



Photograph: Rick Darke

# *Halesia* in cultivation

RICK DARKE surveys a small genus of spring-flowering trees valued for their pure white, bell-shaped flowers

*Halesia diptera* var. *magniflora* flowering in May in a Pennsylvania garden. All species typically form large shrubs or small, multi-stemmed trees in cultivation in the UK. The blue-flowered plants are *Amsonia hubrichtii*

SILVERBELLS or snowdrop trees, as *Halesia* species are variously known, belong to a small genus of superficially similar members. The best among them rival the precocious flowering Asiatic magnolias for sheer magnificence of spring display, and most are attractive choices for gardens of all sizes.

Of the four species generally recognised, three are from eastern North America: *Halesia tetraptera* (Carolina silverbell), *Halesia carolina* (little silverbell) and *Halesia diptera* (two-winged silverbell); and one is from China: *Halesia macgregorii*.

All are deciduous trees or shrubs, ranging in height from under 3m to over 30m in the wild. Snow-white or pink-suffused flowers are produced in spring, mostly or entirely before the leaves. Suspended on slender stalks from axillary buds of the preceding year, the bell-like blossoms are arranged in clusters or short racemes. Following the flowers, the conspicuously attractive winged fruits are bright green at first, maturing to light tan or dark red-brown by late autumn and remaining through much of the winter season. The foliage typically turns a clear golden yellow in autumn, especially in warmer temperate regions with distinct seasons.

Belonging to the snowbell family, *Styracaceae*, silverbells are close relatives of *Styrax*, *Pterostyrax*, *Rebderodendron* and *Sinojackia*.

## Origin of name

I prefer the pronunciation hAles-ia as the commonly heard hal-E-sia obscures the origin of the name, coined by Linnaeus to honour Dr ►

**GENUS PROFILE**

Stephen Hales (1677–1761), a chemist and physiologist of Teddington, near London. Hales actually had nothing directly to do with silverbells. His friend John Ellis (1705–1770), a London merchant, gardener and botanist, sent Linnaeus a description, illustration, and specimens obtained from Dr Alexander Garden of Charlestown, South Carolina, and asked him to adopt the commemorative name *Halesia*. Linnaeus did so, crediting Ellis, and for this reason, the genus is cited in botanical works as *Halesia* Ellis ex Linnaeus.

**Confused species**

There has been considerable confusion over the correct application of the names *H. carolina*, *H. parviflora* and *H. tetraptera*. What is now correctly known as *H. tetraptera* var. *tetraptera* is the most widely distributed species in Western gardens, but it has suffered considerable nomenclatural confusion dating back to the time of Linnaeus and Ellis. Linnaeus first applied the name *Halesia carolina* to this species based upon Ellis' specimens. However, Reveal & Seldin (1976), established that the



The flowers of *Halesia diptera* var. *magniflora*, shown here, are larger than those of *Halesia diptera* var. *diptera* but both varieties show the distinctive corolla deeply divided into four lobes

specimens were actually of the little silverbell, a coastal species known until recently as *Halesia parviflora*. This discovery required that the name *Halesia carolina* be used for the little silverbell, and that the next

oldest validly published name, *Halesia tetraptera*, be used for the true Carolina silverbell.

***Halesia tetraptera* var. *tetraptera***

(syn. *Halesia carolina* misapplied)  
The Carolina silverbell ranges from Virginia, and West Virginia to southern Ohio and Illinois and south through the Carolinas to Florida and Texas, occurring on slopes with a moderate supply of moisture, along creek banks and valley bottoms, and in forests and forest edges. It can be a prolific self-sower on disturbed, sunny sites within its natural range. In US and UK gardens it is the most readily available species.

The flowers are truly bell-like, with the petals mostly united and are often light green or slightly pink-suffused in bud, opening to bright white. They appear before the leaves,

**KEY TO THE NORTH AMERICAN SPECIES OF *HALESIA***

- 1a Petals mostly fused, forming a tube distinctly longer than the lobes; fruits narrow to broad, mostly 4-winged; leaves elliptic to oblong-ovate 2
- 1b Petals appearing separate, the corolla united only at the base with lobes distinctly longer than the tube; fruits broad, mostly 2-winged; leaves broad, ovate to orbicular 4
- 2a Corolla 7–12mm long; stamens exserted; style exserted 1/3 to 1/2 its length; fruits narrowly winged *H. carolina*
- 2b Corolla 12–30mm long; stamens included; style included or exserted; fruits broadly winged 3
- 3a Corolla 12–20mm long; a shrub or small tree less than 10m in height *H. tetraptera* var. *tetraptera*
- 3b Corolla 18–30mm long; a large tree to 35m in height *H. tetraptera* var. *monticola*
- 4a Corolla 10–15mm long *H. diptera* var. *diptera*
- 4b Corolla 20–30mm long *H. diptera* var. *magniflora*



