

Japanese Honeysuckle: From “One of the best” to Ruthless Pest

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Slow to escape from cultivation when introduced, Japanese honeysuckle has become an aggressive and tenacious weed that should be used only with great caution

Lonicera japonica—flowers white changing to yellow, deliciously fragrant, borne in great profusion in the summer and occasionally in autumn. Grand for trellises and ground cover. One of the best.

—Biltmore Nursery Catalog, Biltmore, North Carolina (1912), page 99.

Lonicera japonica . . . a pernicious and dangerous weed, often overwhelming and strangling the native flora.

—Common Weeds of the United States, by the Agricultural Research Service, U.S. Department of Agriculture (1971), page 358.

[A] network of tangled cords that covers the ground wherever this ruthless invader gets a foot hold.

—“The Japanese honeysuckle in the eastern United States,” by E. F. Andrews, *Torreyia*, Volume 19, Number 3 (March 1919), page 39

I was born and raised in the southern Piedmont of Maryland, where Japanese honeysuckle (*Lonicera japonica* Thunb.) is ubiquitous. At an early age I despised it for smothering my woodland clearings and have killed countless of its vines with a determined hatred. Yet I have always been delighted by the smell of its flowers on summer evenings and the taste of its nectar licked off a pulled stamen.

Introduced into the United States in 1806 as an ornamental, *Lonicera japonica* escaped from cultivation and eventually became naturalized throughout the eastern part of the country, where it is now an important component of the flora as far north as Massachu-

setts, Connecticut, southern New York, and Ohio. In the northern part of its range it is not the vigorous pest it is elsewhere because its early growth is killed by late spring frosts. Long Island and Cape Cod, where it is locally dominant, seem to be its northern limits as a pest. It is a serious pest as far west as Indiana and southern Illinois, however, becoming rarer westward and disappearing altogether in central Kansas. Japanese honeysuckle ranges southward to central Florida, being absent from the subtropical part of that state.

The commonly planted (and escaped) plant is *Lonicera japonica* ‘Halliana’, Hall’s honeysuckle. Introduced by George Hall to Par-

sons's Nursery of Flushing, New York, in 1862, it differs from the species only in its more vigorous growth. In the eighth edition of *Gray's Manual of Botany*, Merritt Lyndon Fernald does not recognize it as a legitimate botanical variety. A common item in turn-of-the-century nursery catalogs, Hall's honeysuckle is still very much available in the trade.

Slow To Escape from Cultivation

It is difficult to pinpoint when *Lonicera japonica* began to escape from cultivation, but it apparently did so in the 1890s, becoming naturalized over most of its present range within thirty years. It may have escaped before 1890, however, but was uncommon and not recognized when encountered. Alvan Chapman did not list it in his *Flora of the Southern United States* (1884), nor did Asa Gray in the sixth edition of his *Manual of Botany* (1889). Nathaniel Lord Britton and Addison Brown gave the first evidence for its escape, in 1898, reporting *Lonicera japonica* as freely escaped from southern New York and Pennsylvania to North Carolina and West Virginia in their *Illustrated Flora of the Northern United States and Canada* (1896–1898). By 1903, it was reported from Florida and, in 1918, from Texas.

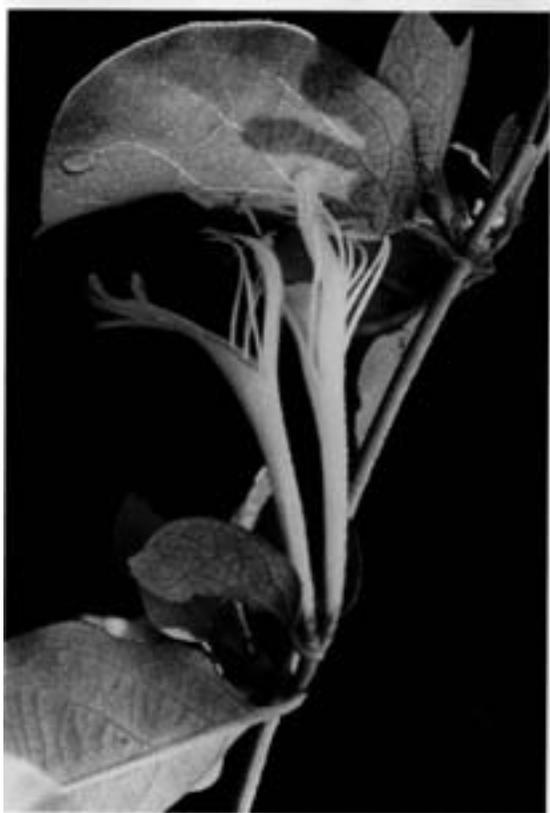
Why did it take more than eighty years for Japanese honeysuckle to escape?

