

WHERE GRASSLANDS AND WOODLANDS MEET:

The University of Wisconsin-Madison Arboretum

TEXT AND PHOTOGRAPHS BY DANIEL MOUNT

No man is an island, I've been told. The same holds true for trees, although I have planted them for clients as individual specimens, or admired a lone, weather-gnarled conifer on a mountain top. But those trees are exceptions. Trees, like people, always exist within a greater context.



ABOVE: The Black Oak Savannah in the Wisconsin Native Plant Garden at the University of Wisconsin-Madison Arboretum. **INSET:** *Forsythia viridissima* 'Kumson'

The founders of the University of Wisconsin-Madison Arboretum were well aware of this. The Arboretum was established in 1934 (in the same year as the Washington Park Arboretum); it began as a 500-acre parcel south of Lake Wingra, one of the five lakes sited in Madison. Among the many botanists, horticulturists, civic leaders and citizens involved in the birth of the Arboretum, one man with a particular vision stood out—the naturalist and land ethic proponent Aldo Leopold. Inspired by principles of the then-new science of ecology, Leopold believed the Arboretum should not be a living museum of exotic trees, but rather a “sample of what Dane County looked like when our ancestors arrived here.” Botanist Theodore Sperry’s enthusiasm for restoring the native prairies and oak savannas that had disappeared under the plow, and had been impoverished by over-grazing, also fired him up to search remaining wild places in the state for plants that once had been native to the newly established Arboretum. The first plantings began by 1935; three planting methods were used. Hay containing prairie seed was spread over cleared soil, sections of sod from existing prairies were transplanted, and seed collected from remnant populations in other parts of the state was sown. By 1938, native purple cone flowers (*Echinacea purpurea*) bloomed once again in the 60-acre tract now known as Curtis Prairie.

This singular project, which is considered the oldest prairie restoration site in the world, has long attracted famous visitors. Walt Disney arrived with his cameras in 1953 to film the wildlife documentary “The Vanishing Prairie.” A few years later, Secretary of the Interior Stuart Udall visited and said, “Nowhere in all my travels have I found more encouragement for conservation than in your state.” Despite this early success, Sperry believed it would take “roughly... a thousand years to restore” this damaged prairie.

Yet 60 acres of grasses and forbs do not an Arboretum make. For all the innovative

planning and hard labor by the botanists, ecologists and troops of Civilian Conservation Corps (CCC) workers involved in prairie restoration, it was lilacs that attracted the Arboretum’s first visitors.

Lilacs and Crabapples

At the Arboretum’s inception, the University hired a newly trained and enthusiastic horticulturist named G. William Longenecker, whose name today graces the Arboretum’s ornamental collections collectively known as the Longenecker Horticultural Gardens.

Longenecker’s focus was typical of what arboreta were doing at the time. He sought out interesting woody plants that could grow in Zones 4b to 5a—the humid, continental climate of southern Wisconsin. With an average snowfall of 40 inches, winter temperatures dipping below zero degrees Fahrenheit, and humid summer temperatures topping out in the 90s, this is not a climate for Mediterranean natives or the broadleaf evergreens we are so fond of in the Pacific Northwest. Yet, despite these climatic limitations, the Longenecker Horticultural Gardens became the premier woody-plant collection in Wisconsin. According to Edward Hasselkus, the collection’s curator for the last 43 years, there are over 2500 different plants within the Garden’s 35 acres. Its collections include one of the nation’s largest displays of lilacs (*Syringa*) with 275 taxa, one of the country’s most up-to-date collections of crabapples (*Malus*) with 175 taxa, and an important arborvitae (*Thuja occidentalis*) collection with over 115 taxa of this variable Wisconsin native. It also includes 16 taxa of one of my personal favorites, the sugar maple (*Acer saccharum*), which is the Wisconsin state tree. On a recent visit to the Gardens, I was surprised to see *Daphne x burkwoodii* thriving there, as well as a large colonizing pawpaw (*Asimina triloba*) at the northern limit of its native range. I was thrilled to see flocks of wild turkeys feeding on fallen nuts beneath four American chestnuts (*Castanea dentata*),

each over 50 years old, that are free of the blight that devastated stands in the eastern United States early in the last century.

