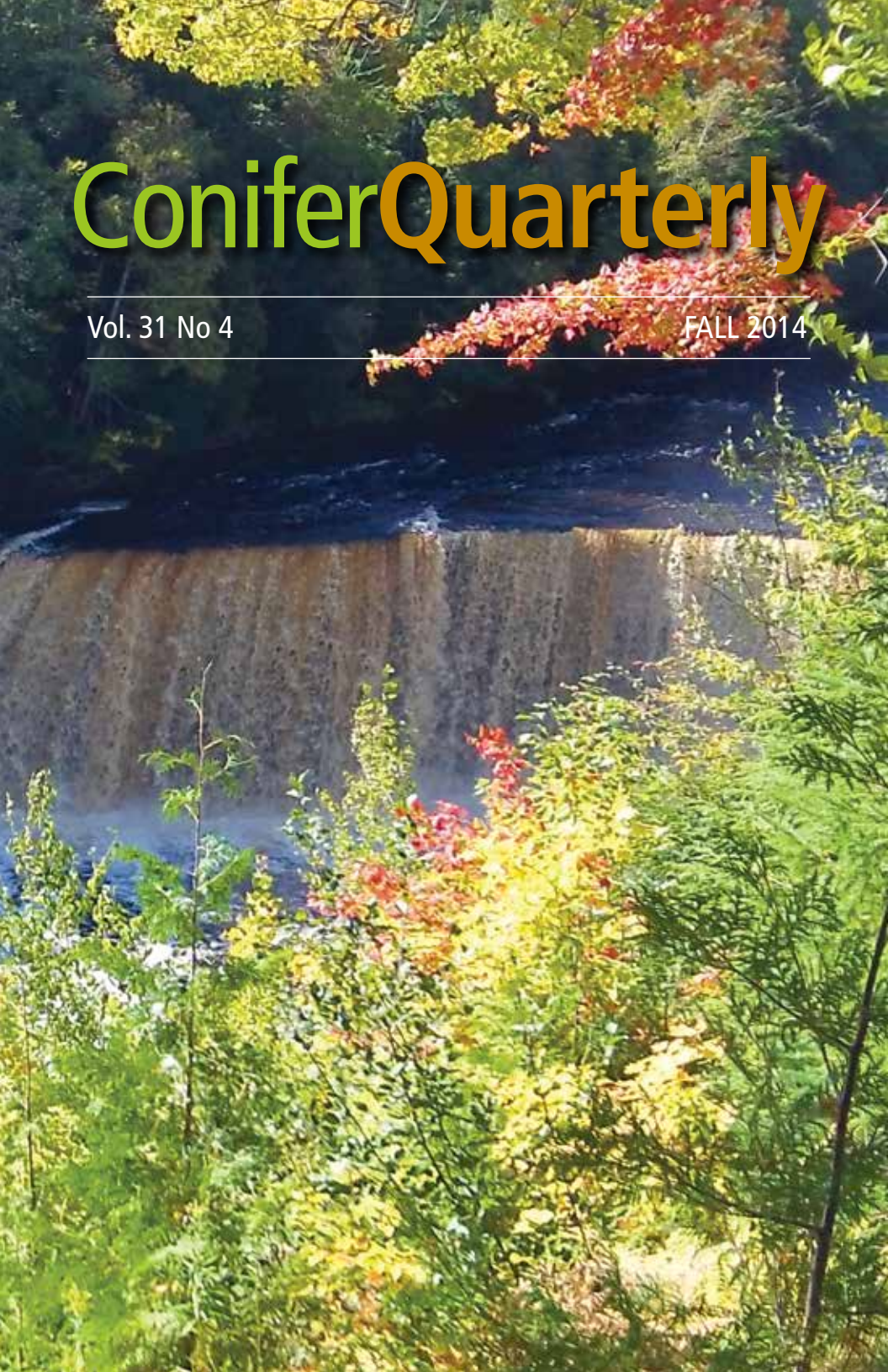


ConiferQuarterly

Vol. 31 No 4 FALL 2014

Araucaria araucana
Lanin National Park, Argentina
Photo by Tom Cox

The *Conifer Quarterly* is the publication of the American Conifer Society

Contents

Temperate Conifers of South America

2014 ACS Scholarship Winner Announced

2015 Collectors Conifer of the Year

Another Little Slice of Paradise

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

FALL 2014 • Volume 31, No 4

The *Conifer Quarterly* (ISSN 8755-0490) is published quarterly by the American Conifer Society. The Society is a non-profit organization incorporated under the laws of the Commonwealth of Pennsylvania and is tax exempt under section 501(c)3 of the Internal Revenue Service Code.