Birds disseminate its seeds. Perhaps it took them some time to recognize honeysuckle berries as a source of food. The birds may even have had to develop a taste for the berries. Even today, when the berries are widely and dependably available, birds eat them sparingly.

On the other hand, Japanese honeysuckle may have spread slowly because there was little suitable habitat for it until the latter part of the Nineteenth Century. Cultivated land is not suitable for honeysuckle, and most mesic sites were under the plow in the

early part of the century. After the Civil War, many farmers in the East abandoned their land. Abandoned fields, as they pass into the shrub stages of ecological succession, are ideal habitat for Japanese honeysuckle. A combination of these factors, and others, may best explain the long delay between the date of the species's introduction and the first reports of its escape.

A ban on honeysuckle at an early stage, coupled with a campaign to eradicate it, might have kept it within bounds, though there seems to be no precedent for success with this sort of effort. In any event, it is now too late to do anything about it. Japanese honeysuckle is a naturalized member of our flora.



Flowers of *Lonicera japonica*. Photograph by Albert W. Bussewitz.

A “most pernicious and dangerous weed”

Regardless of when it did, in fact, escape, Japanese honeysuckle quickly exhibited its darker side. By 1919, it had locally become a pest. E. F. Andrews, writing in the March 1919 issue of *Torreya*, reported that “it is no uncommon thing to see acres upon acres . . . buried under the rank growth of this aggressive invader.” Government documents tell the same story: *The Eradication of Wild Honeysuckle*, by L. W. Kephart (1939); *Honeysuckle Is a Serious Problem*, by T. C. Nelson (1953); and the ominously titled, *Honeysuckle or Trees?*, by E. V. Brender and C. S. Hodges (1957). Animosity towards Japanese honeysuckle apparently developed rap-

idly. The usually dry and objective *Gray’s Manual of Botany* (eighth edition), describes it as

a most pernicious and dangerous weed, overwhelming and strangling the native flora and most difficult to eradicate, extensively planted and encouraged by those who do not value the rapidly destroyed indigenous vegetation. . . . (Unfortunately natzd. from Asia).

Meanwhile, U. S. Department of Agriculture publications were recommending its use and suggesting planting methods. Nursery catalogs contained glowing accounts of it. But perhaps the most disturbing note came from Ernest H. Wilson’s classic, *Aristocrats of the Garden* (page 67):

Hall’s semi-evergreen Japan Honeysuckle (*Lonicera japonica*, var. *Halliana*) needs no comment. . . .

On the contrary, “Japan Honeysuckle” requires considerable comment, discussion, and consideration.

Why is Japanese honeysuckle so vigorous and aggressive in the eastern United States? Let us consider these traits separately, defining “vigor” as a high growth rate and “aggression” as domination of other plants by direct competition. (Honeysuckle’s aggression is, of course, dependent upon its vigor. Only a vigorous plant can be aggressive. But other botanical characteristics besides vigor make honeysuckle troublesome.)

Honeysuckle’s growth rates are indeed high. One researcher has reported fifteen meters of growth on one plant in a single year. Such extensive vegetative growth is supported by an appropriately extensive root system. On an established Japanese honeysuckle plant, the roots may reach three meters across and one meter deep.

Honeysuckle is semi-evergreen, losing its leaves only in cold winters. It produces new leaves very early in the spring. As a result, it



Leaves of *Lonicera japonica* ‘Aureo-reticulata’ Photograph by Albert W. Bussewitz.

can begin active photosynthesis before competing trees and shrubs. Also, evergreen leaves can take advantage of warm, sunny winter days. The entire plant can make as much as two months of growth before most deciduous plants begin to grow. In Maryland, honeysuckle usually leafs out by March 15th, while the predominantly oak forests are leafless until May.

Another element of Japanese honeysuckle's aggression is its ability to reproduce rapidly by both vegetative and sexual means. The lateral branches that spread along the ground, root at the nodes in moist soil. Once this happens, the rooted branch is a new plant in a colony, able to survive if the original root crown is damaged or the branch cut. When a vigorous honeysuckle vine is cut, the root crown will respond with rapid resprouting. Lateral roots also can sprout, creating individuals independent of the original plant.

