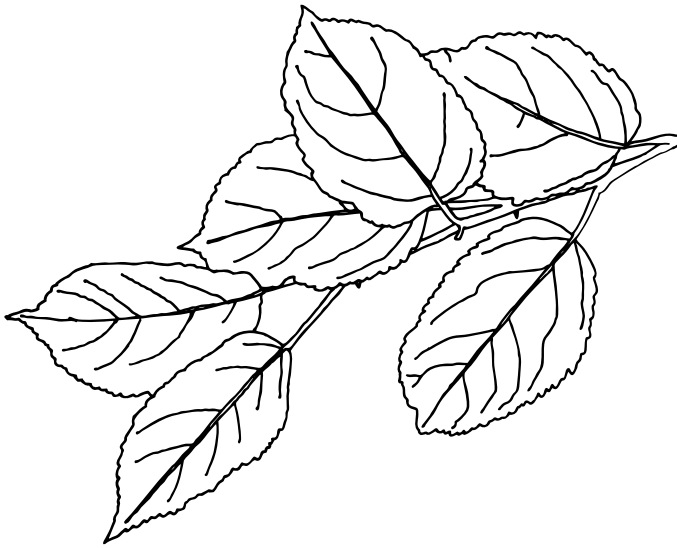
NATURAL HISTORY MUSEUM



Tree identification key

Identification keys are used to identify specimens. This key is made up of a master key and 7 other keys.

How to use this key

- start at step 1 in the master key
- compare your specimens to the statements at each step
- keep following the instructions until you reach the name of a tree

Contents of this key

This identification key is made up of the following sections:

Master key: types of tree found in gardens and urban areas

Master key – step 1

Leaves needle-like or scale-like and often overlapping ▶▶▶ **go to key 1** (page 3)

Leaves not needle-like, scale-like or overlapping ▶▶▶ **go to step 2**

Master key – step 2

Leaves in pairs, opposite each other on shoots ▶▶▶ **go to key 2** (page 7)

Leaves alternate on shoots ▶▶▶ **go to step 3**

Master key – step 3

Leaves divided into separate leaflets ▶▶▶ **go to key 3** (page 10)

Leaves with one blade, possibly indented into lobes, but not divided into leaflets ▶▶▶ **go to step 4**

Master key – step 4

Leaves evergreen ▶▶▶ **go to key 4** (page 12)

Leaves deciduous ▶▶▶ **go to step 5**

Master key – step 5

Fruits fleshy or juicy ▶▶▶ **go to key 5** (page 15)

Fruits dry ▶▶▶ **go to key 6** (page 20)

Key 1: trees with leaves that are needle-like or scale-like

Key 1 – step 1

All leaves scale-like, usually pressed against the twig ▶▶▶ **go to step 2**

All leaves needle-like, usually spread widely apart ▶▶▶ **go to step 6**

Some leaves scale-like, others needle-like ▶▶▶ **go to step 14**

Key 1 – step 2

Scale-leaves at least 30mm long, rigid and sharp-edged ▶▶▶ **Monkey puzzle**

Scale-leaves less than 30mm long, not rigid or sharp ▶▶▶ **go to step 3**

Key 1 – step 3

Deciduous tree; foliage is wispy; pink or white flowers ➤➤ **Tamarisks**

Evergreen tree with cones; foliage is dense ➤➤ **go to step 4**

Key 1 – step 4

Cone is egg-shaped with overlapping scales, eventually wide-spreading like petals of a flower; crushed foliage smells of pineapple ➤➤ **Western red cedar**

Cone is egg- or ball-shaped, scales meet at edges and don't overlap, scales don't become wide-spreading; crushed foliage doesn't smell of pineapple ➤➤ **go to step 5**

Key 1 – step 5

Cone is egg-shaped with more than 15 scales; bark is very thick, with visible fibres, and is rather soft or spongy ➤➤ **Wellingtonia**

Cone is ball-shaped, with fewer than 10 scales; bark is hard ➤➤ **Cypresses**

Key 1 – step 6

Needles are in two flat, parallel rows, at least on the short shoots growing off longer ones; fruit is scarlet and berry-like ➤➤ **Yew**

All the needles are in clusters or are parted on either side of shoot, but not in flat rows; fruit is a woody cone ➤➤ **go to step 7**