You are invited to join our Society. Please address membership and other inquiries to the American Conifer Society National Office, PO Box 1583, Minneapolis, MN 55311. 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.

All editorial and advertising matters should be sent to: Ron Elardo, 5749 Hunter Ct., Adrian, MI 49221-2471, (517) 902-7230 or email conquarteditor@gmail.com

Editor
Ronald J. Elardo

Technical Editors
Steven Courtney
Robert Fincham
Ethan Johnson

Advisory Committee
Brian Jacob, Committee Chair
Sara Malone
Ronald J. Elardo
Ethan Johnson
Evelyn Cox, past Editor
ex officio: Ellen Kelley
ex officio: Steven Courtney

Note: Hardiness Zone references in the *Conifer Quarterly* are USDA classifications unless otherwise specified.

By Brian Jacob

I was fortunate to have had the opportunity to attend the Northeast regional meeting in Rochester a few weeks ago. While I've attended the Western regional meetings for many years, I had never before ventured outside my home region to attend another region's meeting. But I met other members from outside the Northeast Region, and the last two Western meetings have had a great number of members from other regions. Apparently, this practice of attending great meetings, regardless of which region is hosting it, is becoming much more common.

And, what a meeting it was! The quality of the gardens as well as the quality and quantity of plants in the plant auctions, rivalled any national meeting I've attended (and I've attended at least 12). The gardens of Gerry & Karen Kral, Brooke Henninger, David Swinford and Merton Bohonos, all contained impressive collections of well-maintained conifers and their companion plants and were inspirational for anyone with an average-size home landscape. Not only did the hundreds of unique and uncommon plants in the auction raise thousands of dollars for the Northeast Region to continue its support of

reference gardens and other contributions to the conifer community, but also I was allowed the opportunity to place winning bids on a few smaller plants which I carried in a bag on the airplane.

The meeting planners also developed an extensive list of gardens and attractions to visit on our own, and I was fortunate to visit a couple of them, including Elmer and Joyce Dustman's garden and the Sycamore Hill Garden. The Dustman's residential lot garden exhibited many uncommon trees, shrubs, perennials and conifers; again, plants and planting ideas I could easily envision replicating in my landscape. At 35 acres, the impressive and extensive Sycamore Hill Garden, while a private garden, is much larger than any garden I ever expect to have. But, without the confines of the average city lot, the hundreds of conifer specimens could develop their natural size and form.

As a plant nut, I'm always excited about an opportunity to expand my knowledge of and appreciation for any new group of plants...that's why I originally joined the ACS. I've worked for two large, general, ornamental nurseries in Oregon, where I've been exposed to a wide array of interesting trees, shrubs, conifers and perennials. Recently, a new opportunity with a focus on perennials presented itself. I have just joined Skagit Gardens in northern Washington. I've focused on conifers as a hobby and will now also focus on colorful perennials as a profession; hopefully, I will learn how better to combine both groups of plants and create a more well-rounded landscape.

The new job requires I move hundreds of miles north to a somewhat different climate and the opportunity to create a new landscape. I can apply the many inspirational landscape ideas and knowledge of the natural habit to my new landscape. I can also better gauge the size of both well-known and uncommon conifer cultivars I saw at the recent Northeast meeting, along with those I've seen at other meetings in Ohio, Tennessee, New York, South Carolina, Pennsylvania, Washington, Georgia, California, Iowa, Michigan and, of course, Oregon, to my new home. For years, I've been acquiring interesting plants of all types which I haven't wanted to plant at my home in Salem, Oregon, since I knew I didn't want to live there long-term. I look forward to finding a piece of property in northern Washington where I feel more permanent and can

finally release these plants from their containers and develop a landscape I can both enjoy and be proud of.

