

Amur Maackia

Maackia amurensis

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One of our most important plant exploration goals is collecting tree species that demonstrate stress tolerance and are therefore likely candidates for evaluation as urban street trees. *Maackia amurensis* is outstanding in its promise as a tough and useful urban tree. It is native over a wide geographic area including Japan, the Korean peninsula, northeast China, and far eastern Russia. It is a member of the legume family (Fabaceae) and it is one of the relatively few trees that support nitrogen fixing bacteria on its roots. Although it was introduced to the United States in the late nineteenth century, it is still relatively rare here.

In cultivation *Maackia amurensis* is a medium-sized tree reaching 45 feet (13.7 meters) or more (we were surprised to see specimens in China growing well up into the forest canopy, taller than the species is usually reported to grow). It has compound leaves similar to its relative, black locust (*Robinia pseudoacacia*). As the leaves emerge in the spring they are covered with silky hairs which give the tree a silvery-gray appearance.



A 40-foot tall specimen of Amur maackia at the Morris Arboretum.



This Amur maackia in China managed to survive in difficult soil conditions with highly variable moisture levels, an indicator that the species may perform well as an urban street tree.



Newly emerged foliage of Amur maackia has a silvery sheen.

Upright racemes of small cream-colored flowers appear in July, a time when few other trees are blooming. Amur maackia's bark is slightly exfoliating with handsome shades of copper and tan. It is especially striking when backlit.

Professor Jin Tieshan of the Heilongjiang Academy for Forestry reported that Amur maackia's dark-colored wood is very valuable and in the 1990s it was commonly exported to Japan. He also pointed out that on twigs the young sapwood is a light greenish tan, while the older heartwood takes on a dark brown color. The wood is exceptionally hard and rot resistant; traditionally, it has been used for fencing in China, similar to the use of black locust wood in the United States.

NACPEC explorers collected 3 accessions of this species in 1993 in Heilongjiang. Collection HLJ085 was made along Jiang Po Lake, where it grew along the high water line in thin, sandy soils overlaying rock. It was clear that the trees had to tolerate wet soils when the water levels were high and then very droughty conditions when the water level dropped. Adaptability to these kinds of natural conditions suggests that this species might also be adapted to the periodic root flooding and droughts that plague urban street trees. At another site in Heilongjiang, small, stunted Amur maackias were growing on a rocky, ancient lava flow along a stream edge. This area was subject to alternating periods of flooding and drought. Few other woody plants could survive there, but these trees were able to withstand the difficult environment, growing out of fissures in the rock.

We tried two different treatments to soften the hard outer coats of Amur maackia seeds from collection

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Amur maackia bears upright racemes of creamy white flowers in midsummer.

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Clean green foliage and exfoliating bark add ornamental appeal to Amur maackia.

HLJ051. One group of seeds was given a 24-hour soak in hot water and a second group of seeds was scarified in sulfuric acid before being sown. Both treatments resulted in excellent germination.

Three 16-year-old specimens are growing near my home on the grounds of the Morris Arboretum. These Amur maackias stand 18 feet (5.5 meters) tall and are 5 inches (12.7 centimeters) DBH (diameter at breast height). They have attractive foliage, flowers, and bark, and are handsome in every season of the year. They are growing on a hot, sunny, south-facing slope and have never exhibited stress in times of drought. *Maackia amurensis* is certainly proving itself to be a handsome, tough, adaptable shade tree that should be used more widely in stressful urban sites.

Bibliography

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