadelphous, anthers all alike. Leaves with three leaflets, rarely with one leaflet; leaflets denticulate.

### *Synopsis of Genera.*

- I. Corolla falling off after blossoming; petal claws free.
  1. Flowers in heads or short racemes, seldom single; pod linear, curved or twisted.
    - a. Pod linear, straight, or somewhat curved, often beaked. *Trigonella*.
    - b. Pod mostly spirally twisted, sometimes curved, or kidney-shaped. *Medicago*.
  2. Flowers in elongated racemes; pods thick, almost spherical or obovate. *Melilotus*.
- II. Corolla mostly drying up and persistent after flowering; petal claws either all or the four lower ones united with the stamen tube. *Trifolium*.

### *Key.*

1. Petals united with the stamen tube, persistent; flowers in globose or elongated heads, or umbellate. *Trifolium*.
1. Petals free from the stamen tube, falling off. 2.
2. Flowers small, yellow or white, drooping; inflorescence an elongated raceme. *Melilotus*.
2. Flowers single, in pairs, or in a dense more or less elongated inflorescence. 3.
3. Leaflets denticulate all around, seldom almost entire-margined; fruit linear, beaked, often somewhat curved. *Trigonella*.
3. Leaflets denticulate only at the outer end; fruit strongly curved or spirally twisted. *Medicago*.

### **Trigonella** L.

Annual plants with yellow or blue flowers. Stipules united with the petiole at the base. Flowers linear, straight or curved.

1. **Trigonella foenum-graecum** L. Fenugreek.

Annual fodder plants; flowers single or in pairs; pod linear, many seeded. Introduced from Asia and cultivated for its aromatic, mucilaginous seeds, formerly employed in medicines and still used by veterinarians. The source of "Semen faenu graeci."

### **Medicago** (Tourn.) L.

Herbs with small, yellow, or violet flowers in axillary heads or racemes. Leaves pinnately veined, the veins terminating in the teeth. Calyx-teeth short, nearly equal; standard obovate or

oblong; wings oblong; keel obtuse. Ovulary sessile or nearly so, 1-several ovuled; style subulate. Pod curved or spirally twisted, reticulate or prickly, indehiscent, 1-few seeded.

1. Leaflets oblanceolate, oblong, or obovate, usually much longer than wide; flowers violet, purple, or yellow, perennial. 2.
1. Leaflets broadly obovate, cuneate, or nearly orbicular, as broad or nearly as broad as long; flowers yellow, annual. 3.
2. Flowers violet-purple or bluish; pod very much coiled. *M. sativa*.
2. Flowers yellow; pod scarcely coiled. *M. falcata*.
3. Inflorescence usually 10-many flowered; pod without prickles; stem somewhat pubescent. *M. lupulina*.
3. Inflorescence less than 10-flowered; pod prickly. 4.
4. Leaflets more or less truncate at the tip, with dark spot or spots near the center; stem somewhat pubescent, especially at the top. *M. arabica*.
4. Leaflets rounded at the apex; stem almost glabrous; leaves not spotted. *M. hispida*.

1. **Medicago sativa** L. Alfalfa.

Perennial herb with much branching crown; stem  $2\frac{3}{4}$  ft. high, ascending; leaves  $1\frac{1}{2}$  in. long,  $1\frac{1}{2}$  in. wide, with petiole; leaflets  $\frac{1}{2}$ - $\frac{3}{4}$  in. long,  $\frac{1}{4}$ - $\frac{1}{2}$  in. wide, obovate to oblanceolate, dentate especially near the apex; flowers violet or blue, on short racemes; pod twisted into 2 or 3 spirals. In fields and waste places. Rather general. From Europe.

2. **Medicago falcata** L. Yellow Alfalfa.

Perennial herb with much branching stem, 15-20 in. high, ascending; leaves 1- $1\frac{1}{2}$  in. long; leaflets  $\frac{3}{4}$  in. long,  $\frac{1}{4}$  in. wide; flowers yellow; pod scarcely coiled. Occasionally found in waste places. Native of Europe.

3. **Medicago lupulina** L. Hop Medic.