Ecological Relationships

The Japanese honeysuckle's fruit is a firm, black berry with few seeds. Birds disseminate the seeds, eating the berry and excreting the seeds. There is an ecologically self-reinforcing aspect to this manner of seed distribution: the bird ingests the berry and flies some distance before excreting the seeds. Chances are that the bird will deposit the seeds in an environment similar to that in which it found the berry, increasing the probability that the resulting seedlings will succeed. The consumers of honeysuckle berries—bluebirds, purple finches, white-throated sparrows, juncos, robins, bobwhite quails—are birds of brushy areas, thickets, and forest openings. Birds of forest openings usually fly directly from one opening to another. Thus, while roosting, a bird will deposit seeds at the base of a tree that, if all goes well for one seed, will be climbed by a new honeysuckle vine.

Honeysuckle seedlings must have open conditions to succeed. Its small seeds contain little stored food and seedlings must begin photosynthesis soon after germinating. Dense grasslands are poor habitats for honeysuckle, however, because the honeysuckle vine cannot climb the grass blades to reach the full sunlight. If the seeds were to be deposited in a mature forest or in a grassland, the new honeysuckle vine would not be able to compete with its neighbors.

Honeysuckle occupies a special position in eastern landscapes not occupied by native vines. Its twining habit is well suited for climbing shrubs and saplings, a different "strategy" from those of native vines. Grapes (*Vitis* spp.) climb by tendrils, which are effective for holding onto tree branches, while Virginia-creeper (*Parthenocissus quinquefolia*) climbs by adhesive discs on tendrils, which allow it to climb tree trunks that would be too large to twine around. Poison-ivy (*Rhus radicans*) climbs in the same manner as Virginia-creeper, but does so with modified aerial roots.

These vines have climbing strategies well suited for forest environments: they are adapted for climbing the branches and trunks of mature trees. Bittersweet (*Celastrus scandens*) is more like honeysuckle in that it, too, climbs by twining, but it does so much more "lazily" than honeysuckle, making fewer circuits per length of stem than the honeysuckle. As a result, bittersweet cannot support as much weight and does not climb as high as honeysuckle does. Nor can it produce a dense, sunlight-blocking canopy above a sapling, since it does not hold tightly enough to support the weight.

Honeysuckle can climb any object that is thin enough. It cannot twine around mature tree trunks, but it wraps itself around saplings with ease. It grows up and past a sapling, blocking the sunlight to its host. Deprived of light, the sapling dies, and the weight of the vine causes the dead stem to collapse, leaving

only a hummock of honeysuckle. Its twining is equally effective on shrubs. In mature forests, honeysuckle may twine upon other vines such as grape, Virginia-creeper, and posion-ivy, that have successfully climbed mature trees.

Forest openings contain herbs, shrubs, and saplings, many of which are attractive to both man and wildlife. Vigorous growths of honeysuckle can smother them, replacing a diverse flora with a monotonous one. In the Piedmont of Maryland, flowering dogwood (*Cornus florida*), black cherry (*Prunus serotina*), tulip-poplar (*Liriodendron tulipifera*), and brambles (*Rubus* spp.) are very common constituents of forest openings and edges and have much higher wildlife value than honeysuckle.

All of the regions in which Japanese honeysuckle has become naturalized were once forested. Honeysuckle can block the return of forest to landscapes that originally were forested, producing what ecologists call a disclimax or disturbance climax. Plant succession can be "frozen" at the honeysuckle disclimax.

Costs and Benefits

In human terms, Japanese honeysuckle has both costs and benefits. The costs are due to its vigor, aggressiveness, rapid dispersal, and tenacity. A pest in forest management because of its impact on forest regeneration, honeysuckle prevents both the natural and artificial regeneration of forest lands.

Professionals tend to see only one side of the plant—either its virtues or its vices. Nurserymen and landscapers cultivate and plant it, foresters try to eradicate it. Landscaping professionals must understand the character and potential problems of this plant before using it. Planted in the right situation it does no harm, but very few situations are right. Under most conditions, honeysuckle will have a damaging and

uncontrollable impact on its environment. It should be used only after careful and thorough consideration.

In the South, foresters generally practice even-age management on pines (*i.e.*, cutting and restocking large, continuous blocks of forest at the same time), which opens an area to direct sunlight and reduces competition for moisture, allowing honeysuckle to take over and making effective restocking with trees impossible. If honeysuckle is not present, the trees may have a chance to become sufficiently established to shade the ground, making the site less attractive to honeysuckle. However, if honeysuckle is present in a forest stand when the trees are cut, the honeysuckle may grow rapidly, preventing the return of the forest. Often, foresters will not cut certain forests for fear that honeysuckle will take over.

