

## Sax Pine: A Hybrid Left Behind

*Jared Rubinstein*

Last fall, gray fog streamed down the hillside by the Hunnewell Building, enveloping the magnolias and eastern white pines (*Pinus strobus*) that dominate the area. The display emanated from an art installation, Fog x FLO, by Fujiko Nakaya, and when viewing the fog from atop the hill, as signs encouraged visitors to do, a few pines stuck out from the others. With bluish needles and scaly bark, these trees didn't look quite like their neighbors, nor did they look quite like any other species of pine.

That's because these trees (accession 266-46) are hybrids. Although the Arnold Arboretum is best known for its wild-collected plants, most identified to a single species, we also have a significant collection of hybrid plants, including many that were bred and developed here. Karl Sax, a professor of botany at the Bussey Institute and later director of the Arboretum, created some of the Arboretum's best-known hybrids, including *Forsythia* 'Meadowlark' and *Magnolia* × *loebneri* 'Merrill', which both can be found growing in the Arboretum and around the world. But Sax didn't only work with flowering trees or shrubs—he also dabbled with conifers.

In the early 1940s, Karl Sax went on a bit of a pine hybridization kick. Crossing different plant species can be tedious: Pines are wind pollinated, so Sax covered the female cones of one pine species with a bag to prevent natural pollination from pollen blowing around in the wind. When the time was right, he removed the bags and introduced pollen collected from male cones of a different pine species to the female cones. Once the hybrid seeds had developed within the cone, Sax removed and planted the seeds in the nursery at the Bussey Institute. Sax mixed and matched pines from all over the world—New England pines with Himalayan pines, European pines with Japanese pines, West Coast pines with East Coast pines—all with an eye towards producing something new with a high economic or ornamental value.

The hybrid pines behind the Hunnewell Building are crosses between *Pinus monticola*, the western white pine, and *P. parviflora* var.

*himekomatsu*, the southern variety of the Japanese white pine. The combination shows just how well hybridization can capture traits from each parent. The needles, in fascicles of five, maintain the long, soft appearance of *P. monticola* but gain a glaucous, blueish-gray color from *P. parviflora*. The hybrids seem to get their height from *P. monticola*, especially accession 266-46\*B, which soars to almost 75 feet (23 meters), already much higher than even the oldest Japanese white pines at the Arboretum. And the bark, normally thin and smooth on *P. parviflora* and rough and flaky on *P. monticola*, forms elegant plates that are divided into scales—a sort of middle ground between the two parents.

When evaluating hybrids, one usually looks for hybrid vigor, or traits that give a hybrid an advantage over its parents, like a better form or a higher tolerance to adverse environmental conditions. While these particular hybrids do appear to be vigorous growers and have an unusual mix of features, they never managed to achieve the fame found by some of Sax's other hybrids, like *Prunus* 'Hally Jolivette' or *Malus* 'Mary Potter'. The beauty of these hybrid pines is perhaps a more subtle one, and they just weren't flashy enough to make it big in the horticultural industry of the 1940s. Unlike other pine hybrids Sax tried out, such as *Pinus* × *hunnewellii* or *Pinus* × *schwerinii*, these hybrids were never given a nothospecies designation—that is, a Latin name specific to that hybrid. What's more, these hybrids do not appear in horticultural catalogs or seem common in other arboreta.

Far from diminishing their value, however, this lack of fame makes these hybrids all the more special to the Arboretum. It's possible that the five plants growing here are the sole representatives of this hybrid in cultivation. More than anything, these hybrids highlight the importance of experimentation and of following curiosity to wherever it may lead. Their longevity and beauty remind us that even hybrids that don't "make it" deserve another look.

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