

NREM 358 Forest Herbaceous Layer: Ecology and Identification

Week two: Aristolochiaceae, Boraginaceae, Hydrophyllaceae, Papaveraceae, Polemoniaceae, Polygonaceae, Portulacaceae

Aristolochiaceae (birthwort or Dutchman's pipe family) – A small, very ancient plant to attract beetle pollinators, often with unusual coloration, female and male flower parts fused (gynostemium).

***Asarum canadense* (wild ginger)** – thick stem creeps along ground, rooting at nodes; leaves softly pubescent; flowers solitary on the ground between petiole bases; blooms in April-May, but leaves persist through season; fruit a capsule with large ant dispersed seeds. Rich woods.



Berberidaceae (Barberry family) – no single gross morphological character to easily distinguish (supported as a family by DNA analyses and floral morphology).

2. ***Podophyllum peltatum* (May-apple, mandrake)** – 1-2 leaves (2 on flowering plants) from a stem-like petiole up to 0.5 meter tall; peltate (shield shaped) leaf divided into numerous lobes; a single large white flower; blooms in May; fruit yellow and apple-like, edible when ripe. A wide range of woodland habitats.



Boraginaceae (Borage family) – One-sided inflorescence uncoiling as flowers mature; flowers with four parts; fruit a schizocarp that splits into four nutlets.

3. **Hackelia virginiana** (stickseed) – bristly plant up to 1.5 m tall; leaves entire, elliptical; small white flowers. An extremely annoying plant in fall, best known for the prickly fruit, which detach from the plant as an entire inflorescence and attach (embed!) themselves in your clothes. Woods of all kinds.



4. ***Mertensia virginica* (Virginia bluebells)** – Stem 30-70 cm; glabrous; lower leaves very large, elliptic to more rounded; inflorescence with leafy bracts; flowers bright blue; a spring ephemeral that blooms in April and senesces by the end of May; fruit dark brown to black when mature. Rich moist woods, does especially well on bottomlands.



Hydrophyllaceae (waterleaf family) – Five part flowers that are fused as base; fruit a capsule with a small number of large seeds (20 or less).

5. ***Hydrophyllum virginianum* (Virginia waterleaf)** – very short statured perennial spreading extensively by rhizomes (often occurs in large clumps), up to 10 cm tall; leaves divided with distinct watermarks early in the season; inflorescence of several branches of around 8 flowers; flowers purple to whitish, with stamens extending well beyond the petals; fruit capsule with only two seeds; blooms in May, but foliage persists through most of the season, often with a new spurt of growth in late summer to fall. Rich moist woods.

Family Papaveraceae (poppy family) – pinnately lobed or deeply dissected leaves; flowers with caduceous (fall off very early) sepals and sometimes petals; fruits dehiscent capsules with ant dispersed seeds (with elaiosomes = fat body).

6. ***Dicentra cucullaria* (Dutchman's breeches)**, sometimes placed in the **Fumariaceae** – Small plant up to 25 cm tall; deeply and multiple pinnatifid leaves, giving them a lacy appearance; 3-15 flowers on a scape that is a little taller than the leaves; floral parts highly modified and fused to form a hooded structure that resembles old-fashioned breeches, flowers mostly white but tinged with purple; spring ephemeral, blooms in April and senescing by the end of May. Rich mesic woods.



7. ***Sanguinaria canadensis* (bloodroot)** – Names comes from salmon colored rootstock that oozes red juice when broken; leaves with 3-7 lobes and up to about 15 cm tall; single flower on a scape; petals bright white, usually 8 but sometimes more, caduceous, blooms in April, but leaves persist after flowers and fruits mature. Rich woods.



Family Polemoniaceae (phlox family) – Flowers showy with five parts, salverform (a corolla fused below to form a slender tube, abruptly expanding into broad petals) to funnellform (funnel shaped); fruit a capsule with three valves.

8. ***Phlox divaricata* (woodland phlox)** – Stems up to 50 cm tall; leaves entire, elliptic to lanceolate; inflorescence with 9-25 blue-purple to occasionally pink flowers, a spring ephemeral blooming in April-May, leaves sometimes re-grow in fall. Woods.



Family Polygonaceae (smartweed family) – Stems with swollen nodes and sheathing stipules (ocreae); flowers small with sepals and petals indistinguishable = tepals; fruit an achene surrounded by the persistent tepals.

9. ***Polygonum virginianum* (jumpseed)** – Stem up to 1.3 meters tall; leaves alternate, entire, with a V-shaped dark water mark with young; inflorescence a spike of small white flowers, blooms in August; when mature achene dark black and shiny and “jumps” off the stem. Woods and woodland edges.



Family Portulacaceae (purslane family) – succulent herbs, leaves thick; flowers subtended by two bracts of unequal length; flowers of 4-6 tepals.

10. ***Claytonia virginica* (spring beauty)** – Stem very short, usually around 10-15 cm tall, arising from a white roundish corm, can form extensive colonies; leaves opposite, long and linear; inflorescence arising from last pair of leaves, usually with 5-6 flowers, tepals white or rose colored with pink or purple veins; a spring ephemeral blooming in April and senesced by the end of May; seeds small black and shining with a small elaiosome for ant dispersal. Woods.

