

Field Identification of Twigs Trees

Twigs

Leaf Postition



Alternate
leaves arranged alternately

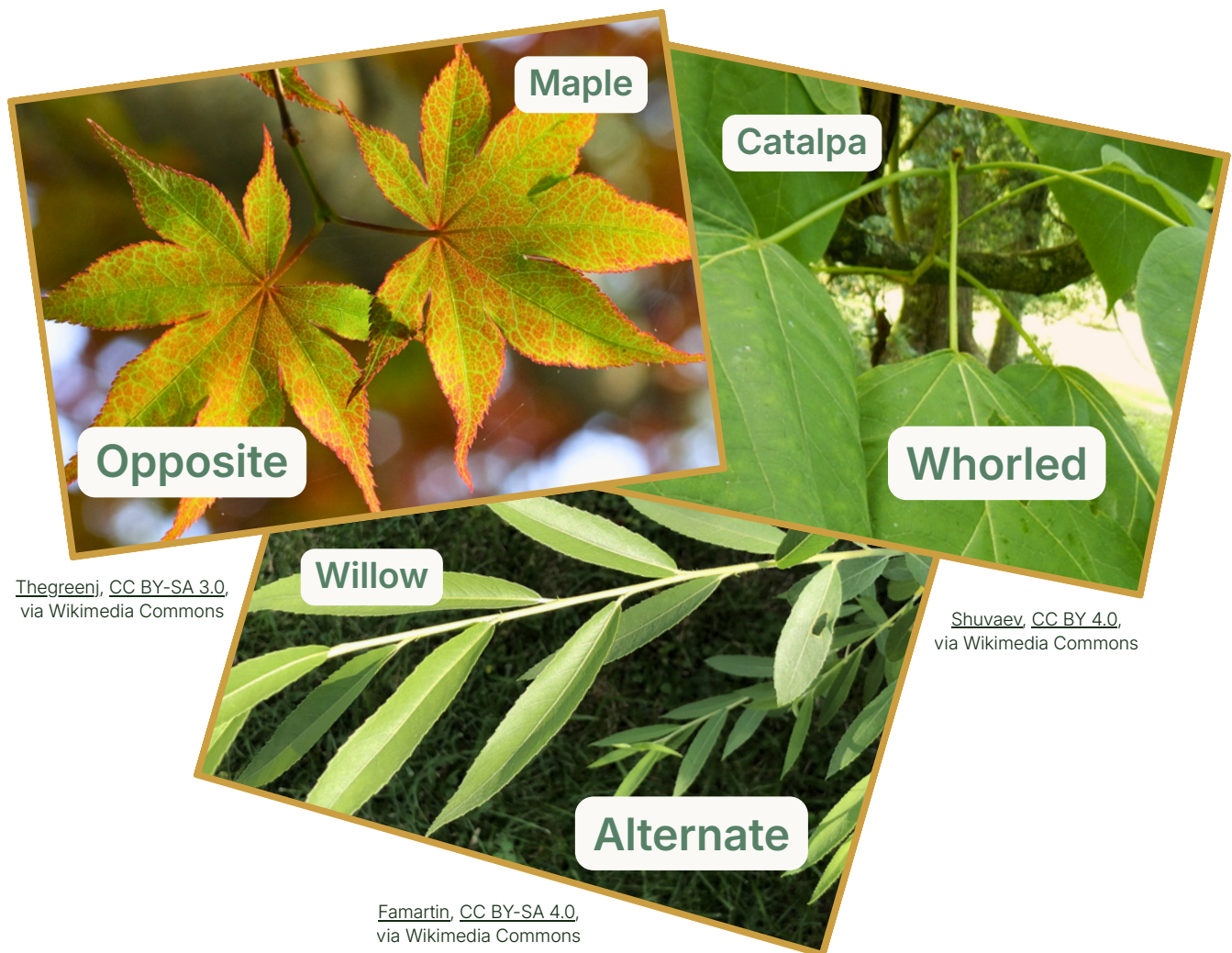


Opposite
leaves in adjacent pairs



Whorled
rings of 3+ leaflets

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Buds

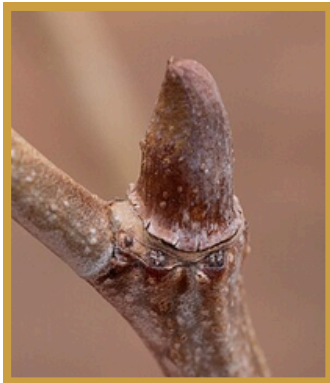
Bud: Protective scales that cover an area of future leaf and flower growth

