

Of Connection and Renewal

The Historic Apple Trees of the Badger Army Ammunition Plant





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At times it feels as if we are exploring Mayan ruins in the forests of Yucatán, or searching deep in the jungles of Cambodia for unknown temple chambers of Angkor Wat. We sweat and stumble and hack our way through thickets of autumn olive and barberry, prickly ash, and Eurasian honeysuckle.

Our location, however, is not particularly romantic. We're just a mile or two from busy US Highway 12, on the lands of the old Badger Army Ammunition Plant in Sauk County, Wisconsin. And the object of our expedition is not so exotic. We're looking for old apple trees.

The apples trees are easiest to find in the spring, around Mother's Day, when their bright white blossoms stand out like hailstones against newly green grass. Some are isolated, standing sentinel in open old fields or along abandoned roads. Many, however, are engulfed by dense shrubs and trees. We trip over branches and untangle ourselves from bramble thorns until we finally arrive at the stout trunk of an apple tree—or, often, multiple trunks. Many trees have fallen or split over the decades, but their life-sap continues to flow stubbornly through new sprouts and leaders. These are tough characters.

Members of the Badger Apple Corps (of which I am one) record each tree's location, attach a numbered aluminum tag, and tie a

strip of bright orange ribbon to an outer twig to make it easier to eyeball after everything else in the landscape has fully leafed out. We will want to come back during the growing season, and then in the late summer and fall to see what fruits these trees will offer. No one knows what we'll discover.

Well, a few people may know. There are agricultural researchers who have noted the trees over the years, and retired workers from the Badger Plant who once collected the apples (and occasionally made cider). Some of the local residents, now in their 80s and 90s, on whose family farms these trees once grew might even recall what kinds of apples were planted here so many years ago.



The Sauk Prairie once stretched across 14,000 acres between the Wisconsin River and the Baraboo Hills. Bounded on the east by the terminal moraine of the last glacier and on the



west by ancient sandstone bluffs, the prairie stood at the eastern gateway to Wisconsin's Driftless Area. The glaciers, prairie vegetation, and intervening millennia provided a precious gift: rich soil. The Ho-Chunk and Sauk-Fox people thrived here until they lost their land through migration, treaties, and removal.

With the arrival of settlers from the eastern states and Europe starting in the 1830s, the Sauk Prairie became home to several hundred prosperous farmsteads. As the land was plowed and tilled, the prairie itself was all but lost. But a new community was gained. Sauk County became a lively center for apple propagation and cultivation. It even had its own local version of Johnny Appleseed: one A.G. Tuttle of Baraboo. "It is now 34 years since I commenced as an orchardist in Wisconsin," reported Tuttle in 1887. "I have experimented with over one hundred varieties. ... We are going to bring our apples up where they will stand as high as any eastern apple. I am here to speak for the great growing apple interest of Wisconsin."

Tuttle did not add an exclamation point to his claim, but he might have. By the late-1800s, farmers had dotted Wisconsin's landscape with favorite varieties, and progressive horticulture was building a foundation for specialized fruit growers across the state. Within a few years, flourishing commercial apple growing centers would emerge around Gays Mills in Wisconsin's southwest Driftless Area, near Sturgeon Bay in Door County, and in the Bayfield region in the north.

As far as the cultivation of apples, the farms of Sauk Prairie may not have been remarkable in their time. Like rural landscapes across Wisconsin, many of its farms would have had a few trees for home use, and a few may have supported small orchards to provide fruit for local markets. However, over the decades as our agricultural priorities changed, apple trees were neglected, became overgrown, and eventually died out. Varieties disappeared. Orchards were converted to cropland and pasture or fell to residential or urban development.

Unlike other Wisconsin landscape, however, Sauk Prairie was to experience a unique fate. In the 1940s, the lands of the

upper prairie were placed in the service of the United States Army. When it was constructed at the beginning of World War II, the Badger Ordnance Works (as it was originally known) was the largest munitions plant in the world, occupying some 10,000 acres. It was later reduced to 7,350 acres, located on the former prairie, adjacent oak savannas, and the south slope of the Baraboo Hills.

To build the Badger plant, the federal government acquired more than eighty farms in the months following the bombing of Pearl Harbor. It took only a few more months for a major industrial facility—1640 buildings in all—to arise on the prairie and for the plant to go into operation, producing smokeless gunpowder for the war effort. The plant produced munitions for the duration of the war, was reactivated during the Korean and Vietnam conflicts, and remained on stand-by throughout the Cold War.

