

Special Trees and Woods Project

Conifer Identification Notes
Volunteers' morning at Priestfield Arboretum, 14 February 2009

Identification

- You need a reasonable field guide, which should have a systematic key preferably not based on obscure botanical features. Alan Mitchell's *Field Guide to the Trees of Britain & Northern Europe* is the best, but sadly now out of print, though second hand copies are still available from Amazon, Abe Books etc. (ISBN 0 00 219213 6)
- Start either in a local civic park, which will mostly only have common trees, or in an arboretum with a field guide. Don't cheat – don't read the labels till you've tried to work it out for yourself! It is usually OK to collect small samples of common trees, but not in collections without permission.

Identification Features

Foliage: colour; shape (ie whole leaf, leaf tip, leaf base, margins, lobbing, venation); texture (type of hairs on leaf surface); smell when crushed. Broadleaf trees: opposite or alternate. Evergreens: pointed (mucronate) or soft tip; white stripes underneath?

Flowers and Fruit/Cones: colour; upright or hanging; intact on ground; position in crown.

Crown shape: Regular; open/compact; lower branches retained. Cultivars often grown for distinctive shape, eg fastigiata.

Bark: colour; appearance (fissured, ridged or mosaic); texture (hard or fibrous).

Main types of conifer

Pines

- Leaves are needles, which occur in bundles of 2, 3, or 5 (usually; can be a bit variable)
- Pegs at the bases of leaves fall off with the leaf leaving a smooth twig
- Cones usually pendant, fall complete
 - 2-needle: small cones, globose or conic
 - 3-needle: large cones, globose or conic, often stay on tree for years
 - 5-needle: large cylindrical; fall quickly

Common species:

Scots Pine (*Pinus sylvestris*) (2) Native. Lower branches shed; orange-red peeling bark below crown

Bhutan Pine (*Pinus wallichiana*) (5) Long (18-20cm) hanging bunches of needles, more usually deep blue-grey and pendulous

Austrian/Corsican Pine (*Pinus nigra*) (2) Greenish-grey; spray with vertical bud with long, pointed tip

Monterey Pine (*Pinus radiata*) (3) Large, old cones retained on branches or trunk for many years; needles bright green and long; very asymmetrical

(Silver) Firs

- Cones erect and break up on the tree (so never found on the ground) at top of tree only
- Regular conic shape (till mature)
- Leaves leathery, blunt (rarely acute). Leave circular scar when pulled off (don't do this in a collection!)
- To 100m natively, but usually to 50m in UK
- Mostly in parks, large gardens (too big/tall for most suburban gardens)
- Identification of individual species can be difficult

Common species: (more in the north and west, less common in south and east as they like it wet)

Common Silver Fir (*Abies alba*) Older trees; regular whorls of branches arising from the end of each year's growth. Suffers from silver fir aphid, so not much planted today

Caucasian Fir (*Abies nordmanniana*) Leaves dark green on upperside with 2 silvery bands on lowerside

Giant or Grand Fir (*Abies grandis*) Leaves bright green on upperside with 2 whitish stripes on lowerside; smell of oranges when crushed

Noble Fir (*Abies procera*) Leaves forward pointing; shoot mostly hidden by dense leaf bases

Douglas Fir (*Pseudotsuga menziesii*) Not a fir, but very common; cones fall intact. Distinctive 3-pronged cone scales. Foliage very soft to touch. Bark grey-green, often resin blistered in young trees, chocolate brown, spongy or corky and deeply fissured on older trees. To 50m

Spruces

- Cones pendulous, at top of tree only; fall intact
- Leaves harsh, spiny (acute). Come away with a “whisker” attached when pulled off
- Pegs at the bases of leaves remain on the twig when the leaf falls
- Bark scaly, never fissured
- Shape more variable and can be distinctive (eg *Picea brewerana*, *smithiana*, *omorika*)

Common species:

Norway Spruce (*Picea abies*) the traditional Christmas tree, which drops its stiff, sharp needles; no bracts on cone

Sitka Spruce (*Picea sitchensis*) the forester's tree par excellence. Distinguished from *Picea abies* by flattened, bluish, even sharper needles. Not so common in the SE

Colorado Spruce (*Picea pungens* 'Glauca') almost always as the blue form (one of only two common blue trees). Rigid, spined leaves all round twig

Cypress

- Familiar as the suburban hedge; trees often grow because hedge trimming has been neglected. Actually four types – false, true, hybrid, thuja.

False Cypress - common species: Flattened sprays of leaves, globular cones.

