



Conifer Quarterly

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Summer 2013

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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

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Energy and enthusiasm are two critical ingredients necessary for the continued growth and success of the ACS. I must applaud the Western region at this time for the tremendous effort and work they are doing on behalf of the ACS. They have hosted and teamed up to produce multiple events over the past few months. These activities have resulted in dozens of new memberships, a surging Facebook page and a great deal of conifer camaraderie. Thank you to everyone in the Western region who have made these events possible and welcome to all of our new ACS members.

It's 12:30 am as I sit here and compose this column. I must confess I have spent the past 3 hours exploring the new ACS website. While this website is still in its development phase, I can see and appreciate the amount of work which has already gone into it. This effort has been led by Sean Callahan, who has spent much of his spring and summer compiling the content. Sean has worked closely with the various committee chairpersons to make this a content-rich website. Without this teamwork and combined vigor, the new ACS website would not be possible.

The Southeastern Region has been blessed with a dynamic member who has led their Reference Garden Program to include and feature 15 gardens! Barbie Colvin has done an extraordinary job over

the past 5 years and is now stepping back, but assisting the ACS in sharing her talents and techniques with the other regions. The Western Region has just added Quarryhill Botanical Garden to its Reference Garden list. I am aware that the Northeastern Region has 3 new applications for its program as well. The Reference Garden Program allows the ACS to assist various gardens with their efforts to display conifers to the public. Public education regarding conifers is a primary component of the ACS mission.

As President, I automatically receive each of the regional newsletters. I am astonished by the effort and quality of each region's publication. It started in the NE Region some 10 years ago by Suzanne Mahoney, who continues as editor today. Soon, Maud Henne will produce a wonderful publication tailored to the SE Region's interests. Next, Jerry Belanger is producing an outstanding publication for the Central Region. In the West, they are experimenting with a more frequent e-newsletter approach, lead by Sara Malone. Each of these 4 individuals gives countless hours of their time and talent to enrich your ACS membership. Past issues of the regional newsletters may be found on the ACS website for everyone to enjoy.

As we gather in Mount Kisco this August for our semi annual board meeting, we will be tasked with identifying and expanding our various ACS programs. Each of our Board members brings with them ideas and projects which they feel will grow and enhance the ACS as it strives to meet its mission. After our meeting, I will request that each BOD member reach out and chat with the ACS members present to solicit ideas and suggestions. For those members unable to attend the National Meeting, the contact information for each BOD member is found on the final page of this *Conifer Quarterly*. Contact us! We need to tap into the energy and enthusiasm of each ACS member to grow and strengthen the ACS. Do not be shy! Help us invigorate and expand the American Conifer Society!

Larry Nau
ACS President



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Editor's Corner



Summer has been well underway. If you're like me, the days don't at all seem long enough to accomplish all the things you want to do, what with plant shopping, planting, pruning, and weed and pest control, to name but a few. There are professional meetings and rendezvous, family gatherings and days on the boat fishing. Summer is definitely the time to celebrate the outdoors and all that they have to offer. We conifer-lovers revel in the spring and summer because those are our seasons to really get our hands in the dirt and lavish our gardens with new finds. My addicted conifer syndrome resulted in more acquisitions, along with some from a colleague who is moving and had to pare down his garden before his departure.

All of your experiences, travels and researches are most valuable and should be shared with the readership of the American Conifer Society. Therefore, in this Corner, I am requesting of you one more task---writing for *Conifer Quarterly*. From time to time some of you have expressed a desire to write for the *Quarterly*, but time and a bit of stage fright have held you back. It's just a matter of 1,200 words or so, maybe even a tad less, and that includes every single word, even the "a's", the "the's" and the "and's". I know you have it in you.

Why, I am certain that at any given moment you could have a drink or two with me and engage me in a 30-minute discussion. Were I to write it all down as you talked, I'd be willing to bet that you'd surpass 3,000 words.

One recent *CQ*-author told me her work wouldn't interest anybody. She emphatically proclaimed: "Nobody would want to read that!" Well, that "that" inspired letters and much appreciation from our readers. It just goes to show you that one writer's subject is the food for many readers' pleasure. Another writer was so inspired by the travels of others that he and his wife embarked on a journey to their own favorite conifer haunts. Then came a recent email concerning the last *CQ* and an article in it. The couple decided to travel to the Smoky Mountains. There they viewed the Fraser firs and even saw their first black bear. They are new members of the ACS.

Therefore, I want to encourage you to consider writing on a topic you enjoy. Is it a new cultivar? A book on conifers you have found especially useful? Or, how can anyone ask me to choose a favorite? What about the

history of your own garden? Or the history of a garden you admire? Is there an arboretum which has a special place in your heart? Is there a special collection of conifers somewhere? What about companion plants to conifers? Are any of you raising conifers in the shade? I have a *Wollemia nobilis* and a *Sequoiadendron giganteum* 'Pendulum' in pots. Are you planting anything exotic for your USDA Zone? What about medicinal uses for conifers? I have even heard of foods made from conifers. Mugo pine jam anyone?

My own brand of writing has taken me and you down the paths of the spelling of witch's brooms, the "correct" pronunciation of botanical nomenclature, my wife's ghost tree (aka *Cupressus nootkatensis*), even social media. With computers it is easy to edit, to add and to subtract. If only I had had a computer to write my doctoral dissertation, my little girls would not have had to hold the master copy in the cart when we went grocery shopping, ostensibly to save it in case of fire or natural disaster. Then there was my dad who kept a copy in the freezer. No kidding!

If you have a topic in mind, we could discuss it. I would be happy to assist you in any way I can. I could help with the outline, drafts, or even the choosing of a title. Before you know it, you will have inspired other writers. I know you can do it.

Ron

Correction

Jerry Tangren has informed me that in his and Lorna's article in Spring 2013 *Conifer Quarterly*, there are two corrections:

1. On page 25, *Picea sitchensis* (Preston Macy Sitka spruce) is not the largest spruce in the world. It is the 6th largest spruce in the world.
2. On page 26, *Juniperus communis* is actually *Juniperus maritima*.



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Profile Darlene Yeager-Torre

When most people end their day, my work begins. I am a night photographer. Using darkness itself as a canvas, my brushes are lights from various sources including off-camera strobes, flashlights, and even car headlights. In nearly total darkness, objects are only visible to the camera upon being lit. After evaluating the scene and any existing light and visualizing the final image, I open the camera shutter. Dressed in black, I begin working in front of the camera moving from object to object with my lights. For me, shadows are as important in creating the mood as the lit subject.

I came to photography after a career of teaching art to others when I began to explore my own artistic vision. A presentation on night photography in 2010 piqued my curiosity about that genre and sent me on the adventures which now fill my evenings. As my repertoire grew and my techniques evolved, so did my art. Although I must summon courage to risk the perils of working in the dark, it is the variety, intricacies, and difficulty of long exposure photography which fuel my creativity and rejuvenate my spirit.

You may see more of my art at www.dytphotos.com.

Darlene Yeager-Torre is the author of the cover photo for this issue of *Conifer Quarterly*.

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From West to East

By Tom Cox

In 2012, I was invited to speak at the 13th Conference of International Association of Botanical Gardens, which was held in November in Guangzhou, China. My talk was on **Conifer Performance in the Southeastern U.S.**, and was the only presentation concentrating on conifers.

My talk focused on the role botanical gardens and arboreta play in preservation and the relative significance of our conifer collection in Canton, Georgia. With 34% of the world's conifers listed on the *ICUN Red List of Threatened Species*, preservation is becoming increasingly important to us. At present, we are successfully cultivating 28 conifer species which are on the ICUN Endangered list.

I also spoke about our success with growing conifers in a region where the growing conditions are assumed to be non-conifer friendly. We are now growing 41 conifer genera (approximately 60% of the world's total) and 198 species which is approximately 50% of the world's total of temperate species.

Before leaving for China, we spent a night with friends John and Christie Hastings in their beautiful hillside home in Orinda, California. John and Christie are regulars on the ACS International trips and are both lovers of conifers as well as delightful people. The next morning our friends Scott and Julie Antrim from Clover, South Carolina, also ACS members, joined us for breakfast at the Hastings' kind invitation. Scott is the one with an incurable case of ACS (Addicted Conifer Syndrome).

Our destination that day would be to find and document *in situ* populations of one of the rarest firs on earth, *Abies bracteata* (bristlecone or Santa



Abies bracteata

Lucia fir). Our search would take us through the Carmel Valley into the Santa Lucia Mountains in the Los Padres National Forest. After a long ride on back roads where we would find stands of *Pinus coulteri* (big-cone pine), we parked at a location marked as China Camp. At an elevation of 4,154' (coordinates N 36 17.741' W 121 34.157'), we found several trees, and Scott managed to hike to a small grove on a very steep northeast facing slope (the luxury of youth). As the picture reveals, Santa Lucia fir has a very narrow conical form with a spire-like crown. Its most unique feature is the cone scale bracts which end in very long, spreading, yellow-brown bristles. No other fir exhibits this.