The ornamental collections are beloved by local visitors, particularly in May when the crabapples bloom, and at lilac time when new generations arrive to see some of the original shrubs that drew the Arboretum's first visitors. Still, restoration and ecosystem projects occupy most of the Arboretum's varied land. The original 500 acres grew quickly, with most purchases being made before World War II; today the Arboretum possesses 1260 acres. (There was a small loss of 3.77 acres and 1500 trees to the Department of Transportation in the 1970s, when they put in the Beltline Highway.) The Arboretum's historian, Nancy P. Sachse, states, "From the piecemeal land acquisition, hectic though it often was, came a curious advantage, for this acreage provided more varied terrain and consequently more scientific opportunity than even the most careful planning could have for seen."

Continuing Restoration Projects

After the successful establishment of the Curtis Prairie, other parts of the Arboretum were considered for restoration; today that terrain hosts 33 restored or created ecological communities, including three additional prairies and two oak savannas. In these prairies and savannas grow the wild ancestors of many popular perennials that inhabit our gardens today. (Often the wild species were exported to Europe, where their cultivars were bred and then re-imported to the American market.) Among many others, native Joe Pye weed (*Eupatorium purpureum*), black-eyed Susan (*Rudbeckia hirta*), New England aster (*Symphotrichum novae-angliae*), spiderwort (*Tradescantia obiensis*) and gayfeather (*Liatris spicata*) have been favored flowers in the waves of natural gardening that periodically sweep this country. Yet nowhere are they more beautiful than in their wild forms, mixed with native grasses such as big blue stem (*Andropogon*

gerardii) and Indian grass (*Sorghastrum nutans*) on the edge of an oak wood.

Wisconsin's post-glacial terrain has similarities with Washington state's. Although not mountainous, it is undulating and hilly, potholed with lakes and braided with rivers. The southwestern part of the state, where Madison is situated, stands at a transitional zone between the eastern-forest biome and the prairie biome of the Midwest. Nowhere is this more obvious than in the Curtis Prairie, where the invasion of woody species—beyond a scattering of burr oaks (*Quercus macrocarpa*)—is problematic: New Jersey tea (*Ceanothus americanus*) and two species of shrubby dogwood (*Cornus sericea* and *C. racemosa*) must be regularly removed from this grassland so they do not turn it into a forest.

Wisconsin—known as "America's Dairyland" and famous for red barns and black-and-white cows—once was covered in forests. With a gentler topography than Washington state, Wisconsin's timber was easily and readily harvested, leaving depleted what had been vast tracts of diverse forest communities rich in wildlife and woody and herbaceous plants. U.W.-Madison Arboretum is recreating many of these complex forest communities. The Wingra Oak Savannah, an open grove of burr oaks (*Quercus macrocarpa*), is still in the process of having non-native trees, shrubs and herbaceous weeds replaced with grassland species. The Noe Woods, a 51-acre grove of white (*Quercus alba*) and black oaks (*Q. velutina*), is a type of woods that typically developed after settlement put an end to the cyclic regeneration that results from natural fires. It hosts the park's oldest trees: several oaks over 150 years old. The 52-acre Wingra Woods is slowly being converted into a typical northern Wisconsin deciduous forest dominated by sugar maples (*Acer saccharum*), yellow birch (*Betula alleghaniensis*) and hemlock (*Tsuga canadensis*). In this woods, and the adjacent 28-acre Gallistel Woods, are found ancient burial and effigy mounds belonging to a Native



ABOVE: Artwork in the Curtis Prairie.

INSET: Goldenrod massed against the stone walls of the Arboretum's Visitor Center.

American culture that flourished there between 650 to 1200 years ago. Some mounds represent birds or panthers, while others are simply geometric. These mounds still hold mystery for casual visitors, as well as for the archeologists who study them.

