

Japanese barberry
Berberis thunbergii DC.
Barberry Family (Berberidaceae)



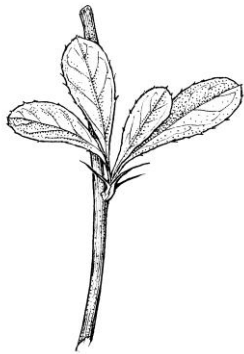
Japanese barberry in winter

DESCRIPTION

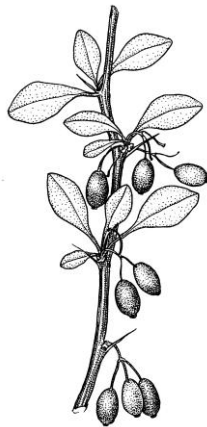
Japanese barberry is a spiny, deciduous shrub with a dense twiggy growth form. It is widely grown as a landscape ornamental in hedges and shrub borders. Many cultivars have been developed including purple-leaf forms. It is hardy in USDA hardiness zones 4–8. All parts of the plant contain the alkaloid berberine.

European barberry (*B. vulgaris*) is also established in fields, pastures, and disturbed woods in many parts of Pennsylvania, especially in the northern counties. It differs from Japanese barberry by its sharply toothed leaf margins and 3-pronged spines. European barberry is not as shade tolerant as Japanese

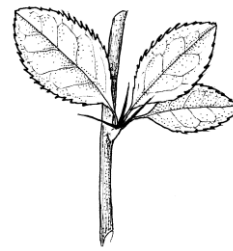
barberry and consequently is seldom found in the woods. Yet another species, the native Allegheny barberry (*B. canadensis*), was known to occur naturally in Pennsylvania in the past; although it is believed to be locally extirpated, it can still be found from West Virginia south to Georgia.



Allegheny barberry (native)
(Berberis canadensis)



Japanese barberry
(Berberis thunbergii)



European barberry
(Berberis vulgaris)

Height - Japanese barberry reaches a height of 3–6 feet. It has a broad, rounded shape that is as wide or wider than tall.

Stem - The twigs have a somewhat zigzag form with a single, very sharp spine at each node.

Leaves - Leaves are ½ to 1¼ inches long and taper from the base to a broad, rounded tip.

Flowers - Flowers are about ½ inch long, yellow and are produced in small clusters along the lower sides of the branches in late April or May.

Fruit and seed - Japanese barberry has bright red fruits that are about ⅓ inch long and persist well into the winter.

Roots - Roots are yellow inside.

DISTRIBUTION AND HABITAT

Native to Japan, Japanese barberry was brought to the United States about 1864 for use as an ornamental. It has become widely naturalized throughout the northeast. It is one of the most widespread invasive, non-native plants in Pennsylvania, occurring in forests throughout the state.

EFFECTS OF INVASION

Japanese barberry is shade tolerant and has invaded closed canopy forests throughout Pennsylvania, New Jersey and New York State. In addition deer do not eat it, consequently barberry has become the dominant understory plant in some heavily browsed forests. Research in New Jersey has documented raised soil pH and reduced depth of the litter layer in forests heavily colonized by Japanese barberry and Japanese stiltgrass (*Microstegium vimineum*).

REPRODUCTION AND METHODS OF DISPERSAL

Reproduction is mainly by seeds that are disseminated widely by birds. Plants growing in dense shade may flower and fruit less heavily than those in more open sites.

CONTROL

Mechanical - Small plants can be hand pulled any time of the year (heavy gloves are recommended due to the sharp prickles). Mowing and cutting will also reduce seed formation, but regrowth will occur.

Chemical - Foliar sprays with a 2% solution of glyphosate or triclopyr are effective. In addition the practices of cutting followed by treatment of cut stumps with 25% glyphosate or triclopyr in water can be employed at any time except when the ground is frozen.

Biological - No biological control options are currently known.

NATIVE ALTERNATIVES FOR LANDSCAPE USE

The following native shrubs are suggested as alternatives to Japanese barberry for landscape use: winterberry holly (*Ilex verticillata*), inkberry holly (*Ilex glabra*), New Jersey tea (*Ceanothus americanus*), bayberry (*Myrica pensylvanica*), wild hydrangea (*Hydrangea arborescens*), ninebark (*Physocarpus opulifolius*), silky dogwood (*Cornus racemosa*), red chokeberry (*Aronia arbutifolia*), black chokeberry (*Aronia melanocarpa*).

REFERENCES

Ehrenfeld, Joan G. 1997. Invasion of deciduous forest preserves in the New York metropolitan region by Japanese barberry (*Berberis thunbergii* DC.) *Bulletin Torrey Botanical Club* 124: 210-215.

Kourtev, P. S., J. G. Ehrenfeld, and W. Z. Huang. 1998. Effects of exotic plant species on soil properties in hardwood forests of New Jersey. *Water, Air and Soil Pollution* 105: 493-501.

Rhoads, Ann Fowler and Timothy A. Block. 2007. *The Plants of Pennsylvania: An Illustrated Manual*, 2nd edition. University of Pennsylvania Press, Philadelphia, PA.

Rhoads, Ann Fowler and William McKinley Klein. 1993. *The Vascular Flora of Pennsylvania: Annotated Checklist and Atlas*. American Philosophical Society, Philadelphia, PA.

Internet resources - <http://www.upenn.edu/paflora>, <http://www.invasivespecies.gov>

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