



Taxodium distichum
Photo by Tom Cox in China



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Vol. 30 No. 2
Spring 2013



Carcross Desert, The Klondike
Photo by John Lennart



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The purposes of the American Conifer Society are the development, conservation, and propagation of conifers, with an emphasis on those that are dwarf or unusual, standardization of nomenclature, and education of the public.

Conifer Quarterly

Spring 2013
Volume 30, No 2

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You are invited to join our Society. Please address membership and other inquiries to the American Conifer Society National Office, 175 Charisma Lane, Lewisville, NC 27023-9611. Membership: US & Canada \$38, International \$58 (indiv.), \$30 (institutional), \$50 (sustaining), \$100 (corporate business) and \$130 (patron). If you are moving, please notify the National Office 4 weeks in advance.

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Spring is always an exciting time of year; the gardens come alive once again; our conifers become flush with color and the ACS gets ready for another exciting year of events and activities. The main highlight every year is our National Meeting. Soon you will be receiving the descriptive brochure along with the registration form. Frank Goodhart and Walter Cullerton have done a superb job in planning this year's meeting in Mt. Kisco, New York. If you would like to explore the Hudson Valley and its wonderful gardens even more, Melanie Wyler has assembled an outstanding post tour for our members to enjoy. Join your friends from the ACS this August in New York.

This spring also brings about changes in our gardens and also in the ACS. Our office manager, John Martin, has advised the Board this will be his final year in the position he has held for thirteen plus years. John has worked with seven different ACS presidents and he and Susan have been involved with the ACS for the past 30 years; since its very beginning. Thank you, John and Susan, for your help and dedication to the ACS for all these years.

The search to find a new office manager has begun, led by Ethan Johnson. Details for the position may be found in this *CQ* and on the ACS website. Contact Ethan if you might be interested in applying for the ACS office manager position or if you know of someone whom we might contact.

This spring has also brought renewed energy and efforts toward the ACS website. For the past 12 years, Bill Barger has generously provided the ACS with a consistent and solid foundation

on the worldwide web. Bill has not only given of his time, but has also provided the website's hosting at no cost to the ACS. During this same time Bill has been the person not only to keep the website functioning and current, but also to lead the efforts toward the ACS database. With its thousands of records and over 5,000 photographs, this has been a monumental and ongoing effort to document the world of conifers. Bill has not only been the ACS webmaster, but also has also served as the ACS Central Region President. For over a decade, Bill has provided leadership, his expertise and countless donations of conifers in support of the ACS—a thank-you will never be enough to express our gratitude.

As we look forward, Sean Callahan is leading the ACS in developing our new web presence to the world. Sean brings his experience in developing websites for Time Warner and its various associates over the past decade. Our goal is to launch the new ACS website at the National Meeting in August. This is a huge undertaking and will be the combined efforts of dozens of ACS members.

Lastly, we must express our gratitude to Dennis Lee for another successful year with our Collector's Conifer of the Year program. The CCOY program is not only a great member's benefit, but also provides additional income for the ACS. Thank you to our membership for supporting the CCOY program. Enjoy your wonderful new conifers, refresh your gardens this spring and look forward to another great year of activities and benefits from your membership in the American Conifer Society.

National Office Manager Job Posting

If you would like to serve and be employed by the American Conifer Society and to travel; and if you have the following qualifications for the position of National Officer Manager, send your resume and application letter to Ethan Johnson (ejohnson@holdenarb.org). General requirements are: good interpersonal skills, ability to work with others, be an ambassador to the membership and to non-members, knowledge of QuickBooks software and Microsoft Office Suite, experience with databases, proven ability to work with non-profit organizations.

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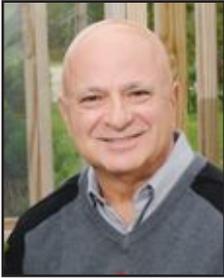
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Editor's Corner



Would any of us have been able to imagine that we could traverse space and time within seconds? That is the reality of today's email and Skype. Could we have foreseen that we could read our emails on our phone, our Android phone? Take pictures with them and then transmit those pics instantaneously around the globe through tens of thousands of "friends" and "followers"? Certainly as I write, forces are racing ahead of us, which will coerce us to join the bandwagon and promote ourselves and the American Conifer Society.

This Corner is a call to you to join social media to get the word out that our Society is the central, responsible authority on conifers; that coniferites are giving people; that what you know you are willing to share. The Internet has a plethora of information on conifers. But we have the Conifer Database, the Conifer Registrar and an absolutely reliable Technical Editor in Ethan Johnson. We have you. Who could ask for anything more? Everyone. There is no rest on today's information superhighway, the phrase itself a cliché.

You are the greatest resource the Society has to disseminate correct and valuable information to the general public and also to ourselves. All over I have observed botanical nomenclature sloppily used and many times incorrectly in major gardening magazines and even in published books. If the ACS is not the *Alliance française*, the standard-bearer, of the conifer world, then no one is. Sadly, my experience has been that many so-called writers about gardening believe that a centimeter of depth of knowledge can be spread over a mile of readers and appear to be authoritative. That is one of the great failings of social media. There are no checks and balances. A so-called "garden writer" can declare themselves a horticulturist overnight, and LinkedIn friends don't question it--- a true story.

You, the members of the American Conifer Society can achieve two things: you can draw upon an enormous depth of knowledge and spread that knowledge to all kinds of gardeners, readers and writers who seek and recognize authority on conifers. You will become their authority and you will conserve the knowledge of conifers and its accuracy. No matter how fast communications race ahead, that information is worthless without an educated and education base. You nursery-people, you plants-people, you horticulturists, you scientists are the mainstay of conifer knowledge.

So, how can you garner members to the Society? How can you spread the word on conifers? How can you muscle your way into the mainstream of social media and make a difference by being a light of order and precision among the chaos of opinions and half-information? One immediate way is to open a Twitter account and post information about conifers. You can join hashtag (#) chats and let yourselves and your Society's presence be known. I began in October 2012 and now have over 700 followers. They in turn have tens of thousands of followers who in turn have thousands and thousands of followers. You get my drift.

This editor is totally committed to the success of the American Conifer Society for altruistic reasons. Were there no American Conifer Society, there would be no core of information and resources. If any of you wish to enter the social media, I will assist you all I can. Just email me. Or give me a call. Onward and upward!

Yours, Ron

The Scenic Hudson River Valley 2013 Annual Meeting Mt. Kisco, NY, August 8-11

Walter Cullerton and Frank Goodhart



Driving along the east side of the Hudson River we enter the legendary town of Sleepy Hollow and see the large wooden sign depicting the headless horseman. When we were young, most of us kids knew about this story of how the headless horseman chased Ichabod Crane one night, and Ichabod was never seen again. The horseman reappears in the creepy little hollows from time to time, keeping residents on edge, fearing that they may all be chased and reach their final demise.

It's this and other stories which add charm to the Hudson River Valley. It's compared to the Rhine River for scenic value. One can just enjoy the natural landscape in the area, or delve into revolutionary history. There are high mountains on the west side as well as rock outcroppings. One can take a river tour via boat and enjoy the quiet ambiance and the sights along the way. In Sleepy Hollow there are historic buildings, a working old farm, and demonstrations of how food was grown and preserved 200 years ago. While only 35 miles from New York City, the area is quite rural and rustic. Its geology relates to the glacier which receded about 12,000 years ago, leaving a carved landscape of mountains, valleys, rock escarpments, lakes and neat woodland rocky areas.

There are many garden venues in the lower valley where the meeting is centered. The planning committee found it difficult to choose the best ones. Therefore, you can visit a wide variety of venues depending on your individual preferences before or after the meeting. Among these are sculpture gardens, estate gardens, and botanical gardens and arboretums. A post tour is planned so that this may be an

alternative for you to see additional historic sites and the best gardens.

Below are descriptions of our garden visits.

Quaker Hill

Quaker Hill Native Plant Garden sits on a scenic 250-acre ridge in Dutchess County, New York. In addition to offering its own beautiful, natural areas



and panoramic views of the Harlem Valley, this ridge provides an ideal backbone for a unique garden which showcases the most splendid of our Appalachian and eastern native plant communities. Beyond the beautiful displays of wildflowers and autumn color, the garden features 23 species of conifers native to the eastern United States along with countless cultivars, including some of Waxman's early *Pinus strobus* selections.

Conifers are displayed in natural-like settings which represent the usual places where they normally grow and are dominant. Examples are Atlantic white cedar and bald cypress in a swamp or wetlands, table mountain pine in the uplands, pitch pine and Jack pine in rocky summits and ledges. The garden seamlessly incorporates the existing landscape in many areas, but the majority of it, from the rocks and ground forms to the trees and groundcovers, is entirely manmade. The garden incorporates rocks, water features and trees into the natural landscape while still giving the feeling that it is all Mother Nature's work. This uncertainty and mystery allow visitors to accept the entire illusion and experience of the garden with the same pleasure and enjoyment which they have in any exceptionally beautiful, natural landscape.

The Steinhardt Garden

The Steinhardt's love of plants is evident throughout this hilly 55 acre estate where over 2,000 species of trees, shrubs, and perennials have been incorporated into a natural landscape by designer Jerome Rocherolle. Stepping stone stairways, pine paths, stone outcroppings, and grassy lawns are used to join and separate different areas. The garden features a sweeping hillside of unusual conifers, a Japanese maple collection (400 cultivars), a secret garden, an alpine garden, and additional thematic areas. There is also a collection of exotic animals roaming about.