The upcoming 2015 National Meeting in Northern California offers yet another opportunity to gain knowledge and insight into landscaping with conifers. I look forward to visiting the renowned private and public gardens, as well as a natural stand of trees.

Like many of you, my interest in plants is diverse, and I enjoy opportunities to learn more about any and all of them. The array of plant types, colors, sizes and habits is endless as new plants are bred, or discovered daily. The American Conifer Society has given me great knowledge and appreciation for a fascinating group of plants which I'll always consider among my favorites. What will I learn and experience as I venture into a new climate and a new job? I'm excited and anxious to find out.

2015 National Meeting Hotel Room Reservations Open

We are already seeing strong interest in the 2015 National Meeting in Sonoma County, CA, Sept. 10–12 and have had many inquiries about booking hotel rooms. The meeting budget is still being finalized, but the rooms for both the meeting and the post-meeting tour are available for booking. For the latest information about the meeting and to book your room, go to the ACS website (www.conifersociety.org) and you'll see the meeting in the "Events" section on the front page. For any questions, email or call Sara Malone (webeditor@conifersociety.org, 707-486-0444) or Joe Carli (acswestern@gmail.com, 503-928-9141), meeting organizers.

If we don't have your email address, please provide it to the National Office right away (acsnationaloffice@gmail.com), as that is the fastest way to receive information and registration forms.

Sponsors are supporting our events. If you would like to sponsor an event for the National Meeting, please contact Sara Malone (webeditor@conifersociety.org).If you wish to volunteer at the meeting, also contact Sara Malone. We hope to see you in Sonoma in 2015!

EDITOR'S CORNER

By Ron Elardo

This summer has been a grand slam of ACS meetings for me. The first meeting I attended was the National Meeting in Atlanta, Georgia, on which I reported in the Summer *Conifer Quarterly*.

Zelkova serrata at Highland Park Arboretum, Rochester, New York

Atlanta Botanic had its best face on for our enjoyment. Smith-Gilbert proved to be an art gallery of conifer venues. These are places not to be missed. The Karlin and Cox gardens were eye-catchers. The meeting was a great mix of public and private gardens. The organizers and planners of "Atlanta 2014" took excellent care of their visitors.

July brought me to Wadsworth, Ohio, for the Central Region's meeting. Once again there was a mix of public and private gardens, a winning combination. A full report from me appeared on the website. The website is also the place to find a report on the Western Region's meeting in Portland, Oregon. The weather was perfect, and so were the garden venues. An elegant bonsai production facility, intriguing nurseries, a fantastic arboretum, and Portland's Japanese Garden. Visit the website for more on that meeting too. Then came A Return to Rochester, a bases-loaded-home-run for an exciting ACS-summer.

Rochester 2014 brought many ACS members back to a place last visited in 2004, and it was all new, all over again. It was mesmerizing. The Northeast Region followed its successful National Meeting in Mt. Kisko (August 2013) with a class-A advertising blitz in *Conifer Quarterly*, which resulted in **158** ACS members returning and coming to Rochester. Highland Park Arboretum began the program with 150-year-old-plus trees, like *Zelkova serrata* and *Ginkgo biloba*, such as I had never seen before.


Ginkgo biloba

Then came four private gardens. Yes, I said **FOUR**, all in one day. And, they were stupendous. Elmer Dustman and Jerry Kral planned a great meeting. The Kral garden is a delightful maze of venues, each with a place to sit and drink it all in. Every nook and cranny, filled with plants, sculptures and lights. Winding paths took the visitor through a fairyland of sights.


Kral garden


Kral garden

Next on tap was the Swinford Garden. This was our lunch stop with a balcony overlooking a part of the conifer garden. It was nice to saunter through the garden while enjoying good company.

The remaining two gardens were just as different as the first two. The thing which struck me about Mert Bohonos garden was its bonsai collection and its *conifer-fence*. Mert created berms around the perimeter of his garden and staffed them with conifers in a zig-zag fashion so that each remained a singular specimen while becoming part of a living fence.


