



Betulaceae Family Characteristics

- Trees and shrubs.
- Simple, serrated leaves.
- Unisexual flowers. Both males and females on same plant (monoecious).
- Precocious (early spring) flowering.
- Well-defended chemically against herbivory.
- Genera: *Betula*, *Alnus*

Former Caprifoliaceae (honeysuckle) family characteristics and recent division into several families

- Leaves, opposite, simple.
- Petals, 5, connate (joined in tube), 2 or 1 upper lobes, and 3 or 4 lower lobes.
- Carpels 2-5, connate.
- Fruit, capsule, berry, drupe, or or achene.

Family has recently been subdivided into several distinct families:

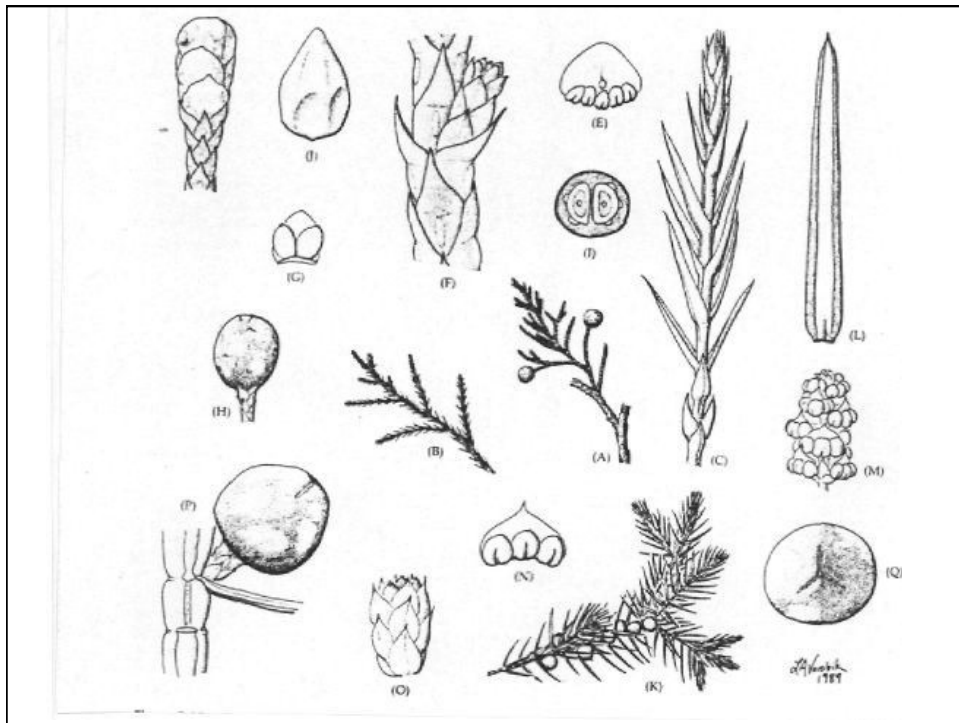
Adoxaceae: *Viburnum* (High-bush Cranberry) and *Sambucus* (Elderberry).

Caprifoliaceae: *Lonicera* (Honeysuckle) and *Symphoricarpos* (Snowberry).

Linnaeaceae: *Linnaea* (Twinflower).

Valerianaceae: *Valeriana* (Valerian).

Dipsicaceae: *Dipsicus* (Teasel).



CORNACEAE

Order: Cornales
Common name: Dogwood Family

Mostly trees and shrubs of temperate and subtropical regions.

In Alaska: *C. canadensis*, *C. suecica*, *C. stolonifera* (*C. stolonifera* mainly boreal)
Popular as ornamentals and for woodworking timber.

Leaves simple, lacking stipules, and variously arranged, but commonly opposite or whorled, parallel-veined.

Inflorescence terminal, often composed of an umbel or corymb of small flowers subtended by showy, petaloid bracts.

Perianth 4 or 5-merous; sepals represented by small teeth, fused, or entirely absent, petals small and inconspicuous.