Next, we traveled with Scott and Julie for a visit to the Santa Cruz Botanical Garden for a tour of their conifer collection. Most noteworthy are their collection of *Araucaria* species and a large weeping specimen of *Cupressus lusitanica* 'Pendula'. From there we drove to Los Angeles for a visit to the Huntington Botanical Garden in Pasadena. Kathy Musial, Curator, Living Collections and Collections Manager, showed us around. Kathy was the featured speaker at the ACS 2012 Western Region meeting in California, as well as editor of the recent two-volume book *Conifers Around the World*. Upon arrival, Kathy mentioned that she had a surprise guest who turned out to be conifer expert, Ron Determan, from the Atlanta Botanical Garden; small world sometimes. The conifer collection at the Huntington should be on your list if visiting the Los Angeles area. Especially noteworthy is their specimen of the *Cupressus cashmeriana* (Bhutan cypress), aka *Cupressus tortulosa*, (Silba, J. 2009). It was interesting to learn from Kathy that the challenge they face in growing conifers is low humidity, which is a limiting factor due to dry conditions. Here in Georgia, we face the exact opposite. No matter how seemingly inviting, every location has issues, with which plant people have to deal.

Several days and a 13-hour flight out of Los Angeles later, we landed in Guangzhou. I had read about all of the building, vehicle traffic and emerging middle class, but was not prepared for all the changes since our last visit in 1986. The modernization since then is nothing short of phenomenal -- modern highways and construction cranes everywhere.

The international conference was attended by representatives from over 40 countries to include Oman, Russia, Vietnam and Israel. The opportunity to network was one of the highlights and it opened up new channels to receive wild collected material such as *Picea orientalis* and *Juniperus excelsa* (the only conifer native to Oman). Among those attending from the U.S. were Dr. Dave Creech, Regent's Professor, Stephen F. Austin State University, Nacogdoches, Texas; Mark Weathington, Assistant Director, JC Raulston Arboretum, Raleigh, North Carolina, William McNamara, Executive Director, Quarryhill Botanical Garden, Sonoma, California; Dr. Gerry Donnelly and Dr. Nicole Cavender from the Morton Arboretum,

Lisle, Illinois.

Our host site for the conference was the modern Yanling hotel. The first night we were treated to an elaborate welcome reception at the South China Botanical Garden, which is located about 5 miles outside the city of Guangzhou.

The reception included dancers, singers, magicians

and acrobats performing on a grand outdoor stage. In today's China, every production seems to be on a grand scale.

The South China Botanical Garden, begun in 1929, is the oldest and largest South Asian tropical botanical garden in China. While a majority of the species would likely be better adapted to a location such as Orlando, Florida, we saw a number of well-represented conifers such as *Taxodium distichum* and *Cephalotaxus mannii*, which are adaptable in Zone 8. The amount of money being spent on gardens such as this is staggering: the Chinese have embraced horticulture on a much grander scale than is currently the norm in the U.S.

The final day of the conference involved a two-hour bus ride to the Dinghushan Nature Reserve. Established in 1956, it is the first nature reserve in China and the only nature reserve of the Chinese Academy of Sciences. Several expedition options were offered ranging from 1.5 to 4.5 hours. (Once you begin; you are on your own as there are no guides.) Not wanting to miss anything, I chose the longer one which was facilitated with the generous help of several young Chinese students who also enjoyed practicing their English skills.

The hike was like stepping into another world where steep paths wind up and down mountains in a sub-tropical preserve which appears to be undisturbed beyond the paths. As we traversed the area, we crossed numerous waterfalls which were accented by very old stone bridges and handrails made from stone carved into Chinese patterns. In many areas, the stone steps were literally carved into the mountain. On one of the summits, we came to a Buddhist monastery, seemingly shut off from civilization. Aside from several bee hives, one wonders how they subsist in such a remote location. The flora



South China Botanical Garden



Taxodium distichum

consisted mostly of broadleaf evergreen trees such as *Schima superba* and *Machilus chinensis*. I was told that *Schima superba* was used as firebreaks as it doesn't easily burn. We did find the conifer *Nageia fleuryi* and, on the distant mountain slopes, we saw what was said to be *Pinus massoniana* (Chinese red pine). The experience was akin to being in the middle of an *Indiana Jones* movie set. Next to Milford Sound in New Zealand, this was the

most beautiful natural setting I've ever encountered.

From Guangzhou, Evelyn and I flew to Kunming. We traveled with Dr. Creech, his wife Janet, and our host for the next three days, Professor Yin Yunlong, who is with the Institute of Botany, Jiangsu Province and the Chinese Academy of Science.

Professor Yin and Dr. Creech are collaborating with the Chinese agricultural sector on a project to grow blueberries in China. Another project they have worked on is the use of *Taxodium* as a primary landscape tree. The cultivar *Taxodium* 'Nanjing Beauty' arose from breeding work conducted by professor Chen Yong Hui at the Nanjing Botanical Garden. Newer selections are being made from controlled crosses and open pollinated seed crops. The selection criteria include growth rate, salinity and alkalinity tolerance, flooding tolerance, *Cercosporidium* needle blight resistance, form, and ease of cutting propagation.

Throughout the entire region, we were to see thousands of *Taxodium* planted along highways. (See *Conifer Quarterly* Summer 2007 and Winter 2008 for more on this project.) Curiously, the Chinese endemic *Metasequoia glyptostroboides* was nowhere to be found. In one instance, we found a farm road lined with *Sequoia sempervirens* (coast redwood).

After visits to the famous Stone Forest and the Kunming Botanical Garden, it was time



Dinghushan Nature Preserve

to move on to perhaps the crown jewel of the trip. As background, prior to departing the U.S., I received an e-mail from Professor John Silba, who is a noted expert on the genus *Cupressus*. He suggested we try to visit Lushan Botanical Garden (LBG), a place few Westerners have visited.

As we were to learn, it is a garden recognized for its collection of conifers, ferns and rhododendrons. We also learned that getting there was not easy as we had to fly from Kunming to Nanchang in Jiangxi Province about 2 ½ hours away and almost 3,500 feet below the mountain-top garden. Arriving three hours behind schedule due to dense fog in Nanchang, we were met by an English-speaking representative from the Botanical Garden who would serve as our interpreter. We were driven



Stone Forest

in a small bus along a narrow road which twisted through the mountains to Lushan. Our seatbelts were disabled, and the driver had a penchant for passing on dangerous curves, which made the drive a bit harrowing on a foggy night.

Arriving after dark, we were shown to our room located on the property and would later be hosted for dinner by their Vice Director, Professor Lehua Zhang. This would be our introduction into somewhat rural Chinese cuisine. Spending our first night in this remote place was an adventure -- especially when the power went off and we got very cold.

The next morning I could not wait to step outside and see this special place we had ventured so far to see. To set the scene: at an elevation of 3,444', LBG is situated on the side of one of the most renowned mountains in China. We were soon to learn that it was near impossible to find a flat spot anywhere on its 741 acres.

Founded in 1934, it is one of the earliest gardens for botanical research in China. In this national reserve for plant resources, more than 5,000 species are being conserved. Their three major areas of research and conservation are conifers, ferns and rhododendrons, of which their collections are the largest in China. The founders were three famous botanists -- Professor Hsen-Hsu Hu, the founder of botany in modern China, Professor Ren-Chang Chen, the founder of fern study in China, and Professor Feng-Huai Chen, the father of Chinese botanical gardens. They are all buried next to each other in the garden.

Departing the room on the first morning I found myself surrounded by huge conifers such as *Cryptomeria japonica*, *Abies firma*, *Thujopsis x dolabrata* and species of *Chamaecyparis*. Outside our room was a stunning specimen of *Cephalotaxus fortunei*, from which I managed to get some cuttings to be sent home for propagation. Before the morning ended, we were escorted into an old stone administrative building where I was introduced to the Garden's director Professor Yiya Wu. We were later to have lunch together along with the ubiquitous rice wine, later dubbed by me "white lightnin". The Chinese have a tradition of conducting numerous toasts during lunch and dinner and I suppose that I was seen as an easy target. Their toast is *Gambei*, which translates to "bottoms up." No plant exploration was conducted for the next three hours.

Over the course of the next two days we toured the entire garden and were of some assistance in helping them straighten out some conifer nomenclature. This is a garden for anyone interested in seeing numerous conifer species (no cultivars), many of which are quite rare. For me the biggest take-away was to see so many conifers of tremendous size. This

included taxa such as *Glyptostrobus*, *Pseudolarix*, *Fokienia*, *Taxus*, *Abies*, *Keteleeria*, and *Picea* -- all at least 50 years old. Judging from the elevation, rainfall, soil and temperate to sub-tropical climate, this

is about as perfect a spot to grow conifers as one will ever find.

On our final day, our guides escorted us to several tourist spots of high interest. The first was Dalin Temple where nearby three very old trees were planted.