*Halesia tetraptera* var. *monticola*, shown here, differs from *H. tetraptera* var. *tetraptera* in its larger flowers and greater height. It is also found at higher altitudes in the wild. However, botanists argue that this variation is continuous in the wild and separation as a distinct variety is not justified

in late March to early May depending upon location in the US, but usually May in the UK. The flowers last up to two weeks if spring temperatures remain cool, and then the still-white bells drop neatly, creating a snow-like effect on the ground below. Flower size varies considerably among seedlings, with corollas up to 20mm long on showier specimens. Distinctly four-winged fruits are conspicuous by mid-summer. Translucent, bright green at first, they mature and dry to a rich red-brown by late autumn and remain suspended from branches long into winter, often beautifully silhouetted by sunsets and sunrises.

The bark on young trees and branches is a smooth gray with conspicuous, vertical silver-gray markings. Older bark develops an attractive pattern of grey ridges contrasting with white-sided furrows. Though this species

sometimes attains a height of 10m in the US, it is inclined toward a multi-stemmed habit and most commonly forms a rounded small tree or large shrub 4–8m in height. It is hardy in the UK but in the colder parts of the US more account needs to be taken of provenance. However, Carolina silverbells are generally hardy through USDA zone 5 and into zone 4.

The cultivar 'Meehanii' arose as a seedling, probably from *H. tetraptera* var. *tetraptera*. It forms a rounded shrub to 3m in height, with small but relatively profuse white flowers. Selections with variegated leaves are occasionally encountered and sometimes offered as 'Variegata'; however none to date possess strong, clear variegation and they are of minor horticultural value. The most garden-worthy cultivars strive to enhance the plant's natural beauty, offering good form and larger, snow-

white flowers. *Halesia tetraptera* Wedding Bells ('UConn Wedding Bells'), is a good example, discovered in Ohio by Mark Brand of the University of Connecticut and introduced through the University.

***Halesia tetraptera* var. *monticola***

(syn. *Halesia monticola*)

The mountain silverbell is capable of reaching over 30m in height in the US but in the UK it forms a small tree. Distinct examples of the mountain silverbell are upright, typically single-trunked trees with flowers one and a half times the size of the Carolina silverbell. The corollas are often 30mm long. In early spring, while the stems are still nearly leafless, the appearance of the typically snow-white blossoms of mountain silverbell is one of the most graceful events in the deciduous forest. When walking

under great mountain silverbell trees in their Smoky Mountain habitats the first clue to their presence is often a skirt of white bells decorating the forest floor. The natural range of the mountain variety is relatively limited, occurring on moist to wet ridges and remote forest coves at elevations of 1,000m and above in eastern Tennessee and western North Carolina.

In cultivation, unless the origin of plants is known, it can be difficult or impossible to distinguish young *H. tetraptera* var. *monticola* from larger-flowered individuals of var. *tetraptera*. There is considerable taxonomic opinion that the mountain silverbell represents only one extreme of a continuously variable species, and should not be segregated as a botanical variety. But from a gardener's perspective, the mountain silverbell is a very real entity with considerably different use in the designed landscape. The floral display is usually much more spectacular, and the greater architectural presence of mountain silverbells can be employed in large-scale spatial organisation of the garden. Mountain silverbell is hardy in the UK and through USDA zone 5, and well-sited trees can live for more than a century.

A number of cultivars have been selected but most are uncommon in cultivation due to the relative difficulty of propagation from cuttings. Among the pink-flowered types, *H. tetraptera* var. *monticola* 'Arnold Pink' is probably the most reliable and yet its flowers are only pink-suffused and not a strong clear pink. Plants sold as *H. tetraptera* var. *monticola* 'Rosea' do not represent one clonal selection but rather a number of variants with a tendency toward pink blooms. The pink colour is most pronounced and effective in years when cool spring



On older specimens, the bark of *Halesia tetraptera* (var. *monticola*, left) is greyish-brown with prominent ridges but in *Halesia diptera* (var. *magniflora*, right) it is reddish-brown flaking into small scales

temperatures are prolonged, and in climates with naturally cool spring weather. 'Vestita' is often listed as *H. monticola* var. *vestita*, but as a combination under *H. tetraptera* probably doesn't exist, it is perhaps best treated as a cultivar. It is noted for its upright form and especially pubescent foliage.

***Halesia carolina***  
(syn. *Halesia parviflora*)

The little silverbell is a rare species ranging from coastal South Carolina south to the Florida panhandle and west into southern Mississippi. The corollas of the bell-like flowers are only 7–12mm long but distinctive on account of the exerted stamens, and the fruits are narrowly 4-winged. It forms a rounded shrub typically less than 4m in height.

