

Epimedium (BERBERIDACEAE)

Mediterranean to temperate E. Asia



Leaves

Ternately compound
Leaflets ~ have long petioles, so looks whorled.

Cordate

Serrulate or with sharp points

Palmately veined

Leaf stalk is thin and wiry-looking.

Flowers

Small, nodding in racemes

Radial, Perfect

Yellow, purple, pink or white

Sepals, 2 whorls of 4 each, outer ones fall early, inner ones petal-like

Petals 4, flat or spur-like

Stamens 4, Anthers open from flaps at the base.

Fruit

Capsule w/several seeds

Seeds have fleshy aril

Other

Perennials 1-1.5 ft

Evergreen or deciduous

Has tufted or creeping rhizomes, makes for easy division.

Good in dry shade

Aphrodisiac properties – discovered by a Chinese goat herder who noticed sexual activity in his flock after they ate it. Sold as a health supplement. Contains icariin (active ingredient in Viagra) which increases nitric oxide relaxing smooth muscle tissue. Overexploitation of wild populations.

Berberis ‘Arthur Menzies’ (BERBERIDACEAE)

Garden origin



Leaves

Pinnately compound

9-10 pairs of leaflets, leaves up to 18 in

(compare *B. aquifolium* w/3-4 pairs)

Very spiny margins, 3-4/side

Dull green

Flowers

Infl – racemes, very long

Axillary

Yellow

3-parted

Flowers in winter

Fruit

Drupe, dark purple

Other

Tall shrub

Stems strongly grooved, glaucous when young

Good hummingbird attractor
Selected in 1964 by the UW Arboretum, from seed sent to us by the horticulturist at Strybing Arboretum in San Francisco - named after him

Camellia (THEACEAE)

camellia

E. Himalayas, Japan, Malaysia



Leaves

Alternate
Simple
 Usually serrate
Leathery
 No stipules

Flowers

Solitary or few clustered in leaf axils
Usually sessile (no pedicel)
Perfect, Radial, Large and showy, white, pink, red
 Bracts and sepals fall away as flower opens
 Sepals 5
 Petals 5merous, **fused at base in wild types, but many more petals, some cultivars may be less fused**
 Stamens many, Style 1

Fruit

Capsule
 Subdivided into ~5 compartments with each compartment containing 8 seeds.

Other

Trees to 45 ft or shrubs
Evergreen
C. sinensis is the source of tea
C. sasanqua is an early bloomer, *C. japonica* has blossom rot in this climate, *C. Xwilliamsii* better (cross of *C. saluenensis* x *C. japonica* produced by JC Williams in the early 1930s)
 Slow grower requiring acidic soils.

Erica (ERICACEAE)

heath (also heather)

Europe, Africa, W. and C. Asia



Leaves

Alternate or in whorls of 3 to 6
Small, linear, green
Margins rolled under (revolute)
Very short petioles
 Often lined with stalked glands.

Flowers

Spikes or panicles, located in axils or terminally
 Perfect
Small, tubular or urn (urceolate) shaped, colors from white to deep pink
Sepals 4, fused at base
Petals 5, fused, but w/4 lobes.
 Stamens 8.
 Style 1, long

Fruit

Capsules with 4 valves
 Sepals persistent

Other

Primarily low shrubs, some trees to 18 ft
Densely branched
Often flowers in early to mid spring
 500 species, center of diversity is in South Africa

Calluna vulgaris (ERICACEAE)

heather

N. and W. Europe to Siberia, Turkey, Morocco and the Azores



Leaves, various colors (see Other)
Opposite and decussate
Scale-like leaves (very tiny)
Sessile

Flowers
 Infl. one-sided spikes
Calyx 4-parted, colored
Corolla campanulate, 4 lobed
 Stamens 8
 Style 1
Flower color usually in the pink-red-purple range (July-November)

Fruit
 Capsule – 4 valved
 Sepals persistent, covering fruit.

Other
 Upright shrub to 3 ft.
(looks like Erica, but scale-like leaves)
 Numerous cultivars with colored foliage ranging from plain greens to vibrant reds and oranges
 Invasive in New Zealand – biological control with heather beetles has been successful
Calluna Greek for “to sweep”, been used to make brooms.
 Was used as a main ingredient in beer during the Middle Ages before the use of hops, now it is strictly regulated, underside of leaves may contain an ergot-like fungus that can have an hallucinogenic effect.