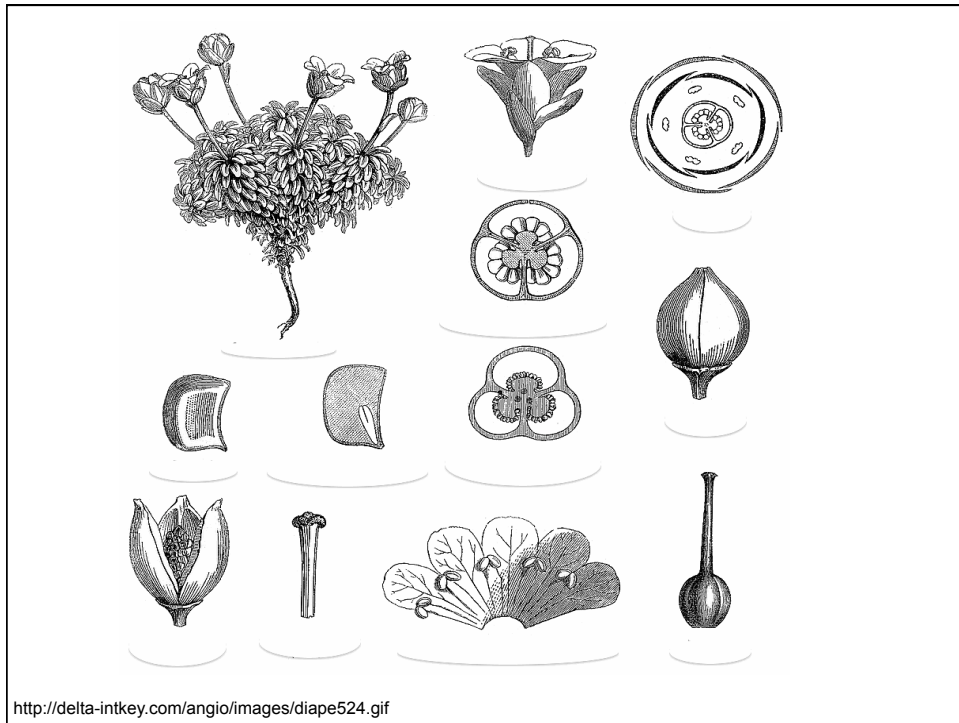
Stamens 4 or five. Inferior ovary of 2 or 3 fused carpels.

Fruit a cluster of berries or drupes.

Cupressaceae

Order: Pinales
Common name: Cypress family

- **Trees or shrubs;** wood and foliage often aromatic.
- **Leaves** persistent (deciduous in three genera), simple, alternate and distributed all around the branch or basally twisted to appear 2-ranked, opposite, or whorled
- **Monoecious (dioecious in *Juniperus*).**
- **Genera/species:** About 29/110-130. Major genera: ***Juniperus*** (50 spp.), *Callitris* (15), *Cupressus* (13), *Chamaecyparis* (8), *Thuja* (5), *Taxodium* (3), *Sequoia* (1), and *Sequoiadendron* (1). (**red genera in Alaska**; not all in AK are arctic)



Diapensiaceae Family Characteristics

Small shrubs, or herbs. Perennial.

Leaves evergreen; small, or medium-sized; **alternate**; spiral; imbricate, or not imbricate; petiolate to sessile; non-sheathing; simple. Lamina entire; one-veined, or pinnately veined; often cross-venulate.

Leaves exstipulate. Lamina margins entire, or serrate, or dentate. **Vernation not circinnate.**

Flowers: solitary, or aggregated in 'inflorescences'; when aggregated, in racemes. The ultimate inflorescence unit racemose. Flowers bracteolate (with two bracteoles); small, or medium-sized; regular; 5 merous; cyclic; tetracyclic, or pentacyclic.