Professor Yin
and Evelyn Cox

Cryptomeria japonica



Then we made a quick stop at Lu Shan, which offered a splendid panorama of the surrounding mountains and lakes.

Later in the afternoon we toured the Garden's rhododendron facility where I have never seen as many species. We are now trying to help them network with our contacts in the U.S. and Europe. Our last official activity involved a farewell meeting with their Vice Director, with whom we executed a formal Seed Exchange Agreement between our entities.

For those interested in visiting, the closest town is Guling, which has at least one high-end hotel. Another location is Jiujiang. The area is popular for Chinese tourists, and a quick Google search will reveal many interesting sights. Do not expect to find



Lu Shan

many English-speaking people. I imagine spring must be the most beautiful season. Our final stop in China was Shanghai, a very modern city with an exciting nightlife and an interesting botanical garden.

While touring the Shanghai Botanical Garden in a constant downpour, we happened upon a grove of *Pinus bungeana* (lacebark pines). There must have been at least 30 of them, but one stood out for the color of its bark. Cuttings were taken and shipped to Gary Gee for hopefully successful propagation. It will be named 'Shanghai Surprise'. This botanical garden contains a fairly good conifer collection, but some of the plants are mislabeled. As with all gardens we visited, there were no cultivars.

Our tour guides in Shanghai were an American couple, Andrew and Danielle Arvesen, who teach English in Chinese schools. Andrew's father Earnest is a longtime ACS member and volunteer at our arboretum. Their knowledge of the city sights, subway and restaurants was invaluable. We shared Thanksgiving dinner with them in old Shanghai, eating traditional Chinese food on a canal with festively lit bridges. On our final full day we took the high speed train to the beautiful city of Hangzhou. Our day was spent at the historic West Lake, which is famous for its picturesque landscape. It is also associated with many scholars, national heroes and

revolutionary martyrs, thus embracing many aspects of Chinese culture. In addition, its many ancient buildings and engraved tablets are among the most cherished national treasures of China.



Signing the seed exchange agreement

After our return to Los Angeles, we decided to drive to San Diego as I have always wanted to see *Pinus torreyana* (Torrey pine) in the wild. It is the rarest pine in North America and can be found in Torrey Pines State Natural Reserve, which is well worth a visit. It is only naturally found elsewhere on Santa Rosa Island, California. While there, we found three witch's brooms which were interesting. It was educational to compare the small size of these trees growing in this rugged area as compared to 90' specimens seen several years past growing on the state capitol grounds in Sacramento: location, location, location. After being on the road for almost a month, it was time to go home and resume the outdoor chores associated with gardening.



Pinus bungeana



Pinus torreyana WB



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Changing Children's Lives – One Volunteer's Story

By Martha Pine - *Reprinted with Permission from Quarryhill Botanical Gardens, Glen Ellen California*

Since I've been volunteering as a docent for the educational tours at Quarryhill, I've had many rewarding experiences with the children and positive feedback from the teachers. However, the story I'm going to tell you has been by far the most surprising and gratifying experience of all, and I personally had very little to do with it.

My vocation at this time is as a tutor at one of the local elementary schools. I work with students of all grades; mostly those who are struggling with school. One of the children with whom I worked last year was a particularly severe case of low academics and poor attitude. When I tried to work with him he would put his head on the table, tell me how stupid all of this was, and generally fight me on every front. It was very troubling to see this third grader harbor such a terribly negative outlook on school and learning in general.

It was no big surprise this year when the fourth grade teacher, in whose class I was working, assigned me to help this child. Nothing had changed over the summer. He deliberately sabotaged any groups, with which he was working, refused to do any of the work I asked of him and belligerently decried his hatred of school, learning, anything which required some effort on his part.

And then the class went to Quarryhill for a tour of the garden. The day after the tour I came into the room and saw an animated, enthusiastic student planting and caring for his fava beans. He wanted to tell me all about it and show me what he had done and couldn't stop talking about what he had learned. The teacher wisely glommed onto this and began to design his school work around his planting and growing. When I told him that I worked at Quarryhill and was, in fact, in charge of sending out the rewards for the students who sent in fava bean pictures, he launched into a description of what he was doing and what he planned to do. Not only did I help him with his plants, but he wrote up a summary of all the steps he had followed to get them to grow...without a whimper of complaint. I can hardly believe this is the same child. He has found a passion and he is discovering success in learning through his enthusiasm.

Today was a beautiful, warm day and he and I walked out to the garden area, pulled up some weeds and talked about what he wants to plant next, and where they would grow best in the garden. When we returned to the

classroom I went to the sink to wash my hands. Shortly he came up to me and asked me if I would help him with his homework. We went out to the hall and went through the work.



Witch's broom in *Pinus densiflora* Photo by Janice Le Cocq

He accepted criticism, talked about the pros and cons of his answers and when he left he turned back around and said, "Thank you, Mrs. Pine," and gave me a warm, sincere smile. I am amazed in the change which has taken place for this child.

All of the children who go through the educational program at

Quarryhill get some degree of the magic the garden has to offer. It's for the children like this one that it makes the most impact. We will hang onto as much of this positive impetus as we can and continue to promote him, but your program was what got it started and I thank you for having that available for him.

Founded in 1987 in Glen Ellen, California, Quarryhill Botanical Garden is one of the pre-eminent botanical gardens, featuring one of the largest collections of documented, wild-collected Asian plants in the world.

Its core programs include: Conservation, Education, Expeditions and Research <http://quarryhillbg.org/>

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*wilsoniana***Chamaecyparis***C. formosensis**C. obtusa**C. obtusa* var. *formosana**C. pisifera***Cryptomeria***C. japonica**C. japonica* var. *sinensis***Cunninghamia***C. lanceolata**C. lanceolata* var.
*konishii***Cupressus***C. cashmeriana**C. chengiana**C. chengiana* subsp.
*jiangensis**C. duclouxiana**C. funebris**C. gigantea**C. himalaica**C. torulosa**C. vietnamensis***Fokienia***F. hodginsii***Glyptostrobos***G. pensilis***Juniperus***J. excelsa**J. formosana**J. pingii* var. *wilsonii**J. recurva* var.
*bhutanica**J. rigida***Keteleeria***K. davidiana**K. evelyniana***Larix***L. griffithii**L. kaempferi**L. mastersiana***Metasequoia***M. glyptostroboides***Microbiota***M. decussata***Picea***P. asperata**P. brachytyla**P. jezoensis**P. likiangensis**P. likiangensis* var.
*hirtella**P. likiangensis* var.
*rubescens**P. maximowiczii**P. morrisonicola**P. purpurea**P. smithiana**P. wilsonii***Pinus***P. armandii**P. densata**P. densiflora**P. koraiensis**P. massoniana**P. morrisonicola**P. parviflora* var.
*pentaphylla**P. roxburghii**P. tabuliformis**P. taiwanensis**P. thunbergii**P. wallichiana**P. yunnanensis***Platycladus***P. orientalis***Podocarpus***P. macrophyllus***Pseudolarix***P. amabilis***Sciadopitys***S. verticillata***Taiwania***T. cryptomerioides***Thuja***T. koraiensis***Thujopsis***T. dolabrata***Tsuga***T. chinensis***Other****Gymnosperms:****Cycas***C. revoluta***Ephedra***E. monosperma***Ginkgo***G. biloba*, *G. biloba*
'Autumn Gold'

Klondike Valley Nursery

Text and photos by John Lennart



Klondilke Valley

Growing trees has been a passion of mine since I was a kid in the 1970's, but I never imagined that arboriculture would involve dog sledding and snowshoeing. However, our collection at Klondike Valley Nursery, near Dawson City, Yukon, Canada now has over 60 spruce selections, propagated from brooms discovered while cross country skiing, driving, biking or dog sledding. To gather most of them I've donned harness and climbing spurs and scrambled up the broom-bearing tree or an adjacent tree if more convenient to reach them.

Our selection *Picea glauca* 'Freedom's Choice' was located one day, for example, when the lead sled dog in a team of 9 chose a particular route down a frozen river channel. The egg shaped broom, the size of an SUV, was 30' up a large leaning spruce; it was hard to miss. I collected pieces a few days later, and, within the year, the tree had fallen into the river and was gone. An early lesson is not to wait too long. Heavy snow, combined with the weight of large brooms, often brings trees down. The resulting selection is a lovely, low-growing, grayish-green dwarf.

Other specimens have been shot out of trees, including one selection where the collector, a friend of mine, stopped to shoot a piece of broom while

he was dog-mushing in the southern Ogilvie Mountains. When the rifle blast went off, the team spooked and ran off, leaving him to run after them while shouting...endearments!

I've been growing trees in the Klondike since 1986. The 44-acre property where we live and raise trees, fruits and vegetables has no road access or grid power. The first killing frost is expected any time after mid-August; winter temperatures can hit -50 C (-58F) November to the end of April. Anything coming in or out walks or slides over the snow and ice on a sled. The other 6 months of the year, trees, like the people, move in or out by canoe, or in June by shallow draft boat, so that by most standards it is a ridiculous place for a nursery.

