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POLEMONIACEÆ OF OHIO.

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POLEMONIACEÆ (PHLOX FAMILY.)

Herbs or sometimes slightly woody plants with opposite or alternate, simple, lobed, or compound leaves, the blades of the leaves or leaflets entire. Flowers hypogynous, tetracyclic, bisporangiate, corymbose-capitate, cymose, or paniculata, actinomorphic or only slightly zygomorphic. Calyx persistent, tubular or campanulate, five parted. Corolla sympetalous, convolute in the bud. Andrecium of five stamens united with the corolla and alternate with its lobes; anthers versatile. Gynecium mostly of three carpels; style simple, stigmas three, linear. Ovulay mostly with two to numerous ovules in each cavity; capsule mostly loculicidally three valved. Seeds sometimes enveloped in mucilage and emitting spiral tubes when wetted.

1. Leaves opposite, simple, entire; corolla salverform. *Phlox*.
1. Leaves alternate, compound or pinnatifid. 2.
2. Leaves pinnatifid or dissected, segments linear; corolla funnellform or salverform in ours; cultivated. *Gilia*.
2. Leaves pinnately compound, with or without tendrils, alternate. 3.
3. Leaves without tendrils, alternate; corolla tubular-campanulate to somewhat rotate; low herbs. *Polemonium*.
3. Leaves ending in tendrils which are branched; climbing herbaceous vines; cultivated. *Cobaea*.

Phlox L. Phlox.

Usually perennial, erect or diffuse herbs, with opposite, entire leaves, or some of the upper ones alternate. Flowers in terminal cymes or cymose panicles, sometimes closely massed, blue, purplish, red, or white. Calyx five cleft, the lobes acute to subulate. Corolla salverform, with a five-lobed limb and narrow tube. Stamens unequal, included or only slightly exerted. Ovulary with 1 to 4 ovules in each cavity; style usually slender. Capsule ovoid, at length distending and rupturing the calyx tube; seed usually one in each cavity, not emitting spiral tubes when wetted.

1. Leaves flat, broad or narrow. 2.
1. Leaves subulate and rigid, sharp pointed, mostly crowded and fascicled; stems long, creeping, sending up flowering shoots usually with few flowers; corolla pink or rose, turning purple with age, rarely white, each petal with deeper spots at the inner and a deep notch at the outerend. *P. subulata*.
2. Panicle narrow, usually compact, ellipsoid or elongated; stem erect, purple spotted, leaves ovate-lanceolate, usually tapering to the apex from a broad base. *P. maculata*.
2. Panicle or corymb flat-topped or broadly pyramidal; stem not spotted. 3.
3. Cymes paniced and broadly pyramidal, pedicels and peduncles very short; stem strictly erect with oblong-lanceolate to ovate-lanceolate leaves; the large veins uniting prominently near the margin. *P. paniculata*.
3. Cymes corymbose, simple, or flowers scattered; pedicels and peduncles long, or if short then the plants not strictly erect. 4.
4. Plants glabrous or nearly so; calyx teeth shorter than the tube, triangular-subulate; corolla lobes rounded, entire, pink or rose. 5.
4. Plants pubescent; calyx teeth longer than the tube, slender; corolla blue or turning purple with age. 6.
5. Flowers long pedicelled; leaves linear-lanceolate, or rarely oblong-lanceolate; calyx teeth very long pointed. *P. glaberrima*.
5. Flowers short pedicelled; leaves oblong-lanceolate, upper ones ovate-lanceolate; calyx teeth acute. *P. ovata*.
6. Plants with prostrate or creeping vegetative shoots, the leaves of which are mostly of the ovate-lanceolate type; calyx teeth rather short pointed. 7.
6. Plants without prostrate or creeping shoots, erect or ascending; leaves mostly of the lanceolate type, usually long tapering; calyx lobes with long bristle tips. *P. pilosa*.
7. Corolla lobes obcordate or wedge-obovate, notched or entire, about the length of the tube, pale lilac or bluish; leaves of the vegetative shoots of an elliptic or oblong type, sessile; plants glandular-pubescent. *P. divaricata*.
7. Corolla lobes round-obovate, mostly entire, about $\frac{1}{2}$ inch long, reddish-purple, leaves of the vegetative shoots of the spatulate type, petioled; plants sparingly pubescent. *P. stolonifera*.

1. **Phlox maculata** L. Spotted Phlox. Plant with erect, simple or branched stem, sparingly pubescent and usually flecked with purple. Leaves ovate-lanceolate, usually tapering to the apex from a broad base, sessile; flowers short-pedicelled, in a compact ellipsoid or elongated narrow panicle; calyx teeth triangular-lanceolate, acute or acuminate, about one-fourth the length of the tube; corolla blue, pink, or purple. Rather general in woods and moist places. June–August.

2. **Phlox paniculata** L. Garden Phlox. Plant with erect, stout or slender stem which is simple or slightly branched above; usually glabrous, sometimes puberulent. Leaves oblong lanceolate to ovate-lanceolate with closed venation; flower cymes paniced, broadly pyramidal; calyx teeth more than one-half the length of the tube; corolla pink, purple, or white, its lobes obovate, entire, shorter than the tube. General. Escaped from gardens. July–September.