Scale number: the number of scales on a bud

Single-scaled: One scale that encloses the entire bud.

Valvate: Two-scaled

Imbricate: More than two scaled



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Single-scaled

Platanus × hispanica



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Valvate (two-scaled)

Cornus mas



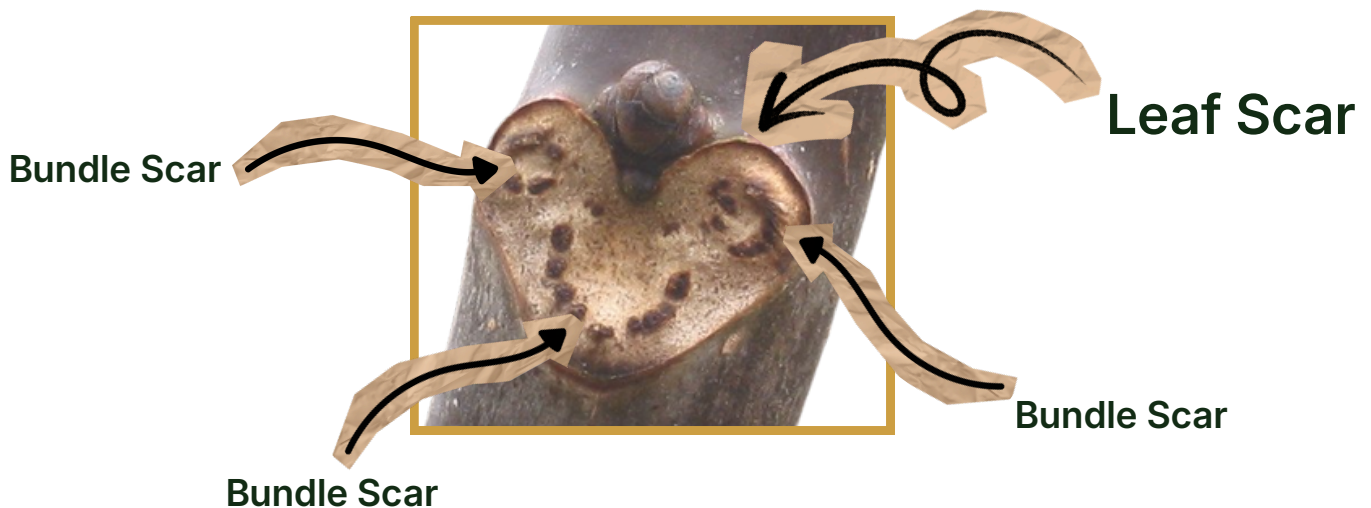
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Imbricate (>2-scaled)

Carpinus betulus

Leaf scar: Site below a bud where the stem of the previous leaf attached to stem

Bundle scars: Part of a leaf scar — a small mark where the leaf vascular tissue connected to stem



Bark



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Smooth

American Beech (*Fagus grandifolia*)



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Horizontal Lenticels

Cherry (*Prunus avium*)



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Diamond Lenticels

Aspen (*Populus tremula*)



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Peeling Strips

Silver Birch (*Betula pendula*)



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Vertical Cracks

Hornbeam (*Carpinus betulus*)



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Plates

Scots Pine (*Pinus sylvestris*)



