

# One Carolina dendrological journey

RON LANCE writes about some of the special species that he has found during his many expeditions into the Appalachian Mountains.

In every dendrologist's life, there are memories equivalent to fish tales among fishermen, revelations among artists, crop booms and busts of farmers. We relive catching "big ones" and lament the ones that "got away" from our experiences. Memories of grand treks and first acquaintances of certain trees underscore good years, yet we remember the disasters and disappointments associated with our attention long aimed at trees. We tend to boast on points of accomplishment, such as being in obscure places where notable trees grow, or bringing home significant propagules for cultivated collection. Some of us strive to collect, some merely seek imagery for experience, and some strive to partake of dendrological comradeship. Regardless of the how and why of tree travels, we all have tales to tell.

Occupying near the top level of any dendrophile's fantasy is performing plant exploration and finding something unique. Plant exploration certainly had a golden age when the earth's corners were new and dendrologists few. Even so, today there are more plant people looking than ever before and we still find new things, and not necessarily things new only to the people looking. I will render a few examples of discoveries highlighting my life, found in my own section of the world tramped so many times before, by hordes of fishermen, hunters, farmers, and a smattering of dendrologists.

## Magnolias

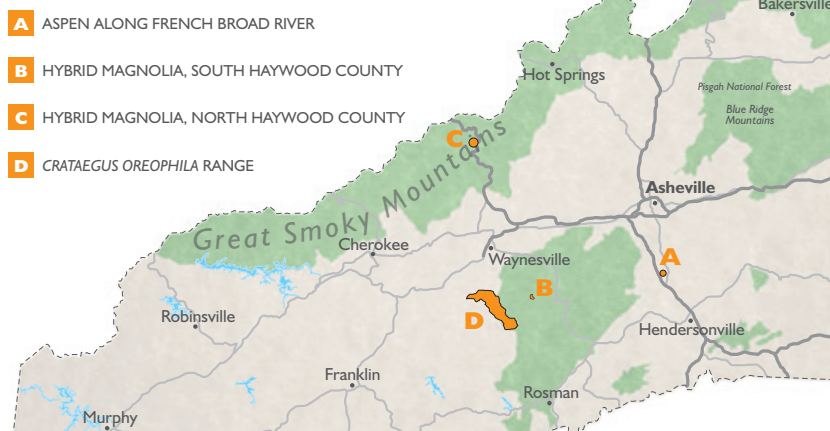
By 1975, I had already formed my personal list of favourite trees. This despite the fact that the true earthly diversity of the subject matter was unfamiliar to someone of such limited exposure, having lived up to that point only in the Appalachians of North Carolina. High on my list, actually being the number one position every now and then, was my region's endemic Mountain magnolia, *Magnolia fraseri*. Everything about this tree was admirable to me, despite the fact that it was not looked upon very favorably in the forestry



■ Eastern United States with framed area (inset) in its detailed form shown opposite.

realm. I developed an eye for the texture, shape and disposition of its leaves in the summer, its pale greyish bark and sparsely branched form in the winter. Even the long, purplish buds and joint-like appearance of its twigs were mesmerizing. I purposely headed toward these trees whenever in the woodlands, and soon I was gathering seeds, transplanting seedlings, and planting these trees in choice spots on the family farm.

### Detailed map of new plant locations in western North Carolina



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photographs © Ron Lance



**Above left**, The flowers of the natural hybrid *Magnolia fraseri* × *tripetala*, and **right**, the flower of the F1 hybrid *Magnolia fraseri* × *pyramidata*.

It was about 1980 or 1981, while monitoring student forestry crews in a mountainous area of southern Haywood County that I noticed an unusual seedling magnolia near a grove of trees which I was visiting to shed some admiration. White-tailed deer were nibbling at this small plant, as upon



Flowers and habit of *Magnolia fraseri* × *tripetala* in North Carolina.

others in the vicinity, so the unusual leaf shape was initially thought to be attributable to that type of stress. It lacked the auriculate leaf base so diagnostic for *Magnolia fraseri*, yet it was clearly not *Magnolia acuminata* nor *M. tripetala*. There was a specimen of the latter planted at a home beyond the edge of this woodland, but the natural forest here was filled only with *M. fraseri* and *M. acuminata*. I watched this plant for the rest of the summer, and into the next year when I returned with a new forestry class. By the end



Leaves and fruit of *Magnolia fraseri* × *tripetala*.

of the second year, and after seeing no more seedlings of its kind in the area, I decided to “save” the little tree from the relentless deer pressure, and provide it a chance to grow unimpeded into whatever it was going to be.

