TREE TALK with BRIAN RILEY

Ohio Division of Forestry & Area 1 Tree Farm Chair

A Diamond in the Rough

So you think you know a beech tree when you see it, huh? Always with smooth, bright-gray bark, presenting itself from a mile away and usually defiled with some vandal's graffiti carved into its trunk, forever professing that Willie is smitten by Kate or something of the sort. This correlation often comes to the forefront of our collective minds whenever we think of American beech (*Fagus grandifolia*). The fact of the matter is that above all else, the classic American beech is defined by its light, smooth bark, practically begging to be vandalized. Many consider it a shame that anyone would want to permanently scar a tree with so much character and wish there was an equally striking beech available that would not lend itself well to that sort of reprehensible action. Having said this, I am pleased to inform you that there is now an exception to the rule.

In March 2001, like most college students out on spring break, I was traveling around Ohio looking at trees in parks, cemeteries, arboretums, state forests, and other places of the sort to observe and learn all I could pertaining to dendrology. On one balmy late winter day, while driving around the beautiful grounds of Ferncliff Cemetery & Arboretum in Springfield in Clark County, I made a discovery that took on a life of its own, forever changing the way I think of and look at the iconic American beech. What I had unwittingly stumbled upon was a most striking form of this species, with shallowly cracked bark forming distinct diamond-shaped patterns throughout the tree, evident down to twigs 1-1.5 cm thick. Due to this disguise, I did not realize that I was actually looking at a mutated American beech, a tree that originated at the site as a wild seedling and could not have been much more than a modest sapling when Ferncliff Cemetery was chartered in 1863. After a few weeks of cross-referencing this tree with all of the other species of beech worldwide, I came to the conclusion that it was, in fact, a never-before-seen form of our native American beech.

Usually the word "mutant" carries with it a negative connotation – something hideous – but in this case, it is an attractive genetic abnormality unlike anything ever seen in beech. Aside from the unique bark pattern throughout the entire tree, this freak of nature is taxonomically identical to the typical American beech found in woodlands throughout the eastern half of the United States. Being enamored by its beckoning bark, I could not help but wonder if others would see as much potential in this tree as I did. After two years of thinking about what I had encountered, I decided in early 2003 to attempt something that is usually not done by anyone outside the horticultural profession: I was going to introduce a registered cultivar (short for cultivated variety) for worldwide distribution, thus forever protecting its genetic identity! It would be an entirely new experience for me, but my mind was made up and I was determined to make it happen.

Of course, a great cultivar needs an equally great name. Given that this particular American beech is distinct, in that its bark cracks into conspicuous diamond-shaped patterns throughout the entire tree, meant that Diamondbark was the only logical choice. In order to protect every unique aspect of this new selection and to eliminate the prospect of pseudomark infringements, Stan Spitler, Superintendent of Ferncliff Cemetery & Arboretum, filed to make "Diamondbark American Beech" a registered trademark of the association. The trademark application was approved by the United States Patent and Trademark Office in 2007, allowing this new cultivar to carry with it the trademark insignia and making it illegal for others to market any plant under that name without the consent of Ferncliff Cemetery & Arboretum.

If you are wondering why the bark formation of this new selection differs from its widely distributed beech brethren, I regret to say that there is no simple answer to this question. The best explanation I can give you at this time is based on what is known about bark behavior in general. The bark of typical American beech is relatively soft due to its low concentration of lignin, a substance that helps provide strength to the woody tissue of trees. As a result, normal beech exhibits the smooth bark that we are all familiar with. Diamondbark American Beech™, however, is a bit different. It is presumed that this cultivar naturally produces more lignin than the typical American beech, causing its bark tissue to become harder than what is normally seen in the species. This hardening process is known as sclerification. And as the tree grows, the abnormally hard bark of Diamondbark American Beech™ builds up and begins to form stress fractures that are not seen in straight American beech. These fissures, arranged in a predominately vertical fashion, criss-cross to form diamond-shaped patterns evident from the bottom of the trunk to the most slender of twigs. This genetic abnormality sets Diamondbark American Beech™ apart as a horticultural gem, and goes to show that bark is anything but boring.

Personal bias aside, Diamondbark American Beech™ is arguably one of the most unique cultivars in distribution because very few plants are selected for their atypical bark characteristics. The bark of Diamondbark American Beech™ most closely resembles that of mature serviceberry (*Amelanchier* sp.), but even this comparison is a bit of a stretch. Unlike most cultivars, Diamondbark American Beech™ shows its elegant character year-round. This aesthetically appealing trait would seemingly make it an excellent candidate for homeowners to plant in their yards. Unfortunately, it can only be successfully cloned by grafting twig cuttings onto American beech understock, which is intolerant of adverse soil conditions, limiting its potential as an urban tree. But for those areas lucky enough to have the rich, loam soils that beech requires, Diamondbark American Beech™ is being produced clonally in both large and small nurseries and arboretums alike across America and as far away as England and Germany. Distribution will most certainly continue as word spreads of the one and only attractive yet "vandal-proof" beech known in existence. Not bad for a tree that was unrecognized until 2001.

As with anything worthwhile, this project was by no means an easy undertaking. The self-imposed burden on me was greatly reduced by the experts and good friends who have guided me nearly every step of the way throughout this endeavor, including Dr. T. Davis Sydnor of The Ohio State University; Barry L. Weber, retired Columbus City Arborist; and Rich Larson, plant propagator with the Dawes Arboretum in Newark, Ohio. Also, I have to thank Dr. Gerry Moore of the Brooklyn Botanical Garden for submitting my cultivar description column for publication in the March 2010 edition of *HortScience* (Volume 45, Issue 3), as well as Kelly Baggett and Dave Carey at the Delaware U.S. Forest Service lab for taking care of the vulnerable young grafts despite having more than enough test trees of their own to look after. Last but not least, this project would not have been possible had it not been for my good friend Stan Spitler and his dedicated staff who joined me in my quest to share this one-of-a-kind tree with the rest of the world. Thanks to the efforts and hard work put forth by the aforementioned individuals, I hereby declare "mission accomplished**"**!

AUTHOR'S NOTE: This article is dedicated to Marjorie R. Skinner (1917-2010) – thank you Grandma for the many years of love, laughter and life lessons you shared with us all.