Annual; branching at the base; branches decumbent and spreading; roots fibrous; stem 1- $1\frac{1}{2}$  ft. high; leaves 2 in. long, 1 in. wide; leaflets  $\frac{1}{2}$  in. long,  $\frac{1}{2}$  in. wide, obovate, often decidedly cuneate at the base; flowers with peduncles  $1\frac{1}{2}$  in. long; flower cluster oblong; pod spiral. In fields and waste places. Native of Europe. General.

4. **Medicago arabica** (L.) Huds. Spotted Medic.

Annual; branching from the root; spreading or decumbent; stem 12-15 in. high; leaves 3-5 in. long, 1- $1\frac{1}{2}$  in. wide, petioled; leaflets 1 in. long,  $\frac{3}{4}$  in wide, obcordate, with purple spot on the mid vein nearer the apex than base; flowers yellow; inflorescence 3-5-flowered; pods spirally coiled, with curved prickles.

5. **Medicago hispida** Gaertn. Toothed Medic.

Annual; branching from the root; spreading or ascending; stem 15-20 in. high, glabrous; leaves  $\frac{3}{4}$  in. long,  $\frac{3}{4}$  in. wide, petioled; leaflets  $\frac{1}{2}$  in. long,  $\frac{1}{2}$  in. wide, obovate; flowers few, yellow; pod several seeded, spirally twisted and armed with curved prickles. In waste places. Lake County. From Europe.

**Melilotus** (Tourn.) Mill.

Annual or biennial herbs with small white or yellow flowers in slender racemes. Calyx-teeth short, nearly equal; standard obovate or oblong; wings oblong; keel obtuse. Ovary sessile or stipitate, few-ovuled; style filiform. Pod ovoid or globose, straight, indehiscent or finally 2-valved. Seeds solitary or few.

1. Flowers white. *M. alba*.
1. Flowers yellow, sometimes pale. 2.
2. Stipules with entire margin; lateral petals as long as the standard or barely shorter. 3.
2. Stipules toothed at the base; lateral petals as long as the keel, but definitely shorter than the standard. *M. indica*.
3. Leaflets rather closely serrate; pod glabrous or glabrate, prominently cross-ribbed. *M. officinalis*.
3. Leaflets sub-entire or remotely toothed; pod pubescent, obscurely reticulate. *M. altissima*.

1. **Melilotus alba** Desv. White Sweet-clover.

Erect or ascending; branching; stem 3–10 ft. high, glabrous, leaves petioled,  $2\frac{1}{2}$  in. long,  $1\frac{1}{2}$  in. wide; leaflets  $1\frac{1}{2}$  in. long,  $\frac{1}{2}$  in. wide, oblong, serrate, narrowed at the base and apex; flowers in racemes, 5–8 in. long, white; pods ovoid. In waste places. Native of Europe. General and abundant.

2. **Melilotus indica** (L.) All. Indian Sweet-clover.

Erect, branching from the root; stem 17 in. long; leaves petioled,  $1\frac{3}{4}$  in. long, 1 in. wide; leaflets  $\frac{3}{4}$  in. long,  $\frac{3}{4}$  in. wide, oblong, serrate, rounded at the apex; flowers in racemes, yellow, small; pod gibbous.

3. **Melilotus officinalis** (L.) Lam. Yellow Sweet-clover.

Erect, usually tall; branching at the root; leaves 2 in. long,  $1\frac{1}{2}$  in. wide, petioled; leaflets  $\frac{3}{4}$  in. long,  $\frac{1}{4}$  in. wide, oblong, serrate, apex rounded; flowers in racemes, 4– $4\frac{1}{2}$  in. long, yellow. In waste places. Rather general. From Europe.

4. **Melilotus altissima** Thuill. Fall Sweet-clover.

Erect, usually tall, leaflets narrow, nearly entire; pods pubescent, gibbous.

**Trifolium** (Tourn.) L.

Herbs with purple, pink, red, white or yellow flowers in dense heads or spikes. Stipules united with the petiole. Calyx-teeth nearly equal. Petals commonly persistent, their claws more or less completely united with the stamen-tube. Ovary sessile or stipitate, few-ovuled. Pod oblong or terete, often included in the calyx, membranous, indehiscent or tardily dehiscent by 1 suture, or by a lid, 1–6-seeded.