When the Badger Army Ammunition Plant was decommissioned in 1997, a new chapter in the history of this land began. Citizens of Sauk County and others interested in the future of this area wrestled with the contentious question of the land's future. A diverse committee, consisting of representatives from local, state, federal, and tribal governments, as well as schools, businesses, and nonprofit organizations, was charged with finding a way to bring competing interests together. After an intense period of debate, discussion, and negotiation, the committee issued the "Badger Reuse Plan." The plan, agreed to in March 2001, outlined a community-driven vision for devoting this storied landscape to ecological restoration, conservation agriculture, education and research, and recreation.

Over the last decade the Badger lands have been transferred to three primary landowners: the U.S. Dairy Forage Research Center (part of the Department of Agriculture), the Wisconsin Department of Natural Resources, and the Ho-Chunk Nation.

While environmental cleanup of contaminated soil and groundwater by the U.S. Army is still ongoing, all but a few of the dilapidated buildings and their contents were safely removed. Today, the land is open in a way it has not been in





decades. Visitors have increasing opportunities to explore this place of history, reflection, and restoration. Volunteers work to revive and expand the precious remnants of the Sauk Prairie, to hold in check the invasive shrubs, to monitor the site's abundant grassland and savanna birds, to document the unique history of the site ... and to find and mark apple trees.



After two field seasons, Badger Apple Corps volunteers organized by the Sauk Prairie Conservation Alliance have located and marked some 180 trees—mostly apples, some pears—on the former Badger Army Ammunition Plant lands. Somehow these survivors have endured the radical transformations of the landscape. Along

with scattered patches of day lilies and an occasional lilac bush or Norway spruce, the apple trees are among the few living connections to the displaced farming community of Sauk Prairie. As reminders of the lives lived here and the history made here, they add a further layer of interest and connection to a landscape already rich in geologic features, biological diversity, and cultural meaning. And as the trees are cared for again, they are contributing to a new chapter in the story of the Sauk Prairie.

Initial surveys by the Badger Apple Corps show that the trees occur throughout the former plant property, but are concentrated in areas where several old orchards were sited. These are places where the army's production lines were set further apart, where the land was a little less flat and even. Over

the decades, army workers and Dairy Forage Research Center employees occasionally pruned some trees, but most have long since gone feral. The deer population of the plant has certainly given them great attention.

Many of the trees are true veterans that were cultivated prior to the building of the plant, and that may represent interesting heirloom varieties. Others are more recent volunteers, the result perhaps of a plant worker's discarded apple core. Some trees have fared well and are remarkably resistant to cedar-rust and other apple maladies. Others are barely holding on, hollowed out trunks with living leaves and fruits restricted to a single stalwart limb.

While the expected questions—*What varieties are they? Are any of them rare?*—are always on the minds of Badger Apple



Corps volunteers, there is much we still don't know about these apples.

To learn more, we've enlisted Dan Bussey, one of the nation's leading heirloom apple experts. Bussey is the orchard manager at Seed Savers in Decorah, Iowa, and owner of a farm near Edgerton, Wisconsin. Bussey has studied the history of apples in North America for more than three decades and had long wanted to visit the remnants of the Badger Plant's old farmsteads. "I'd long been aware of the size of this huge property," he says, "and now we have begun to learn about what we have here."

For Dan, apple identification combines adventure, mystery, science, and history. "I try to figure out how old the tree was; where was it grown; what the typical market apples of that time were. Learning the little variations that the local nurs-

eries of the area may have had also helps. Little by little, you can start to figure it out."

Given the Badger Plant's legacy of contaminated soil and water, Badger Apple Corps members and others interested in these trees also have questions about the safety of the apples. It turns out that relatively little attention has been given to the potential uptake of contaminants in fruit and nut trees. What research has been done suggests that they rank at the low end of potential risk (as compared, for example, to leafy greens and annual vegetables).

What is a concern is also an opportunity. Kate Braun, a Master's student in landscape architecture at the University of Wisconsin-Madison, is focusing on the Badger Plant apples for her thesis work. Part of her research involves analysis of

possible contaminants in fruit harvested from the former munitions plant site, the results of which could be used for urban agriculture and brown-field rehabilitation projects around the globe.

