

Guide to the *Euonymus* (*Euonymus*) of New York City



Euonymus is a genus of 130–140 species in the mostly tropical Celastraceae (Staff-Tree) family. The family comprises about 95 genera and 1,350 species. Only three genera occur in the northern hemisphere, *Euonymus*, *Celastrus* and *Parnassia*, all three found or once found in New York City.

Euonymus species occur nearly worldwide with most species native to eastern Asia. They are trees, shrubs or woody vines, the stems often angled or winged, sometimes climbing by adventitious roots; leaves deciduous or evergreen, opposite, the blades simple, margins crenate or toothed; inflorescences terminal or axillary; flowers in small clusters, petals usually green, sometimes white or purple; fruit usually brightly colored, lobed capsules; seeds enveloped in brightly colored tissue (aril), often contrasting with the fruit wall.

Euonymus (as well as most members of the Celastraceae family) can often be recognized by “gestalt”. The leaves and often the stems too have a distinctive, but somewhat variable yellow-green color that is hard to describe but nearly unlike any other plants. The leaves are usually leathery, and almost always have distinctively scalloped (crenate) margins (the margins rarely completely smooth or toothed).

There are four species native to North America, one species endemic to California, Oregon and Washington (*Euonymus occidentalis*); a predominately Midwestern species (*Euonymus obovatus*); a widespread northeastern species (*Euonymus atropurpureus*) and a widespread southeastern species (*Euonymus americanus*).

Two species are indigenous to New York City. The predominately southeastern US species, *Euonymus americanus*, American Strawberry Bush is endangered in New York State. It is sometimes planted in gardens and natural areas in New York City, obscuring the species’ natural abundance and distribution. Wild populations are extremely rare or non-existent. The predominately northeastern species, *Euonymus atropurpureus* is less frequently cultivated and is thought to be historical in New York City. Truly wild populations are not known.

The leathery capsules of *Euonymus* and *Celastrus* become more brightly colored as the seeds ripen inside. When they are finally ripe, the fruit split open to reveal the round or ovoid seeds completely covered by a red or orange, oily tissue termed an aril. The contrasting colors of the fruit and seeds attract birds and other wildlife who eagerly consume the oily seeds and defecate the seeds. In *Euonymus americanus*, the seeds (presumably including the aril) were found to contain 10.6% carbohydrates, 36.2% lipids and 12.6% protein (The Woody Plant Seed Manual, USDA, Forest Service, Agriculture Handbook 727, 2008).

The Winged *Euonymus* or Burning Bush (*Euonymus alatus*) was promoted for its ease of cultivation and attractive fall foliage. It is now regulated as an invasive species in New York State. If sold, it must be accompanied by a large warning label. The plant readily invades natural areas where it can form dense stands that diminish biodiversity. It possesses several characteristics of pernicious invasives, including sun/shade tolerance, high seed production, bird dispersal, early leaf out and late leaf drop. Wintercreeper (*Euonymus fortunei*) is also invasive and should be regulated. In New York City it forms a dense groundcover that is preferred by rats because it provides cover for them to move about and dig burrows. The cultivar, *Euonymus kiautschovicus* 'Manhattan' is an upright shrub widely cultivated in New York City for its evergreen foliage and

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tolerance for shade and pollution. The plant is apparently not touched by resident fungi, bacteria or fauna, suggesting it provides little or no value for wildlife.

Dichotomous key to *Euonymus* of New York City

1. Woody vine, climbing by adventitious roots; leaves evergreen.....*Euonymus fortunei*
1. Small tree or shrub, not climbing; leaves deciduous or evergreen.
 2. Stems corky-winged.....*Euonymus alatus*
 2. Stems 4-angled or round (terete).
 3. Leaves pubescent over the entire surface below*Euonymus atropurpureus*
 3. Leaves hairless below.
 4. Shrub; twigs strongly 4-angled; fruits tuberculate *Euonymus americanus*
 4. Tree; twigs round or weakly 4-angled; fruits smooth*Euonymus europaeus*

Euonymus alatus (Thunb.) Siebold – Winged Euonymus, Burning-Bush

Introduced, frequent, NYS Regulated Invasive. [Description](#); [specimens](#); [observations](#); [interactions](#).

Euonymus americanus L. – American Strawberry-Bush

Indigenous, unknown status, NYS Endangered. [Description](#); [specimens](#); [observations](#); [interactions](#).

Euonymus atropurpureus Jacq. var. ***atropurpureus*** – American Wahoo

Indigenous, unknown status. [Description](#); [specimens](#); [observations](#); [interactions](#).

Euonymus europaeus L. – European Spindle-Tree

Introduced, frequent. [Description](#); [specimens](#); [observations](#); [interactions](#).

Euonymus fortunei (Turcz.) Hand.-Mazz. – Winter-Creeper

Introduced, frequent. [Description](#); [specimens](#); [observations](#); [interactions](#).