1. Flowers yellow. 2.
1. Flowers red, purple, or white. 4.
2. Leaflets all sessile, stipules linear. *T. agrarium*.
2. Terminal leaflet stalked, stipules ovate. 3.
3. Heads 20-40 flowered. *T. procumbens*.
3. Heads 8-15 flowered. *T. dubium*.
4. Inflorescence much longer than thick; calyx silky, its teeth plumose. 5.
4. Inflorescence a globose, oval, or ovoid head. 6.
5. Leaflets ovate or orbicular; corolla crimson, as long or longer than the calyx. *T. incarnatum*.
5. Leaflets linear or oblanceolate; corolla whitish, shorter than the calyx. *T. arvense*.
6. Flowers sessile or nearly so, in dense ovoid oval, or globose heads. 7.
6. Flowers pedicelled in loose, globose, umbel-like heads. 8.
7. Heads sessile or nearly so, having a leaf immediately below; stem hairy, especially when young. *T. pratense*.
7. Heads always with a distinct peduncle, stem smoothish. *T. medium*.
8. Leaflets narrowly oblong, plant villous; calyx silky, perennial. *T. virginicum*.
8. Leaflets oval or obovate. 9.
9. Calyx villous or with bristly hairs. 10.
9. Calyx essentially glabrous. 11.
10. Calyx-teeth herbaceous, deltoid-lanceolate, nearly equaling the corolla. *T. carolinianum*.
10. Calyx-teeth bristle tipped, shorter than the corolla. *T. reflexum*.
11. Heads 1 in. or more in diameter; peduncles usually 1-2 in. long' stoloniferous. *T. stoloniferum*.
11. Heads  $\frac{1}{2}$ - $\frac{3}{4}$  in. in diameter; peduncles 2-10 in. long. 12.
12. Ascending, not stoloniferous; peduncles less than 6 in. long; flowers pink or nearly white. *T. hybridum*.
12. Creeping, stoloniferous, peduncles usually more than 6 in. long; flowers white or pinkish. *T. repens*.

1. **Trifolium agrarium** L. Yellow Hop Clover.

Annual; ascending;  $1\frac{1}{2}$ -2 ft. high; leaves  $1\frac{1}{2}$  in. long,  $1\frac{1}{2}$  in. wide; leaflets  $\frac{3}{4}$  in. long,  $\frac{1}{4}$  in. wide, obovate or oblong, denticulate, rounded at the apex, narrowed at the base; peduncles axillary, 1 in. long; flowers in oblong heads; corolla yellow, becoming dry and brown with age. Along roadsides and in waste places. Ashtabula, Lake, Cuyahoga, Knox, Clermont. From Europe.

2. **Trifolium procumbens** L. Low Hop Clover.

Spreading or ascending; pubescent; stem 1- $1\frac{1}{2}$  ft. high; leaves 1-2 in. long,  $\frac{3}{4}$  in. wide, petioled; leaflets  $\frac{1}{2}$  in. long,  $\frac{1}{4}$  in. wide, obovate, cuneate at the base, rounded at the apex, finely denticulate; peduncles  $1\frac{1}{2}$  in. long; flowers yellow, heads 20-40-flowered. In fields and along roadsides. Lake, Cuyahoga, Ottawa, Franklin, Montgomery, Gallia. From Europe.

3. **Trifolium dubium** Sibth. Least Hop Clover.

Spreading or ascending; 10 in. high; leaves  $\frac{1}{2}$  in. long,  $\frac{1}{2}$  in. wide, petioled; leaflets  $\frac{1}{4}$  in. long,  $\frac{1}{4}$  in. wide, obovate, rounded at the apex, denticulate, cuneate at the base; peduncles  $\frac{3}{4}$  in. long; heads 8-15-flowered; flowers turning brown with age. In fields and waste places. Lake County. From Europe.

4. **Trifolium incarnatum** L. Crimson Clover.