Alpine fir and lodge pole pines were the first non-resident trees I transplanted into small openings in the forest. Competition with existing spruce, some over 100' tall, proved intense, and growth has been slow. A lucky few survive. Grizzly bears have torn down most of what the snowshoe hares haven't eaten long ago.

Now we give the trees more room and use a lot of fencing. Chicken wire around birch near the water keeps beavers looking elsewhere; 5' high ridged fence keeps the small browsers at bay year round and helps steer occasional bears around sensitive areas. For moose we rely on OZ the *Snapasaurus*, a Jack Russell Terrier possessing an indignant scream which could empty an auditorium. He has singlehandedly run 3 moose off the property through the snow at dawn!

I only got hooked on conifers



Moving a *Larix kaempferi*



Picea glauca 'Klondike Hihat' in foreground, *Picea glauca* 'Minto Moon' in background

ten years ago. Prior to that my focus was growing fruit trees, mostly apples, a challenging task we still struggle with, having around 70 different selections. The shift from fruit to conifers got underway in April, 2003 when Sarah, my wife, and I began developing our exclusive dwarf conifer collection in the old apple battleground. This came about after my visit to some great nurseries in Oregon in November 2002.

I was in Columbus, Ohio, visiting Deckers' Nursery with my mother when the owner Brian Decker recognized my interest and recommended I visit Iseli Nursery to see exceptional conifers. That was doable. My truck was in Denver, awaiting my return, and the 1,200 mile side trip to Oregon was kind of on the way back home.

It was an oh-boy event touring the acres of colorful, fabulously formed trees rolling across the landscape that gray, drizzly day in November. It was a profound life-changing visit. I had never imagined the scale and diversity my eyes took in; such beautiful specimens, such graceful, elegant forms and millions of containerized conifers. From Iseli, it was on to Larry Stanley's place where among his staggering collection he tried to dissuade me of the idea that there was money being made. Somehow I did not find him convincing. The only thing I was making while growing apple trees 300 miles south of the Arctic Circle was a reputation. Some things never change...

During the 2,085 mile trip north I figured that, living amidst an enormous expanse of Boreal forest, it was my duty to collect and graft some of the brooms I had seen over the years and to look for more! I soon bought 1,000 white spruce rootstock, and Sarah happily learned how to graft. After getting a good feel for the work, she took on the most miserably dense, skinny twigged, old broom I had. The melon-sized mutation had grown less than 1/8 inch a year the last 50 years in the wild. Our 150 painstaking grafts of that selection yielded 2 survivors. Ten years later those *Picea glauca* 'Patricia' are now each over a foot across, the beautiful globose parent stock of many others.

Because of their hardiness and abundance, most of our collection is comprised of white spruce. Most of these are semi or fully dwarf specimens while 1 in 6 are miniatures which tend to be difficult to keep alive more than 6 or 7 years. The bulk of the trees are pleasant enough, but they grow on to appear quite alike after some years in cultivation. A half dozen or so



Picea glauca 'Patricia'

globose specimens stand out above the rest, performing consistently enough to earn a place in any conifer collection. Our most prized selection is a stunning, robust eye-catcher which appears to be adorned with grapes as the buds burst in spring. Finally, there are rough looking ones shaped rather like a crow's nest. These taught me that a ratty-looking broom grows a ratty-looking specimen. Thus, I only collect promising looking pieces now. This is something of a relief as the years pass!

While collection of brooms can take place September to late April, poor light, cold and snow in the trees rules out most chances from October until March. Generally I collect in March, offering an odd sight for those who see me leave the roadside in full climbing gear, carrying rope and pole pruners on snowshoes, striding into the forest!

We graft in late April and early May, long after southern producers or hobbyists do the same work. Unfortunately it is just not feasible to house the grafted trees earlier. We can get night time lows below -25C (-13F) into early April, and our greenhouses are heated with passive wood burning stoves so that the risk of hard freezes prior to April 10 is great. Our grafts have to be made carefully in order to heal quickly because the pressure to grow builds quickly, driven by very long days. (We gain about 10 minutes of light per day in April). Of course, late April and May is when every other plant



Newly collected *Picea glauca*

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we grow needs seeding, transplanting, trimming, moving and heeling out. Good thing it's light very late so that I can work extreme hours. Come May, it's hard to stop working while enjoying the beauty of evening sunsets sliding seamlessly into brilliant dawns without the dark of night; all the while birds sing their spring songs!

The season's new selections are always exciting to watch develop. Wild brooms particularly from old decrepit trees often undergo radical change while adapting to cultivation. The second spring reveals even more of the emerging character as the plant adjusts further to cultivation.

Another brief window of opportunity for grafting exists in summer. Discovering when the time is right (scion stems being semi-lignified) is the trick, coupled with scheduling the work and an available pair of trained hands. This growth phase lasts only a week or two here. This past summer we caught the tail end of this period and I trained one of our volunteers in this. We'll learn how successful her effort was in May.

Other spruces in the Klondike Valley Nursery collection which thrive are native black spruce, *Picea mariana* and, to my joy, *Picea glauca* 'Pendula' and bird's nest spruce, *Picea abies* 'Nidiformis', which winters well with snow cover. We have *Picea asperata*, Chinese dragon spruce, but they, like Sitka spruce, *Picea sitchensis* take a hit when they grow above the November snow-line. Similarly the only blue spruce, *Picea pungens*, which is worthwhile to grow here, is 'Procumbens' and the like, which grow prostrate. Other upright blue spruce grow, but the needles die, below about -43C (-45F), which ruins their appearance big-time. I would love to find a super hardy selection! Perhaps there is a good blue selection of *Picea obovata*, Siberian spruce out there?

Among firs, we have a few northern selected *Abies balsamea*, Balsam fir, which appear to be hardy and *Abies lasiocarpa*, sub-Alpine fir, is at the northern limit of their native range in the local mountains.

We have some hardy specimens of *Thuja occidentalis*, eastern arborvitae, though growth is open and slow. Most of these were wild



Young *Picea glauca* witch's broom

specimens, collected along the north shore of Lake Superior while the selections *Thuja occidentalis* 'Degroot's Spire', 'Techny' and 'Wareana' have been with us 3 years successfully with some winter protection.

On the bushier side, we've three selections of dwarf lodge pole pine, *Pinus contorta*, from brooms which at ten years of age are 3- 5' tall, and some others from seeds. Our largest Swiss stone pine, *Pinus cembra* and Siberian cousins, *Picea sibirica*, are nearly 10' high, with hundreds of



Picea glauca 'Pendula'

smaller ones growing up. I have been delighted to see that they and the selection 'Blue Mound' grow readily here despite regular insults of mid-summer frost. Our *Pinus sylvestris* are mostly from the Lake Baikal area of Russia; thus very hardy. Other pines being tried include: *Pinus resinosa*, red pine, *Pinus flexilis*, limber pine, and a single ten year old *Pinus strobus*, white pine, which remains containerized and sheltered in the winter. I am still looking for a few *Pinus albicaulis*, white bark pine, to test.

Larix sibirica are local favorites, growing four feet a year on good sites. Dahurian larch, *Larix gmelinii*, and some selections of European larch do well too, but not *Larix decidua* 'Pendula'. Among dwarf larch we only have our own sleek, plush *Larix sibirica* we call 'Saguaro' which its growth resembles. The tamarak, *Larix laricina*, is native to the territory, but does not grow in this region. I've kept a Japanese larch, *Larix kaempferi*, containerized for many years. It's a "pet" tree which won't overwinter in the yard, but lives with winter protection in one of our underground storage rooms. Other pets we have include a 12 foot silver maple, *Acer saccharinum* 'Kenora', which gets pruned each fall to a manageable size, a 7' American linden, *Tilia americana*, and a hybrid bur oak, *Quercus macrocarpa* x.

Many trees spend the first winter or two under shelter in order to get acclimated. This is particularly helpful for imports from southern nurseries where lush growth is the norm. Our cooler summers and cold soils foster slow growth which is hardier to local condition.

Where we are, frost can occur every month in a bad year repeatedly. 2011 saw a mild May followed by a -5 C (23F) freeze June 2nd in our 3-acre field site. Candles on the lovely Swiss stone and *Pinus cembra sibirica* were already 3-6" long and thick as a finger. When they thawed out, they fell over like wet noodles, and the new growth on the spruces was

heavily damaged all over. Even the native grasses and wildflowers lay black. I had never seen anything like it and had no idea what would recover. A flawless summer followed, but it was heartbreaking to deal with the damage. On some pines nearly every shoot was killed, and buds took all summer to emerge between needles or from much lower latent sites. Those candles, which lived picked themselves back up to various degrees, growing with a distinct sway, had a hard time developing buds, but to my surprise the needles emerged with only the very tips browned. Bud clusters were common.