Aucuba japonica (GARRYACEAE formerly CORNACEAE)

Japan



Leaves
Opposite, paired
Simple
Entire on margin at base ~ serrate above middle
Leathery
 Elliptic, ovate or oblong
 Tip – acute to acuminate

Flowers
Dioecious
Infl upright dense panicle, purple color
 Male flws, numerous, in upright clusters at tips of branches. 4 sepals, 4 petals, 4 stamens
 Female flws have fewer flws/cluster w/ 4 petals + 1 style

Fruit
Berries
- Oblong
- Scarlet
- up to an inch long

Other
 Shrub to 10 ft.
Evergreen
Stems very green
 Does well in shade
 Cultivar ‘Variegata’ has lvs spotted w/yellow marks – planted often

Landscape Plant Recognition

Plant Descriptions – Field Day #4

Berberis nervosa (BERBERIDACEAE)
a.k.a. *Mahonia nervosa*

low Oregon grape

W. North America



Leaves

Alternate
Pinnately Compound
No spines on branches
Leaves spiney-dentate
Leaflets 11-19 (or 5-9 pairs)
Not undulate (*compare B. aquifolium*), veins not pinnate,
Thick, Grey-green color, dull on upper surface
Palmate Veination

Flowers

Infl – racemes
- 4-8 in. long
Axillary
Yellow
Flowers 3-parted

Fruit

Drupe, dark purple
Sour

Other

Shrub to 2 ft
Rhizomatous
Likes shade
Found in Douglas fir and Western Red Cedar forests

Berberis aquifolium (BERBERIDACEAE)
a.k.a. *Mahonia aquifolium*

tall Oregon grape

W. North America



Leaves

Alternate
Pinnately compound
Leaflets 5-9 (2-4 pairs)
Lvs undulate
Lvs spiny-toothed
No spines on branches
Shiny on upper surface

Pinnate Veination

Flowers

Infl – racemes or panicles,
Axillary
2-3 in long
Yellow
Flowers 3-parted

Fruit

Drupe
Dark purple

Other

Shrubs 3-8 ft
Low maintenance
Drought tolerant
Attracts birds
Mix with salal to make jams, jellies, and wine (but have to use lots of sweeteners)
Florists are attracted to foliage
Inner bark was used to make a yellow dye
Roots have been shown to reduce the effects of giardia, diarrhea, and cholera
Contains a multidrug resistance pump inhibitor – decreases bacterial resistance to antibiotics and antibacterial agents (treats Psoriasis)
Current research in anti-cancer agents

Magnolia Xsoulangeana (MAGNOLIACEAE)

saucer or tulip magnolia

Garden origin



Leaves

Alternate, Simple
Entire
Large stipules
Obovate
 Upper – med- dark green
Lower ~ pubescent
6” long, 3” wide
Apex – narrow, pointed

Flowers

Solitary & terminal
Appear before leaves
 Radial , Perfect
 Sepals 3, Petals 3 (tepals)
 Many stamens & carpels,
 spirally arranged
Purplish on outside to white
inside
Sepals half as long as petals

Fruit

Follicles

Other

Small tree - Tree can reach 30-40+ feet, but can be maintained as a small tree or very large shrub. (will vary from cultivar to cultivar)
 Stem shiny, glaucous (whitish) ~ lenticels
 Selections made for larger flowers and richer colors.
 Blooms on 2nd year wood.
 Hybrid of *M. denudata* x *M. liliflora*, in the garden of Soulange-Bodin in Fromont, France

Tsuga (PINACEAE)

hemlock

N. America, E. Asia

Leaves

Flat, linear and blunt
 Varying lengths between 1 and 3 cm long.
White stomatal bands on lower surface.
Leaves spirally arranged, but usually 2-ranked (arranged in 2 rows on the shoot by a twisting of the petioles and leaves)
Leaves attached to slightly forward pointing rounded pegs on twigs

Cones

Monoecious
 Male cones, small, globose, reddish, on ends of branchlets
Female cones small (usually up to 1 in, but as large as 3 in. in one sp.), ovoid, with few rounded scales
Located terminally on lateral shoots
Scales of cones with bracts, but not exerted (not projecting beyond the scale)
 Seeds with one long wing.

Other

Trees to 160 ft. w/nodding leaders
 Pyramidal form when young
 Evergreen
 Often with cinnamon-red furrowed bark.

Tsuga heterophylla (PINACEAE)

Western hemlock

Alaska to California



Leaves

Needles (linear leaves)
 Leaves spirally arranged
 Usually 2 ranked
Varied sizes but short (to 3/4")
 Flattened
 Lower – **2 white bands of stomata (ill defined) and indistinct green margin**
 Short petiole, Apex blunt

Cones

Cones not stalked (sessile)
Cones 1" long
 Thin, smooth scales

Other

Tree to 200 ft, Evergreen
 Cinnamon-red furrowed bark
 Horizontal, ~ pendulous branches
 State tree
 Shade tolerant
 Similar to *T. canadensis*, an east coast species
 Live upto 1200 years old
 Initial slow growth
 Naturalized in Britain and New Zealand.
 Native Americans used boughs to collect herring eggs
 Edible cambium
 New growth can be seeped into a tea high in Vitamin C

Pseudotsuga menziesii (PINACEAE)

Douglas-fir

British Columbia to California, Rocky Mts.