Key 1 – step 7

Needles are all on their own at their position on the shoot ▶▶▶ **go to step 8**

Most needles grouped around the shoot, in pairs or bundles of 2 or more ▶▶▶ **go to step 10**

Key 1 – step 8

Cones stand upright on branches; needles are attached by a sucker-like base ▶▶▶ **Firs**

Cones hang downwards from branches; the base of the needles are not sucker-like ▶▶▶ **go to step 9**

Key 1 – step 9

Needles leave behind their peg-like bases after falling ▶▶▶ **Spruces**

Needles leave behind their cushion-like bases after falling ▶▶▶ **Hemlock spruces**

Key 1 – step 10

Most needles are in bundles of 2–5 ▶▶▶ **go to step 11**

Most needles are arranged around the shoot in clusters of 3, 10 or more, rarely in pairs ▶▶▶ **go to step 12**

Key 1 – step 11

Needles in bundles of 2 ▶▶▶ **Pines, 2-needled**

Needles in bundles of 3 ▶▶▶ **Pines, 3-needled**

Needles in bundles of 5 ▶▶▶ **Pines, 5-needled**

Key 1 – step 12

Needles on all shoots are arranged in rings of 3 going around the shoot, or occasionally in pairs ▶▶▶ **Junipers**

Needles on short shoots, in clusters of 10 or more ▶▶▶ **go to step 13**

Key 1 – step 13

A deciduous tree; the cones are egg-shaped ▶▶▶ **Larches**

An evergreen tree; the cones are barrel-shaped ▶▶▶ **Cedars**

Key 1 – step 14

Leaves of main shoots are scale-like, leaves of short shoots are needle-like, up to 20mm long, arranged in 2 rows; foliage doesn't smell unpleasant ▶▶▶ **Coast redwood**

Leaves mostly scale-like; those towards the tips of shoots are needle-like, in opposite pairs, 5–6mm long; crushed foliage smells unpleasant ▶▶▶ **Junipers**

Key 2: trees with broad leaves, arranged opposite each other in pairs

Key 2 – step 1

Leaves palmately divided into separate leaflets, the leaflets extending from the leaf stalk ▶▶▶ **Horse chestnuts**

Leaves pinnately divided into separate leaflets, the leaflets in two rows on the stalk ▶▶▶ **go to step 2**

Leaves are sometimes lobed, but are not divided into leaflets ▶▶▶ **go to step 5**

Key 2 – step 2

Small trees with ridged, corky bark; the fruit is a berry ▶▶▶ **Elder**

Tall trees with smooth or slightly wrinkled bark; fruits are dry and wing-shaped ▶▶▶ **go to step 3**

Key 2 – step 3

Twigs are clearly flattened where the buds or leaves are attached; leaves are hairy on the underside; 1 fruit per stalk ▶▶▶ **go to step 4**

Twigs are not flattened where the buds or leaves are attached; leaves are hairless on the underside; fruits in pairs on the stalks ▶▶▶ **Ashleaf maple**

Key 2 – step 4

Flowers have no petals; winter buds are black ▶▶▶ **Ash**

Flowers have narrow white petals; winter buds are grey or brown ▶▶▶ **Manna ash**

Key 2 – step 5

Leaves are deeply palmately lobed; fruits are wing-shaped and in pairs ▶▶▶ **go to step 9**

Leaves are not lobed or are only very shallowly lobed; fruit is either a woody capsule, a berry or a long, narrow pod ▶▶▶ **go to step 6**

Key 2 – step 6

Leaf edges are toothed ▶▶▶ **Spindles**

Leaf edges are not toothed ▶▶▶ **go to step 7**

Key 2 – step 7

An evergreen tree, leaves are usually bluish-green and smell of eucalyptus when crushed; bark is usually shredding or flaking

Eucalyptus

A deciduous tree, leaves are pale or bright green and don't smell when crushed; bark is not shredding

go to step 8

Key 2 – step 8

A tall tree up to 20m; leaves are 10–25cm long; flowers are 5cm or more across; fruit is a long, narrow pod that remains after the leaves fall

Indian bean tree

A small tree to 8m; leaves are 4–10cm long; flowers are 4mm across; fruit is a red berry