Several years earlier, a much later summer frost caught the needles just as they were finishing elongation. This resulted in the needles' bases dying and subsequent dropping off. It's a tough life near the northern tree line!

A couple of things have become obvious after seasons like this. One was how micro-climates greatly influence conditions, as similar trees nearer the house under protection of towering spruce saw much less damage. My hybrid *Fraxinus* 'Northern Treasure' just leafing out a few miles away on another site of ours experienced no frost damage.



Picea glauca 'Minto Flats'

The other very obvious observation is that provenance is everything at our latitude! Our *Pinus sylvestris*, flowering cherries, *Prunus padus*, crabapples, *Malus baccata*, and *Sorbus aucuparia* 'Rossica', selections from various locations in Russia, did not blink at being frozen solid when other similar trees from milder places lost all new growth! It really underscored that, when looking to develop greater diversity in our landscape, often it isn't that a particular species cannot be grown, but rather that specific selections need to be found to suit the site.

It is mostly my own curiosity which drives the search for new plants. Due to our remote location, getting a hold of new selections is terribly expensive and full of perils. Material often ends up moldy after many days of travel from major nurseries 1,864 miles (3,000 km) south!

Imported exotic species lacking a history in the north often find the months of endless light from mid-May to mid-July downright confusing. Their usual unfortunate response is to keep growing too long or initiate a second flush when there is insufficient time to finish and harden off the new growth. Our Swiss stone pines often develop second flush candles in August with a few short needles, but, being mountain dwellers, they harden off readily with returning, longer nights and are rarely killed.

Our Yukon conifers are in a 3-acre field occupying an acre of rows, increasingly too close together. We mow the aisles only after new growth has hardened off. The tall grasses and wildflowers help protect the plants from frosts and pests, like tarnished plant bugs, which have more to feed on than our pine candles. We hand-weed around low growing trees in order to minimize competition: a favorite job for many volunteers.

Near the middle of September, we mow and rake for the last time, to remove as much food and cover for the rodents which occupy the space for months under the snow where they have caused lots of damage. Our ever-vigilant terriers hunt them in summer. Weasels take over in the snow, hunting the voles and mice in their own tunnels. Above this, Moose are occasionally a problem, browsing on the pines in early winter. Mule deer have moved into the region the last few years, a plague on hillsides closer to town, but they have not moved to our lowlands. Local wolves may make that difficult.

Snow poses other problems, and growers in places where heavy snowfalls are found will relate to this. Dwarf pines need to be tied up in the fall or cleared of snow periodically to prevent damage. We get almost no wind to clear snow from the trees, and heavy accumulations snap dozens of mature trees off in our forest, (heavy cone loads do the same some years). April up here is a particularly dangerous time while the snow slowly melts and settles, dragging moisture saturated limbs relentlessly lower. Additionally, miniature and dwarf conifers are prone to molds which grow rampantly in the very humid, uncirculated air in the melting snowpack. Therefore, before this happens, I locate all vulnerable trees and carefully remove most of the snow above them in March. After this, I broadcast a thin layer of sand



Picea mariana

over the whole area, and the dark particles help melt the snow much faster than otherwise. Talk about love and dedication! We grow more of our stock plants now on short standards to keep the valuable portions closer to the snow surface.

Just as southern exotics struggle here, adapting to the extreme light and temperature variations, so too do ours when moved south. It remains a question; just how far south ours might be moved before showing signs of

maladaptation as reflected in major changes in growth rate or form. We sent a few selections for evaluation to Iseli Nursery in Oregon in 2010. Photos I've examined show they are not living up to expectations so far, but Paul Halladin says they've seen it before and so I need to be patient. Their experience suggests that the trees may well adapt in time. Well patience I've got, heck I've waited 10 years for first fruit on some apple trees only to see one of our dogs eat the only fruit just prior to picking. I'm engaged in a similar wait for the first cones to appear on our dwarf spruces in order to begin cross-breeding some selections. The anticipation for that event builds every spring as the buds burst.



Young *Pinus sylvestris* (Baikal)

Sarah and I like to travel, when fortune has shone on us sufficiently and after we wrap up our place, with all that entails! When we get away I steer us in the direction of arboretums and the like to enjoy the exceptional beauty of southern collections and to compare our best with what we find.



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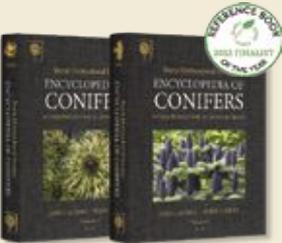
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Sarah planting *Larix sibirica*

As Sarah is originally from the UK, we have visited Kew and Hillier's, toured Westonbirt, wandered among the magnificent specimens of Stourhead and Heligan in the south of England and enjoyed a splendid time through Cornwall. The many stunning specimens leave us awestruck, and relegating those incredible gardens to a single sentence is unsettling, but descriptions of these visits would take pages. Were I ever to live elsewhere, the plantsman in me would want to live where such stunning trees grow, the Atlas cedars, Spanish firs, concolor firs;

North America's vastness makes visits to great collections difficult and we have not been to many, but wonderful personal collections abound and these are a constant joy.

Garden closures and leafless trees are issues we often encounter by the time we get south. Our visit to the Devonian Botanical Garden near Edmonton, Alberta illustrates this. The Garden was closed when we arrived on a beautiful afternoon in October of 2009. I knew there had to be someone around and finally located some research staff and quickly made the case for our needing in. Understanding our circumstances, we were given permission and told where to hop the fence to get in. After that we were warmly greeted by all staff we came across...thanks to a bit of grey hair and a respectful demeanor no doubt!



Picea glauca 'Klondike Hihat'

endless *Chamaecyparis*, *Pinus thunbergiana* ‘Thunderhead’ ...too many to list! But the realistic side knows to expect such company only on holidays!

Our cedar-clad home is tucked amidst a stand of spruce; its gardens wedged into small clearings. Eight foot blue delphiniums stand above waves of yellow *Trollius* and our meadow-like nursery is host to a lot of crazy little trees. We welcome visitors; a roadside boat or canoe pick-up is a call away. The trip starts and ends from a local fishing spot along the Klondike River, across from a row of Siberian larch on an island above a second landing. That view is kind of a false front like those historic facades lining the boardwalks in Dawson City 15 minutes away – it misleads passersby into thinking our nursery is on the island. A stoney winding path across the narrow island leads to another unexpected landing, a second canoe and the view of the north shore. If a visitor’s eyes scan carefully, even larger larch, lodge pole and Siberian pine and groves of birch can be seen against an unbroken wall of tall white spruce, but still no house or yard.

Only after another brief trip across the shallow river channel, a quick swing round and up a quiet creek do the first buildings come into view, and just so. It’s obvious that trees take precedence; here are no sweeping lawns reaching down to the water, just small grassy landings amongst the brushy bank. Here a sharp eye can begin to pick out trees most unexpected in the heart of the Yukon forest.

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From these landings in late May and early June when the water is high, we move the bulk of our trees, bushes and bedding plants across the river and into truck or trailer for the trip to town and markets. It's here that most customers, after all, choose their ornamental trees and shrubs while they're stocking up on organic fruits, vegetables and jams we produce. However some customers do love coming out to select specimens on site, and part of the reason is because of the journey in and back.

John & Sarah Lenart are the proprietors of Klondike Valley Nursery based near Dawson City, Yukon. The Dawson area has about two thousand permanent residents. Sarah, lacking the conifer obsession, regularly works away from the property to see that they have a real source of income. John, at 52, is a twenty-seven year Yukon resident originally from Columbus, Ohio, who moved to Sudbury, Ontario as a youngster where his early favorites were white pines.

In 1986 he purchased a hundred year old, rural property which had never been developed. It offered an exceptional opportunity for a tree aficionado. Here was a place to practice his gift for growing and sharing the results with his community. Forested completely, mostly with spruce some over 100 feet in height and 3 feet in diameter, clearings for a house and garden areas were made with a chainsaw, axes, shovels and picks. Hundreds of feet of ditch were dug to drain myriads of boggy areas. In 2002 his nearest neighbor on the same side of the river was hired to clear several acres with an ancient bulldozer. This was to support a field trial of apple trees, or more accurately a battleground where the losses were going to be heavy. Since then he has developed most likely the largest, most varied collection of fruiting trees in Canada, north of 60 degrees latitude: mostly apples, a small collection of Pears, grapes and a number of berries including haskaps. Finding this an insufficient challenge in the last 11 years he and Sara developed their nursery.



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A Blooming Love Affair with Conifers

By Susan Eyre

I absolutely adore conifer collectors who want to incorporate unusual plant forms into their gardens. The ACS Central Region visited Dorothy Danforth's garden in Brown Deer, Wisconsin in 2010. This garden is always in process, so you could make multiple visits and see something different and new each year.

