Styracaceae R.Br.

Alniphyllum Matsum.
Halesia J.Ellis ex L.
Huodendron Rehder
Melliodendron Hand.-Mazz.
Perkinsiodendron P.W.Fritsch
Pterostyrax Siebold & Zucc.
Rehderodendron Hu
Sinojackia Hu
Styrax L.

VEGETATIVE KEY TO SPECIES IN CULTIVATION

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Vegetative identification key.

Introduction:

This key is based on vegetative characteristics, and therefore also of use when flowers and fruits are absent.

- Use a 10× hand lens to check pubescence, bud scales, teeth and venation pattern in general.
- Start counting veins at base of the top leaves lamina with first clearly ascending secondary vein, do not include intercalary veins, nor these ending in the apex.
- Look at the entire plant. Avoid young specimens, shade- and strong shoots as these give an atypical view.
- Beware of hybridisation, especially with plants raised from seed other than wild origin.

Taxa treated in this key: see page 6.

Taxa referred to synonymy in this key: see page 6.

Questionable/frequently misapplied names: see page 6.

References:

- JDL herbarium
- living specimens, in various arboreta, botanic gardens and collections
- literature:

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KEY TO GENERA

01 a **Bud with several imbricate scales of different length. genera *Halesia*, *Melliodendron, Perkinsiodendron* and *Rehderodendron*:** ..... **see page 3**

b **Bud different.** **02**

02 a **Lamina margin entire to serrulate with mucronulate teeth, apices NOT glandular (10× LENS). genus *Huodendron*:** ..... **see page 3**

b **Lamina margin different, teeth apices often glandular (10× LENS).** **03**

03 a **Lamina LS rather glossy, tertiary and quaternary vein pattern predominantly poorly visible (10× LENS). genus *Sinojackia*:** ..... **see page 3**

b **Lamina LS rather dull, tertiary and quaternary vein pattern always quite visible (10× LENS).** **04**

04 a **Lamina margin scattered with clearly protruding veinlets/stalked hydathodes up to +/- 1mm, the glandular apices often curved (10× LENS). genus *Pterostyrax*:** ..... **see page 3**

b **Lamina margin different (10× LENS).** **05**

05 a **Lamina margin entire. genus *Styrax* - A:** ..... **see page 4**

b **Lamina margin different.** **06**

06 a **Buds of 2 top leaves hidden by petiole base. genus *Styrax* - B:** ..... **see page 4**

b **Buds of 2 top leaves not hidden.** **07**

07 a **Lamina LS greyish. genus *Styrax* - C:** ..... **see page 4**

b **Lamina LS greenish.** **08**

08 a **Top leaves with lamina base narrowly cuneate to cuneate. genera *Alniphyllum* and *Styrax* - D:** ..... **see page 5**

b **Top leaves with lamina base broadly cuneate to rounded. genus *Styrax* - E:** ... **see page 5**

genera *Halesia*, *Melliodendron, Perkinsiodendron* and *Rehderodendron*

01 a Lamina L/W predominantly 2/1-3/1(-4/1**).** **02**

b Lamina L/W predominantly ≤2/1. ..... **04**

02 a Lamina LS at least on venation stellate pubescent. ..... ***Rehderodendron macrocarpum***

b Lamina LS glabrous. **03**

03 a Lamina LS secondary veins 10-18/side. ..... ***Rehderodendron kwangtungense***

b Lamina LS secondary veins ≤13/side. ..... ***Perkinsiodendron macgregorii***

04 a Petiole ≤10 mm. **05**

b Petiole 10-25 mm. **06**

05 a Lamina LS glabrous or stellate pubescent on venation. ..... ***Melliodendron xylocarpum***

b Lamina LS stellate pubescent on surface. ..... ***Rehderodendron kweichowense***

06 a Lamina margin minutely serrulate with 20-40 closely placed teeth/side. .. ***Halesia carolina***

b Lamina margin sinuately serrulate with <15 distantly placed teeth/side. .... ***Halesia diptera***

genus *Huodendron*

Lamina length/width >3/1. ..... ***Huodendron biaristatum***

Lamina length/width <3/1. ..... ***Huodendron tibeticum***

genus *Sinojackia*

Fruit ovoid. ..... ***Sinojackia xylocarpa***

Fruit cylindrical. ..... ***Sinojackia rehderiana***

genus *Pterostyrax*

01 a Lamina at least in part of the leaves tridentate/tri-lobed at apex. ***Pterostyrax psilophyllus***

b Lamina different. **02**

02 a Lamina predominantly elliptic (rarely ovate or obovate). ..... ***Pterostyrax hispidus***

b Lamina predominantly obovate or elliptic to obovate. ..... ***Pterostyrax corymbosus***

genus *Styrax* - A
Lamina margin entire.

Shoot densely stellate pubescent (10× LENS). ..... ***Styrax officinalis***

Shoot glabrous to sparsely stellate pubescent (10× LENS). ... ***Styrax platanifolius*** subsp. ***texanus***

genus *Styrax* - B
Buds of 2 top leaves hidden by petiole base.

Lamina always longer than wide, top leaves with midvein length 10-20 cm. ..... ***Styrax obassia***

Lamina in part of top leaves wider than long, midvein length <10 cm. ..... ***Styrax shiraianus***

genus *Styrax* - C
Lamina LS greyish.