After several years in a container, this new magnolia was exhibiting intermediacy in fine form. It was eventually planted in 1987. Blooming deepened the evidence that this magnolia was indeed a natural hybrid of *Magnolia fraseri* and something else. The “what else” became more apparent after I gleaned about six similar seedlings from a large planting of *M. fraseri* seed I had collected in northern Haywood County. In that location, both *M. fraseri* and *M. tripetala* grew in natural association. Those few non-auriculate-leaved seedlings among about 1000 normal *M. fraseri* seedlings looked the same as my southern Haywood County tree. Again, subsequent maturity and blooming confirmed the match, as the flowers and their odour were nearly identical.

Over the years, I have not managed to locate or attain any new examples of this natural hybrid. The cultivated specimens have today grown to 9 m tall and about 25 cm diameter. They flower profusely, with a delightful scent that is less dizzying than *Magnolia fraseri*, but absolutely inviting in opposition to *M. tripetala*. The fruits yield no seed, hence these are sterile hybrids. Grafting is the only hope of continuing these particular plants, but hand-pollination of *M. fraseri* with *M. tripetala* pollen is an obvious possibility to glean new examples.

In another episode of Mountain magnolia interest, there came the idea of improving cultivation success of the persnickety *Magnolia fraseri*. I teamed up with Neal Peterson in another hybrid scheme for *M. fraseri* in 1996 (see Peterson, 2000). Neal collected pollen from an east Texas population of *Magnolia*



*pyramidata*, rather unique in its siting on upland, subxeric sandy soil. This is a closely related species to *M. fraseri*, but ranging mostly in mesic places in the coastal plain of the southeastern United States. Hand-pollination from the Texas *M. pyramidata* upon flowers of *M. fraseri* yielded several progeny which are both more precocious bloomers than the female parent and appear to have greater tolerance to sites not so limited to the mesic, cool conditions typically demanded by *M. fraseri*. These trees were shared among several cultivation sites and are still performing, last I heard.

## Poplars

Magnolias pushed aside, another intriguing group of trees for me are *Populus*. Perhaps this interest places me in more of a minority of dendrologists, but nevertheless the poplars have also been targets of explorative journeys and collections. One discovery along the banks of the French Broad River near my home in Mills River, North Carolina came early on, about 1973. There and then, some suffering aspen saplings were noticed on the wooded riverbank, already declining amid competition by taller hardwoods. I did not recognise the species, so samples were dug up and planted on the farm. Years later, a grove from root sprouts had developed. The bark was not like *Populus alba*, *P. canescens* or *P. tremuloides*, and the foliage and female flowers were not like *P. grandidentata*, the regionally native species. Obviously a hybrid, unnamed to this day. The glabrous leaves and grey bark of this slender aspen are unique, made more interesting since it seems a natural hybrid. The original grove and the farm grove are gone now, but two examples of this aspen are still maintained so they might survive to sprout again, waiting on the next *Populus* collector.

## Hawthorns

Ultimately, I became heavily involved in *Crataegus* in the southeastern US region, and continue this venture to present day (see Lance, 2014). Within this large and satisfyingly perplexing genus, there have not been so many new hawthorns discovered as might be expected. Over the past 25 years, less than a dozen new species, varieties or hybrids have presented themselves in my region. Actually, there was a higher ratio of disappearances among previously



The leaves of a natural hybrid aspen in North Carolina.



**Above.** The original tree contributing the type of *Crataegus lancei*, in flower.

**Right.** Flowers and spring leaves of *Crataegus lancei*.

described taxa, so it was more often a cause for excitement when these were “rediscovered” after many decades of absence in the collection record. Nevertheless, two “new” hawthorns do deserve mention.