Gallistel Woods is representative of the woodland communities of southeastern Wisconsin that are dominated by sugar maple (*Acer saccharum*), basswood (*Tilia americana*) and American beech (*Fagus grandifolia*). These are the woods of my youth; I still remember the joy, after a long and bitter winter, of seeing bloodroot (*Sanguinaria canadensis*), yellow dog tooth violet (*Erythronium americanum*) and white baneberry (*Actaea pachypoda*) pushing out of the leaf litter to take advantage of sun beneath the leafless trees. That some

of these plants can be found in my clients' gardens here in the Pacific Northwest is evidence of the lasting impression these forests had on me.

One of the first forest re-creation projects at the Arboretum—the Leopold Pines—was planted in the 1930s by the Civilian Conservation Corps, under the direction of Aldo Leopold himself. It is a tall stand of white pine (*Pinus strobus*) and red pine (*P. resinosa*) that recreates the primary coniferous forests of the upper Midwest before they were logged. An understory of red maple (*Acer rubrum*) and paper birch (*Betula papyrifera*) seems to thrive under Leopold's pines, but experiments



Split burs—or nut casings—of the American chestnut (*Castanea dentata*).

to establish a lower understory of northern shrubs and ground-layering plants have met with limited success. (Ecologists now hope to create an “old-growth effect” in a relatively short time by cutting down selected trees.)

The 14-acre Boreal Forest is an attempt to recreate the forests, dominated by black spruce (*Picea mariana*) and balsam fir (*Abies balsamea*), which cover great expanses of Canada and dip into the northern-most regions of Wisconsin.

Water Features in the Arboretum

Of the 65,503 square miles of Wisconsin, 11,190 are water. The state borders one of the largest bodies of fresh water on the planet, Lake Michigan, and touches another, Lake Superior. It has the famous Mississippi River as its western boundary line and is covered with countless

smaller lakes and rivers. The Arboretum’s many representative wetlands—fed by storm water runoff from the surrounding 4600-acre urban water shed—include ponds, marshes, creeks and Lake Wingra. Of the wetlands, Wingra Marsh remains relatively intact, while other wetlands contain many exotic species. These protected wetlands, once favored hunting grounds of Native Americans as well as early settlers, now attract birders—especially during the migratory seasons of spring and fall. They also play host to one of this continent’s more dramatic birds, the Sandhill crane.

The most recent development, the Wisconsin Native Plant Garden, was begun in 2001 in conjunction with an expansion of the Visitors’ Center. This four-acre garden surrounds the Center and represents over 500 plants from around the state, grown in



ABOVE: Mixed Shrubs in the Longenecker Horticultural Gardens. **INSET:** *Liatris spicata* in one of the Arboretum's wildflower meadows. (Photo courtesy of the University of Wisconsin Archives)

15 distinct plant communities. As part of the ornamental gardens of the Arboretum, it serves to encourage use of native plants in home landscapes, both for their intrinsic beauty and for creating habitat for wildlife.

Visionary Goals

The fact that this impressive Arboretum is sustained by a relatively small community (there are only slightly over 230,000 inhabitants in Madison) is a testament to its visionary goals and its ability to inspire the public. Many visitors simply enjoy the 20 miles of trails for biking, jogging, skiing or snowshoeing, while university students and garden and nature enthusiasts are drawn to the well-maintained horticultural collections and ecosystem projects.

With only one full-time and one half-time gardener for the ornamental collections, and three field staffers for the remaining 1200

acres, much of the Arboretum's maintenance falls on its 700 volunteers, who play indispensable roles in helping with educational programs, fundraising and creating and maintaining the Arboretum's Web site.

It is estimated that the University of Wisconsin-Madison Arboretum is home to the species of over 650 native plants, 250 birds, 29 fish, 35 mammals, 26 amphibians and at least 15,000 types of insects. Add to these numbers its many visitors, staff and volunteers, and the very existence of the Arboretum proves that no tree—like no man—is an island. ∞

DANIEL MOUNT received a BSLS-Botany degree from the University of Wisconsin-Milwaukee. He currently works as an estate gardener in the Seattle area. Read his thoughts on gardening on his blog danielmountgarden.blogspot.com.