Cornelian cherry

key 2 – step 9

Leaves with 3-13 lobes. If 5-lobed, then any teeth present aren't small, coarse, round-tipped and numerous, or flowers/fruits don't hang in tails

Maples (other than sycamore)

Leaves 5-lobed with many small, coarse, round-tipped teeth; flowers/fruits in hanging tails

Sycamore

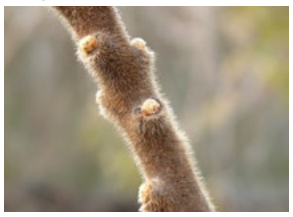
Key 3: trees with leaves arranged alternately, divided into separate leaflets

Key 3 – step 1

Leaves divided into 3 leaflets ▶▶▶ **Laburnums**

Leaves divided into more than 3 leaflets ▶▶▶ **go to step 2**

Key 3 – step 2



Twigs are thick and densely covered with velvety hairs; flower heads (and later the seed heads) are dense, cone-shaped and hairy ▶▶▶ **Stag's horn sumach**

Twigs not velvety; flowers and fruits are not in hairy, cone-shaped heads ▶▶▶ **go to step 3**

Key 3 – step 3

Twigs have a pair of thorns at the base of each leaf ▶▶▶ **False acacia**

Twigs have no spines or thorns ▶▶▶ **go to step 4**

Key 3 – step 4

Twigs have distinctive Y-shaped scars where leaves have fallen; cut twigs leak latex; flowers are in catkins or clusters of 1–5 ▶▶ **Walnuts**

Leaf scars are not Y-shaped; cut twigs don't leak latex; flowers are numerous and in clusters. ▶▶ **go to step 5**

Key 3 – step 5

Leaflets are not lobed, they are not foul-smelling; the fruit is a pod ▶▶ **Pagoda tree**

Leaflets have a few teeth or lobes in the lower half only and they are foul-smelling when crushed; the fruit is a papery, winged seed ▶▶ **Tree-of-heaven**

Leaflets are toothed or lobed, not foul-smelling; the fruit is a papery capsule ▶▶ **Pride-of-India**

Leaflets are toothed at least in the upper half and are not foul-smelling; fruit is juicy and berry-like ▶▶ **go to step 6**

Key 3 – step 6

Lower part of the leaf is divided into 1–4 pairs of leaflets, the upper part is lobed in places but not completely divided ▶▶ **Service trees**

Leaves are completely divided into 6 or more pairs of leaflets ▶▶ **go to step 7**

Key 3 – step 7

Ripe fruits are orange-red to vermillion-red or occasionally yellow, with yellow pulp ▶▶▶ **Rowans with orange or vermillion fruit**

Ripe fruits are white to pink or crimson, with white pulp ▶▶▶ **Rowan with white, pink or crimson fruit**

Key 4: evergreen trees with leaves arranged alternately, not divided into leaflets

Key 4 – step 1

Leaves have spiny edges ▶▶▶ **go to step 2**

Leaves sometimes have toothed edges but are not spiny ▶▶▶ **go to step 3**

Key 4 – step 2

Leaves are white- or green-felted on the underside; fruit is an acorn; flowers are green, the male flowers are in slender catkins ▶▶▶ **Evergreen oak**

Leaves are paler but hairless on the underside; fruit is a berry; flowers are white and in small clusters ▶▶▶ **Hollies**

Key 4 – step 3

Leaves are aromatic when crushed ▶▶▶ **go to step 4**

Leaves are not aromatic when crushed ▶▶▶ **go to step 5**

Key 4 – step 4

Leaves smell of eucalyptus when crushed, or rarely of lemon, the edges are flat ▶▶▶ **Eucalyptus**

Leaves smell of almonds when crushed; the edges are rolled under ▶▶▶ **Cherry laurel**

Leaves smell of bay when crushed, the edges are wavy ▶▶▶ **Bay**

Key 4 – step 5

Leaves are densely covered with rusty brown or grey hairs on the underside ▶▶▶ **go to step 6**

Leaves are hairless or have white hairs on the underside ▶▶▶ **go to step 7**

Key 4 – step 6

Flowers are on their own ▶▶▶ **Evergreen magnolias**

Flowers are in clusters ▶▶▶ **Rhododendrons**

Key 4 – step 7

Flowers are roughly 1cm long, urn-shaped and in small drooping clusters; the fruit is a warty, matt-red berry ▶▶▶ **Strawberry tree**