An especially picturesque hawthorn specimen growing in an old field in Weaverville, North Carolina prompted someone to call me one day in 1998, when I worked at the North Carolina Arboretum. The tree was in a bit of jeopardy, being isolated in a new housing development that had claimed its pasture site. When I paid a visit, I was impressed. Its 24 cm diameter trunk was all but hidden behind a curtain of dense drooping branches. It rose to 6 m in height,





Above, The original type tree of *Crataegus lancei* in fruit, and inset, the fruit and foliage.

and was laden with red fruit. I returned several seasons to take herbarium samples, pictures, and to labour over its identification. It did not quite fit any previous description, though I had chosen to label it *Crataegus senta*, that being the most similar species and I needed a name for purposes of conversation with the landowners. A new home soon appeared at the site, and the tree became a yard specimen. Fortunately, the owners of the home became interested in the uniqueness of the tree and dedicated themselves to care for it, providing a mulched arena over its roots. In subsequent years, they even planted a few offspring of the large hawthorn in other sections of their yard, with minimal prompting by me.

I had a dendrologist's uneasiness in the realisation that my identification of this plant was likely wrong, but no one else seemed to care. At the time, there were only two hawthorn taxonomic investigators working the southeastern US, one rather green at the job (myself), and the other James B. Phipps of the University of Western Ontario (a true *Crataegus* specialist). By 2008, Dr Phipps had decided that my drooping hawthorn discovery indeed did not have a proper name, and there were others of its kind spread sparsely over the region, these having appeared during his herbaria studies. Much to my delight, it was named *Crataegus lancei* (Phipps & Dvorsky, 2008), so naturally I have a grove of these plants growing today on my own farm. This species is a polyploid





**Above,** The broad crown of *Crataegus oreophila* in bloom.

**Below,** The trunk of *Crataegus oreophila*, with its sparsity of thorns, alongside which the flowers, foliage and autumn fruit are shown.





apomict, delivering clonal offspring through seed, so all the progeny look the same as the parent tree. Although I have not gone back to the homeowners of the original tree to press the new name, I do drive by occasionally to spy on the tree's survival. Doubtless there are other examples of *C. lancei* growing in European collections masquerading as *C. senta*, since I did ship seeds of this hawthorn before it had its new name.

Elsewhere, in western North Carolina's Great Balsam Mountains, the higher spine of which forms the Jackson and Haywood county lines, another hawthorn semi-neglected for many years finally received concentrated attention in 2013. This hawthorn seemed fairly well distributed in one section of these mountains, mostly above 1220 m elevation. Here, amid old grazing lands of the high country that are today largely reclaimed by forest, these hawthorns had been growing for at least 50 years without much notice by botanists. When the plants were noticed, an incorrect identification was typically applied, a practice I participated in until a closer look revealed my misstep. After a summer of critical study and survey work, these Balsam Mountain hawthorns received their own deserved name, *Crataegus oreophila* (Lance, 2013), which means "mountain-loving hawthorn." It is a comparatively large species, capable of growing to 8 m tall and with a 15 cm diameter trunk. Most likely it originated after a rare hybrid event between *Crataegus macrosperma* (a common species in the area) and *C. succulenta* or possibly *C. punctata*. Since all the individuals encountered were nearly identical, and many analyzed samples revealed tetraploidy, this hawthorn is almost certainly another apomictic polyploid. It still shares its habitat with *C. macrosperma*, but no further genetic mixing is apparent and there are no additional hawthorn species sympatric with these two taxa in the habitat zone.

Akin to most IDS members, my own dendrological journeys will no doubt last as long as I do. The imagery of trees and the places they grow is an enduring lure that prompts travel much more efficiently than any other excuse. I am thus grateful to be one of the minorities of human populace that sees the character of land everywhere defined by the plants that cover it. Whether we concentrate our attention in one area or across many, accepting that our efficiency need not require finding new plants that are new to anyone but ourselves allows us ample rewards in other ways, to please mind and memory.

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