It is uncommon in cultivation, in part due to its natural rarity and part due to its smaller flowers. It is less cold-hardy than most silverbells, reliable only to USDA zone 6.

***Halesia diptera* var. *diptera***

The two winged silverbell is easily distinguished from other species both by the the two-winged fruit and the flowers, which, though still

pendulous and vaguely bell-like, have nearly separate petals that are united only at the base, much like those of *Styrax*. It usually blooms 7 to 10 days later in spring than *H. tetraptera*, making it possible to have a flowering succession lasting nearly a month if trees are mixed in plantings. The leaves are also distinctive, being much rounder (nearly orbicular) than those of *H. tetraptera*. The broadly two-winged fruits are chartreuse and translucent at first, maturing to a light tan and remaining suspended from branches well into winter. It is taller than *H. tetraptera* var. *tetraptera* but shorter than var. *monticola*, growing 10 to 15m tall with rounded form in the US. In the UK it generally forms a shrub. The bark is not as deeply furrowed as *H. tetraptera* and is more evenly dark brown in colour. Autumn foliage turns a pleasing golden yellow. Two-winged silverbell is hardy in the UK and through USDA zone 5.

Two-winged silverbell ranges naturally from southern South Carolina south to the Florida panhandle and west to Alabama, Arkansas, and east Texas, growing mostly in moist habitats including river and stream floodplains and



*Halesia tetraptera* has 4-winged fruits up to 6cm long which can make an attractive winter feature

adjacent slopes. The typical variety is an attractive garden plant; however the flowering is sometimes sparse, particularly in the UK, and may be slightly obscured by expanding foliage. *Halesia diptera* var. *magniflora* is significantly more dramatic in bloom.

#### ***Halesia diptera* var. *magniflora***

The large-flowered two-winged silverbell is certainly the most spectacular silverbell in bloom, and is arguably the showiest member of all the *Styracaceae*. Though not all taxonomists consider it worthy of varietal status, from a horticultural perspective it is quite distinct, with flowers up to twice as large as the typical variety. It was named from

plants that occur naturally only in southwest Georgia, the Florida panhandle, and southeastern Alabama in moderately moist woodlands on bluffs, ravines, and upland sites. It is also capable of attaining 10 to 15 meters in height, and is proving quite drought tolerant in cultivation, perhaps owing to its drier upland origin.

The snow-white flowers are produced in profusion before the leaves, and mature trees in bloom appear as white clouds. This tree is hardy in the UK and has proved reliably hardy in USDA zone 6 and is probably hardy in zone 5. Although significant specimens have existed for years in a few public gardens and nurseries in the the UK, the US and continental Europe, this spectacular tree is only now becoming more available commercially, due to increasing notoriety and success with seed and cutting propagation.

#### ***Halesia macgregorii***

The Chinese silverbell is virtually unknown in Western gardens. It occurs naturally on moist, forested slopes and at woodland edges at low mountain elevations of 700–1,200m in Fukien, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, and Zhejiang. An upright tree to 24m in height, it has relatively small white flowers with lobed, tubular corollas to 15mm long.

#### **Cultivation and propagation**

*Halesia* are relatively drought tolerant once established, but require a slightly acid, moisture-retentive, rich organic soil for optimum growth. They need a position in full sun or part shade and shelter from wind. In the UK, as with many woody plants introduced from the east coast of North America, *Halesia* flower better and grow more vigorously if

subject to high summer temperatures.

*Halesia* are difficult to transplant when large but small trees re-establish readily when moved in late winter or early spring.

All silverbells are relatively disease free. However, individual stems of *H. tetraptera* var. *tetraptera* often become senescent after 20 or more years, and are naturally replaced by new shoots from the base. This tendency can be used to good effect in smaller garden spaces where a tree of modest size is required. New shoots are readily produced when older stems are culled.

Seeds require cold stratification for 60–90 days, and seeds planted in the ground often take two years to germinate. Seedlings often begin blooming in their third or fourth year. Propagation by softwood cuttings is also viable.

#### **Conclusion**

Though the typical Carolina silverbell, *Halesia tetraptera*, is deservedly popular for its springtime display, the variation amongst and within the other *Halesia* species is worthy of further attention. They promise considerable multi-season appeal for gardens great and small. In particular, the greater architectural presence of the mountain silverbell, *H. tetraptera* var. *monticola*, can be employed in large-scale spatial organisation of the garden.

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#### REFERENCE

Reveal, JL & Seldin, MJ (1976) On the identity of *Halesia carolina* L. (*Styracaceae*). *Taxon* 25(1): 123-140