Swinford Garden

Brooke Henninger's garden is an excellent example, similar to Gerry Kral's, of utilizing every centimeter of ground to landscape and plant. It is also an inspiration to anyone with seemingly little space, looking to gain the greatest impact from a jam-packed landscape plan.

Pinus strobus 'Pendula' *at Swinford Garden*

Mert Bohonos garden

Rich Eyre gave a wonderful presentation on Friday evening on the planting and selection of conifers in the landscape. He is a teaching master. Interwoven in the conifer information is the life of a truly multi-experienced journeyer through life. He represents the renaissance man, always garnering more and more information and applying it to his life, while sharing it with others. On Saturday evening, the silent and live auctions were rip-roaring. I heard that the auctions gained $15,000.

Brooke Henninger's garden

Although we often go to our own regional meetings, I would recommend that all of us take the opportunity to visit other regional meetings. First off, you will be able to meet other ACS members. Secondly, it will be great fun, and, thirdly, you will be able to learn so much from the gardens you will visit. Meetings, both national and regional, are the connective tissue of the ACS.

Please do not send queries to the former Lewisville, North Carolina address for the National Office. The National Office is now PO Box 1583, Maple Grove, Minnesota 55311. Check the Directorate in *Conifer Quarterly* for further information.

Cupresssus sp. *at Villa La Angostura, Argentina*

Temperate Conifers of South America

By Tom Cox

A longtime dream of mine has been to document and photograph *in-situ* populations of the temperate conifers of South America. These are only found in Chile and Argentina. Very little is ever written about them and, to my knowledge, they have never been discussed in *Conifer Quarterly (CQ)*.

For sake of clarity, it is important to distinguish these temperate (Andean) conifers from those tropical and sub-tropical conifers, occurring further north in locations such as southern Brazil, Paraguay and northern Argentina, e.g. *Araucaria angustifolia* and *Podocarpus lambertii*. An easy assumption which I made early-on is that any conifer growing south of the U.S. border would not ever be winter hardy in my Zone 7b climate. While over the years a number of these Andean conifers have made their way to our arboretum, growing them has proven at best to be quite challenging. As I was to learn on this trip, the conditions, in which they naturally occur, is difficult to replicate in the Piedmont region of Georgia.

As one who has a fascination with conifer evolution, it was interesting to learn more about these Andean species. With the exception of

Araucaria araucana (Monkey Puzzle tree), they are seldom seen in collections, even in the countries to which they are native. While none are particularly garden-worthy, their place in the conifer kingdom is interesting.

As a starting point, there are only nine species in the region and they belong to three families:

Podocarpaceae: containing *Lepidothamnus fonkii, Podocarpus nubigenus, Podocarpus salignus, Prumnopitys andina* and *Saxegothaea conspicua*.

Araucariaceae: containing *Araucaria araucana*

Cupressaceae: containing *Austrocedrus chilensis, Fitzroya cupressoides* and *Pilgerodendron uviferum*.

I dare say that none of these conifers are exactly household words. During our travels, we documented all but the following; *Prumnopitys andina, Podocarpus salignus* and *Lepidothamnus fonkii*.

Our journey began in Santiago, Chile, where we met up with ACS members Ken and Elena Jordan (Roseburg, Oregon). After several days in Santiago, it was off to the port city of Valparaiso, where we boarded a Golden Princess cruise which was to be our home for the next 14 days. I was not certain as to how I might acclimate to being on a ship for that long as I'm used to being out making my own way. As we get older, and I am less able to trek all over the globe, this presented an alternative which worked.