While a luxuriant growth of honeysuckle in a woodland is visually unpleasant, a tended and pruned vine of honeysuckle clothing an arbor or fence can be very attractive. The sweetly fragrant flowers open pure white and fade to a soft yellow. In full sun, with regular pruning, honeysuckle is far more floriferous than in the woodlands, where most honeysuckle vines are devoid of flowers. It is very easy to transplant and is a vigorous and carefree flowerer. This, of course, is one of the reasons it is such a pest outside of the garden.

Honeysuckle can provide a dense mat of vines that will climb over banks and thus is useful for stabilizing roadbanks, controlling erosion, and revegetating terrain. Rooted cuttings grow readily and quickly produce a cover, completely arresting soil erosion. The same qualities that make it a pest under one set of circumstances make it a valued plant under another set of circumstances.

Honeysuckle's value to wildlife must be carefully evaluated since it suppresses many of the plants that have the highest food value to wildlife. It holds its berries through the

winter, usually well above the ground, providing a dependable food source during a critical period. Songbirds and gamebirds do eat small quantities of its berries. Deer eat its leaves. The tangled vines do provide superlative cover for birds, mice, and, particularly, cottontail rabbits. Honeysuckle has been suggested for use as a managed source of nutritious browse in the heavily manipulated southern pine plantations.

Japanese honeysuckle can also strongly affect historic sites. One survey of historic sites around Washington, D. C., noted that honeysuckle had damaged wooden and masonry structures, forcing apart stonewalls and producing dry rot in wooden walls. More importantly, it may produce an uncontrollable, historically inappropriate landscape. The study found that along the Potomac Canal in Washington, D. C., honeysuckle was threatening "visitors' understanding and appreciation of the site."

Design Considerations

A luxuriant growth of Japanese honeysuckle is aesthetically objectionable for three reasons: it lacks discernible form, it creates no line, and it suppresses aesthetically pleasing vegetation. "Form" can be defined as the three-dimensional mass of an object. Japanese honeysuckle is loose and rangy, forming hummocks over strangled saplings and reaching in all directions. It is impossible to perceive limits to its mass; it is amorphous. Its growth creates no visual points, no visual line (for a line is a series of points). The most commonly perceived visual line of a plant lies along its stem, from the root collar to the leaves. A dense growth of honeysuckle hides its source, presenting a façade of leaves or tangled vine stem. It can establish no "rhythm" without points, no pattern without lines. If a growth of honeysuckle were translated into sound, it would be noise. As noise disrupts music, honeysuckle disrupts an aes-

thetically pleasing landscape. Instead of a thicket or young forest, it produces a tangle of amorphous vegetation. Forest openings and edges usually are characterized by a richness of plant elements and structures, but Japanese honeysuckle succeeds in creating a landscape of only one element.