Leaves

Needles (linear leaves)
Spirally arranged but or 2 ranked
Needles ~ 1" long
Short petiole
 Upper – Grooved
 Lower – 2 white stomatal bands
Pointy bud tips, often reddish orange & shiny, bud scales may stick to leaves later in season

Cones

Monoecious
Cone with three-forked bract "mouse-tail"
 Cone 4-5" long
 Produce seeds at 20-30 years
 Irregular production (some years high, some years none)

Other

Tree to 300 ft (second tallest tree in the world)
 Lives 500-1000 years
 Evergreen
 Irregularly whorled branches
 Ovate leaf scars on branches
 Prefers sun
 Leaves can vary in length and width between trees
Bark deeply furrowed & reddish brown when mature, thick with resin blisters
 Pioneer tree
 Habitat for spotted owl, Douglas squirrel, grouse, porcupine, and many other birds
 Choice crop for timber production

Erica arborea (ERICACEAE)

tree heath

S.W. Europe, Mediterranean, N. Africa, E. Africa



Leaves

Ternate (whorls of 3)
Needle-like, linear
 0.25-0.5 in long
 Glabrous

Flowers

Infl – **Large pyramidal panicles**
 Calyx 4 parted
Corolla 4 lipped, urn-shaped or tubular
 Stamens 8

Fruit

4-valved capsules

Other

Small tree to 6 ft
 Flws Scented
 Wood used for making briar wood smoking pipes

Cedrus atlantica (PINACEAE)

Atlas cedar

Morocco – Atlas Mountains



Leaves

Needles rigid
 Densely fascicled on spurs (each spur 1 yrs growth)
 ~ Triangular, pointed
Needles shorter, thicker than *C. deodara*

Cones

Upright
 2-3 in. long
 Deciduous cones

Other

Tree to 125 ft.
Cultivar – blue, most common form used
Branches not pendulous, with horizontal structure
 Mountains
 Sunny locations
Gray bark
 Similar to *C. deodara*
 Choice crop for timber production in France

Umbellularia californica (LAURACEAE)

California laurel or Oregon myrtle

S. Oregon, N. California



Leaves

Alternate, Simple
Pinnate venation
Entire
Ovate to lanceolate
2-6 inches long, 1" wide
Upper-glossy green
"camphor" odor

Flowers

Infl – Umbel-like
Yellowish-green
3 parted
6 petals
9 stamens

Fruit

Drupe
Ovoid
~1 in. long
Yellowish-green to purple
Looks like olive
Pedicle of fruit looks like a golf tee.

Other

Tree to 100 ft or shrub
Evergreen
Smells like a bay leaf but much harsher, sometimes sold as a bay leaf but is very inferior
Can easily self seed and pop up in other areas of the landscape close by.
AKA – Headache tree (excessive smelling of this tree will give you a headache)

Picea (PINACEAE)

spruce

N. Hemisphere

Leaves

Needle-like, Narrow, Stiff
0.5 – 1.5 in. long
Often 4 angled with stomata on all 4 sides
Spirally arranged
Usually very sharp to the touch

Cones

Monoecious
Male cones at or near end of branches, elongate
Red or purple when young
Female cones pendulous
Many rounded, pointed overlapping scales, often very thin and "papery" with a "torn" apex
Length 1-6 in.
Seeds have single long wing.

Other

Trees to 250 ft
Evergreen
Often w/hanging branchlets and scaly bark
Branchlets have peg-like stalks bearing leaves, which remain when the leaves fall off.
"Sharp spruce, fine fur (fir)".

Picea abies (PINACEAE)

Norway spruce

S. Scandinavia to C. and S. Europe



Leaves

Needles (linear leaves)
 Spirally arranged
 Peg-like stalks on branchlets
 Usually 4 angled or square looking
Some lvs point towards apex, overlapping
2-3 stomata lines on both sides
 Needles straight or curved
 ~1 in. long, Dark green
Tip blunt so not as sharp

Cones

Pendulous female cones
Purplish-green before mature
Thin “papery” scales
 Cone scale not undulating

Other

Tree to 150 ft
 Evergreen
Droopy branches
 Reddish-brown bark
Naturalized in parts of the North America
 Every Christmas, the Norwegian city of Oslo provides NYC, London, and D.C. with Norway Spruce as a sign of gratitude for the aid provided in WWII

Sequoiadendron giganteum (CUPRESSACEAE)
 (formerly TAXODIACEAE)

giant Sequoia

California



Leaves

Scale-like
 Lanceolate
 3-6 mm long
Bluish-green
 Lvs point towards apex
Spiral in 3 longitudinal rows

Cones

Female cones 2-3 in. long
 ~1.5 in. diameter
Ovoid w/peltate (shield shaped) cone scales
Very hard and woody
 Cone upright first year, pendulous second year.
 Bract indistinct or none
 Winged seed can carry 600 feet from the tree
 Mature tree can release 300,000-400,000 seeds per year

Other

Huge tree to 325 ft.
 ~30 ft diameter
 Grows in mountains
 Rapid growing tree
Spongy, fibrous, red bark
Trunk buttressed at base
Perfect conical shape.
 Leaflets, not leaves, shed, so look on ground under tree
 Very long lived (2-3,000 yrs)
 Does not take root compaction well