



Styracaceae R.Br.

Alniphyllum Matsum.

Halesia J.Ellis ex L.

Huodendron Rehder

Meliiodendron Hand.-Mazz.

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 10x 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* 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* and *Rehderodendron*

- 01 a Lamina L/W predominantly 2/1-3/1(-4/1). 02
 - b Lamina L/W predominantly $\leq 2/1$ 05
- 02 a Lamina LS at least on venation stellate pubescent. 03
 - b Lamina LS glabrous. 04
- 03 a Lamina LS stellate pubescence restricted to venation. *Rehderodendron macrocarpum*
 - b Lamina LS stellate pubescence scattered over surface. . *Rehderodendron gongshanense*
- 04 a Lamina LS secondary veins 10-18/side. *Rehderodendron kwangtungense*
 - b Lamina LS secondary veins ≤ 13 /side. *Halesia macgregorii*
- 05 a Petiole ≤ 10 mm. 06
 - b Petiole 10-25 mm. 07
- 06 a Lamina LS glabrous or stellate pubescent on venation. *Melliodendron xylocarpum*
 - b Lamina LS stellate pubescent on surface. *Rehderodendron kweichowense*
- 07 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. *Alnyphyllum 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 \times LENS).
..... *Styrax hookeri*
- b Lamina LS vein axils without such domatia (10 \times LENS). 04
- 04 a Lamina LS pubescent with +/- scale-like short armed stellate hairs (10 \times LENS).
..... *Styrax glabrescens*
- b Lamina LS pubescent with long armed stellate hairs (10 \times 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.

<i>Alniphyllum fortunei</i>	<i>Styrax americanus</i>
<i>Halesia carolina</i>	<i>Styrax confusus</i>
<i>Halesia diptera</i>	<i>Styrax dasyanthus</i>
<i>Halesia macgregorii</i>	<i>Styrax faberi</i>
<i>Huodendron biaristatum</i>	<i>Styrax formosanus</i>
<i>Huodendron tibeticum</i>	<i>Styrax glabrescens</i>
<i>Meliiodendron xylocarpum</i>	<i>Styrax grandifolius</i>
<i>Pterostyrax corymbosus</i>	<i>Styrax hemsleyanus</i>
<i>Pterostyrax hispidus</i>	<i>Styrax hookeri</i>
<i>Pterostyrax psillophyllus</i>	<i>Styrax japonicus</i>
<i>Rehderodendron gongshanense</i>	<i>Styrax limprichtii</i>
<i>Rehderodendron kwangtungense</i>	<i>Styrax obassia</i>
<i>Rehderodendron kweichowense</i>	<i>Styrax odoratissimus</i>
<i>Rehderodendron macrocarpum</i>	<i>Styrax officinalis</i>
<i>Sinojackia rehderiana</i>	<i>Styrax perkinsiae</i>
<i>Sinojackia xylocarpa</i>	<i>Styrax platanifolius</i> subsp. <i>texanus</i>
	<i>Styrax pulverulentus</i>
	<i>Styrax serrulatus</i>
	<i>Styrax shiraianus</i>
	<i>Styrax suberifolius</i>
	<i>Styrax tonkinensis</i>
	<i>Styrax wilsonii</i>

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.

Meliiodendron 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.

