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ZSOLT DEBREZCY is Research Director of the International Dendrological Research Institute, Inc. in Boston, Massachusetts, USA, a position he has held since 1990. He holds a Ph.D. in biology and in his career as curator of the herbariological collection at the Botanical Department of the Natural History Museum in Budapest, Hungary.
**ILEX PURPUREA**

**Chinese Holly**

The Chinese Holly is a fast-growing, conical, evergreen tree, sometimes multistemmed or a large shrub, flowering in spring or summer. Its purple flowers are very unusual in the genus as other hollies usually have white or greenish flowers. The bright red fruits persist on the tree for a long time during winter. These, together with the brightly colored young foliage, make it a popular tree in regions where it can be grown, such as the southeastern United States. Various parts of the plant are important medicinally in China, and it is one of the 50 fundamental herbs of traditional Chinese medicine, used to treat a variety of ailments. The name *Ilex chinensis* has been and sometimes still is incorrectly used for this species.

**SIMILAR SPECIES**

The shallowly toothed leaves could be confused with other, mainly subtropical species, but the purple flowers easily distinguish the Chinese Holly.

The leaves of the Chinese Holly are ovate to elliptic, and up to 4 in (10 cm) long and 2 in (5 cm) across. They emerge bright purple-pink when young, maturing to glossy dark green above and pale green beneath. The margins are very shallowly toothed, not spiny, tapering to a slender point at the tip, and with a petiole to about ½ in (1 cm) long.

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**ARALIA ELATA**

**Japanese Angelica Tree**

The Japanese Angelica Tree is a small deciduous tree of spreading habit with slightly spiny shoots. It flowers in late summer and fall. Although it can be a tree it frequently spreads by suckers, forming thickets. The young shoots are eaten in the Far East, and the root bark is used medicinally. It is a popular ornamental, grown for its fruit and fall color, and there are several forms with variegated leaves.

**SIMILAR SPECIES**

The North America Devil’s Walking Stick (*Aralia spinosa*) is similar but more shrubby and more spiny. Its inflorescences are conical with a single main axis while those of *A. elata* have several spreading branches from the base.

The leaves of the Japanese Angelica Tree are very large, 3 ft (1 m) or more long and 2.3 ft (60 cm) across. Each leaf has several pairs of opposite pinnae, each with a single leaflet at its base. The pinnae have up to 11 ovate leaflets up to about 4½ in (12 cm) long; they are base-pointed at the tip with a toothed margin and a very short stalk. They are dark green above, grayish with hairs and sometimes spiny on the veins. They turn yellow, orange, red, and purple in fall.
The Elder is a broadly columnar to spreading, small tree, more often shrubby, with stout shoots dotted with numerous pale lenticels, producing its fragrant white flowers in early summer. Both flowers and fruits are used to make wine and other drinks although the fruits can be poisonous unless cooked. The fruits, which are very attractive to birds, are also used in various preserves. Small extrafloral nectaries at the base of the leaves and leaflets are thought to provide food for beneficial insects.

**SIMILAR SPECIES**

Other species in this genus are rarely trees, some are herbaceous. The American elderberry, *Sambucus nigra* subsp. *canadensis*, is more shrubby with more leaflets, occurring south to Mexico, where it has been called *S. mexicana*. *S. nigra* subsp. *cerulea*, from western North America, has blue-white fruits.

**SAMBUCUS NIGRA**

*ELDER*

*LINNAEUS*

**LEAF TYPE**

Pinnate

**LEAF SHAPE**

Oblong in outline

**LEAF SIZE**

12 in (30 cm) long and are dark green above and paler beneath. They are composed of usually 5 or 7 short-stalked leaflets that are oval to elliptic and up to 4 in (10 cm) long, each edged with small, pointed teeth. Some forms grown in gardens have purple or deeply and finely-cut leaves.

**ARRANGEMENT**

Opposite

**BARK**

Gray-brown, deeply ridged, thick and corky

**FLOWERS**

Small and creamy white, the corolla 5-lobed, in broad, flattened heads

**FRUIT**

A glossy black, juicy berry

**DISTRIBUTION**

Europe, North Africa, West Asia

**HABITAT**

Woodland, hedgerows

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Liquidambar acalycina is a fast-growing deciduous tree of conical to columnar habit, producing its small flowers in spring. In recent years it has proved to be a popular ornamental tree in Europe and North America for its young foliage that is attractively flushed with red-purple. The genus was until recently included in the same family as the witch hazels (Hamamelidaceae).

**SIMILAR SPECIES**

With its three-lobed leaves this species is closest to *L. formosana* from which it can be distinguished by its shorter stalked leaves and fewer capsules in the fruit cluster. The foliage of this and other species in the genus is sometimes confused with that of maples (*Acer*) but can be recognized by the alternate leaves.

**LIQUIDAMBAR ACALYCINA**

*LIQUIDAMBAR ACALYCINA*

*H.T. CHANG*

**LEAF TYPE**

Pinnately lobed

**LEAF SHAPE**

Round to ovate

**LEAF SIZE**

1½ x 6 in (31 x 15 cm)

**ARRANGEMENT**

Alternate

**STEM**

Rounded leaves

**FLOWERS**

Individually inconspicuous, greenish, without petals or males and females in separate spherical heads on the same plant

**FRUIT**

A spherical cluster of up to 26 small, woody capsules

**DISTRIBUTION**

Central and south China

**HABITAT**

Mixed mountain forests.