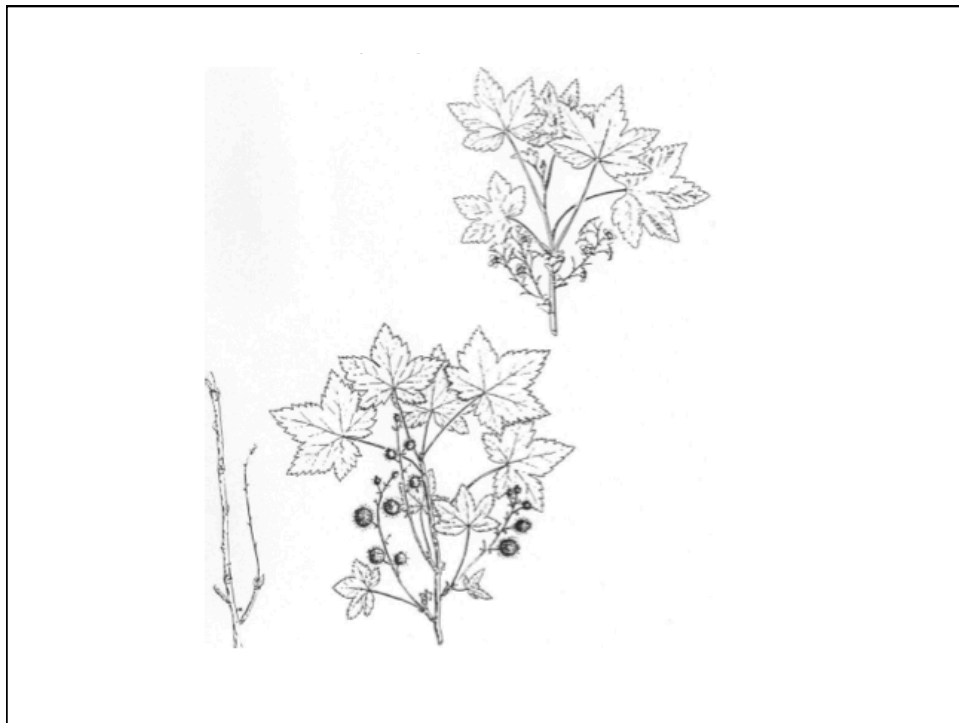
Fruit non-fleshy; dehiscent; **a capsule.** Capsules loculicidal. Seeds copiously endospermic; small.

Eleagnaceae (Oleaster)

- Plants covered with scurby or scaly pubescence.
- Leaves simple, firm, alternate or opposite.
- Flowers, small, in axillary racemes or umbels. No petals. Sepals fused to form disc-shaped or tubular calyx. N-fixing bacteria in root nodules.
- Colonize disturbed sites.
- Mostly tropical and temperate species.

Shrubs and trees having N-fixing bacteria in their root nodules. Often colonizing recently disturbed sites. Most common in subtropics and temperate regions. The two species in Alaska are common to gravel bars and open dry woodlands.

Plants often covered with scurfy or scaly pubescence. Leaves simple, firm; opposite or alternate along twigs. Small flowers are uni- or bisexual, actinomorphic, and arranged in small axillary racemes or umbels. Petals absent; sepals 2 or 4, fused to form a disc-shaped or tubular calyx. Single carpel is superior, but may appear to be inferior if within the fused calyx. Fruit is an achene, but surrounded by swollen calyx tissue and appearing to be a berry.



Ericaceae Family Characteristics

- **Ericaceae** - The Heath Family
- Plants usually woody shrubs or small trees. Numerous dwarf shrubs in the Arctic and boreal forest. Highly variable (presently 21 genera. Pyrolaceae, Empetraceae are now placed in the Ericaceae based on genetic evidence.
- **Leaves:** *coriaceous* (with a thick or leathery texture).
- **Flowers:** Highly variable. Petals sometimes fused to form *urceolate* (cylindrical or ovoid, hollow, *campanulate* (bell-shaped) or *zygomorphic* (irregular), flowers. Many are showy (e.g., *Rhododendron*, *Azalea*).
- **Fruit:** a capsule (as in *Cassiope tetragona*) or berry. Many common berries such blueberry (*Vaccinium uliginosum*), lingonberry (*V. vitis-idaea*), bog cranberry (*Oxycoccus microcarpus*), bearberries (*Arctous rubra*), crowberries (*Empetrum nigrum*).
- Many species are typical of acidic, infertile "heaths".

Grossulariacee (Gooseberry and Current) family characteristics

Small shrubs and trees.

Leaves, palmately veined and/or lobed.

