It Happens Every Spring

Digging Into the Rite of Spring Planting at the Arboretum

Jon Hetman, Associate Director of External Relations and Communications

Spring festoons the Arboretum landscape with emerging flowers, new growth and leaves, and the promise of new beginnings. At the Arnold Arboretum, the awakening Earth means it is show time for some 300-400 new trees, shrubs, and vines as they acquire permanent locations across our 281-acre landscape. As sunny days grow longer and slowly get warmer, our entire Living Collections staff of plant propagators, horticulturists, arborists, and curatorial professionals dig in to preparations for spring planting. Many of the new additions each year were collected as seeds or seedlings in their wild environments—or gathered right here from Arboretum plants with lineages we hope to extend indefinitely—then grown on and carefully nurtured in our Dana Greenhouses and Nurseries until they reach maturity. By the time these young plants obtain their final destinations in our landscape, many members of our staff have contributed innumerable hours to their acquisition, propagation, cultivation, and documentation.

Spring planting does not mark the beginning for an Arboretum plant, and in no way does it signal an end to the robust attention required of a living organism that is also, essentially, a curated museum object. Instead, it represents a graduation of sorts, in which our “Class of 2018” plants have proven themselves capable of making their way in our landscape. At the Arboretum, preparations for spring planting begin the previous summer, as our Manager of Plant Production Tiffany Enzenbacher and the Greenhouse staff survey the overall condition and vigor of specimens growing in our nurseries—both in-ground and containerized specimens. With initial recommendations of plants ready for the permanent collections compiled, by August Tiffany joins Keeper of the Living Collections Michael Dosmann and Manager of Horticulture Andrew Gapinski in the nurseries to inspect the top candidates. They decide what will be ready for transplanting that fall and the following spring, and what should wait for another year. This also offers an opportunity, in the case of accessions with multiple individuals, to rank plants in order of fitness for the collection. Those in better condition are utilized in more important or prominent locations. Taxa included on the spring planting lists are mostly deciduous species that benefit from favorable rooting conditions through spring; conifers, generally more slow-growing and less dependent on abundant moisture, are largely reserved for fall when their roots grow more rapidly in the warm soil and cool air of autumn.
The work of selecting and staking specific locations in the Arboretum for each individual on the planting lists begins in fall, and as weather permits continues through the winter months, often all the way to early spring. Michael and Andrew select tentative locations based on the Arboretum’s historic planting scheme, assessment of the value of the accession, plant growth type and form, and what we know about a taxon’s growing requirements. In general plants are sited within their collections as mapped across our landscape in the Bentham & Hooker sequence of plant families—flowering cherries (*Prunus* spp.) with the rose family (Rosaceae) near the ponds, lilacs (*Syringa* spp.) with the olive family (Oleaceae) on Bussey Hill, and so on.

Multiple individuals of an accession are typically planted together when possible, but may be separated if there are issues of adequate space, if plant material is needed for a functional purpose or renovation project elsewhere in the landscape, or if questions of hardiness exist for a particular taxon. Plants untested or marginally hardy in Boston may be planted in one of several warmer microclimates in our landscape, such as the Explorers Garden on the protected slope of Bussey Hill. With location ideas generated, Andrew works with the staff horticulturists responsible for the hands-on care of the collections in their assigned maintenance zones to select the exact location for each plant. As “local experts” for their zones, our horticulturists hold extensive knowledge regarding the characteristics of both the plants they steward and the landscape zones they oversee as part of our Landscape Management System [see more in “Rooted in the Collections”, *Arnoldia* 74(2), 2016].

*Quercus virginiana* (southern live oak) offers one great example of how the Arboretum may diversify planting areas for a species of questionable hardiness for our region. In 2012 Michael collected *Q. virginiana* in the northernmost part of its range, the southeastern region of Virginia. Thirty-eight plants cultivated in our nurseries from that expedition now grace three different plantations in the Arboretum—two in known microclimates on Bussey Hill and one on Peters Hill—in hopes of offering this species a fighting chance at surviving our winters. A fourth batch of a dozen more plants from Michael’s field work will find their way into the landscape this spring, and will be closely monitored as part of the Arboretum’s novel attempt to rear the legendary southern live oak this far north of its natural range [read more in “The quest for the hardy southern live oak”, *Arnoldia* 70(3), 2013].