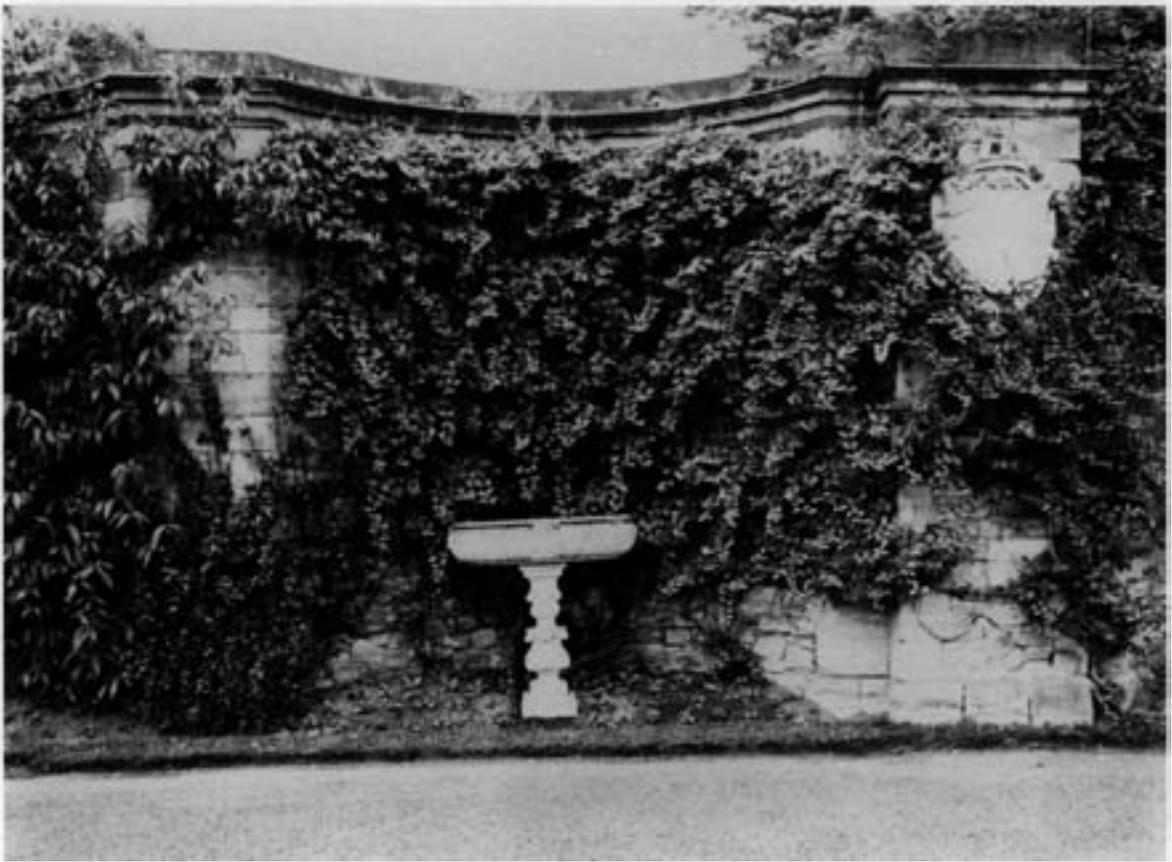
On balance the costs of Japanese honeysuckle outweigh the benefits. Other, less invasive plants can be used to control erosion and as ornamental vines. Of course, it would be impossible to make Japanese honeysuckle disappear; it is a permanent part of our flora. It can only be controlled.

Controlling Honeysuckle

A number of measures are used routinely to control weeds: chemicals, mechanical cultivation, hand labor, fire, biological control, and competition. Chemicals have been developed to kill honeysuckle. They usually kill broad-leaf plants on contact without affecting conifers. In southern pine plantations, these chemicals may be the most effective control measure. Unfortunately, honeysuckle is also present in hardwood areas, in which the chemicals would also kill desired saplings and shrubs.

Mechanical cultivation eliminates Japanese honeysuckle. As a result, the species is absent from cultivated cropland. In woods and thickets, mechanical cultivation is not possible because it kills the trees and shrubs you want. Hand labor would eliminate the honeysuckle without destroying the trees and shrubs, but its high cost makes this method completely impractical.

Fire often is used to control weeds in southern pine plantations and can also be used to control honeysuckle in pine forests, though the vine is likely to resprout from the roots. A light fire does not kill the pine trees but does kill seedlings, shrubs, and most hardwood trees. Therefore, fire can be used before planting, to clear out honeysuckle and



Lonicera japonica 'Halliana' covering a wall at Hener Castle, England Photograph by Donald Wyman From the Archives of the Arnold Arboretum.

give seedlings a slight headstart.

Biological control—the deliberate use of a disease or animal to control a weed—has been used successfully on several invasive exotics. In Australia, the prickly-pear cactus has been controlled by an introduced moth (*Cactoblastis cactorum*) that feeds on the cactus. St. Johnswort (*Hypericum perforatum*), a weed of rangelands in the western United States, has been controlled by two introduced beetles. Unfortunately, there appear to be no disease-producing organisms that have any serious effect on Japanese honeysuckle in the United States, nor are there any insects in the United States that

do anything more than nibble its leaves occasionally. This freedom from diseases and insects is a major reason for honeysuckle's high vigor. Nonetheless, biological control represents the best potential for controlling Japanese honeysuckle and is deserving of research.

Ecological competition is a natural phenomenon. Competition for light by trees reduces the vigor of honeysuckle. When its vigor is sufficiently reduced, it is no longer a pest. It is a lion without teeth. Unfortunately, human activity usually leads to the removal of trees, eliminating the competition for light.

Because it is such a problem, ought it not to be illegal to plant Japanese honeysuckle? Indeed, it is highly inadvisable to plant the species near woodlands if it cannot be controlled, but in the garden, tended and pruned around an arbor, it does no harm. There is already so much wild honeysuckle that garden plants could not significantly affect the overall seed supply.

Japanese honeysuckle has some virtues and many vices. When I was a child in the woods of Maryland, it was rope and string, perfume and ambrosia to me. Though I have spent many a day ripping it out of the earth with my bare hands, I have never wished that Japanese honeysuckle had never been.

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