Although Dorothy has been a perennial gardener for 35 years, her love affair with conifers, her living sculptures, began in 2006. She wanted to block an unsightly view created when a neighbor cut down two huge spruce trees, exposing her shade garden to the hot afternoon sun and an ugly garden shed. Nancy Matthisen of Monches Farm recommended she contact ACS member Bill Reichenbach, a local nurseryman and arborist extraordinaire.

He designed a wall of tall and shorter conifers to create a living barricade to block the contentious view. This was the beginning of no end. From that point on, pines, spruces, hemlocks, false-cypress, arborvitae,



boxwoods, junipers, firs and yews found a home on her property, gracing her front yard and nestling among the perennials in her garden beds.

Dorothy started to educate herself about conifers. She spent the winter months that year reading Adrian



Miniature Garden

Bloom and Richard Bittner's books. Deb Wiley, a garden writer for *Midwest Living*, wrote an article about Dorothy's magnificent garden. When Dorothy confessed her growing interest in conifers, Deb made three suggestions: 1) join the American Conifer Society, 2) visit Bickelhaupt

Arboretum in Clinton Iowa and 3) go shopping at Rich's Foxwillow Pines Nursery in Woodstock, Illinois.

Dorothy maintains that "the trip to Bickelhaupt Arboretum was an earthly paradise [which] completely captivated me and confirmed my plans to fill my garden with as many of these beautiful sculptures as space would allow. After exhausting the variety at local nurseries, by purchasing the common ones, I set out to find conifers 'with personality'. This search led me to my first trip to Rich's Foxwillow Pines Nursery (RFPW) in Woodstock, Illinois. The trip was a peak experience. Walking into that vast forest of a nursery transformed me into the proverbial 'kid in a candy store'. I was totally mesmerized by the sight of the endless assortment of conifers and trees of every color, size, texture, and variety. I was so overwhelmed that I could not make a decision as to what to purchase. Finally I picked out a small *Chamaecyparis pisifera* 'Boulevard' to take home."

Dorothy's mind could not stop thinking about all the spectacular conifers she saw: the beautiful yellow new candle growth of *Pinus contorta* 'Taylor's Sunburst', *Pinus strobus* 'Angel Falls' (which now stands in the middle of her circular rose bed), various *Pinus parviflora* cultivars such as 'Cleary', any of the *Pinus densiflora* cultivars, especially 'Oculus-draconis' and 'Burke's Red Variegated' (which is almost white in summer and so golden in winter).

As conifers moved in, some perennials moved out. Dorothy is not giving up her perennials, but she figured who needs 3 patches of 'Queen of the Prairie' when it could be replaced with *Picea pungens* 'Hoopsi', a *Pinus densiflora* 'Golden Ghost', a *Picea abies* 'Acrocona' or *Pinus aristata*, or a

‘Star Power’ juniper. She thinks the list of colorful conifers is endless. The perennials were accepting of the new intruders. Another area which draws attention is the miniature conifer bed in front of her gazebo, where these trees grow one inch or less per year. *Picea glauca* ‘Rita’ and *Pinus strobus* ‘Mini Twist’ surround the *Picea pungens* ‘St Mary’s Broom’ and, her visitors are amazed at the sight of such small conifers.

The 2012 drought was not kind to Dorothy’s garden with little rain, excessive heat and an avalanche of insects. She decided to remove trees in decline and replace them with new selections. Whitespire birches were replaced with *Acer griseum* and *Ginkgo biloba* ‘Saratoga’. A fifty-year-old shade Norway maple was replaced with *Acer palmatum* ‘Autumn Fantasy’. These tree removals opened large areas for sun which then transformed shady areas into full sun. This became the perfect location for a *Picea omorika* ‘Bruns’, which Dorothy describes as a “lovely ballerina with branches inching out as if to dance a ballet.” Thirty-five-year-old yews were eliminated and left a large space north of her patio. A great fantasy vision came to her. Why not create a “Rhapsody in Blue Garden” with all blue-silver, blue-green and blue conifers of every size. Dorothy says this gave her the opportunity to find a place for the lovely feminine *Abies concolor* ‘Blue Cloak’, the masculine *Picea pungens* ‘Thomsen’, the feisty *Picea pungens*



Blue Garden

‘Bonnie Blue’, the solemn *Picea pungens* ‘Mission Blue’, plus a number of middle and small-sized conifers. For companions, she has planted some short blue grass, small *Hosta*, blue winter pansies and blue wave petunias to crawl around the base of the trees. The only thing missing is piping in Gershwin’s music...that is for next summer.

Dorothy Danforth started planting perennials which glorify her garden with color and beauty. Some perennials and annuals do not live up to their reputation and fizzle out. She will keep the surviving ones to compliment the conifers. Since good help is scarce and she is not growing any younger, someday she will have to depend mostly on conifers for the beauty of her garden. When that day comes, (no time soon since gardening keeps one healthy and young) she plans to donate some of the conifers to the botanical gardens or local parks. She hopes that these beauties will give others the joy they have afforded her while learning, searching and planting conifers in the garden. The highlight of her “obsession” has been meeting some of the loveliest people she has ever known. Bernice Gardner said: “On an ACS trip, we visited Dorothy’s exceptional garden, and I admired a plant. Dorothy asked if I would like a piece of it. I said yes and she got her spade, dug it up and put it in a bag, and now it is growing in my perennial garden with many visitors asking about it. She is a perfect “pass-along” gardener. I will always remember her and I am honored to have one of her plants.”

As Keats, the poet, so succinctly put it, “A thing of beauty is a joy forever”, and Dorothy Danforth and her garden are “things of beauty”. As you can tell, we have become dear friends, and it is a challenge and thrill to supply her with new varieties which will blend into the gorgeous garden she has created. Her garden has a life of its own with the care and love she puts into it. Her photographs give you an idea of its beauty, but I recommend you stop and visit if you are north of Milwaukee.

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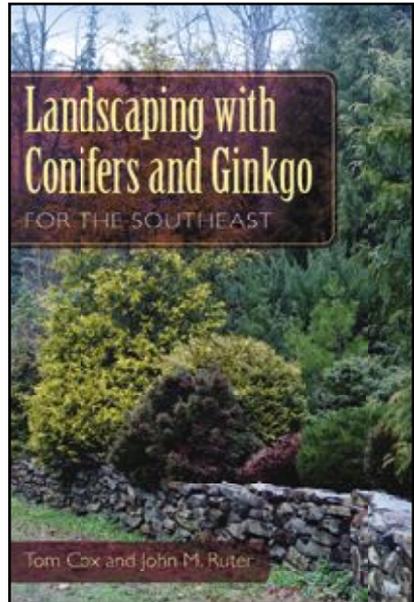
Landscaping with Conifers and Ginkgo: For the Southeast

By Tom Cox and John M. Ruter; 290 pp, softcover,
University Press of Florida, 2013

Tom Cox and Dr. John Ruter bring 20 years of conifer trials together in this outstanding resource for anyone interested in successfully growing conifers in a warm climate. Tom is a past president of the American Conifer Society and founder of the Cox Arboretum. John is the Allan M. Armitage Endowed Professor of Horticulture at the University of Georgia. Together, these two have created a comprehensive reference guide suitable for every southeastern conifer collector and avid gardener. The book is organized in a gardener-friendly way, with one-third covering cultural practices, insect pests, and disease, and two-thirds focusing on garden-worthy conifers and selected cultivars.

The cultural practices discussed in this book are scarcely published. For example, while rootstock is a constant variable for the conifer grower, it does not cross the mind of the average conifer consumer (or retailer, for that matter). Cox and Ruter review rootstock selection for fir, Lawson cypress, spruce, and pine – all of which have historically been problematic in terms of survival in the southeast region of the United States. For example, for the gardener tired of losing his Lawson cypress (most likely from *Phytophthora*), this book discusses new possibilities for growing cultivars on Oregon State disease resistant (DR) rootstock. The disease and insect sections are similarly valuable, introducing many of the most common threats to conifers in the Southeast accompanied by high-quality photographs.

Rather than overwhelming a gardener with thousands of varieties (or limited two-line descriptions), Cox and Ruter detail a combination of approximately 400 genera, species, and cultivars suitable for the southeastern garden. Unlike books which tempt you with a photo of a new variety from the Netherlands or Poland which won't be seen in a U.S.



garden center for another decade or more, or a seldom-seen cone of another rare species, these varieties are extremely well represented, tried, and tested. This book is a practical reference guide. Most of the varieties can be found at a garden center now, or within the next few years.