3. **Phlox ovata** L. Mountain Phlox. Plant with slender stem, glabrous or nearly so, ascending from a decumbent base, 1–2 feet high. Upper leaves ovate or ovate-lanceolate sessile by a rounded or subcordate base, acute at the apex, 1–2 inches long; lower leaves oblong or ovate-oblong, narrowed into slender often margined petioles; flowers short-pedicelled; calyx teeth lanceolate to triangular-lanceolate, acute or acuminate; corolla pink or red, its lobes rounded entire. Fulton Co. May–August.

4. **Phlox glaberrima** L. Smooth Phlox. As lender, simple-stemmed, erect or ascending plant, glabrous or only slightly pubescent, 1–3 feet high. Leaves lanceolate to linear acuminate at the apex, narrowed at the base, 1–4 inches long, sessile or the lower ones short-petioled; flowers short pedicelled; calyx teeth subulate-lanceolate; corolla mostly reddish-pink, its lobes obovate, rounded or obcordate, longer than the tube. Butler Co. May–July.

5. **Phlox pilosa** L. Downy Phlox. Downy often glandular plant with slender, simple or branched, erect or ascending stem, 1–2 feet high. Leaves linear to lanceolate, long-acuminate, 1–4 inches long, sessile, the base narrowed and rounded; flowers short-pedicelled; calyx teeth setaceous-subulate, longer than the tube; corolla blue, pink, or white, its lobes ovate, entire, tube usually pubescent. Northern part of state as far south as Franklin County. April–June.

6. **Phlox divaricata** L. Wild Blue Phlox. A viscid pubescent plant with slender, ascending or diffuse stem, 1–3 feet high, producing leafy shoots at the base. Leaves of the creeping shoots oblong or ovate, those of the flowering stems ovate-lanceolate to lanceolate; flowers faintly fragrant; calyx teeth subulate; corolla bluish to lilac, its lobes obcordate, emarginate or entire, about as long as the tube. General and abundant. April–June.

7. **Phlox stolonifera**. Sims. Creeping Phlox. An hirsute or pubescent plant with slender stem producing creeping, leafy shoots at the base. Leaves of the creeping shoots obovate, narrowed into petioles; flowering stems $\frac{1}{2}$ ft. to 1 ft. high; leaves oblong to lanceolate; flowers slender-pedicelled; calyx teeth linear-subulate; corolla pink, purple, or violet, its lobes rounded and mostly entire, about one-half the length of the tube. Hocking Co. April–June.

8. **Phlox subulata** L. Ground Phlox. A more or less pubescent plant with tufted, much branched and diffuse stems forming mats. Leaves persistent, subulate to linear-oblong $\frac{1}{2}$ -1 inch long, ciliate, rigid, commonly fascicled at the nodes; flowers slender-pedicelled; calyx teeth subulate, from a broad base; corolla pink to white, its lobed emarginate or entire and shorter than the tube, with two dark-red spots at the inner side. General. April-June.

Gilia R. & P. Gilia.

Herbs with opposite or alternate, entire, pinnatifid, palmatifid or dissected leaves, small or large, solitary, cymose, capitate, or paniculate flowers. Corolla rotate to salverform. Stamens included or exserted. Capsule at length rupturing the calyx. Seed coats commonly mucilaginous when wetted, some species emitting spiral thread-like tubes.

1. **Gilia rubra** (L.) Heller (*Gilia cornucopifolia* Pers.) Standing-cypress. An erect plant with a wand-like stem, 2-3 feet high, thickly clothed with alternate, crowded, pinnately divided leaves and a leafy panicle of showy, scarlet flowers, the corolla tubular funnel form. Cultivated. Escaped in Erie and Lake Counties. June-September.

Polemonium (Tourn.) L.

Perennial or rarely annual herbs with alternate, rarely opposite pinnately compound leaves, and mostly large cymose-panicled flowers. Corolla rotate to funnel form. Seeds mucilaginous and emitting spiral threads when wetted.

1. Leaflets opposite, 5-7; stamens included or only slightly exserted; flowers $\frac{1}{2}$ inch broad; low herbs not more than 1 foot high. *P. reptans*.
1. Leaflets alternate, at least below, 9 to 21; stamens exserted; flowers 1 inch broad; herbs growing 1 to 3 feet high; cultivated. *P. caeruleum*.

1. **Polemonium caeruleum** L. European Jacob's-ladder. An erect, smooth or sometimes hairy plant, 1-3 feet high, with bright blue flowers collected in a long panicle. Cultivated.

2. **Polemonium reptans** L. Greek Valerian. A glabrous or slightly pubescent plant with weak slender stem, at length reclining or diffuse, about 1 foot high. Flowers cymose panicled, blue, about $\frac{1}{2}$ inch broad. General and abundant in woods. April-May.

Cobæa. Cav. Cobæa.

High climbing herbs with alternate, pinnate leaves ending in compound tendrils, the lowest leaflets unlike the others and imitating stipules. Flowers solitary, on axillary peduncles. Corolla bell-shaped with short and broad, spreading lobes; stamens declined; ovulary surrounded at the base by a fleshy gland.

1. **Cobæa scandens** Cav. Cobæa. A smooth, high climbing vine with large, dull purple flowers having long stamen filaments which coil when old. Commonly cultivated. Blooms in autumn.

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