

The River Birch

Anne Carlsmith

Landscape designers are always looking for beautiful and adaptable low-maintenance trees. Since the number of these trees currently available is low, however, the result is often another planting of honey locusts or maples. Yet alternatives do exist, and worthy candidates are often overlooked by the nursery trade. One such is the river birch, *Betula nigra* L.

In comparison to the white-trunked members of the birch family (Betulaceae), the river birch has long been ignored, though it is a graceful tree, with a warm red bark that exfoliates to pink-white. It is also adaptable to both flood and drought and is more disease-resistant and heat tolerant than any other birch.

When young the river birch (also known as the red birch) is delicate. If left unpruned, it becomes multitrunked in its first or second year, breaking at ground level into several splayed stems. It is twiggy, with many horizontal subbranches that recurve slightly. The youngest twigs are lustrous red and darken as they grow, eventually becoming marked by narrow lenticels. The bark then separates into thin flakes, which curl into strips and cling to the wood indefinitely. Bark color varies from tree to tree: the outer bark may be bright or subdued and the inner bark may be nearly white.

As the tree matures (40 years), the bark thickens, darkens, and becomes deeply fissured, beginning at the bases of the trunks. The larger branches acquire a rough and broken surface, while the smaller ones continue to exfoliate. The mature river birch has an open habit and fine foliage texture; the leaves (4–8 cm long) are deep green and very lustrous. Monoecious, *Betula nigra* forms three-clustered staminate catkins in the fall, which become conspicuous when they elongate to 8 cm in spring.

The river birch lives up to its name in its willingness to thrive in damp soil or soil that may be inundated for weeks in the spring. This characteristic makes it a special asset to the landscape designer: all authorities agree that it is one of the finest trees for damp ground. In addition, it has the advantage of being drought-tolerant and therefore has potential as a street tree.

Betula nigra owes its adaptability to the floodplain habitats of which it is characteristic. In the wild it grows along the banks of streams, on the edges of ponds, and in swamps, habitats that may be flooded in spring and dry in summer. It attains its largest size (27 m) in the damp bottomlands of the Gulf States and is most prevalent along the larger, slow-moving silt-laden rivers. It grows thickly along the Mississippi and its tributaries, holding the muddy banks against erosion.

The river birch is the only birch growing in the South, and it has the widest distribu-

Young river birch trees (*Betula nigra*) growing at the edge of Jamaica Pond in Boston, Massachusetts. Bruce Applebaum photo.



Leaves of the river birch (*Betula nigra*). Bruce Applebaum photo.

tion of all the North American birches. Its natural range extends from New Hampshire south to Florida and west to Texas and Minnesota. Donald Wyman has noted that it does well even in California (Wyman 1977a). Native stands are sparse in zone 4, however, and trees there are both smaller in stature and less long-lived (Steele and Hodgdon 1975). In New England the average stature at 30 years is 15–18 m, whereas in the South it can be as high as 27 m.

Bronze birch borer, the most destructive of birch pests, has virtually no effect on the river birch, and leaf miner, another birch pest, has very little. Atmospheric pollution apparently is harmless also: Henry Arnold

lists the river birch among the trees that have sprung up spontaneously in Central Park and eventually replaced the installed plants (Arnold 1980). A low soil pH appears to be the only definite requirement of the river birch. Chlorosis occurs at pH levels higher than 6.5 (Dirr 1983).

'Heritage', the only river birch cultivar, was selected for both a light bark color and a prolonged period of exfoliation. Neither the species nor the cultivar is readily obtainable. Weston Nurseries in Hopkinton, Massachusetts, supply the species (and will supply the cultivar in spring 1984). Oliver Nurseries in Fairfield, Connecticut, and Mellinger's in North Lima, Ohio, supply the cultivar.



Peeling bark of a young river birch. Peter Del Tredici photo.

Growing the River Birch

Ready germination from seed is another asset of the river birch, but the seeds must be collected early. This is the only *Betula* species that ripens its seeds in spring or early summer. Small and lightweight, they are dispersed by the wind and often carried long distances. Much of the seed falls near the tree, however, so collection is not difficult. Nurserymen report that seedlings grow so quickly from seed that propagation by rooted cuttings is unnecessary. A caliper of 8–10 cm has been noted at 15 years. 'Heritage', reproduced by cuttings, grows equally quickly.

Many nurseries list all the birches as

difficult to transplant, except when balled and burlapped and moved in very early spring. (Most reputable nurseries dig them only at that time.) Again the river birch is the exception. Gary Hightshoe describes it as "easily transplanted [in] early spring or late autumn" (Hightshoe 1978). The tree is quick to throw out adventitious roots when flooded and generally shows the rooting vigor of all fast-growing trees.

Birches in general are "bleeders," that is, they are slow to heal if pruned in spring, when sap flow is heaviest. Pruning in fall and early winter is preferable.

Donald Wyman has observed a tendency in the river birch to form weak crotches, but a grove of mature trees in the Arboretum shows no evidence of it (Wyman 1977b). Planted from seed collected in 1877, these trees show the typical habit of the mature river birch in New England.

References

- Arnold, Henry F. 1980. *Trees in Urban Design*. New York: Van Nostrand, Reinhold.
- Dirr, Michael A. 1983. *Manual of Woody Landscape Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses*. 3rd edition. Champaign, Illinois: Stipes.
- Hightshoe, Gary. 1978. *Native Trees for Urban and Rural America*. Ames, Iowa: Iowa State University Research Foundation.
- Pirone, P. P. 1941. *Maintenance of Shade and Ornamental Trees*. New York: Oxford University Press.
- Steele, Fred L., and Albion R. Hodgdon. 1975. *Trees and Shrubs of Northern New England*. 3rd edition. Concord, New Hampshire: Society for the Protection of New Hampshire Forests.
- Wyman, Donald. 1977a. *Trees for American Gardens*. New York: Macmillan.
- . 1977b. *Wyman's Gardening Encyclopedia*. Revised edition. New York: Macmillan.

Anne Carlsmith is a student in the Program in Landscape Design at Radcliffe College.



Carlsmith, Anne. 1984. "The River Birch." *Arnoldia* 44(1), 28–31.

View This Item Online: <https://www.biodiversitylibrary.org/item/217534>

Permalink: <https://www.biodiversitylibrary.org/partpdf/250703>

Holding Institution

Harvard University Botany Libraries

Sponsored by

BHL-SIL-FEDLINK

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: Arnold Arboretum of Harvard University

License: <http://creativecommons.org/licenses/by-nc-sa/4.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.