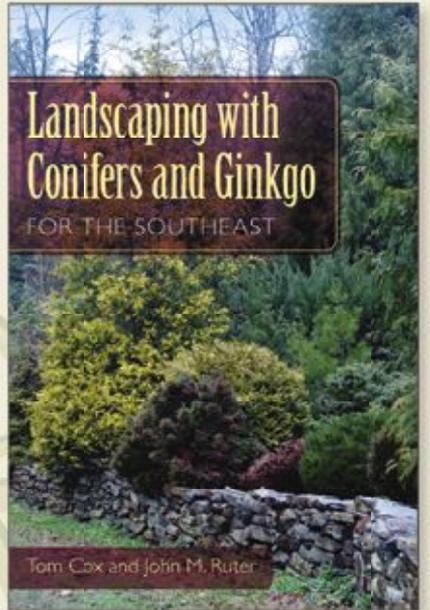
In addition to well-known varieties, Cox and Ruter introduce promising new-to-market ones (many of the southeastern-introduced varieties were new to this northern grower). By volume of varieties, there is an emphasis on *Cedrus*, *Chamaecyparis*, *Cryptomeria*, *Cupressus*, *Juniperus*, *Picea*, *Pinus*, *Taxodium*, and *Thuja*. That said, many seldom-discussed species are also covered, including the Chinese (also Taiwanese) species, *Cathaya*, *Fokienia*, *Glyptostrobus*, *Keteleeria*, *Nageia*, and *Taiwania*, as well as the southern hemisphere species: *Podocarpus* and *Wollemia*. While there is not a photo of every cultivar, the descriptions are excellent. The description for *Chamaecyparis obtusa* ‘Confucius’, for example, compares it to the more common variety ‘Crippsii’, explaining that it has superior form and better color. These in-text comparisons and details educate the reader to make an informed purchase.

The details in the descriptions include heat tolerance, growth rate, soil types, sun exposure, and experience sketches. Furthermore, the experience

Verdant Conifers from Virginia to Florida to Texas

“A guide every conifer-seeking gardener and landscaper in the region will want to consult.”—Ronald W. Lance, author of *Woody Plants of the Southeastern United States*

“Bravo! Explores not just the common conifers found in nurseries and landscapes, but also introduces a plethora of species and varieties rarely encountered in the South and deserving greater use.”
—Dave Creech, director, Stephen F. Austin Gardens



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anecdotes include what to do and what not to do for these non-native conifer varieties to thrive in the southeastern United States. The trials of so many varieties in the southeast can additionally be referenced by conifer growers in so many other regions throughout the world which experience extremely warm temperatures. As the best source for conifer adaptability for the Southeast, this book must be kept within reach of all master gardeners and extension offices, and in all libraries in the Southeast.

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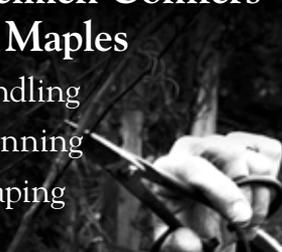


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2013 Western Region Meeting: A Showcase of Conifer Collections

Join our pilgrimage to Conifer Olympus

September 13 - 15!

By Sara Malone

Olympia, Washington, nestled at the southern tip of Puget Sound, owes its name to Greece's Mt. Olympus, the home of the twelve gods of the ancient world. Olympia and its environs receive between approximately 35-65 inches of rain per year, and this "good rain", as Washington native Timothy Egan calls it in his classic book about the Pacific Northwest, provides a growing environment which nurtures both the native stands of Douglas fir and western hemlock and the many cultivars which grace the collections and nurseries of conifer aficionados. This "Olympus" might not inspire the kinds of pilgrimages made to its namesake in Greece, but those of us who worship the conifer gods are paying our own homage with a visit to a land rich in both collections of cultivars and nurseries which feed our passion. We invite ACS members and conifer lovers from all regions to join us!

Don't let that rainfall statistic scare you—most of the region's precipitation comes in the winter months, and mid-September, when the conference will take place, is generally lovely and warm, with cool nights and low humidity. Conifers flourish in this environment, and the gardens we will visit abound in dazzling displays of a wide range of cultivars. In addition, the nurseries in this part of the world are famous for the richness of their stock and the diversity of their offerings.

Olympia is the funky and eclectic capital of the state of Washington—a small, safe, friendly and amazingly walkable town with views of the Olympic Mountains to the north and Mt. Rainier to the east. Should you have a few free minutes when you're not shopping for or learning about conifers, you'll discover interesting restaurants which make the best use of local produce, a microbrewery to quench your thirst and stimulate your imagination and one of the best farmers' markets in the state.

The Phoenix Inn and Budd Bay Cafe are teaming up to offer us the best in lodging, dining and meeting space (as they did in 2006). The Phoenix is only a block from the Sound and an easy stroll to shops, restaurants and the awesome Farmer's Market. The ACS Western Region is excited to be returning to this charming venue. We'll have the obligatory conifer auction at the Phoenix and we're working on a few fun surprises, as well.

Puget Sound is a vacation destination for outdoor enthusiasts, nature

lovers, fishermen and photographers and, by September, most of the tourists will have gone home and left a peaceful ambiance in their wake. Our diverse itinerary includes one day on the Kitsap Peninsula, which is not only home to wonderful gardens and nurseries, but is surrounded by 236 miles of salt water shoreline, with spectacular views of mountains and water. On Kitsap we'll tour a nursery, a botanical garden and a private collection. The next day we'll travel inland to visit Bob Fincham's legendary Coenosium Gardens as well as another private collection. Yes, purchases can be arranged!

A Day On Kitsap

Our lunch stop on the Kitsap Peninsula will be Dragonfly Farms, a specialty nursery owned and operated by Heidi Kaster and featuring artistically pruned conifers by bonsai artist and professional pruner Dave DeWire. Dragonfly has a display garden where Heidi, who has been a professional landscaper since 1989, plants pleasing and compatible combinations. While she carries a broad variety of plants, conifers have always been her favorite, since they add so much to the winter landscape. Heidi's nursery draws many local plant nerds, many of whom volunteer there. As she says, "it's not work, it's a passion!" Dave DeWire, who Heidi describes as a "conifer and maple wizard with an enormous following" will be on hand for our visit to give us a demonstration of artistic pruning techniques.

We'll also visit Albers Vista Gardens, which originated as the private home and collection of John Albers and his wife Santica Marcovina. Albers Vista covers over four acres and includes 14 different garden areas, each with a distinct theme. This garden was started in 1999 and most of the conifers went in between five and six years ago. Sam Pratt—who recently joined Conifer Kingdom, the retail division of Rare Trees Nursery in Silverton, Oregon—was a volunteer at Albers Vista for the last three years and will be our guide here. Most of the conifers at this private botanical garden came from Coenosium Gardens and Porterhowse Farms, neither of which needs any introduction to the vast majority of the *Conifer Quarterly* audience. It will not surprise readers to learn that there are lots of unusual specimens here. Under Sam's guidance, the garden began building a collection of *Abies*



Pinus thumbergiana var. *corticosa*, pruned by Dave de Wire. Photo by Heidi Kaster



Albers Vista Gardens
by Dave Perry

species and cultivars, and features a variety of interesting grouping of like cultivars, such as the trio found in the Alpine Rock Garden of *Abies veitchii* ‘Rumburk’, *Abies pinsapo* ‘Turek’ and *Abies lasiocarpa* ‘DuFlon’.

Next we enter the world of Hobbiton Gardens, the private collection of ACS member Will Fletcher. Hobbiton is the spot inhabited by the Hobbits in JRR Tolkien’s *Lord of the Rings*, and Will’s garden is inhabited by many cultivars with names such as “Elf”, “Dwarf”, “Gnome”, “Sprite” and even “Hobbit”! Will started with what he



Hobbiton Gardens
by Will Fletcher

describes as “regular gardening”, but like many conifer converts, became disenchanted with the amount of work, water, fertilizer and the winter garden doldrums. Will found the color and structure he was seeking in the wonderful world of cone-bearing plants and, when he found Bob Fincham’s Coenosium Gardens website, he was hooked! He began planting his almost-one acre suburban lot in 2009 and now has 1,500 different cultivars and 2,500 individual plants, with an understandable focus on miniatures. Will has one of Bob Fincham’s creations which he purchased with naming rights,

and *Picea abies* “Catharine’s Golden Heart” (named for Will’s mother) is one of the highlights of his collection, with its golden foliage and bright red cones. Will has plans for the future, when his collection outgrows its space. You’ll have to join us and learn firsthand what they are!

Day Two

We begin with a visit to ACS member Dave Olszyk’s collection at Glacier’s End, so named because he is sure that, given all of the rocks he mines, the last glacier ended there! He is a self-described obsessive collector who has enough of the artist’s soul to strive for attractive combinations of shapes, colors and textures. His plants are starting to mature and our autumn visit should see some nice fall color on the deciduous specimens, with many maples and oaks sharing garden space with the conifers. Dave has designed his garden

to feature similar cultivars in garden “rooms”, such as a grouping of the *Abies balsamea* cultivars ‘Hudsonia’, ‘Nana’ and ‘Piccolo’ and another of the *Picea orientalis* cultivars ‘Skylands’ and ‘Tom Thumb Gold’. The garden includes over 700 different conifers. Dave is also the chief organizer of this meeting, and will be serving brunch to us during our visit.