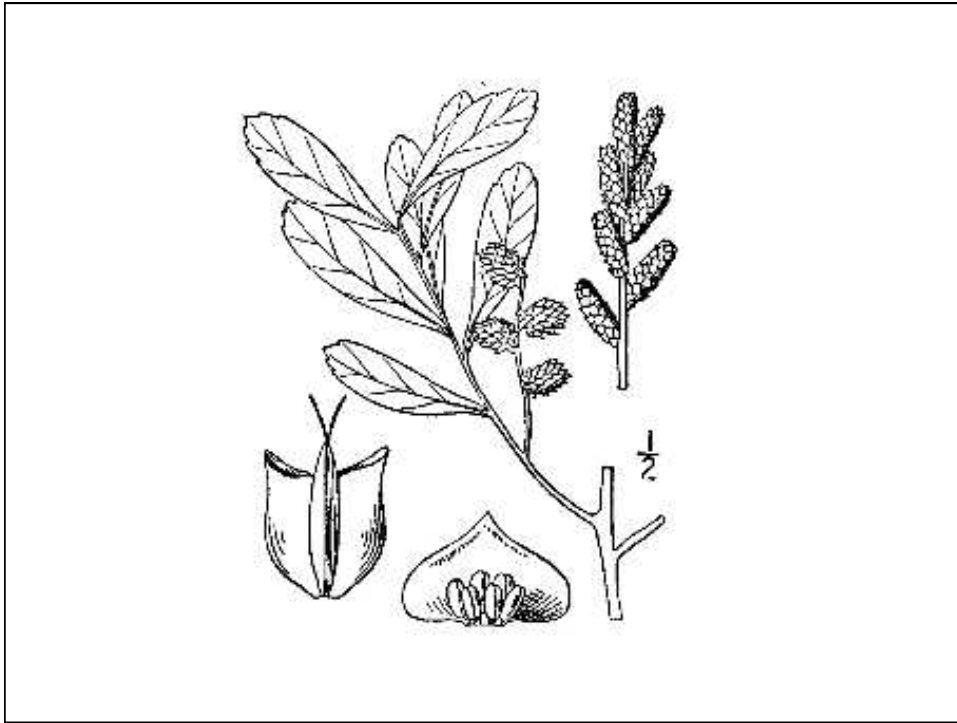
Flowers: 5-merous, in axillary racemes. Perianth usually small, with well-developed hypanthium, with inferior ovary that develops into a berry. Hypanthium and fruit sometimes covered with resin dots, stalked glands, or hairs.

Trees and shrubs with a cosmopolitan distribution, but most common in the northern hemisphere. *Ribes* is the only genus in Alaska and is described here.

Small shrubs with alternate, simple leaves which are often palmately veined and/or lobed. Prickles found on some species. Small actinomorphic 5-merous flowers arranged in axillary racemes. Perianth is usually small and bract-like. Hypanthium is well developed early in flowering stage, the ovary is inferior and develops into a berry. Hypanthium and fruit sometimes covered with resin dots, stalked glands, or hairs.

Some workers consider the genus *Ribes* to be in Saxifragaceae (see Hulten and Welsh), others split Grossulariaceae into several families on a world wide basis. Differs from Saxifragaceae described here in its woody habit, having a well-developed hypanthium, an inferior ovary, and the fruit being a berry.

Ribes (currants)

