Plant Diversity Website

Lonicera japonica Thunb.

Common Names: Japanese honeysuckle

Etymology: *Lonicera* is named after the 16th century German botanist, physicist and herbalist Adam Lonitzer (also spelled Lonicer), while *japonica* refers to the plant's Japanese origins. The name honeysuckle comes from the honey or nectar that can be easily sucked from the flower (3, 5).

Botanical synonyms: *Lonicera japonica* Thunb. var. *aureo-reticulata* (T. Moore) G. Nicholson; *Lonicera japonica* Thunb. var. *chinensis* (P.W. Wats.) Baker; *Nintooa japonica* (Thunb.) Sweet

FAMILY: Caprifoliaceae, the Honeysuckle Family

Quick Notable Features (9):

¬ the young stems are hairy and the young leaves are sometimes lobed

¬ the leaves are sometimes toothed, while most *Lonicera* leaf margins are entire (see image to right)

¬ the flowers turn from white to yellow with age

Plant Height: grows to 5m (12).

Subspecies/varieties recognized: None found. Previous varieties and synonyms have all been united under the name *L. japonica* (1).

Most Likely Confused with: May be confused with other species of *Lonicera,* especially *L. sempervirens*. It may also be confused with members of the genus *Euonymus*.

Habitat Preference: It is found in "thickets, borders of woods, and roadsides" (5). In sites in Illinois where it is invasive its presence is correlated with higher canopy openness (more light) (26).

Geographic Distribution in Michigan: Found in Berrien, Van Buren, Kalamazoo, Kent, Monroe, Wayne, Washtenaw and Macomb counties, all of which are located in the southern 1/3 of the lower peninsula (1).

Known Elevational Distribution: In California it has been observed above 1000m (19), while it can occur between 1,350m and 2,100m in New Mexico (21). However, in the northeastern United States it is rarely found above 360m. It can grow at higher elevations in the southern Appalachians and Ozarks and has been observed at 1,500m in North Carolina and 840m in

Arkansas (20 cited in 22).

Complete Geographic Distribution: This plant is considered a weed or invasive throughout much of the world, outside of its native range in Asia. It is most probably native to Japan or Korea. In the United States it is found in every state except WA, OR, ID, MT, CO, WY, ND, SD, MN, IA, VT, and AK. It has also spread to many Pacific islands, New Zealand, and southern parts of Australia through New South Wales and Victoria, where it is considered a serious threat to native plants. It is also found in areas of Chile (1, 2, 16, 17).

Vegetative Plant Description: In the mid-Atlantic and southern states the leaves are evergreen. In northern states the leaves may fall off the woody stem, but only after prolonged exposure to wintry conditions. The thick leaves are opposite, simple, mostly 4-8 cm, with short pubescent petioles. The leaf blades can be ovate, elliptical, or oblong, usually with at least some sparse pubescence on the midrib above and below. Leaves are usually entire, except on young spring shoots, where they can be pinnately lobed and come to a broadly rounded or cuneate base (5, 6, 13, 18).

Climbing Mechanism: Darwin noted that all members of the genus *Lonicera* climb with the apex of the plant, which moves dextrally (left to right) or, as Darwin referred to it "with the sun" (10).

Flower Description: According to Voss (4), the "corolla is white, fading quickly to pale or dull yellow," while according to Fernald (5) it can be "white tinged with purple." The matter seems to be resolved by Cooperrider (7), who claims the corolla turns a dull, golden yellow with age. Either way, it is 3-5cm long, borne on a 5-10mm long peduncle, pubescent, and very fragrant. The calyx and corolla are both fused, and five in number, with the latter being bilaterally symmetrical (bilbiate) and fused into a slender tube. The epipetalous androecium also has five parts. It bears an inferior ovary with one style held inside the tubular corolla. The genus *Lonicera* is known to have 2-3 locules, however this has not been confirmed for this species.

Flowering Time: Flowers from late April to July, rarely as late as November, in the central and northeastern United States and adjacent Canada (5).

Pollinator: The flowers of this species show traits that are typical of the "hawkmoth-pollination syndrome," and open at dusk. Diurnal bees actually deliver more pollen than moths, but remove almost ten times more pollen per visit. By opening at dusk, the plant makes more efficient use of its pollen by avoiding the higher consumption by bees. It was also shown that the nocturnal pollinators spread pollen to flowers further away than the diurnal bees, which improves genetic diversity by contributing to more cross-pollination (23).