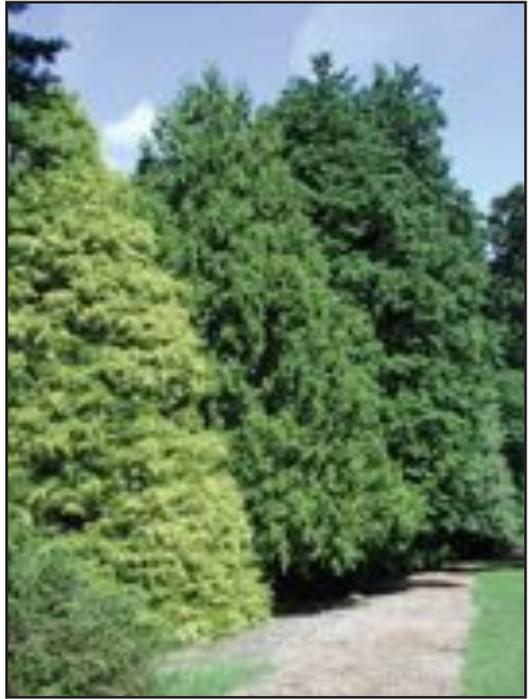


Pinus sylvestris 'Gold Coin'

Great attention has been paid to planting the understory of the maple and woodland gardens with unusual shade loving perennials. New plants reside in experimental beds until they are later integrated into the garden upon maturity. Antique apple trees abound in the fruit orchards.

Bartlett Arboretum

This historic old garden was the former residence of Dr. Francis A. Bartlett, who was a noted horticulturalist and founder of Bartlett Tree Service. It is a 91 acre preserve, featuring wildflower meadows, woodland trails, and a large red maple swamp. There are some very old conifers on the site and particularly notable are the two *Sciadopitys verticillata* (Japanese umbrella pine). There is a very large sugar maple cultivar, *Acer saccharum* 'Newton Sentry'. Two lectures by scientists from the Bartlett Tree Expert Company will be presented.



Chamaecyparis grove

The Larned Garden

Beazie and Michael Larned moved into their circa 1797 North Stamford farmhouse (built by Silas June) in 1977 and began transforming the landscape in the early 1980s. Of the 5.3 acres, about 3 acres consist of gardens, the remainder being woodland. As is typical of the Mianus River Valley, there are many rock outcroppings



^vInformation on the area may be found on the website [Hudson River Valley.com](http://HudsonRiverValley.com). Ground transportation service is available from the LaGuardia and Westchester airports.

and a few broadly flat areas, making an ideal site for pocket gardens. Conifers are planted throughout the property, with the greatest concentration in the alpine/conifer rock garden. Specific gardens include the alpine/conifer rock garden, several perennial gardens, an enclosed raised bed vegetable garden, a butterfly garden, a mature wildflower meadow, a xeriscape garden on a striking rock formation known as Mole Mountain, a contemplation niche garden and two small woodland shade gardens. A woodland walk is in the early stage of development. Beazie and Michael are avid gardeners and have done much of the planting and maintenance themselves.

Speakers

Our keynote speaker is Peter Del Tredici of Arnold Arboretum; the title of his talk is “The Emergent Forests of the Future”.

In addition, Linnaeus aka, Dr. Art Tucker, will be visiting with us to review nomenclatural progress over the last few centuries, but the presentation will be rather on the light side and humorous.

Two more speakers, Greg Paige and Neil Hendrickson of Bartlett Tree Research Laboratories will discuss topics on tree planting and maintenance.

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Post-Tour - Historic Hudson River Valley – August 11-14 (4 days, 3 nights)

By Melanie Wyler

The scenic grandeur of the Hudson River Valley has delighted generations of visitors since 1609, when Henry Hudson first sailed the great river central to the lives of the Valley's original inhabitants, the Algonquin.

The area's natural beauty inspired 19th-century landscape painters, writers, and poets to create an American version of Romanticism. It was also a crucible for the development of an American garden and landscape design tradition. The majesty of its views influenced the great garden designers of the 19th Century Beatrix Farrand.



Hudson River Valley

Our Itinerary:

The gardens of the Hudson River Valley have a special character, ranging from the formal grounds and wide vistas of Gilded Age estates to private gardens which respond directly to the region's rolling landscapes and mature forests. Our tour will include famous estate gardens such as Boscobel, Rockefeller's Kykuit and the former farm Stone Barns; some of the best-known public gardens such as Stonecrop, Innisfree and Storm King Art Center; and New York City's innovative and surprising High Line, as well as some wonderful private gardens.

We will be dining on some of these estates and on farms celebrating the field-to-table movement. The tour will also include an evening dinner cruise on the Hudson River around Manhattan.



River View

At every stop, we'll have the pleasure of absorbing the lively spirit of a region whose historic gardens and landscapes have powerfully influenced the shape of American gardening.

Photography courtesy of Hudson River Valley National Heritage Area and James Bleecker

Dwarf Ginkgo Cultivars-- Part II: Garden 'winners'— the envelope, please!

Text by Sara Malone



Ginkgo biloba
'Mariken'
Photo by
Janice M. Le Cocq

The world of dwarf *Ginkgo* cultivars is reminiscent of the mythical American West, with the lawman not always successful in dealing with those vigilantes and renegades who abound on the frontier of new plant introductions. Upstanding growers, plant breeders and enforcement organizations try vainly to provide order for collectors who, like the townsfolk in the movie *High Noon*, much to Gary Cooper's dismay, secretly enjoy some of the disruptions which the outlaws bring.

This has made composing a list of "best of breed" dwarf *Ginkgo* more difficult than one might think. To the extent that readers are dissatisfied with the lack of specificity and clarity surrounding some of these suggestions, remember that unless collectors demand *bona fides* from retailers, and refuse to purchase without them, it will be difficult to halt the influx of incompletely documented plants into the market. Many—if not most—growers and breeders are ethical, but there is little motivation for those who are at best sloppy and at worst dishonest to play by rules which collectors ignore. Does the draw of more offerings outweigh the confusion—and ultimately the disappointment—when a promised trait in a cultivar fails to materialize? Do those with small gardens or tight budgets enjoy wading through incomplete descriptions and conflicting information when selecting the cultivar for a choice location or container? Remember, if we insist that plants

which are distinctive from others be registered as new cultivars, with appropriate accompanying documentation, we could head to the nursery armed with the data, with which to choose the one likeliest to meet our criteria and please us the most. This dusty Western town could use some deputies!

Despite the challenges, we can still provide guidance in selecting a dwarf *Ginkgo* cultivar. If you want some degree of predictability, stick with those which have been around long enough and documented sufficiently to provide a reasonably clear idea of how the plant is going to perform. If you are more adventurous and want to explore the *Ginkgo* frontier, there are choices with less history which may tempt you. While the basic criteria for plant selection are more or less the same across genera, *Ginkgo*, due to the narrow range of characteristics discussed in Part I (one species, largely one sex, basically one color), really have only three attributes to consider: overall shape, size of plant and leaf shape/size.

Ordinarily, we would deem size to be the most important criterion, but these are all supposed to be dwarf varieties. Thus, in selecting one of these *Ginkgo* cultivars, it is generally most useful to first consider shape. Does the spot require a low spreader or a short, bushy plant? An upright, a vase-shaped or a columnar form? There are also pendulous versions, although most are not very weepy. Lucille Whitman, of Whitman Farms, a grower in Salem Oregon, says that ‘Weeping Wonder’ is the best weeping form she’s seen. ‘Pendula’ and the others which purport to be weepers, really just have horizontal branches (Remember Richard Larson’s comment that “no *Ginkgo* is going to weep like a cherry.”). Before you put ‘Weeping Wonder’ on your wish list, however, note that it is female, and if there is a male *Ginkgo* nearby, you may eventually get fruit. As we mentioned in Part I, fruit on a dwarf is unlikely to be particularly problematic, but *caveat emptor*.

Richard Larson notes that ‘Weeping Wonder’ is a renaming of a plant which used to be called ‘Mutant Weeper’, and the plant eventually displays multiple morphologies, making its original name perhaps more useful! ‘Ross Moore’ is a more recent weeping introduction, but not much is known about it. So, we must wait to find out how it performs, and, since it was found as a growing tree, rather than as a broom on a sexed *G. biloba*, we as yet have no idea if it is a male or a female, or, indeed, how quickly it grows or how large it gets.