Braun notes that the permaculture movement, which builds sustainable agroecosystems by bringing together traditional knowledge and contemporary scientific understanding, is drawing increased attention to the use of fruit trees and other woody perennial plants in both suburban and urban settings. For instance, urban "food forests" comprised of a large fruit or nut tree canopy with and an understory of berry bushes and herbs below are welcoming foragers in cities from London to Toronto to Los Angeles. Braun is betting the apple trees of the Badger Plant, survivors in a once industrialized landscape, will yield



helpful lessons for the future of sustainable agriculture.

Braun's work will also help us to better address questions involving the protection and preservation of the trees. Ultimately, the responsibility and opportunity for stewardship rests with Badger's new landowners. All have expressed interest in the results of the Badger Apple Corps fieldwork. They also recognize the potential for innovative approaches to conserving the trees as part of the continuing renewal of the Badger landscape and realization of the vision of the 2001 "Badger Reuse Plan."

While we have focused on the practical considerations for these trees, we have found increasing public curiosity about them. As interest in craft brewing of hard cider and apple brandies has grown, the search for older and rare apple cultivars has intensified. Local brewers often ask us if any of the apples

are known cider apples—which are typically not supermarket-pretty and conventionally tasty—and if they are available for sampling and experimentation. The best we can tell them is: stay tuned.



The interest of heirloom preservationists, landscape architects, craft cider brewers, and others suggests something else hanging from the fruit-heavy branches of Badger's apple trees: concern for the variety of life on our planet. Over the last century, the diversity of cultivated apples has diminished dramatically. Seed Savers orchard manager Dan Bussey has compiled the astonishing numbers: of the 17,000 (and counting) named apple varieties that once were found across North America, some 70% have been lost, presumably forever. Of the remaining

varieties, several thousand are grown in limited places and amounts by a devoted band of heirloom apple enthusiasts. Only a couple dozen apples are grown for the commercial market, and a small handful of these dominate the supermarket shelves.

Compared to our ancestors, we are "apple-poor." It is hard for us even to imagine the variety of flavors, textures, colors, sizes, shapes, and adaptations that they knew and grew. This, of course, reflects trends in the loss of agricultural biodiversity generally. Especially since World War II, as agricultural systems have intensified, the genetic diversity of the world's cultivated fruits and grains, vegetables, livestock breeds, beneficial microbes, and pollinators has eroded.

In a world with a warming climate whose future will require greater adaptation and resilience in our food systems,



conserving that remaining diversity is of paramount concern. That is the mission of Seeds Savers (among other non-profit organizations, businesses, and agencies). And, in our small corner of Wisconsin, it is the goal of the Badger Apple Corps

The Badger Plant trees have hung on through episodes of eviction, land conversion, wartime production, land abandonment, and political wrangling. Once one has scrambled like a running back on hands and knees to get through thick brush to a blooming tree, one develops an eye for apple trees everywhere in the Wisconsin landscape—and an appreciation of old orchards that apple keepers have maintained. By highlighting the story of apples, the Badger Apple Corps can contribute to the growing appreciation of relict trees that still stand along fence lines and in “back forties” throughout our landscape.

The apple trees of the former Badger Army Ammunitions Plant also remind us of what we have sacrificed, and what we can yet reclaim. As the living memory of World War II fades, so does awareness of its disruption of Wisconsin lives and landscapes. In 1942 more than eighty Wisconsin families evacuated beloved farmsteads to serve the patriotic cause. Just as thousands of Wisconsinites served and died in World War II, thousands of workers—from local communities, from the Ho-Chunk Nation, from all across the state—worked in former farm fields transformed into a vast weapons factory. The infrastructure of that factory has now been dismantled, recycled, sold for scrap, entombed in landfills. The land is transforming again, to serve a restorative vision—yet facing an uncertain future.

The deep-rooted trees remain, persist, and insist on bearing their fruit. As I

write, the apples are blushing yellow and deepening red. Deer await their annual windfall. So do we. We gather up not only apples, but data, memories, stories. We bite into fall-crisped apples and renew our connection to the past and our hope for the future. ✱

Postscript: Work to research, identify, and steward Badger’s historic apple trees has been carried out by the Sauk Prairie Conservation Alliance (saukprairievision.org) and the Badger History Group (badgerordnancehistory.org), in partnership with the Badger landowners. These groups welcome questions about and support for this ongoing project and other activities related to the history and future of the Badger lands.