Lawson Cypress (*Chamaecyparis lawsoniana*) Innumerable cultivars, many of which look nothing like the parent. Best id is smell of crushed foliage (parsley) and red male flowers at tips in March/April. Leading shoot always droops, ie curls back to point to the ground

Nootka Cypress (*Chamaecyparis nootkatensis*) Yellow male flowers at tips through winter; smells unpleasant

True Cypress. Only one is common:

Monterey Cypress (*Cupressus macrocarpa*) Male flowers yellow late May – June. Foliage is yellowish and smells of lemon. Large, lumpy, globose cones

Hybrid

Leyland Cypress (*x Cupressocyparis leylandii*) At least three different hybrids between false and true cypresses. Extremely vigorous and hardy. Often doesn't flower or produce cones. Leading shoot is always c45° to the vertical

Thuja Cone is bell- or urn-shaped

Western Red Cedar (*Thuja plicata*) Thin, appressed, stringy leaves in flattened sprays. Smells of pineapple without being crushed. Leading shoot is always very bare and pretty upright

Redwoods

- Don't use the ambiguous term “Californian Redwood”! Four species, all common:

Wellingtonia (*Sequoiadendron giganteum*) (Sierra Nevada, S California). Unmistakeable. Orange/red fibrous bark; tapered bole; small dull green or grey-green scaly leaves; branches upswept at ends. Usually the tallest tree around. Crown conical, pointed shape until mature (or until topped by lightning).

Coast Redwood (*Sequoia sempervirens*) (Coastal ranges from N. California to Oregon) Bark red-brown, soft, spongy, fissured; crown generally untidier appearance than Wellingtonia. Leaves 5-7mm, stiff, dark-green, spread in one plane on opposite sides of twigs. Tallest trees in the world

Dawn Redwood (*Metasequoia glyptostroboides*) (China) Deciduous. Leaves are *opposite* on oppositely-placed side shoots and appear early (from March, out by May). Leaves larger than *Taxodium distichum*. Bark red/grey, fissured. Very regular shape.

Swamp Cypress (*Taxodium distichum*) (N America) Deciduous. Leaves are *alternate* and appear late (not fully out till June). Sharply narrowing, buttressed trunk; “knees”; often by water

[Japanese Red Cedar (*Cryptomeria japonica*) Common in collections. Scaly, hard leaves similar to Wellingtonia, but brighter green, a bit longer and more open. Small round cones, each scale with a short spine. Both male and female cones retained. Tree itself looks like a conical green cumulus cloud, nothing like a Wellingtonia!]

Larches

- Deciduous conifers
- Leaves in bunches (“whorls”). In winter, look for knobs on twigs where leaves grow
- Colour of shoots and cone scales are key identifying features between species
- Cones with leathery or softly woody scales
- In winter retained old cones give trees a knobbly appearance

Common species:

European Larch (*Larix decidua*) Most common. Down-sweeping branches turning upwards (sometimes vertically) at the tips. Shoots are bright yellowish-green. Male flowers open late March as whitish discs, often pale purple round edge; female flowers rosy-red, pale green or white. Smooth cone

Japanese Larch (*Larix kaempferi*) Widely planted. Shoots usually dark orange-red but may be dark brown or dark purple. Male flowers open yellow, droplet-shaped; female flowers usually pink and cream, open Feb-March. Cone scales are outward-pointing, strongly curled down at tip

Hybrid Larch (*Larix x eurolepis*) Widely planted. Shoots usually pale orange or varying from pinkish to pale brown or red-brown. Male flowers intermediate; female flowers bigger than *L. decidua*, colour variable. Cone scales abruptly bent out but not curled down at tip

Cedars

- Large trees, seemingly ancient but usually not much more than 200 years
- Leaves in bunches (“whorls”)
- Pollen shed in huge clouds in November, on dry, cold, often frosty nights
- Three species, best distinguished by shape of crown, all common

Deodar (*Cedrus deodara*) (Himalayas) Leading shoot on each branch droops

Cedar of Lebanon (*Cedrus libani*) (Middle East) Branches are level, spread into huge flat plates and are often lower than *C. atlantica*

(Blue) Atlas Cedar (*Cedrus atlantica* ‘*Glauca*’) (Atlas Mts N Africa) Almost always as the blue form. Shoots ascend, branches are swept up; tall, straight trunk. Needles longer than *C. libani*

Hemlocks

Rather like spruces. Soft, delicate, aromatic foliage; very small, pendulous, cones. Priestfield only has a few exotic species. Only other conifer with a drooping leader (like *Chamaecyparis lawsoniana*)

Common species:

Western Hemlock (*Tsuga heterophylla*) Used in forestry; can withstand deep shade. Male flowers dense and bright red in April, covering leaves in pollen dust. Many ovoid cones all over tree, 2-3 cm.

Eastern Hemlock (*Tsuga canadensis*) Not used in forestry. One row of leaves on the underside of the shoot is twisted so that the white band is uppermost. Male flowers yellow/green. Cones 1cm.

Primitive conifers

Ginkgo (*Ginkgo biloba*) Leaves unmistakable. Usually the male tree is planted (because the fruit smells horrible (like rancid butter or baby sick!))

Yew (*Taxus baccata*) Native. In pretty much every churchyard, also scattered in Chiltern woodlands. Only conifer with a fleshy aril – seeds of which are poisonous

Monkey puzzle (*Araucaria araucaria*) Leaves and crown like nothing else

Other conifers that don’t fit anywhere else!

Incense Cedar (*Calocedrus decurrens*) Columnar with rounded top. Crushed foliage has strong scent of shoe-polish or turpentine

Common Juniper (*Juniperus communis*) Native. Bush to small tree. Slow growing. Spiny leaves like gorse, in threes. Fruit a “berry”, only on female trees. Should be common in the Chilterns