**Class of ’18 Spotlight**

*Malus ‘Mary Potter’*

The Arboretum has introduced a number of wonderful selections of crabapple. A favorite for many is ‘Mary Potter’, a hybrid between *Malus sargentii* (Sargent crabapple, a dwarf, spreading tree) and another hybrid (*Malus × atrosanguinea*). A bit more robust than its one parent, it still maintains a wide, spreading form. It bears a profusion of white flowers (pink in bud) in spring, and small red fruits in the late summer. Another novelty with meaning to the Arboretum is the name—Mary Potter was one of the daughters of Charles Sprague Sargent. The plant going out into the collections this spring was propagated from the original Arboretum accession.

**Class of '18 Spotlight**

*Carya laciniosa*

Shellbark hickory is prized not only for producing the largest fruits (nuts) of the hickories—giving rise to another common name, kingnut—but also for its gorgeous deep yellow to orange autumn leaf color. The genus is one of the most important at the Arboretum, recognized as one of our national or accredited collections in coordination with the Plant Collections Network of the American Public Gardens Association and the USDA. The three young trees (327-2011*A,B,C*) that will be planted in the collection this spring represent wild material gathered by Michael Dosmann and colleagues near Driftwood, Pennsylvania, while collecting *Fraxinus* (ash) in 2011.
Once a planting location has been selected, steps to prepare the ground for the new arrival come next. Horticulturists will stake the location and turn the soil to mark its place—a technique that helps identify the spot if the planting stake is lost over the winter, and makes digging easier come spring. They may also add compost amendments as needed.

As April approaches, Andrew, Tiffany, and the planting team keep an eye on the thermometer, the thawing soil, and moisture conditions in the landscape for the right time to start the transplanting work ahead. Broadly speaking—but highly dependent upon conditions—spring planting runs through April for hand-dug plants, and into early June for plants in containers. Plants on the planting lists get evaluated one more time in the nurseries, particularly to inspect for any winter damage or changes in condition. Once the selections are reviewed, ’planting bulletins’ are issued based on transplanting priority, with the goal to complete the process before each field dug plant breaks bud and foliage starts to emerge. Plants that leaf out early like maples (Acer spp.) and birches (Betula spp.) come first, followed by plants like oaks (Quercus spp.) and ash (Fraxinus spp.) that break dormancy weeks later. Plants in containers are the final focus; since their root loss is typically less severe than plants dug in the nursery, they are more amenable to transplanting after leaf-out. As a last step in the nursery, Manager of Plant Records Kyle Port affixes their metal accession tags, which carry all of their vital collection information, and replace the temporary identification labels used at various points in the propagation cycle.

On planting day at the site, horticulturists dig the planting hole, making sure it is not too deep that it will bury the plant’s root flare. The root flare (where the trunk meets the root system) sits at or slightly above grade level, to allow for gas exchange and prevent growth of a secondary system of roots. Once settled in and viewed from all angles to ensure it stands straight, the hole is backfilled with the excavated soil. Keeping clear of the root flare and trunk, a layer of mulch is applied and the plant is thoroughly watered to ensure good hydration and proper soil-to-root contact. New plantings—easily identified by their colored stakes, a new color each planting season—receive regular watering during their first year in the landscape and in subsequent years during dry periods and drought conditions. Curation collects precise GPS coordinates for the plants in their new locations, and adds this information to the Arboretum’s plant database along with any additional observations from the site visit. Our horticulturists monitor new accessions closely for their first few seasons until they are well established, managing everything from aesthetic and corrective pruning, to reducing weedy competitors, to mitigating stress resulting from pests, disease, or other factors.

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