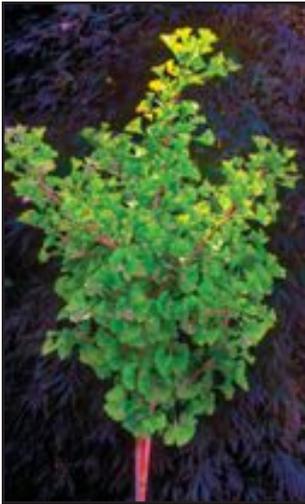
Size, indeed, is the second consideration in selection. Presumably those selecting dwarf cultivars are seeking small plants, but suggestions regarding size are famously defied—or at the very least, ignored—by collectors. With slow-growing plants such as *Ginkgo*, indeed it is the exceptional gardener who does not view size issues as the next owner’s—or even next generation’s—problem. Diane Van Anda, ISA certified arborist, says that proper size nomenclature and descriptions are often lacking in the nurseries and at the growers. The American Conifer Society has adopted the following definition for dwarf conifers, which we can reasonably apply to *Ginkgo*: growth per year of 1 to 6”, approximate size at 10 years between 1 to 6’. ‘Dwarf’ size is flanked by “miniature” and “intermediate”, and many growers do use these terms. However, there is wild variation in how they define them, and some add ‘semi-dwarf’, which is not universally recognized. Although widely used on tags, 10-year size is only useful if one knows how old the specimen in question

is at purchase. Since the vast majority of dwarf *Ginkgo* come to market as grafted clones, they are not starting at year one in the same way that a seed grown plant is. So remember, when selecting a dwarf *Ginkgo* variety, that size is yet another unknown aspect of many on the market, and, if you wait long enough, your lovely dwarf tree may outgrow its location.

The trade has a vested interest in underselling the size and growth rate of trees. As Diane explains: “Dwarf selections are increasingly being sought by landscape architects, designers and contractors as good choices for plant material in the urban landscape where smaller size is a desirable attribute.” Steven Courtney, Manager of Michigan State University’s Hidden Lake Gardens and Curator of its Harper Collection of Dwarf and Rare Conifers, offers a useful tip for those of us planting dwarf *Ginkgo* cultivars, the growth rates of which (and thus 10-year sizes) are unknown: root prune your plant every year, so that, if it outgrows its spot and you have to move it, the job will be less stressful for both you and the tree. Use a narrow-headed shovel (keep it sharpened) and stick it straight down around the plant on at least three sides.

The third consideration in selecting a cultivar is leaf detail; some, such as ‘Jade Butterfly’ have leaves similar to the species. Others sport tiny leaves. Still others have leaves which are oddly formed or variable, such as ‘Thelma’ or ‘Tubifolia’. For many *Ginkgo* aficionados, the iconic leaf shape of the species is desirable and they shun—or at least do not favor—the variations on some of the dwarf cultivars. In speaking with collectors and growers, I heard more vehemence about leaf size and shape than about any other aspect of *Ginkgo*!

Thus, with a relatively short list of attributes to consider, what do experts—and collectors—recommend among the nearly 30 dwarf cultivars currently being marketed in the U.S.?



Ginkgo biloba ‘Spring Grove’
Photo credit Harold Greer of
Greer Nurseries

When pressed for her favorites, Lucille, a pragmatist, focuses on selections which are distinctive, reliable and reasonably available. For those looking for nicely shaped choices with leaves similar to those of the species, she suggests ‘Spring Grove’, which is essentially vase-shaped, or ‘Mariken’, which grows in a compact, shrub-like fashion, but is sometimes grafted onto a stalk. ‘Chris’ Dwarf’ (syn. ‘Munchkin’) and ‘Chase Manhattan’ are her choices for “little bitty leaves”. ‘Tubifolia’ (often incorrectly styled ‘Tubiformis’) is a slightly bigger dwarf, to 6’ or so in 10 years, and has leaves which, on mature wood, are fused at the base into a trumpet-shape which is distinctive, or, as she says, in her Southern drawl, “kinda cute”. She finds ‘Troll’ aptly named, with heavy limbs which project at odd angles and ‘Thelma’ to be the strangest one she’s seen, with a fringed, split leaf.

Crispin Silva, of Crispin’s Creations Nursery in Molalla, Oregon has been propagating *Ginkgo* for

about 20 years, beginning with some of the older selections such as ‘Chase Manhattan’, which is still a favorite, of both his and his customers. Crispin has seen increased interest in dwarf *Ginkgo* on the part of the public; folks visiting his small operation come seeking *Ginkgo* along with other specialty trees such as Japanese maples, dogwoods and *Styrax*.

Gary Handy, owner of Handy Nursery in Boring, Oregon, is willing to commit himself and term ‘Spring Grove’ the best dwarf,

although he admits that he is viewing it from a grower’s perspective. ‘Spring Grove’ has a much fuller appearance as a young plant—even in a gallon container—than any other dwarf cultivar. Thus, a retail customer gets a fatter, denser plant, even when small. That, by itself, may be enough of a reason to begin one’s dwarf *Ginkgo* collection with ‘Spring Grove’; small *Ginkgo* have a way of looking like so many sticks initially, with little in the way of branching. ‘Spring Grove’ is also more



Ginkgo biloba ‘Tubifolia’
Photo by Janice M. Le Cocq



Ginkgo biloba ‘WB’

uniform in growth habit than others, such as ‘Jade Butterflies’ or ‘Witch’s Broom’, which can be more irregular. Gary admits that some people prefer such irregular shapes, so that it largely comes down to personal preference.

Richard Larson is also a ‘Spring Grove’ fan, but cautions that it should probably be termed an intermediate rather than a dwarf. He describes one that was planted in 1998 which is now about 10’ tall. He too likes ‘Mariken’, which he describes as “well behaved, low and compact and retains its compact status well”. He cites ‘Troll’ as another favorite. After 12 years his plant similarly has stayed compact and well behaved. Its name comes from its short, stubby branches—which Lucille described as ‘heavy’. Ironically, ‘Jehosaphat’ (originally named Spring Grove #86), which Richard registered himself, has not lived up to his



Ginkgo biloba 'Jade Butterflies'

expectations, which should serve as a cautionary tale to all; he observed it for 12 years, after which the plant was still not even up to his knees. He then registered it, and shortly thereafter, following a mild, wet summer it “scooted up” to where it is virtually identical to ‘Spring Grove Sport’. If a diligent observer who believes in the integrity of the registration process can have this experience, what does that say about the reliability or differentiation of unregistered *Ginkgo* cultivars?

Steven Courtney’s favorites are “Jehosephat’, ‘Witch’s Broom’/‘WB’ and ‘Munchkin’ (syn ‘Chris’ Dwarf”). He likes the very full

appearance of ‘Jehosephat’, which has leaves about half the size of the species. The densely-leaved, globe-shaped plant has very full branching so that the overall effect is one of lushness. ‘WB’ has stayed true to expectations—that is, quite dwarf—in his garden, where it has been growing for about five years. His sandy soil does not favor rapid growth, so that may be a contributing factor. He likes ‘Munchkin’ for its shape, which is broad and spreading, and for its tiny leaves. For tiny-leaved fans, it is worth noting that ‘Munchkin’/‘Chris’ Dwarf’ has the smallest leaves of any *Ginkgo*.

Byron Baxter, who operates a small specialty nursery in Ohio, favors ‘Chi Chi’, syn. ‘Tschi Tschi’, which some label an intermediate. He specializes in conifers and niche plants not offered by many of the bigger growers; even though ‘Tschi Tschi’ is an older cultivar, and many more dwarfs have been introduced since it became available. He says that it fills a place in the landscape perfectly. “It is that perfect fit which makes both the tree and me happy. If only all of my plantings over the years had been sited as such, my gardens would be much better. Live and learn.”

Collectors, not surprisingly, have their own opinions of which cultivars represent the “best of breed”. Dave Stegmaier in Shawnee, Kansas, an avid collector of specimen conifers which he interplants with deciduous trees and shrubs, has a number of dwarf *Ginkgo* and favors ‘Jade Butterflies’. While he cautions that it is not a “stand alone, focal point” tree, it is an attention-getter all year round, with its dark-green butterfly-shaped leaves in spring and summer and its distinctive bark and vertical limbs in winter. Then, of course, there is the buttery-yellow fall color!

Jan Curry, who gardens in the San Francisco Bay Area, is so taken with

‘Mariken’, that, despite a small garden chock-a-block with specimen conifers and other intriguing shrubs and small trees, she is looking to find a place to plant a second one! ‘Mariken’ meets her criteria for being both small and interesting, and she likes its low, shrubby form. Jan is a perfect example of a collector who values some predictability in her selections; her garden is simply not large enough to accommodate failed choices or plants which grow faster or larger than they are supposed to.

Alan Twohig in Chesapeake, Maryland grows about half a dozen different cultivars, including ‘Munchkin’ (syn. ‘Chris’ Dwarf’), ‘Chase Manhattan’, ‘Troll’, ‘Jade Butterflies’ and ‘Mariken’. He has a ‘Witch’s Broom’/‘WB’ in a container in a choice location by his front door. Dwarf trees are often wonderful candidates for containers and *Ginkgo* cultivars are no exception. Al admits that he may have to move it into the ground at some point, but for now it makes a lovely, eye-catching focal point on his porch. It lives there year-round, with winter interest provided by its interesting scaffolding. Al grew Japanese maples for about 20 years and notes that the dwarf *Ginkgo* make a great alternative to maples for a small deciduous tree amongst conifers, especially in smaller gardens with limited space. Al, who, like Jan, has a small garden, has stuck with the better-documented cultivars to avoid giving over prime garden real estate to plants which may prove disappointing.