01 a Lamina midvein length predominantly <4 cm. ..... ***Styrax wilsonii***

b Lamina midvein length predominantly >4 cm. **02**

02 a Lamina L/W >2/1. ..... **03**

b Lamina L/W predominantly <2/1. ..... **04**

03 a Petiole rather short, <5 mm. ..... ***Styrax serrulatus***

b Petiole longer 6-10 mm. ..... ***Styrax suberifolius***

04 a Lamina base cuneate. **05**

b Lamina base broadly cuneate to rounded. **06**

05 a Lamina midvein length predominantly <10 cm. Petiole 3-7 mm. ..... ***Styrax pulverulentus***

b Lamina midvein length 5-18 cm. Petiole 10-15 mm. ..... ***Styrax tonkinensis***

06 a Lamina LS secondary veins 3-6/side. ..... ***Styrax limprichtii***

b Lamina LS secondary veins 5-8/side. ..... ***Styrax perkinsiae***

genera *Alnyphyllum* and *Styrax* - D
Lamina LS green, base narrowly cuneate to cuneate.

01 a Petiole US and adjoining basal part midvein purplish red. ..... ***Styrax odoratissimus***

b Petiole US greenish. **02**

02 a Lamina LS secondary veins 7-14/side. ..... ***Alniphyllum fortunei***

b Lamina LS secondary veins ≤10/side. **03**

03 a Lamina apex acuminate to caudate. **04**

b Lamina apex acute to short acuminate. **05**

04 a Lamina L/W predominantly 2/1, secondary veins 5-7/side. ..... ***Styrax japonicus***

b Lamina L/W 2/1-3/1, secondary veins 3-5/side. ..... ***Styrax formosanus***

05 a Petiole rather long 4-12 mm. ..... ***Styrax grandifolius***

b Petiole rather short 1-6 mm. **06**

06 a Petiole 1-3 mm. ..... ***Styrax confusus***

b Petiole 3-6 mm. ..... ***Styrax americanus***

genus Styrax - E
Lamina LS green, base broadly cuneate to rounded.

01 a Petiole rather long 7-15 mm. **02**

b Petiole rather short 2-7 mm. **05**

02 a Basal leaves often (sub-)opposite. ..... ***Styrax hemsleyanus***

b Basal leaves always alternate. **03**

03 a Lamina LS largest secondary vein axils with membranous domatia (10× LENS). ..... ***Styrax hookeri***

b Lamina LS vein axils without such domatia (10× LENS). **04**

04 a Lamina LS pubescent with +/- scale-like short armed stellate hairs (10× LENS). ..... ***Styrax glabrescens***

b Lamina LS pubescent with long armed stellate hairs (10× LENS). ..... ***Styrax grandifolius***

05 a Lamina largest width towards base. ..... ***Styrax faberi***

b Lamina largest width in the middle. **06**

06 a Lamina margin predominantly entire to scattered with minute dot-like hydathodes +/- 0,1 mm (10 × LENS). Current year shoot densely stellate pubescent (10× LENS). ..... ***Styrax confusus***

b Lamina margin predominantly +/- regularly denticulate with minute teeth +/- 1mm (10× LENS). Current year shoot sparsely stellate pubescent to glabrescent (10× LENS). **07**

07 a Lamina LS rather greyish-green. Fruit cylindrical. ..... ***Styrax serrulatus***

b Lamina LS green. Fruit globoid-ovoid. ..... ***Styrax dasyanthus***

Taxa treated in this identification key.

Alniphyllum fortunei

Halesia carolina
Halesia diptera

Huodendron biaristatum
Huodendron tibeticum

Melliodendron xylocarpum

Perkinsiodendron macgregorii

Pterostyrax corymbosus
Pterostyrax hispidus
Pterostyrax psillophyllus

Rehderodendron gongshanense
Rehderodendron kwangtungense
Rehderodendron kweichowense
Rehderodendron macrocarpum

Sinojackia rehderiana
Sinojackia xylocarpa

Styrax americanus
Styrax confusus
Styrax dasyanthus
Styrax faberi
Styrax formosanus
Styrax glabrescens
Styrax grandifolius
Styrax hemsleyanus
Styrax hookeri
Styrax japonicus
Styrax limprichtii
Styrax obassia
Styrax odoratissimus
Styrax officinalis
Styrax perkinsiae
Styrax platanifolius subsp. ***texanus***
Styrax pulverulentus
Styrax serrulatus
Styrax shiraianus
Styrax suberifolius
Styrax tonkinensis
Styrax wilsonii

Taxa referred to synonymy in this identification key.

Halesia monticola = H. carolina
Halesia tetraptera = H. carolina
Styrax americanus subsp. ***pulverulentus = S. pulverulentus***

Questionable/frequently misapplied names.

Melliodendron xylocarpum Hort. **= *Pterostyrax corymbosus***

Sinojackia rehderiana and ***S.xylocarpa*** as well as ***Styrax dasyanthus*** and ***S.serrulatus*** in collections are poorly distinguishable from each other in the absence of flowers and fruits.

For the time being: ***Styrax chinensis***, ***S.grandiflorus***, ***S.huanus*** and ***S.wuyuanensis*** are not included here. Studied material in collections differs markedly from herbarium specimens at RBGE and RBGK and does not match the descriptions in literature either.