Our first stop was in Puerto Montt, Chile, and Alerce Andino National Park, where a remaining stand of *Fitzroya* (native common name is Alerce) were protected. While some specimens in the region are dated as 4,000 years old, my guess is that, what we saw were secondary forest. Nonetheless, many of these trees were at least 75' (23 m) tall with virtually no limbs for the first 40' (12 m). Another characteristic is their slow growth—less than 1" (2.5 cm) per year. *Fitzroya* is considered one of the largest trees in South America and now receives national protection. It was formerly used for the building of houses, shingles, and boats, and even used in aircraft. One small cathedral in Puerto Montt is constructed entirely from *Fitzroya* and casts the same red hue as our native redwood. *Fitzroya* derives its name from Vice-Admiral Robert FitzRoy, the captain of HMS Beagle during Charles Darwin's famous voyage. An associated conifer common in the forest was *Podocarpus nubigenus* (more

on this species later). On the touristy side, the city of Puerto Montt is a small port founded by German settlers over 150 years ago. There is a pleasant main square, the aforementioned cathedral, and the authentic Angelmo market, famous for fresh seafood and souvenirs. We enjoyed a very nice seafood meal with wine in a little "hole-in-the-wall" cafe overlooking the port. Alas, these are sometimes the best meals.

Fitzroya cupressoides in Puerto Montt, Chile

Sailing southward along the coast of Chile, we stopped in Punta Arenas; a formerly bustling city prior to the opening of the Panama Canal in 1914. There is some interesting architecture and fine homes which are emblematic of another era. Situated near the Straits of Magellan, it was interesting to see how people lived this far south and so remote. We then sailed around legendary Cape Horn at the southernmost tip of South America. This often violent stretch of water between Antarctica and South America can sometimes be the roughest sea in the world. Luckily, it was relatively calm as we sailed past. We then traversed through the Drake Passage and on to Ushuaia, Argentina, which is considered the southernmost city in the world.

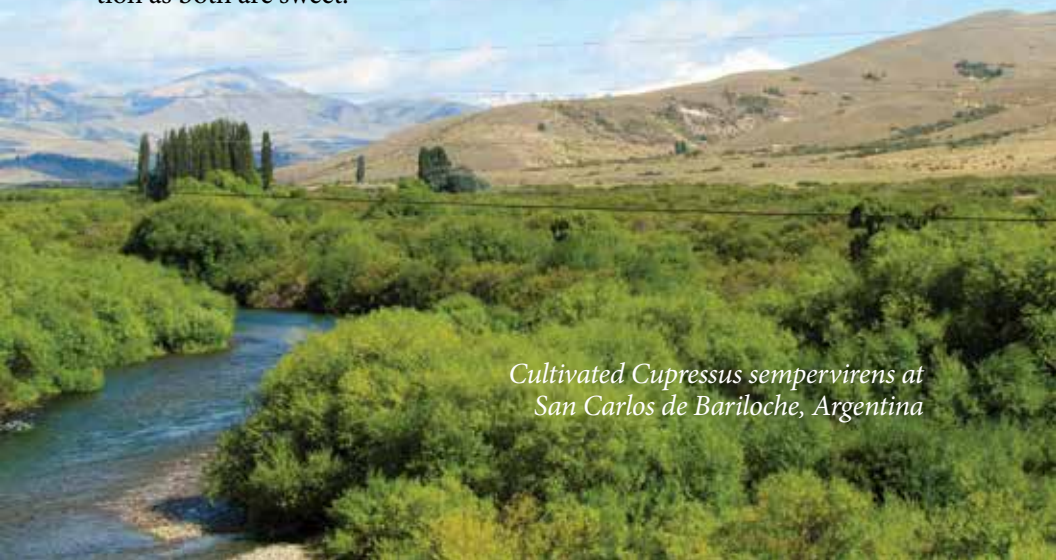
Our next stop was Port Stanley, Falkland Islands. Officially classified as a British overseas territory, there has been some controversy concerning ownership between Great Britain and Argentina, which resulted in a two month undeclared war in 1982. The occupants are considered British citizens, and the city has a distinct British feel. Having previously travelled to Ascension Island in the equatorial south Atlantic (another British overseas territory), it was interesting to see how they lived on this also remote outpost. It was fascinating on this largely treeless island to see a number of conifers such as *Picea orientalis* 'Skylands' and *Cupressus macrocarpa* planted on the grounds of the governor's mansion—all performing quite well.