This author has about 10 dwarf *Ginkgo* and finds ‘Todd’s Dwarf’ and ‘Mariken’ the most pleasing, largely due to the attractive branching and overall structure of the plants. I have to admit that I like the small leaves of ‘Chase Manhattan’ and the furled ones of ‘Tubifolia’. Wanting more predictability, I have stuck with the tried and true, but confess that the descriptions of ‘Beijing Gold’, despite being inconsistent, intrigued me so much that I purchased a small plant this year and



Ginkgo biloba ‘Todd’s Dwarf’ Photo by Janice M. Le Cocq

am looking forward to seeing the leaf color for myself. I am also intrigued by descriptions of some of the spreading forms, such as ‘Girard’s Spreader’ and ‘Layin Low’, and the weeper ‘Ross Moore’, but cannot find out much about them—or indeed locate the plants for sale—so, I will leave those for others to try.

For those of you who want to hunt for the very latest, in fact, one still in the “laboratory”, Byron Baxter, a tree buff in Ohio, tells of liners he received some years ago for ‘Tubifolia’ (syn. ‘Tubeleaf’, ‘Tubiformis’). They grew as expected except for one, which never sent up a leader, and is now about 18” tall and 5’ wide. He grafted some of the wood in 2011, expecting it to revert and grow like the others, but all the grafts grew laterally—not a single one put up a leader. The trees grow laterally for about 3-4’ and then arch down to the ground. Byron, who is the registrar for ‘Queen City’, one of the ‘Spring Grove’ witch’s brooms, sent in a registration for his find, calling it ‘Golden Arches’. An ACS member touring last summer pointed out that since the understock is short (18” or so), it is hard to know if the shape is really arched or only pendulous. Byron plans to graft onto higher understock this year to determine the ultimate shape of the tree. However, we may have to wait a while to learn the results: it turns out that scion wood is not the only wood which is in short supply in the world of *Ginkgo* grafts! Understock is not exactly prevalent, either. When looking for three-foot understock for his high grafts, Byron could not find any. Thus, he is doing it the old-fashioned way and growing his own. *Ginkgo* futures, anyone?

Dave in Shawnee, when searching for the best words to describe why he loves and enjoys *Ginkgo*, let the poet Howard Nemerov do it for him:

<u>NAME</u>	<u>10-YR SIZE</u>	<u>SHAPE</u>
‘Beijing Gold’	10’?	Dwarf, shrubby form
‘Chase Manhattan’	10’	Upright, central leader dominant
‘Munchkin’, syn. ‘Chris’ Dwarf’	6’	Upright
‘Girard’s Spreader’	3-4’	Low, horizontal habit
‘Jade Butterflies’	9-12’	Vase to globe; shrubby, very dense
‘Jehosephat’	9’	Globose (may get larger than first thought)
‘Layin Low’	1-2’	Flat, no upright tendencies
‘Mariken’	3-4’	Compact and shrublike; dense foliage
‘Queen City’	7-10’	Rounded; compact twiggy scaffolding
‘Ross Moore’	?	Weeping
‘Spring Grove’	4’	Upright, vase shaped to round and compact
‘Thelma’	3-15’	Open, multi-stemmed
‘Todd’ syn. ‘Todd’s Dwarf’	4’	Compact and shrublike; irregular branching
‘Troll’	3’	Heavy irregular branching
‘Tubifolia’	6+’	Open, upright
‘Weeping Wonder’	3-8’	Weeping
‘Witch’s Broom’ or ‘WB’		Ball; very dwarf

The Consent

Late in November, on a single night
Not even near to freezing, the ginkgo trees
That stand along the walk drop all their leaves
In one consent, and neither to rain nor to wind
But as though to time alone: the golden and green
Leaves litter the lawn today, that yesterday
Had spread aloft their fluttering fans of light.

What signal from the stars?
What senses took it in?
What in those wooden motives so decided
To strike their leaves, to down their leaves,
Rebellion or surrender? and if this
Can happen thus, what race shall be exempt?
What use to learn the lessons taught by time.
If a star at any time may tell us: *Now*.

So, if you're not growing at least one dwarf
Ginkgo cultivar, what are you waiting for?
The time is *Now*!



Ginkgo biloba 'Chase Manhattan'
Photo by Janice M. Le Cocq

LEAF

Bright gold turning to green with gold stripes
Tiny, dark green, slightly cupped
Smallest leaves of any on market
Similar to species
Dark green, deeply lobed. Paired like butterflies
Half-size of the species, very dense

Roughly 2/3 size of species

Scalloped edging, deeply divided (appear furled)

Full-sized
Narrow, contorted foliage; fringed or rolled
Full-sized
Dense, deep green, small and rounded
Fused; trumpet-shaped
Some regular, some narrow

Light green

NOTES

Estimates of growth rate/size vary widely.
Syn. 'Bons' or 'Bons Dwarf'. Branches small and closely spaced.
Twiggy branches, very slow growing.
2011 introduction. Said to be fast-growing.

Originally named Spring Grove #86

Leaves carried upright. Often grafted onto
standard for lollipop effect

Very unusual leaf detail; a Spring Grove wb.

Sex unknown

Dense branching, foliage. Botanical name 'Grovi'

Size unknown. Handy Nursery terms 'wild!'

Syn. 'Todd's' or 'Todd's Witch's Broom', stocky, thick branched.

Compact, leaves lie flat."

Fused leaves on mature wood only.

Female, syn. 'Mutant Weeper'. Forms dense,
moundlike structure.

Closely grouped branches.

The Ancient Pines of Death Valley

By David Rasch

When most people think of Death Valley National Park, perhaps they envision barren desert landscapes or the lowest point in the western hemisphere, a salty flat, known as Badwater Basin at 282 feet below sea level. However, the Panamint Mountains on the west side of the valley are like another world, with the highest point, Telescope Peak at 11,049 feet, rising above an amazing alpine timberline of ancient Great Basin bristlecone pines (*Pinus longaeva*). According to R. Kirk, *Exploring Death Valley* (Stanford University Press, 1965), when W. T. Henderson climbed the mountain in 1860, he was so awestruck that he said: “You can see so far it’s just like looking through a telescope!” Indeed, the 14-mile round trip has magnificent views in all directions. I have hiked up this mountain twice in my life, and I can definitively state that the strenuous day-long journey is well worth the effort. I enthusiastically recommend this awesome trail, and I know that I will return again to appreciate those ancient pines on this highest summit in Death Valley.

When I left New Mexico on the 4th of July for a short vacation in California, I had planned a hike in the southern Sierra Nevada Mountains of Sequoia National Park. But once I got to Barstow, that intoxicating smell of the desert after



View southwest toward cloud-covered Telescope Peak in early morning at approximately 6 miles away.

thunderstorms forced me to change my plans. I decided to stay in the desert and drove north instead of west. By the time I got to Death Valley, the night was very dark except when frequent lightning strikes lit up the adjacent landscape. Then I could see that the mountainous horizons were still quite cloudy, and I wondered if I had made the wrong decision. High mountain hiking and lightning just don't mix well.

The best trail begins at Mahogany Flat, a primitive campground with 10 sites at 8,133 feet, after a bumpy ride on a rutted dirt road. Set upon a small saddle, among single-leaf pinyon (*Pinus monophylla*) and Utah juniper (*Juniperus osteosperma*), there are some very large examples of the namesake shrub curl-leaf mountain



Flagged
limber pines
on west slope
looking north.

mahogany (*Cercocarpus ledifolius*) scattered around the campground.

Waking early on the morning of July 5th just before dawn, I could see that the mountain was still engulfed in weather and that the highest summit tops were enshrouded above the cloud layer. Again, I worried about lightning, but perhaps the clouds might burn off during the next few hours before I would gain the summit ridge (photo 1). After all, this is Death Valley with record high temperatures in the summer. I had come this far for some adventure, so I decidedly set out at 5:30 a.m.



Old limber pine "Montrose form", notice the
normal Limber pine form to the left.

Along the trail which winds up through the pinyon-juniper woodland, one finds a few large Sierra junipers (*Juniperus occidentalis* var. *australis*), and farther upslope



View along ridgeline of Panamint Mountains looking north.



Ancient bristlecone pines in cloud burn off on east slope.



View to
Badwater Basin,
center left,
with ancient
bristlecone pines
on east slope.



View from
summit of
Telescope
Peak
looking
north.

there are windswept limber pines (*Pinus flexilis*). The limber pines don't grow large here. Apparently, they succumb to the fiercely blowing winds, so they bow down in flags or disheveled mounds.

Upon reaching the halfway point, around Bennett Peak at approximately 9,000 feet, the vistas open up to the west for spectacular views toward Mount Whitney, the highest point in the contiguous United States at 14,505 feet, and the massive High Sierras above Owens Valley. The groundcover on this lofty spacious saddle is composed mostly of a pleasantly-odoriferous, dwarfed sagebrush (*Artemisia* sp.) and a spiny prickly pear cactus (*Opuntia* sp.) with many yellow flowers slightly or moderately tinged with red tips. After visually scanning all the limber pines on this ridgetop, I found one unusually dense and bushy limber pine which consists entirely of a tightly deformed growth much like a witch's broom. What is it?

The most awesome part of this hike starts at approximately 10,000 feet. By now, the cloud cover was dissipating as I had hoped, but in a most fantastic manner.

Wisps of foggy tendrils were dancing upon the slopes as they were swept upward by the heat from the valley below. Here, I found spooky forms of gnarly snag-topped bristlecone pines which appeared and disappeared from view among the fast-moving clouds.