Annual; erect; branching; 12-20 in. high; leaves long petioled, 6 in. long, 2 in. wide; leaflets 1 in. long, 1 in. wide, sessile or nearly so, all from the same point, obovate, cuneate at the base, rounded at the apex; peduncles  $1\frac{1}{2}$  in. long; flowers in oblong heads; corolla crimson. In fields and waste places. From Europe. Rather general.

5. **Trifolium arvense** L. Rabbit-foot Clover.

Annual; erect; branching above the root; leaves 1 in. long,  $\frac{1}{2}$  in. wide; leaflets  $\frac{3}{4}$  in. long,  $\frac{3}{8}$  in. wide, linear or oblanceolate, cuneate at the base, rounded at the apex; heads oblong or cylindrical; calyx silky; corolla whitish. In fields and waste places. Warren, Stark, Cuyahoga, Lake. From Europe.

6. **Trifolium pratense** L. Red Clover.

Perennial; branching, decumbent or erect; 2 ft. high; leaves  $4\frac{1}{2}$  in. long, 2 in. wide; petiole pubescent; leaflets  $1\frac{1}{4}$  in. long,  $\frac{5}{8}$  in. wide, with short petioles, all from the same point, ovate or oblong, narrowed at the base, rounded at the apex, usually with a prominent light ornamental spot in the middle; heads somewhat ovoid; flowers red, calyx hairy. In waste places and meadows. General and abundant. Naturalized from Europe.

7. **Trifolium medium** L. Zig-zag Clover.

Perennial; ascending; 14 in. high; leaves 6 in. long, 3 in. wide; leaflets  $1\frac{1}{2}$  in. long,  $\frac{1}{2}$  in. wide, oblanceolate to ovate; flowers nearly sessile, bright purple.

8. **Trifolium virginicum** Small. Prostrate Mountain Clover.

Perennial; branched at the base, the branches prostrate, pubescent; leaflets  $\frac{1}{2}$ - $1\frac{1}{2}$  in. long, linear, narrowly lanceolate or oblanceolate, obtuse, serrate, dentate; flowers in globose heads, whitish, crowded.

9. **Trifolium carolinianum** Mx. Carolina Clover.

Perennial; ascending or procumbent; much branched from the base; leaves  $\frac{3}{8}$  in. long,  $\frac{1}{8}$  in. wide; leaflets all from the same point; obovate, cuneate at the base, denticulate; flowers purplish.

10. **Trifolium reflexum** L. Buffalo Clover.

Annual or biennial; ascending; branching, 15 in. high; leaves  $1\frac{1}{2}$  in. long,  $\frac{3}{8}$  in. wide; leaflets  $\frac{5}{8}$  in. long,  $\frac{1}{2}$  in. wide, oval or obovate, cuncate, denticulate; flowers red with peduncles  $1-3\frac{1}{2}$  in. long. In meadows and ravines. Belmont County.

10. **Trifolium stoloniferum** Muhl. Running Buffalo Clover.

Perennial; branching, forming runners at the base; stem 15 in. long; leaves  $6\frac{1}{2}$  in. long, 2 in. wide; leaflets  $1\frac{3}{4}$  in. long,  $1\frac{1}{2}$  in. wide, broadly obovate; flowers white tinged with purple; pods 2-seeded. Prairies and dry woods. Hamilton, Clermont, Butler, Clinton, Clark, Franklin.

11. **Trifolium hybridum** L. Alsike Clover.

Perennial; erect or ascending; stem 3 ft. high; leaves 2-5 in. long, 3 in. wide; leaflets  $1\frac{1}{4}$  in. long,  $\frac{3}{4}$  in. wide, obovate, cuneate at the base, serrate; flowers pinkish. Open woodlands and waste places. General. From Europe.

12. **Trifolium repens** L. White Clover.

Perennial; branching at the base; branches creeping, often rooting at the nodes; leaves 5 in. long, 1 in. wide; leaflets 1 in. long,  $\frac{3}{4}$  in. wide, cuncate at the base, denticulate, usually with a prominent white or reddish ornamental spot in the center; flowers white; pod about 4-seeded. General and abundant. Naturalized from Europe.

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