It was then on to Montevideo, Uruguay, which is an interesting old city in this small country wedged between Brazil and Argentina. A short

ride from the port found us four coneheads at the botanical garden. Regrettably, our cab returned exactly at the time we requested, but much too soon to enjoy fully this garden which has a very good plant collection with numerous old conifers. One of special note was a 30' (9 m) *Cupressus torulosa*, a rare find in any collection.

Our last stop was Buenos Aires. After a couple of days there, we said goodbye to Ken and Elena, who headed back home to Oregon. This is a city which most people claim to either love or hate. We loved it. Every street is tree lined, with *Jacaranda* being the principle landscape tree. What a sight it must be in the spring when these trees are covered with blue trumpet shaped flowers. We found the city to be clean, with beautiful European architecture, wide boulevards, great food and wine, and friendly people. If visiting, a must stop is in the Recoleta cemetery which contains the graves of Argentina's famous, including Eva Peron. The botanical garden is a gem and contains a large area dedicated to conifers from around the world, most of which are straight species. The garden contains numerous statues, winding paths and inviting benches where one can sit and relax for a while. Another highlight is a greenhouse imported from France in 1900. In summary, it makes for a nice escape from the hustle and bustle, and admission is also free.

It was now time to lay the sissy stuff aside and kick the hunt for endemic conifers into high gear. We flew to Bariloche in the lake district of Argentina and rented a car. Bariloche is an idyllic little town reminiscent of a European ski resort. It is also a town where conifers are king; and lays claim to being the chocolate capital of Argentina, a good combination as both are sweet.



Cultivated Cupressus sempervirens at San Carlos de Bariloche, Argentina

Araucaria araucana, Pseudotsuga menziesii, Cupressus lusitanica, C. macrocarpa, Pinus radiata and *P. pinaster* are everywhere. We spent our first two nights in a room overlooking scenic Lake Nahuel Huapi, which sits at 2,500' (765 m) elevation. Our view was framed by two perfectly formed *Araucaria araucana*. A postcard setting for sure.

One day, we drove along the shore of this deep blue lake with its backdrop of rugged peaks of the Andes to Puerto Panuelo, where we caught a boat to Puerto Blest in an effort to search for native conifers. As a side note, this port is also where one would find the legendary Llao Llao hotel and resort—the most famous hotel in Argentina. After an approximate one hour boat ride, we docked and began our trek. This was the only physically challenging portion of the trip as we had to climb 700 steps alongside a spectacular waterfall. Fortunately the steps were broken up by landings where one can take a rest. Along the way, we saw more specimens of the rare *Fitzroya*. We would also document specimens of *Saxagothea conspicua, Pilgerodendron uviferum* and *Podocarpus nubigenus*, as well as a wide variety of mosses, mushrooms, and lichens. We were in the middle of a Valdivian Temperate Rain Forest; one of the world's five major temperate rainforests and the only one in all of South America. The annual precipitation here is around 197" (5000 mm). Snow-capped volcanoes and Andean peaks are the backdrop of these temperate rainforests. We also saw numerous Southern beech (*Nothofagus* sp.) forests, one of only three of this type of forest in the world.

Nothofagus sp. *In Puerto Blest, Argentina*

Conifers du jour:

Saxagothea conspicua (Prince Albert's Yew): This monotypic genus was a rather commonly occurring conifer in this area. It resembles a yew (*Taxus*) in appearance with .6–1.2" (1.5–3 cm) long lanceolate leaves, which are fairly hard with a prickly spine tip (like the genus *Torreya*).

The dark purple-brown bark is thin and flaky to scaly, which I found attractive. While they can reportedly attain heights of 82' (25 m), we saw none taller than approximately 10' (3 m). At least one nursery in the U.S. (Far Reaches Farm in Port Townsend, Washington) carries this species.