At this point, the steeply switchbacked trail requires frequent stops to catch one's



*Ancient krummholz
bristlecone pine
snag on west slope.*



*Ancient living bristlecone
pine snag on west slope.*

breath and to take in the dizzying view directly down to Badwater Basin.

Just below the rocky summit of Telescope Peak, the bristlecone pines become severely stunted and more sparsely spaced as they climb higher into their difficult habitat.

The oldest pines, attaining ages of 3,000 years, have multiple trunks rising from 8-foot-wide bases to the tops of their vigorous crowns at less than 15 feet high.

These monster krummholz snags lean only slightly into the slope as if to proclaim that they still meet the definition of a “tree”. As a pine’s exposed main stem is beaten to death and transformed into a polished wooden skeleton from prolonged exposure to harsh conditions, another branch adventitiously rises up as the next trunk from beside this windbreak of bones. Thus, the resultant linear piggy-backed growth betrays the idea that these pines seem more shrublike than treelike.

I knew that I could stay only another hour in enjoyment of these ancient pine trees before heading back down the 7-mile trail to my camp.

By 4:00 p.m. I had returned to Mahogany Flat after a wonderful, but exhausting, day which was filled with experiences I will cherish for the rest of my life.

Themes from *Conifer Quarterly*: Wanderlust

By Jerry & Lorna Tangren



Hidden Lake, Chelan County, Washington. More than eleven species of conifers occur along the half mile trail to this small lake along the east slope of the Cascades in central Washington State.

Call it plant geographical ecology, exploring, tourism or just wanderlust; conifer enthusiasts hit the road and trail whenever possible, seeking everything from old favorites to new experiences. Conifers create this wanderlust by their unique adaptations to environment which presents a changing and special feeling for wherever we encounter them. Many of our favorite articles in *Conifer Quarterly* are based on the wanderlust theme.

There is a list of reasons conifers can pull us out on the road, or off the one we're traveling:

First, it is just to see outstanding individuals. How many of us haven't planned vacations around seeing a single giant member of a species, or otherwise exceptionally beautiful specimens? Living most of our lives within hours of the Pacific coast, our family vacations have always included special trees. For example, as current residents of Washington State the superlative conifers in both Olympic and North Cascade National Parks are often the destinations for family trips and out-of-state visitors.

Along with outstanding individuals are trees of special significance. Several states and numerous local areas have programs to recognize heritage trees.

One such tree recognized by the Oregon State Heritage Tree program is a rather modest, but sobering *Pinus ponderosa* near Bly in south-central Oregon. This tree bears the shrapnel wounds from witnessing the only human deaths due to enemy action in the contiguous United States during World War II. The location is not that easy to find and to visit. It required a degree of wanderlust on our way back from California last May.



Heritage *Pinus ponderosa* near Bly, Oregon, site of the only deaths in the contiguous United States due to enemy action during World War II.



Ancient *Pinus balfouriana* at Horseshoe Meadows, just south of Mt. Whitney, California. One of the only two or three places where foxtail pine can be accessed from the road.

Wanderlust can take us to those special places in order to experience species of limited distribution, or those otherwise difficult to visit. Here we certainly thank contributors to *Conifer Quarterly*. It's these special places, for which we most often get the wanderlust.

For example, *Pinus balfouriana* is easily accessible at perhaps only a couple of locations, one in northern California as described by Michael Kauffmann in his book *Conifer Country*, and the other at Horseshoe Meadows in the southern shadow of Mt. Whitney. An article by Don Howse in the *CQ* put us onto the second location, which we visited in 2007.

Other *CQ* articles have included the back road cypresses of California, another wanderlust target. A favorite location is the area of Napa, Lake, and Colusa Counties., the site of the only naturally occurring hybrids of this otherwise bewildering group. Along Little Stony



Phenotypical *Cupressus macnabiana* (on left) growing next to a hybrid *Cupressus sargentii* (on right) along Bartlett Springs Road, Lake County, California, *Pinus sabiniana* in the background.



Photo of Laura Tangren in front of *Picea sitchensis* (Preston Macy Sitka spruce), the largest spruce in the world, located along the Hoh River into Olympic National Park.

Creek in Colusa County and Bartlett Springs Road in Lake County, *Cupressus macnabiana* and *Cupressus sargentii* occur side by side along with their hybrids.

Wanderlust has often taken us to experience conifers under limiting environmental conditions. Most of us have enjoyed *Sequoiadendron giganteum* in its home, adapted to the very defined summer drought and fog belt of northern and central California. Equally intriguing are the conifers of the rain forests from just north of the redwoods into the Alaskan coastal areas.

However, no region is absent of unique conifer communities. In our wandering within the United States, we've visited such forests as the ones of *Pinus* and *Juniperus* in the Southwest, *Pinus banksiana* in Michigan, *Tsuga canadensis* in Indiana, mixed *Pinus* in Florida. Then there are *Picea* and *Abies* in the sky islands

of southern Arizona.

Yet another target of wanderlust are forests containing a large diversity of species. On many a bucket list is the "Miracle Mile" in northern California's Klamath Mountains, where 17 or 18 species can be found in a square mile.

However, to a less degree, this is repeated along the



Juniperus communis and *Picea sitchensis* in sand dunes along Puget Sound in Deception Pass State Park, Washington.

east slope of the mountains of Central America. This set of species adapted to moist, west-slope conditions. A second set adapted to the more arid east slopes.

The US Highway 2 corridor from Stevens Pass to Wenatchee in Washington is our local version with 19 conifer species. The Hidden Lake trail on a terrace above Lake Wenatchee has been a favorite hike of ours from the time we've had young children. Three species of each *Pinus* and *Abies* are among the at least eleven species of conifers occurring along the nearly level half mile walk.

Another aspect of wanderlust is enjoying the comparison of related species from different locations. We've enjoyed junipers in a variety of communities from the *Juniperus virginiana* var. *silicicola* of the Florida panhandle, *Juniperus deppeana* of the Southwest, *Juniperus horizontalis* of the Black Hills, and the *Juniperus communis* in the Cascade alpine to the *Juniperus communis*, which grow with stunted individuals of *Picea sitchensis* just inside the sand dunes along the shores of Puget Sound.

The spruces are also among our favorites. The magnificent *Picea rubens* forests

of the Appalachians are on our bucket list. A scheduled visit this fall coincided with hurricane Sandy. We consider it fortunate we had made last minute plans and enjoyed ourselves with *Pinus virginiana* at its limits in southern Indiana.

Our emphasis on wild conifers is not intended to short shrift domesticated gardens and arboretums. To cover those adventures would take a separate article. However, we especially appreciate arboretum managers and garden owners who understand conifer wanderlust and attempt to substitute the experience of seeing the species in the wild.

Our own conifer wanderlust, with the exception of one trip to Japan, has been limited to North America. This is one more theme at which *CQ* excels, providing vicarious international experiences. Thanks to many *Conifer Quarterly* contributors. We can almost feel we have been to the forests of Pakistan, Spain, and China.

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Chicagoland Hosts 2013 ACS CR Meeting

By Susan Eyre

Welcome to Chicagoland for the Central Region meeting of the American Conifer Society June 21-22, 2013. The newly remodeled Best Western Plus Hotel in Schaumburg, Illinois, has plenty of comfortable rooms at reasonable rates. Members will check in on Friday afternoon for the evening program. On Saturday, three spectacular gardens will be ready for viewing. All the gardens are in close proximity to each other and to the Chicago Botanic Garden.

The first garden is a formal Asian garden which took a decade for the owners to complete. They have created a Japanese-style garden with heavily pruned specimens of *Pinus densiflora* and *Pinus sylvestris*. There are many cultivars of Japanese and Korean maples, Japanese white pines, Korean firs, azaleas, and special ornamental deciduous trees. An attractive vegetable garden is impeccably maintained. Garden sculpture and containers complete this garden. Every window of the house looks out at this spectacular Asian delight.

The second garden is a very eclectic assemblage of plants and sculptures. The tree collection includes magnificent European beeches, *Pinus parviflora* and other specimens, weeping conifers, spectacular, large Japanese maples, and topiaries by well-known artist Simple. There are water features, including a koi pond, and grounds to roam around and admire the artistry. There are many places to find a small private place to rest and reflect.

The third residence and surrounding garden are a merging of two distinct properties. Built in 1902 and originally landscaped by Jens Jensen, the home was designed to face the ravine and wooded hillside which leads down to Lake Michigan. Today only two trees remain from that time. The current owners purchased it in 1996. When the property next door became available, they purchased the lot, tore down the cottage and then started landscaping the surroundings. Their own house was remodeled to view the new gardens which were created. Glass windows and doors open the house to view a tranquil setting of Japanese maples, a birch grove next to a Japanese tea house and bridge, stream and pond with water lilies, and prairie-style meadow. The terrace garden has remnants of the Jens Jensen design with lovely boulders and sculptures. Conifer specimens are everywhere in this special paradise and will thrill all who see it.

After the three private gardens, the group will head to the Chicago Botanic Garden for lunch. Following lunch, everyone is on their own to enjoy the Dwarf Conifer Garden, Japanese Garden, Waterfall Garden, English Walled Garden, and world class Bonsai Collection. The group will return to the hotel for the auction, social hour and evening activities to complete the meeting.