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The leaves of the Liquidambar acalycina are up to 5 in (12 cm) long and 6 in (15 cm) across. They are pale green to red-purple when young, becoming dark green above and paler beneath, often turning orange to red and purple in fall. They are divided into 3 triangular lobes that are edged with small glandular teeth and end in a tapered point. They are borne on a petiole up to 3½ in (9 cm) long.
The Elder is a broadly columnar to spreading, small tree, more often shrubby, with stout shoots dotted with numerous pale lenticels, producing its fragrant white flowers in early summer. Both flowers and fruits are used to make wine and other drinks although the fruits can be poisonous unless cooked. The fruits, which are very attractive to birds, are also used in various preserves. Small extrafloral nectaries at the base of the leaves and leaflets are thought to provide food for beneficial insects.

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Other species in this genus are rarely trees, some are herbaceous. The American elderberry, *Sambucus nigra* subsp. *canadensis*, is more shrubby with more leaflets, occurring south to Mexico, where it has been called *S. mexicana. S. nigra* subsp. *cerulca*, from western North America, has blue-white fruits.

**The leaves of the Elder** are up to 12 in (30 cm) long and are dark green above and paler beneath. They are composed of usually 5 or 7 short-stalked leaflets that are ovate to elliptic and up to 4 in (10 cm) long, each edged with small, pointed teeth. Some forms grown in gardens have purple or deep red and finely cut leaves.

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**The leaves of the Liquidambar** acalycina are up to 5 in (13 cm) long and 6 in (15 cm) across. They are pale green to red-purple when young, becoming dark green above and paler beneath, often turning orange to red and purple in fall. They are divided into 3 triangular lobes that are edged with small glandular teeth and end in a tapered point. They are borne on a petiole up to 3½ in (8 cm) long.
The Tarajo is a conical to columnar, evergreen tree of dense habit, bearing its fragrant flowers in spring. Its bold foliage has made it valuable for plant breeding, and many hybrids have been raised from it. In China the young leaves are used to make a bitter tea. In Japan, where it is often planted near shrines or temples, the wood is used for charcoal.

SIMILAR SPECIES
The Tarajo is usually a very distinct species because of the large size of its leaves. It can be confused with some of its hybrids, which normally have smaller leaves with fewer spines.

The leaves of the Tarajo are oblong and up to 8 in (20 cm) long and 3½ in (8 cm) across. Glossy dark green above, pale green beneath, the leaves are borne on a stalk to 1 in (2.5 cm) long and are edged with numerous black-tipped teeth. They are among the largest leaves of any holly.

While the best-known hollies are the evergreen members of the genus, there are also those that are deciduous, and *Ilex macrocarpa* is one of the most unusual of these. The glossy black, cherrylike fruits are among the largest of any holly. In China they form an important part of the diet for the catlike palm civets, which are thought to aid in their dispersal. This very distinct and unusual species was introduced to gardens from China by plant collector Ernest Wilson in 1907. Although rare in cultivation, it is a striking tree when bearing its glossy black fruits.

SIMILAR SPECIES
The deciduous habit and large black fruits are characteristic of *I. macrocarpa*. It is more likely not to be recognized as a holly than to be confused with another plant in the same genus.

The leaves of *Ilex macrocarpa* are ovate to elliptic, and up to 4½ in (12 cm) or more long and 2 in (5 cm) across. They are smooth or nearly so on both sides, with a shallowly toothed margin and a taper-pointed tip. Borne on a petiole of about ½ in (1 cm) long, they are dark green above, paler beneath, turning yellow in fall when the fruit is ripe.
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**ILEX MACROCARPA**

**TARAGO**

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Of all our childhood memories, few are quite as thrilling, or as tactile, as those of climbing trees. Scampering up the rough trunk, spying on the world from the cool green shelter of the canopy, lying on a limb and looking up through the leaves at the summer sun almost made it seem as if we were made for trees, and trees for us.

Even in adulthood, trees retain their power, from the refreshing way their waves of green break the monotony of a cityscape to the way their autumn transformations take our breath away. In this lavishly illustrated volume, the trees that have enriched our lives finally get their full due, through a focus on the humble leaves that serve, in a sense, as their public face. The Book of Leaves offers a visually stunning and scientifically engaging guide to six hundred of the most impressive and beautiful leaves from around the world. Each leaf is reproduced here at its actual size, in full color, and is accompanied by an explanation of the range, distribution, abundance, and habitat of the tree on which it’s found. Brief scientific and historical accounts of each tree and related species include fun-filled facts and anecdotes that broaden its portrait.

The Henry’s Maple, for instance, found in China and named for an Irish doctor who collected leaves there, bears little initial resemblance to the statuesque maples of North America, from its diminutive stature to its unusual trifoliolate leaves. Then there’s the Mediterranean Olive, which has been known to live for more than 1,500 years and whose short, narrow leaves only fall after two or three years, pushed out in stages by the emergence of younger leaves.

From the familiar friends of our backyards to the giants of deep woods, The Book of Leaves brings the forest to life—and to our living rooms—as never before.

Allen J. Coombes is botanist at the Sir Harold Hillier Gardens and Arboretum in Hampshire, England, and the author of many books about plants and trees. Zsolt Debreczy is research Director of the International Dendrological Research Institute in Boston.