Flowers are 3–5.5cm long, bell-shaped and in large rounded clusters; the fruit is a capsule ▶▶▶ **Rhododendrons**

Flowers are 1–1.5cm across and flat, with up to 100 in erect spikes; the fruit is a smooth, shiny black berry ▶▶▶ **Portugal laurel**

Flowers are less than 1cm across, flat and in clusters; the fruit is a red, orange or blue-black berry ▶▶▶ **Cotoneasters**

Key 5: deciduous trees with leaves arranged alternately, not divided into leaflets; fruits fleshy or juicy

Key 5 – step 1

Leaves are fan-shaped with a central notch ▶▶▶ **Maidenhair tree**

Leaves are not fan-shaped ▶▶▶ **go to step 2**

Key 5 – step 2

At least some leaves are lobed ▶▶▶ **go to step 3**

Leaves are undivided, the edges may be toothed but not lobed ▶▶▶ **go to step 6**

Key 5 – step 3

Leaves are palmately lobed, distinctly bristly to the touch on the upper side ▶▶▶ **go to step 4**

Leaves are pinnately lobed, smooth or softly hairy on the upper side ▶▶▶ **go to step 5**

Key 5 – step 4

Some leaves are lobed and all are toothed; the fruit resembles a raspberry, red or purple when ripe ▶▶▶ **Mulberry**

All leaves are lobed; the fruit is pear-shaped and brownish purple when ripe ▶▶▶ **Fig**

Key 5 – step 5

Twigs are thorny ▶▶▶ **Hawthorns**

Twigs are not thorny ▶▶▶ **Whitebeams**

Key 5 – step 6

Leaves are not toothed ▶▶▶ **Cotoneasters**

Leaves are toothed ▶▶▶ **go to step 7**

Key 5 – step 7

Flowers and fruits are in cylinder- or cone-shaped spikes ▶▶▶ **go to step 8**

Flowers and fruits are on their own, in pairs or in clusters ▶▶▶ **go to step 9**

Key 5 – step 8

Flowers are less than 10mm in diameter, the petals are broadly oval; the fruit is smooth at the apex ▶▶▶ **Bird cherries**

Flowers are more than 10mm in diameter, the petals are narrow and strap-shaped; the fruit is crowned with the withered sepals ▶▶▶ **Amelanchier**

Key 5 – step 9

Flowers have 1 style; sepals are absent on the ripe fruit; 1 seed ▶▶▶ **go to step 10**

Flowers have 2 or more styles; sepals are usually present on the ripe fruit; 2 or more seeds ▶▶▶ **go to step 14**

Key 5 – step 10

Twigs are very thorny ▶▶▶ **Blackthorn**

Twigs are not thorny or have only occasional thorns ▶▶▶ **go to step 11**

Key 5 – step 11

Fruit is less than 2cm long; the bark often has distinctive horizontal bands of pores

go to key 7 (page 25)

Fruit is more than 2cm long; the bark doesn't have horizontal bands of pores

go to step 12

Key 5 – step 12

Fruit has a velvety skin, even when fully ripe

Peach and almond

Fruit has a smooth skin, often with a greyish waxy bloom on the skin

go to step 13

Key 5 – step 13

Young twigs are green, smooth and glossy

Cherry plum

Young twigs are brown or grey, dull and often hairy

Plum

Key 5 – step 14

Flowers and fruits in clusters of 11 or more, with their stalks not arising from a central point ▶▶▶ **go to step 15**

Flowers and fruits in clusters of 10 or fewer, with their stalks all arising from a central point ▶▶▶ **go to step 16**

Key 5 – step 15

Twigs are thorny or spiny, sometimes with very few spines ▶▶▶ **Cockspur-thorns**

Twigs are not thorny ▶▶▶ **Whitebeams**

Key 5 – step 16

Fruit is usually pear-shaped, with gritty flesh; styles are not joined together at the base ▶▶▶ **Pears**

Fruit is usually apple-shaped, the flesh is not gritty; styles are joined together at the base ▶▶▶ **go to step 17**