**Want to learn more about conifers?
Go to the ACSWeb site www.conifersociety.org**

Incompatible Plantings

By Mary Donaldson

When I originally branched out to learn about gardening, I was intrigued by the idea of companion planting. My first foray was to plant marigolds among the tomato plants. I appreciated the symbiosis and interdependence of nature, recalling the beneficial relationship between barnacles and whales. What I was not prepared for was my discovery of plants which are inhospitable to other plants. Becoming a coniferophile, my interest was in protecting my personal collection. Three 'incompatible' plantings to conifers are explored in this article.

White Pine Blister Rust is caused by the fungus, *Cronartium ribicola*, to which the five-needle and stone pines are highly susceptible. *Diseases of Trees and Shrubs* lists the following as being most commonly affected as:

- Pinus albicaulis* (white bark pine)
- Pinus aristata* (Rocky Mountain bristlecone pine)
- Pinus balfouriana* (foxtail pine)
- Pinus flexilis* (limber pine)
- Pinus lambertiana* (sugar pine)
- Pinus monticola* (western white pine)
- Pinus strobiformis* (southwestern white pine)
- Pinus strobus* (eastern white pine).



White Pine Blister Rust
Photo by Mary Donaldson

It is not a disease which can be passed from pine to pine, but it needs a host plant of *Ribes* to complete the devastating life cycle of White Pine Blister Rust. More common names of the *Ribes* species are gooseberry and currant.

The resulting infection of white pine blister rust requires the migration of the *Cronartium ribicola* in the form of aeciospores, a chain like formation of the fungus spores, from a canker on white pine to *Ribes* and then back to white pine in the form of basidiospores, the reproductive form of the fungus spores. A germination stage on *Ribes* is crucial for the *Cronartium ribicola* to become damaging to *Pinus*. Therefore, without the alternate host plant, it is unable to complete its life cycle. This is not to say “down with *Ribes*” any more than “down

with *Pinus*”, but it is more the idea of leaving two teenagers alone for the weekend to feed off of each other’s bad ideas and cause trouble.

Cool and moist conditions in the late summer and early fall seasons facilitate the transfer of basidiospores from the *Ribes* to *Pinus*. The further geographically north a combination of *Pinus* and *Ribes* are planted together, the more likely the outbreaks. The cycle can be broken, since *Cronartium ribicola* does not overwinter on *Ribes*. Major *Ribes* eradication happened throughout the US during the 20th century along with federal bans on growing certain currant cultivars. The federal ban was lifted in the 1960’s although several states continue the ban on all or some *Ribes* species. For those who desire to plant *Ribes*, simple internet searches, or contacting your state’s Cooperative Extension office, will provide further legal information on possession to propagation of this once popular fruiting shrub.

In most cases when symptoms are noticed, it is too late. With *Pinus*, only after the cambium layers of a branch have been destroyed, might the branches show signs of chlorosis, stunted growth, or death because the transportation of water and nutrients have been hindered or eliminated. Resin may be noticed oozing from diamond shaped cankers of greenish yellow to orange colors. On *Ribes*, orange urediniospores, the pustule form of the fungus, builds up on the undersides of the leaves until late summer and early fall. They give rise to telia, which look like orange-brown hairs.

Pines infected with White Pine Blister Rust can have the affected area pruned out, but, in most cases, branches are infected too close to the main leader, or the trunk itself is infected. There is no chemical application to control the spread of *Cronartium ribicola*. Since there is more value placed on pine forests in the U.S. and Canada, the impact of a widespread outbreak would be far-reaching from the environment it provides for wildlife and other plant species to the topographical erosion and adverse effects on forest watersheds. It is more practical to control the use of *Ribes*, which is a non-native species to North America.

Further study of White Pine Blister Rust, *Cronartium ribicola*, and the various forms it takes, rivaling Lady Gaga for costume changes during a concert, can be found in the cited literature used to compile this article. Excellent pictures of *Cronartium ribicola* in various stages can also be found on the internet.

Sinclair, Wayne A. and Howard H. Lyon. *Diseases of Trees and Shrubs*. 2nd ed. Cornell University Press, 2005. Print.

“How to Identify White Pine Blister Rust and Remove Cankers.” *USDA Forest Service Northeastern Area*. Web. 21 Sep. 2011. <http://www.na.fs.fed.us/SPFO/pubs/howtos/ht_wpblister/toc.htm>.

“White Pine Blister Rust and its Threat to High Elevation White Pines.” *USDA Forest Service Northeastern Area*. Web. 21 Sep. 2011. <<http://www.na.fs.fed.us/rm/higherelevationwhitepines/Threats/blister-rust-threat.htm>>.

“White Pine Blister Rust.” *Forest Pathology*. Web. 21 Sep. 2011. <http://www.forestpathology.org/dis_wpbr.html>.

Cedar Apple Rust is caused by the fungus *Gymnosporangium*. Although it is detrimental to the economic industry of apple trees, as it causes unsalable fruit to eventual death of the tree, it gets more attention in reference to apples than to conifers, due to the financial impact to the industry. Even though the common name of this disease refers to cedar, most likely referring to eastern red cedar, which is not a cedar at all in taxonomy, but rather is *Juniperus virginiana*. It does affect several *Juniperus* spp., such as eastern red cedar, southern red cedar, Rocky Mountain juniper, red-berry and Utah junipers, and some Chinese and prostrate junipers, making them look shabby and unsightly until the tree declines into ultimate death.



Cedar Apple Rust
Photo by Claudia Miller

Migration of *Gymnosporangium* from apple (*Malus*) to cedar (*Juniperus*) occurs during the summer in the form of aeciospores, a chain like formation of the fungus spores, overwintering until spring to morphosis into galls which eventually produce teliospores, a two-celled spore which germinates, producing basidiospores, the reproductive form of the fungus spores. In the second crossover phase, the basidiospores migrate to apple trees, causing fruit lesions and rust leaf spot in the form of aeciospores, which, going back to the beginning of the cycle, re-infect the cedar.

In *Malus*, yellow hued lesions bordered by a red band infect the leaves, decreasing the amount of photosynthesis the tree is able to do. In *Juniperus*, the galls destroy branches from its insertion point to branch tip, disfiguring the tree until the infestation continues to destroy all the growing tips, and the tree dies.

A complete life cycle of *Gymnosporangium* takes two years. The fungal damage can be noticed sooner in apples than in junipers due to the many different stages of the disease, which cause the infection to go undetected.

Physical eradication of either host plant has shown to be effective, but that requires as little as a quarter of a mile to several miles of clean area. The further geographically south, the more distance needed for removal of host plants.

Control of Cedar Apple Rust can be done by pruning galls on junipers during the winter months, but this must be accomplished before the telial horns have been produced. In the situation of several juniper trees in the area being infected, pruning does little good.

Fungicides have proven to protect apple trees along with control on cedars. Spray schedules are different for apples and for cedars. Special attention should be given to selecting a fungicide which is effective on apples and then on cedars. This may require use of more than one product. The extension office for your state will have more detailed information on which fungicides to apply for IPM practices which are specific for your area.

For those who have low risk tolerance, *Diseases of Trees and Shrubs* lists cedar-apple rust resistant junipers as:

Juniperus chinensis ‘Ames’, ‘Blue Point’, ‘Hetzii Columnaris’, ‘Iowa’, ‘Keteleeri’, ‘Maney’, ‘Mountbatten’, ‘Perfecta’, ‘Robusta Green’, ‘Spartan’, ‘Wintergreen’
Juniperus ‘Grey Owl’
Juniperus scopulorum ‘Medora’, ‘Moonglow’
Juniperus virginiana ‘Blue Mountain’, ‘Grey Owl’, ‘Hillspire’
(Sinclair 262)

The sage advice is to plant disease resistant plants. For many conifer collectors, this will only be considered a challenge of man versus Mother Nature.

Sinclair, Wayne A., and Howard H. Lyon. *Diseases of Trees and Shrubs*. 2nd ed. Ithaca: Cornell University Press, 2005. Print.

“Cedar Apple Rust.” *Oklahoma Cooperative Extension Service*. Oklahoma State University, n.d. Web. 21 Sep. 2011. <<http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-1036/EPP-7611web.pdf>>.

“Cedar Apple Rust – Focus on Plant Problems.” University of Illinois Extension, n.d. Web. 21 Sep. 2011. <<http://urbanext.illinois.edu/focus/cedarapplerust.cfm>>.

Black walnut toxicity in conifers does not involve transfer of fungi, but is caused by the toxin exuded specifically from the black walnut trees, *Juglans nigra*. The juglone toxin is found in the black walnut species in the highest concentrations, even though it is produced naturally by the other species in the walnut family, *Juglandaceae* (*Juglans cinerea*, butternut, and *Juglans regia*, Persian, and common English walnut), which also produce juglone, but in less damaging quantity. Grafted English walnuts are sometimes grafted with much hardier black walnut root stocks which can also produce a toxic environment for other plantings.

It took me a few years of living with black walnuts to realize why my pines and rhododendrons would succumb to “*Plantus deadus*” in a matter of a season, but right next to it, other things would flourish. Since then, I have also seen professionally installed landscapes go in and not until plants fail, do the landscapers look up and realize the neighbor’s black walnut shade trees are the culprits.