Dave Olszyk’s Garden “Glacier’s End”

Saving the most fabled for last, we end our pilgrimage at Bob and Dianne Fincham’s* Coenosium Gardens in Eatonville. Bob has been the muse and inspiration for countless conifer collectors and gardeners and has a worldwide reputation as a conifer expert, with a list of introductions and publications to his name, of which any plantsman would be proud. Coenosium Gardens (the word comes from ancient Greek and means “plant community”) is a 5.6-acre wonderland of specimen conifers and companion plants with ample space devoted to propagation and storage of container plants for Bob and Dianne’s mail-order nursery. The majority of the acreage is given over to expertly landscaped plantings, with a focus on pleasing combinations of foliage, showcasing the gold-foliaged conifers, which are his specialty. Bob will lead our tour and we’ll finish up in the nursery for anyone wishing to purchase some of his creations!

*Editor’s note. Sadly I must tell you Diane Fincham died after the writing of this article. Our hearts go out to Bob.

New Cultivars of Thuja derived from *Thuja occidentalis* 'Filiformis'.

By Clark D. West, MD and Christopher Daeger

Although not realized at the time, the development of new cultivars of arborvitae, the hobby of one of the authors, took a giant step forward when it was noted in Chub Harper's yard that a *Thuja occidentalis*



A display at the Stanley Rowe Arboretum of 34 plants of the progeny described in this article.

'Filiformis' was producing seed. For 20 years, the senior author had been planting seeds from *Thuja occidentalis* cultivars (23 different ones) in an effort to develop something new. The effort met with success on three occasions, an average of one new cultivar every seven years. Perhaps because Chub realized that new cultivars come more readily from witch's broom seed (one of Chub's well known specialties) than from *Thuja* seed, he gave me *carte blanche* to pick all I wanted.

The yield was not very interesting; half the seedlings had 'Filiformis' foliage and half normal foliage. For a reason which is now not clear, all were discarded or given away except for one with normal foliage which was planted in the yard. It grew into the large non-descript plant shown

and out of curiosity some of its seeds were planted. The result was surprising. The seedlings were a bonanza of unique plants, some with foliage which was most typical of *Thuja* and others with the thread-like foliage of 'Filiformis'. Of those with foliage resembling *Thuja*, some were globular, others columnar and a few pyramidal. The amazing part was that they were all progeny of a single, ordinary looking arborvitae. The uniqueness of such an event is brought home by Humphrey Welch's statement in his *Manual of Dwarf Conifers* to the effect that the probability of raising a new dwarf from a packet of conifer seeds is in the order of millions to one against. To the contrary, we had many from a few seeds. Their variability is too great to be described in a few pages. Thus, we have limited the presentation to only a few, particularly those which are older and more mature.



This "generic" *Thuja occidentalis* was grown from a seed from 'Filiformis'. It is unique in that its seeds produced a wide variety of *Thuja occidentalis* cultivars.



Thuja occidentalis
'Pincushion'. Original plant.
The trunk is extremely short.

Plants with 'Filiformis' or 'Filiformis'-like foliage. Three plants are described as noted above, all came from seed from the mundane tree.

Thuja occidentalis 'Pincushion' is characterized by whip-like foliage so abundant that it is not possible to see the approximately one inch long trunk. Some of the foliage strands have a very short branch at the end. It is green in color, but interspersed are a few brown filaments making its name appropriate; the less abundant brown filaments can be considered pins stuck in the abundant green foliage, visualized as the cushion. The original plant, now seven years old, is 27 inches across and 32 inches tall. Rooted cuttings also have foliage making the trunk invisible. A number of young seedlings have



Thuja occidentalis 'Little Filley'.
Original plant is 7 years old.

foliage similar to 'Pincushion', but differ in that they have easily visible 4 or 5 inch trunks.

The foliage on *Thuja occidentalis* 'Little Filley', is unique as compared to that on 'Pincushion'. Only an occasional thread-like strand may be seen. Instead, there are many branches coming off at multiple angles, making the plant very irregular. The branches and branchlets are all of approximately



Thuja occidentalis 'Fuzz Ball'. Original plant of an unusual dwarf.

the same diameter and, since they seem to be the only structures containing chlorophyll, one might expect that the growth of the plant would be slow. So far, at age eight years, it is 15 inches tall and 10 inches wide.

Another unique plant is *Thuja occidentalis* 'Fuzz Ball'. From a 4 inch single trunk arise several branches (not visible in the photo) which ascend in close apposition for a short distance and then end in threads of 'Filiformis' foliage. The foliage is abundant, largely unbranched, and merges to form a very symmetrical single ball. If the ball should become very large, it could be a valuable accent plant. Its ultimate size can, of course, not be predicted. The plant pictured is 4 years old and 12



Two year old seedlings showing variability at an early age.

An unusual columnar plant of this progeny. The foliage is open and loose.



These open and loose pyramidal plants came from different seeds from the generic *Thuja occidentalis* above.

inches tall. One cannot judge the chlorophyll content of this plant from the picture since it was taken in the winter when all plants in this category have foliage which is brown and in some cases almost black. The variability of these plants starts when they are about two years old as demonstrated by the two of this age.

Plants with foliage more or less typical of *Thuja*. Although the plants with foliage closely resembling typical *Thuja* were, with some exceptions, not as unique and attractive as those in the other group, they nevertheless came in a number of shapes and sizes. Some were columnar, some globular and some roughly pyramidal.

The foliage on many of these was loose and, in the overall, they were not of the quality of many well-known *Thuja*. As a consequence, they have not been named or propagated. An example of loose and open structure is seen in the three very similar, roughly pyramidal plants. They seem disinclined to grow tall and might be suitable as a low hedge.

The typical *Thuja* foliage of two in this group was gold in color and not unlike that of other yellow cultivars. One of these had an occasional 'Filiformis' branch. Their poor structure made them inferior to other yellows and, thus, they have not been named or propagated.

Plants which were virtually identical, but coming from different seed, as was the case with the plants illustrated above, were not unusual. The form which was most often replicated was globular or slightly oval and had finely cut foliage which vaguely resemble that of *Thuja* because the foliage



One of several stands of *Thuja occidentalis* 'Filiformis'

was of limited length. The outline of the plant was more smooth than that of the usual globular plant. Because of these characteristics, the first plant was named *Thuja occidentalis* 'De Luxe'. The numerous subsequent forms had for added interest typical broad *Thuja* foliage embedded in the finely cut foliage. These plants still had a smooth outline and from a distance appeared the same as the others. They have not been specifically named. As with many globes, these plants when old and large tend to fall apart with a snow load. We are attempting to determine whether any of the many seedlings of this type will be resistant to this kind of damage. So far, those which opened up in the winter closed in the spring.

As above we have in a rather cavalier fashion separated these plants into two groups based on their foliage, occasional plants such as that here show characteristics of both groups making them impossible to classify.

Practical considerations. A disadvantage of attempting to duplicate this method of developing new cultivars is the time involved. *Thuja occidentalis* 'Filiformis' rarely produces seeds. Of two approaching 25 years of age, with which the authors are acquainted, one has produced seed once. Once the seed is procured, there is another long wait for the seedlings to produce seed. This stage might be hastened by the use of plant growth regulators or by girdling or otherwise injuring the tree. Once the seedling (which would be of the generation of the plant) has itself produced seed, there is another wait

before the nature of the final product can be determined. This is, of course, when the fun begins.

The variability of these plants appears to be the result of some genetic chaos occurring at the time of pollination. This deviation from normal events appears to affect not only the morphology of the plant arising from the embryo, but also the metabolic processes involved in germination and embryonic growth. The latter disruption is probably responsible for a germination rate for these seeds rarely exceeding 30%, a rate much less than that for most cultivars

Of great practical interest about plants from this progeny is that they seem resistant to burning of the foliage by the sun. Whereas we experienced days, in which the temperature hovered about 100 degrees F and *Thuja* of other progeny were either partially or completely burned, full sun did not cause burning on plants from this progeny, whether the foliage could be classed as *Thuja*-like or 'Filiformis'.



Thuja occidentalis 'Half and Half'. The foliage branches like *Thuja*, but is of uniform caliber like 'Filiformis'.

For those who may be interested in seeing more of the variability of arborvitae grown from the seed of this plant, 34 different, relatively mature plants are on exhibit at the Stanley M. Rowe Arboretum, 4600 Muchmore Road, Cincinnati, Ohio 45243. Telephone (513) 561-5151 or (513) 560-2551. Christopher Daeger, the Arboretum Manager, would be glad to show you around.

A number of seedlings with foliage resembling 'Filiformis' were given out at Central Region ACS meetings starting in year 2006. We would welcome comments from those who received these progeny.

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Picea glauca 'Rainbow's End' with new May growth.
Photo by Dennis Groh.



Stone Forest
(from "West to East" by Tom Cox, page 7)



Unidentified Juniper, over 1,400 years old, at entrance to 1,425 Steps leading to the Hourai-ji Shingon Temple in Aichi Prefecture, Japan.
Photo by Dennis Groh