Fruit Type and Description: The fruit is a small, black, globose berry (see image). It is usually 5-6mm long and personal observation reveals that the calyx persists on the fruit (5, 13).

Seed Description: There are usually 2-3 small seeds in each berry (13).

Dispersal Syndrome: The small, "attractive red, orange, or black" fruits of most members of the genus *Lonicera* are consumed by birds. "Bird dispersal is typically by species that frequent brushy areas, thickets, and forest openings. Birds that frequent forest openings, for example, usually fly from one opening to another, depositing seeds at each roosting site. This means of seed dispersal generally ensures deposition in a habitat where the seedling has a high probability of success, such as beneath a sapling tree suitable for stem twining" (22). The berries are also eaten by small mammals and deer.

The fruits of *L. japonica* are rarely produced on plants on the edge of the species' range. This has been shown to be due to a lack of pollinators outside of the plant's natural range. When hand-pollinated, the plant readily produces fruits (7, 8, 9, 24).

Distinguished by: The leaves of this species may confuse some into thinking it is *L. sempervirens*, but it is not. The easiest way to distinguish the two species is by observing the pair of leaves below the inflorescence. In *L. japonica* they are clearly distinct; whereas they are connate around the stem in *L. sempervirens*. The leaves of *L. japonica* are broader, more yellow-green, hairier, and less glaucous beneath. The young stems and leaves of *L. sempervirens* are glabrous, not pubescent. *L. japonica* also has white, or slightly yellow corollas, as opposed to the red to yellow corolla with pure yellow inner corolla surface of *L. sempervirens*. *L. japonica* may also be confused with members of the genus *Euonymus*, which has finely serrated leaf margins. The margins of *L. japonica* are almost always entire; however when they are toothed, the sinuses are rather large and could never be considered "finely serrated."

Other members of the family in Michigan (number species): *Lonicera* – 18, *Diervilla* – 1, *Kolkwitzia* – 1, *Linnaea* – 1, *Sambucus* – 2, *Symphoricarpos* – 3, *Triosteum* – 2, *Viburnum* – 11 (1).

Ethnobotanical Uses: The leaves contain saponins, which are quite toxic but are poorly absorbed by humans and pass through without causing harm. They are more toxic to other creatures, but, again, have little effect on the human body unless in large quantities. The flowers and leaves, although toxic, are edible and can be made into a tea (11, 12). The flowers are quite delicious and are an important ingredient in many Chinese dishes (personal communication, Susu Yuan).

Phylogenetic Information: The Caprifoliaceae consists of 36 genera. Subclades include Linnaeeae (*Dipelta, Abelia, Kolkwitzia, Valeriana* and *Dipascus*), Diervilleeae (*Diervilla* and *Weigela*) and an unnamed clade consisting of *Lonicera*, *Symphoricarpos*, and their relatives. Currently, Caprifoliaceae is the only member of the Dipsacales clade, but this organization is somewhat in doubt (2). As it stands, the Dipsacales are part of the Euasterids II, which also contains the Aquifoliales, Apiales, Dipsacales, and Asterales. These are all members of the Core Asterids of the Asterid clade, which, along with the Rosids, make up the Core Tricolpates (2).

Interesting Quotation or Other Interesting Factoid not inserted above:

--The leaves are partially evergreen (see vegetative description) (7)

--It is considered highly invasive outside of its natural range. It is invasive for many reasons, likely due to a lack of natural enemies outside of the natural range. The evergreen to semi-evergreen leaves give it an advantage, as does its ability to climb over and smother other plants by forming dense thickets. It has also been observed girdling shrubs and small trees; it wraps so tightly when climbing that it cuts off water transport through the plant (18).

--Cooperrider explains that it seems to be “approaching var. *chinensis*” because of the red color seen in the corolla and the leaves and young branches turning somewhat purple. He goes on to agree with Duncan (15) in saying that the two varieties (var. *japonica* and var. *chinensis*) “probably cannot be maintained because of the abundance of intermediates.”
--The seeds of *Lonicera* species remain viable after storage for 15 years in sealed containers, at low temperatures (8).
--Belote et al. (25) report that *Lonicera japonica* grew quickly under elevated CO2, while an invasive C4 glass was reduced in biomass production.

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