Juglone is not very soluble in water and, therefore, does not leach out of the soil very quickly. Some estimates state that the toxin can last in the ground for many years. Mulch from wood chips or even the stems, leaves and nuts carry high enough concentrations so that many plants can suffocate from the respiratory debilitation caused by juglone. Exposure to air does break the toxin down more quickly, diminishing the allelopathic effect of the stems, leaves, nuts and hulls, which also

contain the toxin. But air is not a dependable catalyst to break down the toxin in the roots which stay underground. Therefore, using compost or wood chips from black walnut trees is like riding a motorcycle without a helmet; you're just asking for trouble.

It doesn't take the maturity of a black walnut tree to poison its competition. Dr. Ed Hasselkus, Professor Emeritus of University of Wisconsin-Madison, recalls observing squirrels "planting" black walnuts in a mixed hedge row of shrubs, only to have the hedge decline. It is most likely after the nuts sprout and root growth takes off, that the competition for survival is initiated.

Unfortunately for the coniferite, who many times invests a lot of resources in a single tree, little scientific research has been done to determine a wide range of plants tolerant to juglone. Most lists of plants, inventoried for their tolerance and sensitivity, are compiled from other lists and from observation of plants *in situ* with black walnut trees. The majority of publications are dated, have not been updated in over ten years, and most of that info is most likely based on recycled information which is older than that.

Bert Cregg, Associate Professor at Michigan State University, also concludes that most of the information on Black Walnut is based on anecdotal information, compiled by observation of what is seen growing with relatively normal thriving within the danger zone of black walnuts. Most information recommends not planting any closer than 50-60 feet of the root zone of a black walnut.

Conifers which are regularly considered not susceptible are: *Tsuga canadensis*, *Juniperus chinensis*, *Juniperus communis*, *Juniperus virginiana*, and *Thuja*. Another conifer to add to the list observed and which warrants continued monitoring is *Cephalotaxus*, Japanese plum yew, which has been trialed for the last two years in this author's yard. But yet a witch hazel, which is supposedly tolerant, living opposite the *Cephalotaxus*, has been tormented for at least five years under a black walnut tree and is chlorotic enough that one should pull it out by its roots and allow it to die humanely.

There are no quick fixes to eradicating the concentration of juglone in the landscape (chainsaw only works to remove the tree, not the toxin). Some creative advice recommends using sacrificial tomato plants to measure the gross toxic juglone levels, as plants from the tomato (*Solanaceae*) and cucumber (*Cucurbitaceae*) families are highly sensitive and are a proverbial canary in the mine. This sounds like an opportunity for a newly marketed "organic" herbicide, but who wants to kill a *Cucurbit*?

Documentation of new observations and experimentation with newer cultivars of plants introduced to the plant industry would be greatly appreciated by coniferites who are taking on the opportunities and the challenge of planting in the dappled shade afforded by tall and very straight black walnut trees. The best advice for planting among the black walnuts is to proceed with extreme caution, and not to give homes to plants with a lot of love or money invested in them.

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The Land of the Long White Cloud

Text and Photos by Harry Bethea



During a three week trek from the Invercargill on the southern tip of New Zealand to Russell in the Northland, I discovered that conifers were everywhere and in every shape and size. I decided to write a brief report on what I observed. Before getting to the main point of this article, there are two events which are worth considering.

(1) Two hundred million years ago (“mya”) this island was an integral part of the Gondwana landmass. Eventually and very gradually Gondwana split at the seam between Africa and South America. On the other side of the landmass, Australia and Antarctica split apart dragging Zealandia, or what will become the island of New Zealand, along for the ride. Eighty-five mya, Zealandia starts a journey along the edge of the Australian and Pacific tectonic plates to its current unique place in the great and lonely south ocean roughly due east of Tasmania. Gondwana was rich and diverse in flora and fauna during this geological epoch and, as one geologist put it, the island absconded with a cargo of plants and animals which would contribute to its uniqueness as time marched on. There is ongoing controversy, or shall I say discussion, as to exactly what happened in the interim, allowing for mass extinctions and regenerations of those that exist today.

(2) About 1,000 to 1,500 years ago the restless populations of southern and southeastern Asia began to glance seaward and wonder about the horizon, until the urge to explore was irresistible and the surge began. They traveled out from Asia to Polynesia, then eastward to settle islands such as the Solomons, Tonga and Fiji. Still over the horizon lay Hawaii, Easter Island and maybe even South America. About

800 years ago a tribe called the Maori turned the compass south and rowed their canoes into the northern reaches of the north island of New Zealand. The island and its inhabitants were about to be changed forever. Humans arrived, and dominion over this unique place was ceded, and the transformation to present day New Zealand was underway. The Maori, although destructive at first, realized at some point that a compromise with nature was necessary. In 1789, a tall ship from a far away land sailed through the strait between the north and south island and eventually passed by what is now Auckland. Captain James Cook returned to England from this voyage and filed a report with the British Admiralty that a south sea island of great riches was there to be exploited. Shortly thereafter, the British arrived and the destruction of Aotearoa's (the Maori name for New Zealand) vast forests began. The Maori objected fiercely and wars raged between the two cultures until a tenuous peace emerged, and a treaty signed with the interlopers in the mid 1800s.

Ka mate Ka ora. The eternal struggle between life and death¹.

This brush through two hundred million years or so of geologic and human history in two short paragraphs brings me to the point of this article: CONIFERS. There are many species endemic to New Zealand. Thus, I'll focus on one of particular interest to me, the *Kauri*. Others I can only mention briefly.

The kauri *Agathis australis*. Araucariaceae

The kauri is pronounced "cory" or "cow-ry" depending on who is speaking. The tree exists in the fossil records back to Gondwana and still has a toehold in New Zealand. About 20 species exist throughout the islands of the South Pacific Ocean. Like other great trees of the world, it has been exploited for its wood with little or no thought given to the time and habitat needed to grow such a giant. Dedicated conservationists labor behind the scenes to plant this tree into its natural habitat and into city parks and arboretums. For example, Albert Park in Auckland features two trees; one planted in 1962 and one much larger and older standing about 75'.

New Zealand is truly a place of plants and the greatest, at least in size, is the *Kauri*. In Sequoia National Park, the great trees are given names to "humanize" them. It works to a degree. After all, how could you do harm to the President or General Sherman or the Grizzly Giant. The same is true for the Maori. Great trees are given divine title by the *Tane* (giver of life and light) and blessed by Maori *tohunga* (spiritual leader).

Tenei te tangata, puhuru huru.

Comes now the hairy man.

Nana nei I tiki maj, Whakawhiti te ra. Who causes the sun to shine again.

¹ I will excerpt a few stanzas from a Maori war chant called a *Haka*. It was accompanied by aggressive gesturing with the arms and legs and a puffing of the cheeks with wide eyes and often a fully extended tongue to the chin. Today the *Haka* is performed by the New Zealand All Blacks prior to Rugby games.

Tane Mahuta, the God of the Forest. Found in the Waipoua Forest reserve. This tree is currently the largest living kauri. It stands at a mighty 165' with a circumference of 45', 15' in diameter and a volume of wood larger than any other. Its age estimates run to 2,000 years. Straight as an arrow and strong in its place, it is the successor to the tree which bore the title originally. Those before it were certainly much larger. The Great kauri Ghost tree, felled in the 1870's, was 88' in circumference with a diameter of 28' and an unknown height. The Kauri Ghost was believed to be about 4,000 years old.



Tane Mahuta, the God of the Forest



The Simpson kauri Tree

Te Matua Ngahere, the Father of the Forest. Found nearby after a 20 minute hike, this massive tree is believed to be 3,000 years old. Its top has tumbled, but otherwise it looks healthy and strong with a circumference of 54' and a diameter of 17'.

The Four Sisters. These trees and many of equal size stand in a grove not far from the Father tree.

The McKinney and the Simpson kauri trees are impressive in size and exist outside the Waipoua. They are situated on the more populated east coast of the Northland in Warkworth.

Although the main reserve is in the subtropical Northland, the tree shows great adaptability and can be seen as far

south as Stewart Island at 48 degrees south latitude. Winter temperatures can dip to near freezing, accompanied by very windy conditions. Invercargill's climate is similar to England/Scotland where bouts with freezing temperatures occur. I think the tree is hardy into the 20's F. based on information gathered on this trip. It is classified as a zone 9 equivalent.

I am pleased on one hand to report that "kiwis" have elevated these primordial dinosaurs to mystical status. Steps have been taken to protect the sensitive roots of the *Kauri* from tramping tourists. It has much deserved protected status in the country. On the other hand, sad to report that a fatal fungus has invaded the trees

and many are in the throes of a very slow death. The pathogen is PTA (*Phytophthora taxon Agathis*). It enters through the roots causing fissures along the lower trunk. The fissures discharge massive amounts of sap until the tree gives up and ultimately skeletonizes where it stands. (See photo)



Skeletonized Simpson kauri Tree

Whiti te ra, Hi. The sun shines.

Hopefully with a little TLC the sun will shine on the *Kauri* for a long long time. We are here now. It was here then and will

be here for the future.