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Intersecting Ridges

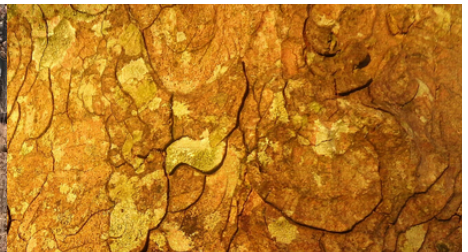
White Ash (*Fraxinus americana*)



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Ridges Broken Horizontally

Black Oak (*Quercus velutina*)



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Curved Ridges

Sycamore Maple (*Acer pseudoplatanus*)



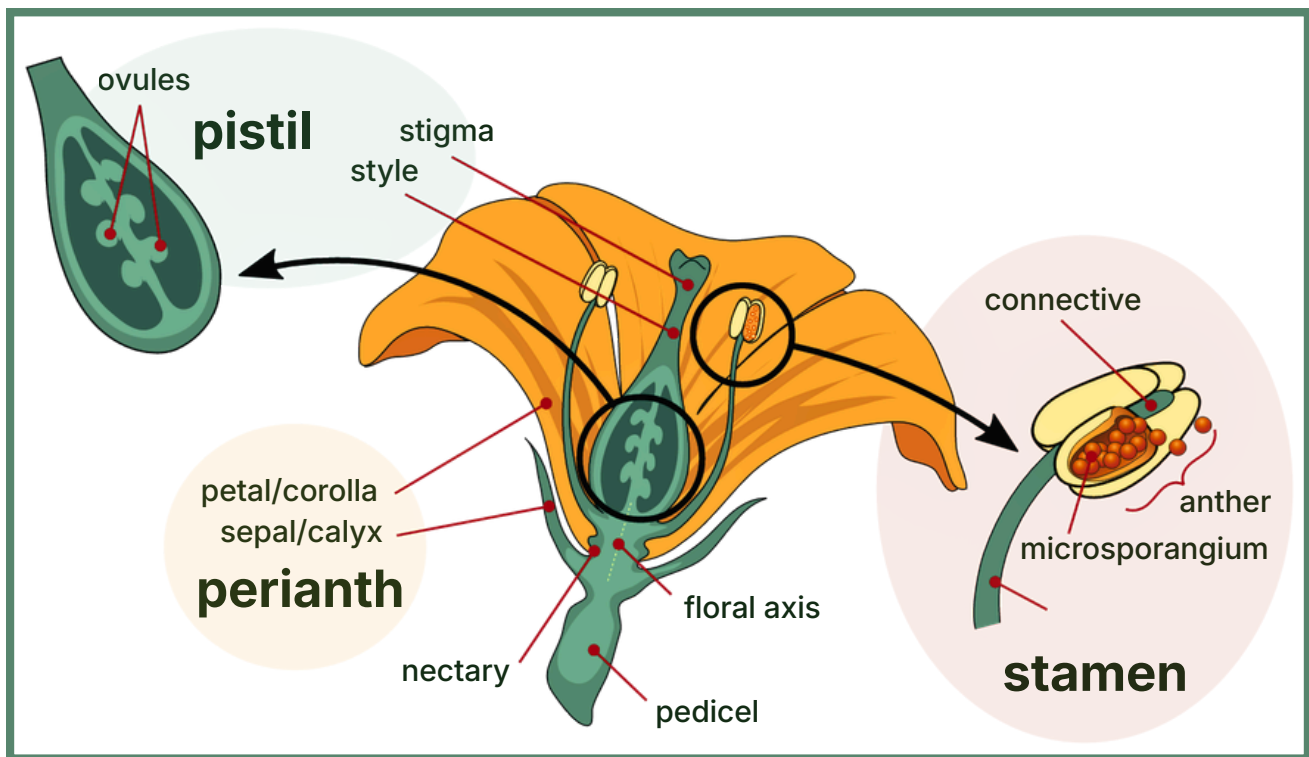
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Fibrous

Sequoia (*Sequoiadendron*)

Flowers

Flowers: Reproductive organs of plants composed of pistils (ovary bearing), stamens (pollen bearing), and perianths (petals + sepals).



