**317 FAMILIES**

**LAURACEAE** - Laurel family (50 genera; 2500 species)
- Trees or shrubs (occasionally vines, including the parasitic vine Cassytha)
- Ethereal (aromatic) oils present
- Leaves simple (occasionally lobed), alternate and spiral, entire, pinnate.
- Flowers bisexual or unisexual (then dioecious), actinomorphic, usually small; tepals usually 6; stamens 3-12 (in whorls of 3); anthers opening by 2-4 flaps; one carpel with single ovule; ovary superior
- Fruit a drupe, or occasionally a one-seeded berry
- Examples: Cinnamomum (cinnamon), Laurus (laurel; bay leaves) Persea (avocado), Sassafras, Umbellularia (California bay)

**HAMAMELIDACEAE** - Witch Hazel family (25 genera; 80 species)
- Shrubs or trees
- Stellate hairs
- Leaves simple, alternate, entire to serrate; venation pinnate or palmate
- Flowers bisexual or unisexual (then monoecious), actinomorphic, showy or inconspicuous; sepals 4 or 5; petals 4 or 5 or lacking; stamens 4 or 5, alternating with staminodes, or numerous; anthers usually opening by two flaps; carpels 2, partially connate; ovary half-inferior to inferior; styles distinct; ovules 1 to several per carpel.
- Fruit a capsule with woody exocarp and bony endocarp
- Examples: Corylopsis (winter hazel), Hamamelis (witch hazel), Fothergilla, Parrotia

**GERANIACEAE** - Geranium family (7 genera; 750 species)
- Herbs to subshrubs
- Hairs usually simple, glandular with aromatic oils
- Leaves alternate or opposite, palmately veined, simple, lobed or compound
- Flowers bisexual, actinomorphic or zygomorphic; sepals 5; petals 5; stamens (5-) 10-15; carpels 5, connate; ovary superior, with axile placentation, and persistent, sterile column in center that elongates after the flower is pollinated; style one; ovules 2 per locule
- Fruit a schizocarp with 5 one-seeded segments that separate from the central column, often opening from the base.
- Examples: Geranium, Pelargonium (the cultivated ‘geraniums’), Erodium (storksbill)

**CORNACEAE** - Dogwood family (13 genera; 130 species)
- Trees or shrubs
- Hairs often Y or T-shaped
- Leaves simple, opposite (rarely alternate), entire (sometimes serrate), with pinnate to +/palmate venation; secondary veins usually arching from base to tip and elastic (dogwood ‘test’); no stipules
- Inflorescences terminal often with enlarged showy bracts
- Flowers bisexual or unisexual (dioecious or monoecious), actinomorphic; sepals 4 (sometimes 5), often simply small teeth or lacking; petals 4 (sometimes 5); stamens 4-10; carpels 2 or 3, connate; ovary inferior with axile placentation; stigma capitate, lobed or elongate; ovules 1 per locule; nectary disk on top of ovary
- Fruit a 1 to few-seeded drupe
- Examples: Cornus (dogwood), Davidia (dove tree), Nyssa (tupelo)
APOCYNACEAE - Dogbane/Milkweed family (355 genera; 3700 species)
- Trees, shrubs, lianas, vines, herbs; sometimes succulent
- Milky latex often present
- Leaves usually opposite (sometimes alternate or whorled), entire, pinnate; stipules lacking or small
- Flowers bisexual, actinomorphic; sepals usually 5, connate; petals usually 5, connate, often with a corona at apex of tube, with lobes contorted (twisted) or imbricate (overlapping) in bud; stamens 5, epipetalous; filaments short, sometimes connate; anthers often highly modified, distinct or variously connate in a ring and adnate to the style (former Asclepiadaceae); pollen loosely sticking together by means of viscin, or even tightly massed into 'pollinia' for dispersal together (former Asclepiadaceae); in the latter case, structures ('translators') connect pollinia from adjacent anthers; carpels 2, connate by styles, but ovaries usually distinct; apical portion of style expanded and highly modified; ovules 2-many
- Fruits of paired follicles, berries or drupes; seeds flattened often with tuft of hairs
- Examples: Asclepias (milkweeds), Hoya, Vinca (periwinkle), Catharanthus (Madagascar periwinkle), Nerium (oleander), Plumeria (frangipani), Stapelia (carrion flower)

OLEACEAE - Olive family (25 genera; 600 species)
- Trees, shrubs, lianas; buds on stems 2-several and superposed.
- Leaves opposite, simple, pinnately compound, or trifoliolate, entire to serrate, with pinnate venation; stipules absent
- Flowers bisexual (rarely unisexual, then dioecious), actinomorphic; sepals 4, connate (rarely lacking), petals 4 (rarely more numerous or lacking), connate; stamens 2, epipetalous; carpels two, connate; ovary superior, with axile placentation; stigma 2-lobed or capitate; ovules usually 2 per locule; nectar disk often present
- Fruit a capsule, samara, berry, or drupe, often one seeded
- Examples: Jasminum (jasmine), Forsythia, Fraxinus (ash), Ligustrum (privet), Syringa (lilacs), Olea (olive)

ADOXACEAE - Moschatel of Elderberry Family (5 genera; 245 species)
- Trees, shrubs, or perennial herbs; with cyanogenic glycosides and iridoids.
- Leaves opposite, simple, trifoliolate, or pinnately compound, entire or variously toothed, with pinnate or palmate venation; stipules present or absent.
- Inflorescences determinate, often umbellate.
- Flowers bisexual, actinomorphic, a few spp. with sterile flowers around periphery of inflorescence; sepals 2-5, connate, reduced with only a single vascular trace; petals 4-5, connate into short tube with well-developed coeolla lobes; stamens 5, sometimes divided and appearing as 10, epipetalous; pollen with reticulate exine; carpels 3-5, connate; ovary inferior or 1/2 inferior, with axile placentation; style(s) short; stigma(s) capitate; ovules 1 per locule, often only 1 functional; nectar produced by glandular tissue atop ovary (Viburnum), cushion-like group of multicellular hairs (Adoxa), or lacking (Sambucus).
- Fruit a drupe with 1-5 pits.
- Examples: Adoxa (Moschatel), Sambucus (elderberry), Viburnum
**ARACEAE** - Arum family (109 genera; 2830 species)
- **Herbs**, some epiphytes
- **Leaves simple or compound, broad and having an apparent petiole** (‘pseudo-lamina’)
- **Calcium oxalate crystals** usually present; physical deterrent to herbivory
- **Inflorescence consisting of a**
  - spathe – bract (often colorful) surrounding the flowering stalk
  - spadix – axis on which the flowers are borne (male above; female below, if both present. Often with a sterile extension above the flowers called an ‘appendix.’
- **Flowers unisexual (monoecious or dioecious) or bisexual (less common), actinomorphic**; tepals 4-6 or 0 scale-like or fused in a cup, inconspicuous; stamens 1-6; carpels 2-3, connate; ovary superior; stigma 1; ovules 1-numerous
- **Flowers usually with a fetid odor** (they stink!)
- **Fruit usually a berry**

**TYPHACEAE** - Cattail family (2 genera; 28 species)
- **Aquatic Herbs**
- **Leaves simple, alternate, basal, linear**
- **Inflorescence - dense spike of male flowers at tip of axis and female flowers below**
- **Flowers unisexual (monoecious), actinomorphic**; perianth of bract-like tepals or bristles; stamens 1-6; carpels 2, connate; ovary superior; ovules 1 per carpel, with one carpel aborting to yield 1-seeded fruit
- **Fruit follicle or drupe**
  - Examples: *Typha* (Cattail)