One additional thought to give perspective to the size of this great tree. There is a Maori war canoe (*Waka Taua*) in a Maori museum carved from a single tree. I paced it off at 126'. It carried 100 warriors and two chiefs into battle when the occasion arose.

One other curious and interesting habit of this tree from seed germination to about 50'-70' was described as follows by the propagator at the Auckland Botanical Garden. Once



"big rimu"

the tiny tree emerges from the earth, it assumes a wilted appearance and maintains this posture until the leaves stand upright. It will stay this way for a period and then return to the wilt. This process repeats many times until it “decides” to go up in a straight line. I assume it is waiting for conditions in the soil to be just right and for its root system to be able to support it as it enters a very fast growth stage to the height noted above. The trees in this stage are referred to as rickers which form a copse of young trees which have germinated and grown together.

Other conifers noted

The rimu-- *Dacrydium cupressinum*. The tree appears frequently in both north and south island forests. In a woodland setting with many competing trees and understory, the tree is open and sparsely foliated reminding me of a southern pine forest where the trees grow close together and lose most of their lower foliage and limbs. In an open area, the Rimu shows beautifully as its dense needles weep gracefully down from the branches. The tree can be very large. A sign on one road points to “the big rimu” and I can’t resist the hike to see it in a most remote location. It is huge, measuring 9’ in diameter and reaching an estimated 150+’ in height. Truly impressive. These trees have been logged vigorously for their beautiful reddish wood. In the hotel (The Last Resort) near the big rimu, the entire roof structure was supported by a milled rimu log estimated to be 100+’ in length. This species is now protected.

The totara—*Podocarpus totara*. As with the rimu, the sign says “large totara” with an arrow indicating the direction. Try as I did, I could not locate it and darkness dictated that the search was over. However, many others are available to see.

The matai. I did get to see another signed tree not far from the rimu as it leaned out over the mountain road. Only the canopy was available to photo as it rose from the forest. I can only estimate the tree to be 100’ with a width of 70’. This tree was a Matai—*Prumnopitys taxifolia*—the New Zealand black pine (a podocarp).

The kahikatea—*Dacrycarpus dacrydioides*. This podocarp is referred to as the white pine and is the tallest tree in New Zealand reaching 200’ and standing straight



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The matai

as an arrow. There is a grove near the village of Hokitika. Many groves exist through the south island, and few in the north island. The trees grow best in wet swampy conditions and are hard to approach for photography for that reason, at least in the Lake Kaniere reserve. The conservation service estimates these trees to be 500 years old. Fossils have been dated back to 180 mya. This is an ancient species.

In closing, there are quite a number of non-native trees growing around New Zealand, many of them North American. They appear in arboretums and city gardens, several referred to as “Queen’s Gardens”. These trees are impressive and have been in New Zealand for 100+ years in some cases. The Queenstown Garden is a great stop. Here I saw one of the most perfect conifers in form (*Abies nordmanniana*) which I have seen in my travels. It was accompanied by other large trees all in beautiful form mainly because of thoughtful spacing. Nelson, Rotorua, Wanganui, and Te Anau offer opportunities to see large conifers in public gardens. Many other arboretums and parks are available to browse. It is hard to cover it all in 3 weeks.

If you go, the people are lovely and curious about America, the scenery is great, and the price is high.

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Sharing the Passion

Text and photos by Nick Wawok



As a third generation landscaper I have spent my entire life watching my grandfather, Walter Small, then my mother, Nancy Marshall, collecting and growing conifers. As a child I learned to make cuttings and grow a new tree from something so small that in a few years would be so much larger. My family operated a commercial and residential landscaping company that also had a large nursery and a wholesale operation. When I went to college my family had a bit of a “divorce” and the business split. I would



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say that may have been a blessing in disguise. My mother and aunt have spent the last 12 years building a collection of rare and unusual conifers which we use every day in creating one-of-a-kind landscape designs. They have spent many years and taken many buying trips to

build such a collection.

I felt like a beginner to the craft, and I am. I have a great teacher though. My mother is sharing her passion with me. As we walk through our 12 acre facility, I am constantly amazed at the unending variety of the conifers, Japanese maples, beeches, and other plants we have on hand. I can only imagine what else is out there as we have an impressive collection of more than 30,000 plants. I have been learning how to design in the past couple years. When I was younger my mother would share her knowledge, but I, of course, was entirely too cool to listen at the time. As I grow older, all that advice my parents offered seems to be coming to fruition more and more. Turns out, they were right most of the time. Who knew?



As I learn this craft I find the real trick is to choose exactly the right plant for a given space. Each homeowner and every landscape are unique on their own. The challenge and the joy come from finding that perfect specimen which makes the garden greater than the sum of its parts. It is exciting to balance the different colors, textures, heights, and structures nature provides to us. I look forward to learning more and more as the years go along. I guess I didn't really know everything when I was 18. Now, as I await the birth of my first child, I wonder if he/she will have any interest in this business. Either way, I have had a nice journey so far. Let's see what path the future lays before me.

Nick Wawok
Landscape Designer, Small's Landscaping,

Profile of the Stanley M. Rowe Arboretum

By Chris Daeger

As one of the first named Conifer Reference Gardens in the Central Region, we are proud and very appreciative to have been selected as a recipient of this honor. In fulfillment of being an ACS Conifer Reference Garden, the following article serves as an introduction to all members of the American Conifer Society.



Rowe Arboretum conifers in spring

The Arboretum was started in 1926 by Stanley and Dorothy Rowe. After meeting a man by the name of A.F. Sanford of Knoxville, Tennessee, who had a collection of woody plants from around the world, the Rowe's decided to pursue the same hobby to fill their newly acquired farmland and pastures. The Rowe's also built a home on the property and moved from neighboring Cincinnati.

The owners themselves shared this tale which was the beginning episode in their collecting and learning adventures. Mr. Rowe gave explicit instructions for the train station to call him at his firm's office, the Shepard Elevator Company, when the 5,000 trees came to town from the Ohio Department of Forestry. He got the



Weepers

call, corralled a couple of trucks, a few employees, and went to pick them up. Mr. Rowe was deeply embarrassed when the man behind the counter gave him one large box about the size of a trunk and replied: "Here you go!" The learning curve for these rookie gardeners all started with a crate of 2 year old seedlings.

Over the years of trial and error plantings,



Dwarf Conifers

the Rowes' hobby grew into a collection which at times numbered close to 5,000 different trees and shrubs. The idea was to experiment and see what would do well for this region of the Midwest. Records were kept on the purchase price, sizes, and how well the plants were doing. This process continues so that visitors can learn from past efforts.

Visitors were allowed to tour the estate as long as arrangements were made in advance. Tours were given by the Rowe's themselves if they were in town. On some occasions even their home was opened, which by the way is modeled after Mount Vernon, George Washington's home.



Given that Dorothy was also from the south, the plantings around the home were suggestive of a southern plantation. It still can be viewed from the Arboretum today. Members Day at the Arboretum also features the traditional lemonade and cookies Dorothy served to visitors to their home and gardens.

The Rowe's wanted to insure that their legacy would not be lost, unlike the Sanford Arboretum, Knoxville, Tennessee. Through the Rowe family's generous donations of land and their home to the Village of Indian Hill's Green Areas program, a portion of the original estate, heavily populated by specimens from around the world, has been saved. An endowment fund was initiated after the Village's sale of the Rowe home. Plans were drawn by a landscape architect who proposed that the collections spread out over a great deal of the original 200 acres. There were designated areas for conifers, and even one section was designed and planted as a dwarf conifer collection. These sections originated in the early to mid-1930's, and some remain today as part of the Arboretum's collections.

In 1987 when the gardens officially opened to the public, the preserved Arboretum contained collections of lilacs, crabapples, deciduous trees and shrubs, and many of the original conifers. With the many evergreens already taking up a large portion, the decision was made that the collections policy stated that conifers



Dorothy Rowe dwarf conifers.

were to be the primary collection. It is estimated that there are well over 1,300 different conifers and evergreens on display, and the number is probably higher. Records are currently being

updated and computerized.

More recently some Dr. Clark West collections have been added. These include a Colorado spruce witch's broom seedling display, a 3rd generation seedling assortment from a *Thuja occidentalis* 'Filiformis', and, in 2011, a group of *Thuja occidentalis* 'Rosenthalii' 3rd generation seedlings were planted. These unique collections accompany other smaller samples in the gardens and demonstrate the diversity which may result when conifers are grown from seed.



Conifer Reference Garden labels.

A sample of some of the other interesting attractions visitors enjoy include the petrified log, a 8 by 10 foot California redwood slice, the Dorothy Rowe Meadow filled with bulbs and wildflowers, and some very unique trees and shrubs. The Arboretum is also known to be a great bird watching site as over 160 species have been spotted here.

The Arboretum's main area today consists of approximately 10 acres devoted to displaying woody plants. They are easy to traverse as there are gravel or cypress mulch paths throughout the gardens. Grassy areas also separate many beds of woody plants; many are mixed to provide interest and color at all times of the year.

This spring and summer, come visit one of the two the original Central Region Conifer Reference Gardens. Come to southwest Ohio and take in the Rowe Arboretum.

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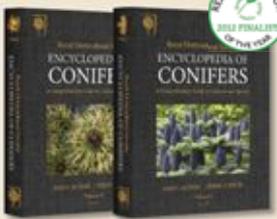


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