Key 5 – step 17

Fruits less than 4cm long ▶▶▶ **Crab apple**

Fruits more than 4cm long ▶▶▶ **Apples**

Key 6: deciduous trees with leaves arranged alternately, not divided into leaflets; fruits dry

Key 6 – step 1

Leaves are lobed ▶▶▶ **go to step 2**

Leaves are not lobed ▶▶▶ **go to step 6**

Key 6 – step 2

Leaves are square or notched at the tip; the flowers are up to 5cm long and are on their own ▶▶▶ **Tulip tree**

Leaves are rounded or pointed at the tip; the flowers are much smaller, in clusters or catkins ▶▶▶ **go to step 3**

Key 6 – step 3

Leaves are pinnately lobed; the fruit is an acorn ▶▶▶ **Oaks**

Leaves are palmately or irregularly lobed; the fruits form a catkin or globe-shaped head ▶▶▶ **go to step 4**

Key 6 – step 4

Leaves are felted with white or grey hairs on the underside ▶▶▶ **White poplar**

Leaves are smooth or sparsely hairy on the underside ▶▶▶ **go to step 5**

Key 6 – step 5

Bark is flaking in large patches; the fruits form a soft, hairy ball like a pom-pom ▶▶▶ **Plane**

Bark is fissured, not flaking; the fruits form a stiff, spiky ball like the head of a mace ▶▶▶ **Sweet-gum**

Key 6 – step 6

Bark is silver or white ▶▶▶ **go to step 7**

Bark is greyish or brown ▶▶▶ **go to step 8**

Key 6 – step 7

Tree is weeping, the twigs and smaller branches hang loosely; the bark has black, diamond-shaped splits ▶▶▶ **Silver birch**

Tree is not weeping; the bark is often peeling but doesn't have black diamond-shaped splits ▶▶▶ **White or Himalayan birch**

Key 6 – step 8

Leaves are more than 3 times as long as they are wide ▶▶▶ **go to step 9**

Leaves are less than 3 times as long as they are wide ▶▶▶ **go to step 11**

Key 6 – step 9

Leaf edges are coarsely toothed, the teeth end in a softly spiny tip; the seeds are enclosed in a softly spiny husk ▶▶▶ **Sweet chestnut**

Leaf edges are not indented but may have small, fine teeth; the seeds have a plume of silky hairs at one end ▶▶▶ **go to step 10**

Key 6 – step 10

Tree is weeping, the smaller branches hang downwards, often almost to the ground ▶▶▶ **Weeping willow**

Tree is not weeping ▶▶▶ **Willows**

Key 6 – step 11

Fruit is a small, woody cone, they are numerous and stay on the tree until spring ▶▶▶ **Alders**

Fruit is not a woody cone ▶▶▶ **go to step 12**

Key 6 – step 12

Leaf edges aren't indented ▶▶▶ **go to step 13**

Leaf edges are toothed, the teeth may be very small ▶▶▶ **go to step 15**

Leaves are double-toothed ▶▶▶ **go to step 16**

Key 6 – step 13

Leaves are almost circular; flowers are pea-like and found on the trunk and main branches as well as the twigs ▶▶▶ **Judas tree**

Leaves are oval or egg-shaped; flowers aren't pea-like ▶▶▶ **go to step 14**

Key 6 – step 14

Leaves are flat and 15cm or more in length; the flowers have 5 or more large petals that are white or pink; the fruit is cone-like but not woody ▶▶▶ **Magnolias**

Leaves are up to 9cm long with wavy edges; the flowers are greenish and don't have petals; the fruit has a spiny husk ▶▶▶ **Beech**

Key 6 – step 15

Flowers and fruits are in clusters suspended beneath an oblong, wing-shaped bract; the leaves are roughly heart-shaped ▶▶▶ **Limes**

Flowers and fruits are in cylindrical catkins; the leaves are oval to oblong ▶▶▶ **Willows**

Key 6 – step 16

Flowers are in small clusters; the fruit is a seed surrounded by a papery wing ▶▶▶ **Elms**

Flowers are in slender, hanging catkins; the fruit is a nut ▶▶▶ **go to step 17**

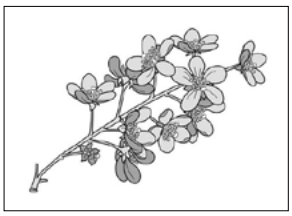
Key 6 – step 17

Leaves hairy on both surfaces; fruits are solitary or in clusters of a few; each nut is wrapped in a leafy sheath ▶▶▶ **Hazels**