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Number of pistils and stamens, ovary position, and ovary placement can be used for identification.

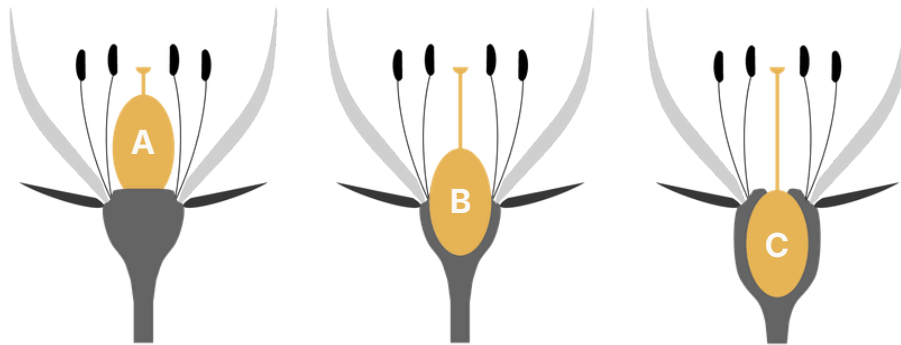
Flowers

Ovary Postition

a. *Superior ovary*: An ovary that is situated above the point of attachment of the perianth (petals & sepals). Flowers with a superior ovary are called hypogynous.

b. *Half-inferior ovary*: An ovary that is situated partly below and partly above the point of attachment of the perianth (petals & sepals). Flowers with half-inferior ovaries are generally perigynous (base unattached to ovary).

c. *Inferior ovary*: An ovary that is situated below the point of attachment of the perianth (petals & sepals) and the anthers. Flowers with inferior ovaries are called epigynous.



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Flower Type

d. *Hypogynous*: The perianth (petals & sepals) attaches below the ovary. A flower is called hypogynous if it has a superior ovary.

e. *Perigynous*: When the perianth (petals & sepals) and the stamens arise from a base that is *not attached* to the ovary. This base/cup is called the hypanthium. Perigynous flowers can have a half-inferior or superior ovary.

f. *Epigynous*: The perianth (petals & sepals) attaches above the ovary. A flower is called epigynous if it has an inferior ovary.