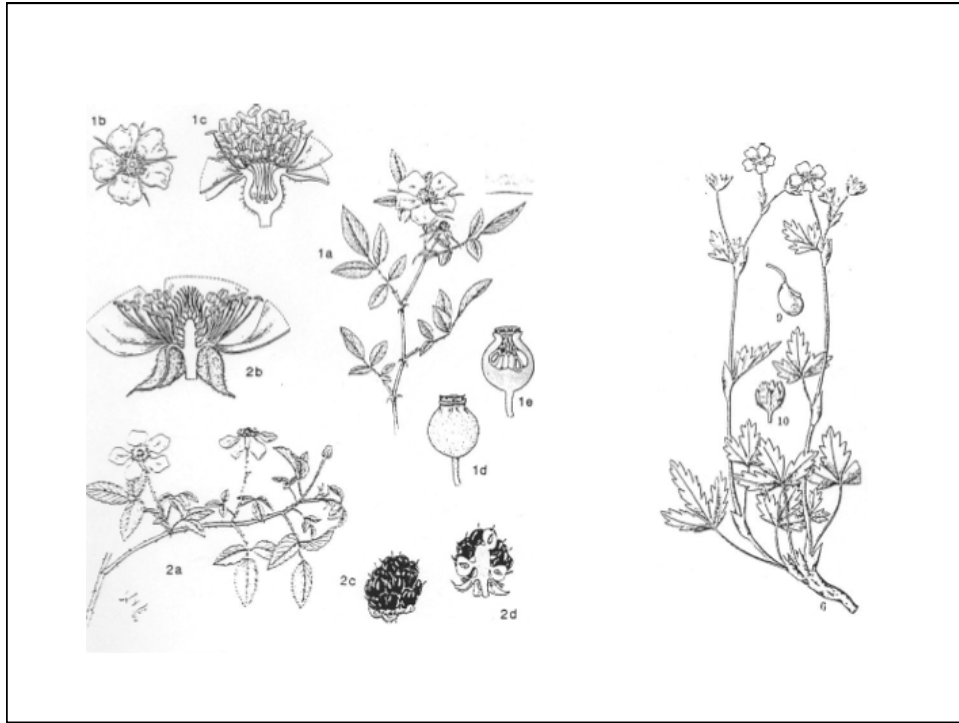


Myricaceae (Bayberry) family characteristics

- Fragrant shrubs in Alaska.
- **Leaves:** alternate, simple with entire or toothed margins, and small aromatic yellow resin dots on both surfaces.
- **Flowers:** Small yellowish, without sepals or petals. Inflorescence often spikelike or catkinlike. Flowers unisexual, staminate and carpellate flowers usually in separate inflorescences (plants can be monoecious or dioecious).
- **Fruit:** a small drupe or achene.

Pinaceae family characteristics

- Trees (except *Juniperus*) .
- Needle-like alternate leaves.
- Cones with spirally arranged, flattened, bract like complexes.
- Seeds with long terminal wing.
- Branches whorled or opposite.
- Boreal and Arctic Alaska genera: *Picea*, *Larix*, *Pinus*, *Juniperus*,



Rosaceae Family Characteristics

- Very variable family!
- Growth forms: Highly variable, trees, shrubs, herbs.
- Leaves often serrate.
- Flowers: 5-merous, 5 sepals, many spirally arranged stamens.
- All flower parts fused at base into a hypanthium.
- Fruits: Highly variable (achenes, drupes (plums), hips (rose), pomes (apple), nuts (almonds), and aggregates (strawberry, raspberry)).
- Many showy flowers and edible fruits.

Salicaceae family characteristics

- Trees and shrubs.
- Male and female flowers on separate plants (dioecious), pedunculate, borne in catkins.
- Fruits: small 2-valved, dry capsule.
- Alternately arranged.
- Alaska genera: *Populus*, *Salix*

SALICACEAE Willow Family
Order Salicales

Trees and shrubs, predominantly of north temperate areas. Tree and tall shrub species are significant elements in riparian habitats for both succession after natural disturbance and for wildlife habitat and forage. In alpine and arctic habitats, dwarf shrub species are very common.

Simple, stipulate (bearing stipules) leaves alternately arranged on woody stems. Flowers are minute, unisexual, reduced, and arranged in catkins which often emerge before the leaves (our pussy willows!). Flowers consist of either a superior pistil (1-2 carpels), or of 2 or more stamens, and each reduced flower is subtended by a single, small, ciliate and/or pubescent bract. In *Salix* there are one or two nectary glands at the base of each flower which produce nectar and scent to attract insects, facilitating pollination. *Salix* also has a single bud scale, often diagnostic for winter twig identification. *Populus* has no nectaries, has several bud scales, and the buds often exude balsam, a fragrant, sticky substance that is a harbinger for spring in interior Alaska. Capsules open to release numerous tiny seeds having a tuft of hairs for wind dispersal. All species are dioecious, having staminate and pistillate catkins borne on separate plants.

Uses include lumber, ornamentals, revegetation, and medicinal (balsam and salicylic acid). *Salix* is a taxonomically difficult group, having both known and suspected hybridization, and displaying extreme morphological variation in response to habitat, disturbance, and browsing. Collecting pistillate catkins and recording plant height greatly facilitates identification later.

New terms: aments, bracts, precocious.

Salix (willows), *Populus* (cottonwood and aspen).