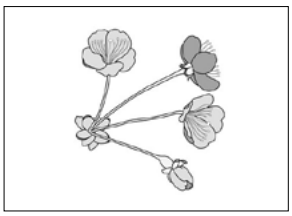
Leaves hairy only on veins on the underside; fruits are in a hanging catkin, paired nuts are attached to a large, 3-lobed, bract ▶▶▶ **Hornbeam**

Key 7: cherry trees

Key 7 – step 1



Flowers or fruits arranged in roughly cylinder-shaped spikes, 11 or more per spike ▶▶▶ **go to step 2**



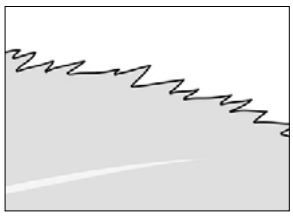
Flowers or fruits on their own or in clusters of 10 or fewer ▶▶▶ **go to step 3**

Key 7 – step 2

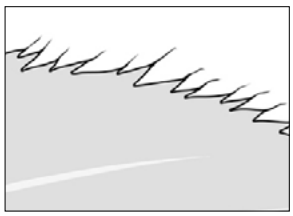
Leaves hairless or with white hairs along midrib, sometimes only where veins join; flowers 10-15mm across ▶▶▶ **Bird cherries**

Leaves have rusty or orange hairs underneath, each side of the midrib; flowers 8mm across ▶▶▶ **Rum cherry**

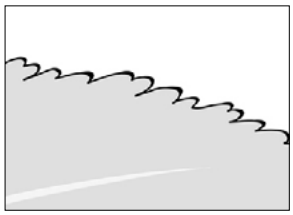
Key 7 – step 3



Flower and leaf stalks densely hairy; leaf edges have pointed teeth ▶▶▶ **go to step 4**



Flower and leaf stalks hairless or almost hairless; leaf edges have pointed teeth, often with thin, bristle-like tips ▶▶▶ **go to step 5**



Flower and leaf stalks hairless; leaf edges have blunt or round teeth, often with a claw-shaped gland at the tip ▶▶▶ **go to step 6**

Key 7 – step 4

Sepal edges are toothed; leaves hairless on the upper side with hairy veins on the underside ▶▶▶ **Spring cherries**

Sepal edges not toothed; leaves hairy on both surfaces ▶▶▶ **Fuji cherry**

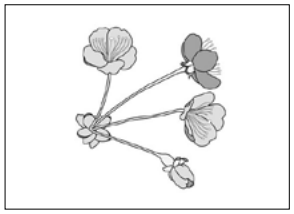
Key 7 – step 5

Bark on trunk and branches very glossy, purplish-brown and peeling in thin, copper-brown strips ▶▶▶ **Tibetan cherry**

Bark mostly dull grey or brown, sometimes peeling to reveal shiny red-brown on the trunk ▶▶▶ **Japanese cherries**

Key 7 – step 6

Flowers less than 20mm across, on stalks up to 15mm long, not arising from a central point; fruit less than 10mm long ▶▶▶ **St Lucie cherries**



Flowers more than 20mm across, on stalks more than 15mm long, arising from a central point; fruit more than 10mm long ▶▶▶ **go to step 7**

Key 7 – step 7

Flowers cup-shaped; leaves dull on the upper side, sparsely hairy on the underside ▶▶▶ **Wild cherry**

Flowers saucer-shaped; leaves glossy on the upper side, hairless on the underside ▶▶▶ **Morello cherry**

Image credits

Master Key: Types of tree found in gardens and urban areas

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Key 1: Trees with leaves that are needle-like or scale-like

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Key 2: Trees with broad leaves, arranged opposite each other in pairs

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Key 3: Trees with leaves arranged alternately, divided into separate leaflets

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Key 4: Evergreen trees with leaves arranged alternately, not divided into leaflets

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Key 5: Deciduous trees with leaves arranged alternately, not divided into leaflets; fruits fleshy or juicy

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Key 6: Deciduous trees with leaves arranged alternately, not divided into leaflets; fruits dry

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