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Leaves

Leaf Type



Simple

one undivided blade
with one petiole/leaf stem

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Compound

divided blade, multiple leaflets with
one petiole/leaf stem

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Leaf Shape



Ovate

egg-shaped, wide at base



Lanceolate

pointed at both ends



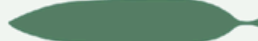
Elliptic

oval-shaped, small or no point



Obovate

egg-shaped, narrow at base



Linear

parallel margins, elongate



Peltate

stem attached centrally



Reniform

kidney-shaped



Spatulate

spoon-shaped



Oblong

roughly rectangular



Oblanceolate

widest near the tip;
reversed lanceolate

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Leaves

Leaf Tip



Acute

Pointed — short sharp apex
angled less than 90°

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Acuminate

Tapering to a long point in a
concave manner

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Obtuse

Blunt, forming an angle > 90°

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Truncate

Squared-off end

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Mucronate

Ends abruptly in a small sharp
point as a continuation of midrib

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Emarginate

Slightly indented at the tip

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Cuspidate

sharp, elongated, rigid tip; tipped
with a cusp

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Leaves

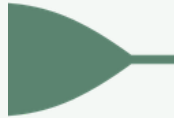
Leaf Base



Cuneate

Triangular, wedge-shaped, stem attaches to point

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Acute

Pointed — short sharp apex angled less than 90°

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Cordate

Heart-shaped, with petiole or stem attached to the notch

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Obtuse

Blunt, forming an angle > 90°

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Oblique

Asymmetrical leaf base, with one side lower than the other

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Sagittate

Arrowhead-shape with lower lobes curled downward

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Hastate

Spear point shape, with flaring pointed lobes at base

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Truncate

With a squared-off end

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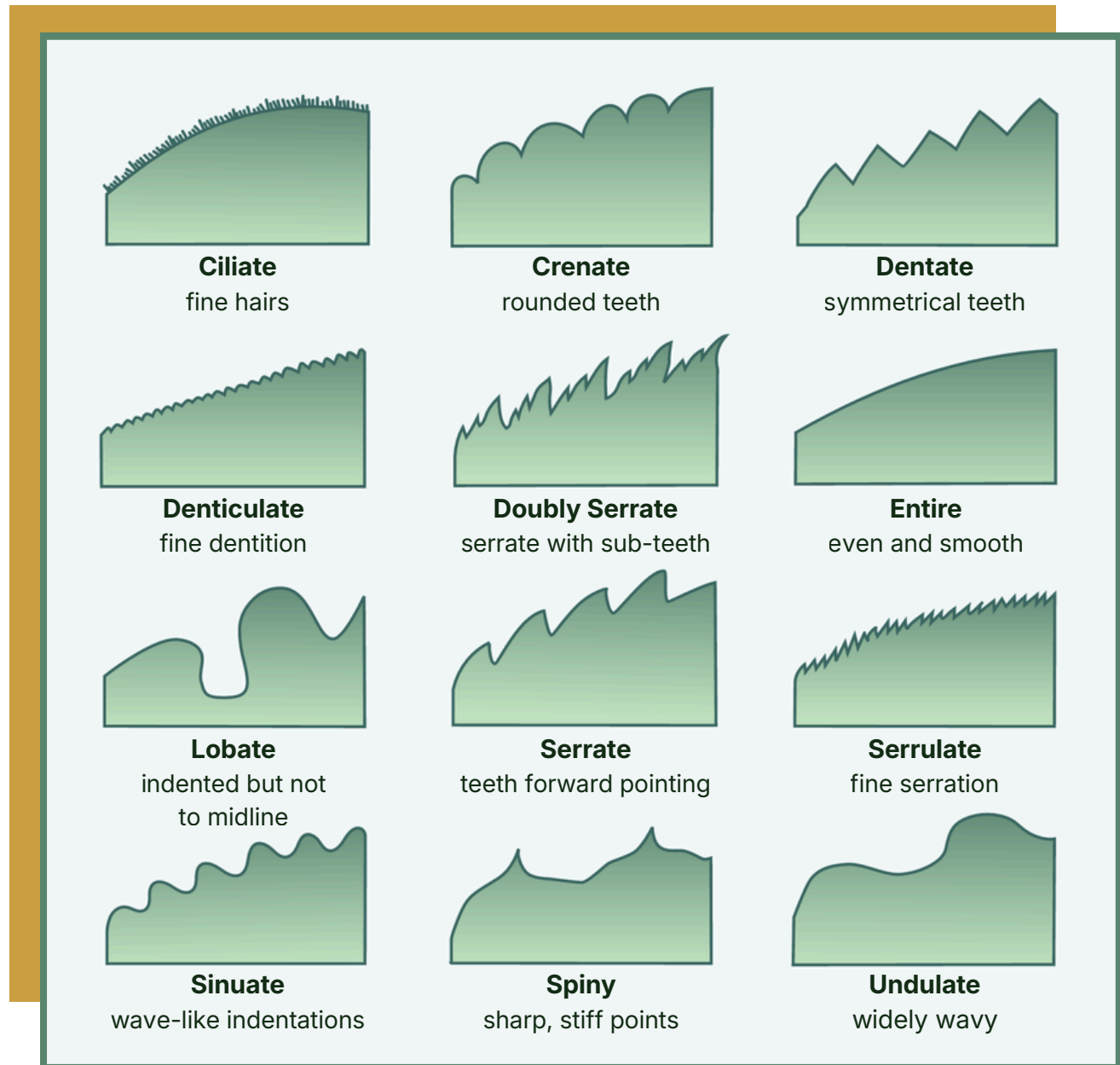
Auriculate

Ear-shaped appendages reach past attachment to stem

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Leaves

Leaf Margin



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