Pilgerodendron uviferum: While mostly seen around bogs and swamps, we found it on wet mountain slopes within the rainforest where it grew next to *Nothofagus betuloides, Saxagothea* and *Fitzroya*. While it can reportedly attain heights of 65' (20 m), we saw nothing approaching this. The specimens we did see displayed an appealing dark brown bark which exfoliated in long strips. Close examination of the densely crowded scale-like needles reminded me somewhat of a succulent. One prominent feature was that all needles appeared to be of the exact same length. Several trees observed were perfectly conical and rather handsome, which makes me want to try this species in our arboretum. I recall seeing this species during my unforgettable stay at Bedgebury Pinetum in the U.K., but do not recall it being that remarkable. This is analogous to the boy or girl we pay no attention to in high school and then one day we see them as a star on TV. Due to overexploitation as a building material, *Pilgerodendron* is now protected under CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora).

Podocarpus nubigenus: As a genus, *Podocarpus* are to the southern hemisphere what pines are to the northern hemisphere—that is to say, the most number of species. *P. nubigenus* is the southernmost *Podocarpus* species in the world and is one of two occurring in the region covered in this article. The other, *P. salignus* was not found. *P. nubigenus* is another conifer growing to around 65'– 80' (20–25 m). The specimens we observed were no taller than 15' (5 m). As observed, this is a tree also reminiscent of the genus *Taxus*, but most like *Podocarpus totara* from New Zealand. It is of interest to me how the Antarctic flora from this region bears strong resemblance to that of portions of New Zealand. This is an irregularly shaped tree I suspect has no garden merit outside special collections and for conservation.

Before leaving Bariloche, we took another boat to the island of Victoria. It had been recommended by a local horticulturist as a place to see conifers. If one travels to Puerto Blest, then there is no reason to travel here except to see exotic trees. It has plants and trees from all over the world which began as seedlings. Of particular note is a long

Sequoiadendron giganteum allee with trees approaching 100' (30 m), as well as large specimens of *Pinus ponderosa, taeda* and *radiata*, and several species of *Cupressus*. The island was privately owned in the past.

The highlight of the entire journey was soon to unfold. After spending several nights in the charming mountain town of San Martin de los Andes, which is nestled between high peaks next to Lake Lacar, we were off to Lanin Volcano. The principle reason was not to see the snowcapped volcano, but rather to visit a natural forest of *Araucaria araucana*. This has long been high on my bucket list, particularly after seeing a small grove of planted trees at Bedgebury Pinetum. After driving for what seemed forever on a dirt road which looked as if it had been bombed, we began to see the cone shaped, snow-capped Lanin Volcano. We were lucky as it danced in and out of clouds making it possible to catch full views. Soon we would find ourselves in the middle of the *Araucaria*. There were all sizes and various forms, although we saw little evidence of seedlings. At the risk of sounding hyperbolic, this was one of the greatest experiences of all times. There were few vehicles to spoil the moment and the weather was cooperating. Behind us were large mountains where *Austrocedrus chilensis* and *Nothofagus* spp. blanketed the slopes. Facing us was the volcano and in this alpine valley were the legendary *Araucaria*. It was easy to see the transitional aspects of the area where *Austrocedrus* grew on the rocky slopes and *Araucaria* in the lowland on pure volcanic scree.

Araucaria araucana at Lanin National Park, Argentina

The contrast between conifers of the rainforest and those in drier areas was stark. It offered insight in to how I might attempt to grow these in north Georgia. They are all very site specific.

Conifers du jour

Araucaria araucana: One of only two species of *Araucaria* native to South America. The other being *A. angustifolia* from Brazil. *Araucaria* only occur naturally in the southern hemisphere. This is

not an uncommon tree in parks and arboreta and is frequently seen in Portland, Oregon, and the U.K. Attesting to its cold tolerance, I have even seen a tree growing on Long Island, New York. Here in the southeast, the tree is not long lived due to being highly susceptible to the soil born fungus, *Phytophthora*. Some success has been achieved by using *A. angustifolia* as an understock. Due to its Jurassic like reptilian branches, it has been referred to as a "queer tree". Perhaps one day we may have this tree living in our collection.


Austrocedrus chilensis at Lanin National Park, Argentina

Austrocedrus chilensis: Grown properly, this member of the cypress family can be a nice addition to a collection of rare conifers. The scale-like leaves are a blue-green color and have a prominent white stomatal stripe along the outer edge. The bark is shaggy brown. From personal experience in having killed several and from observation, the tree wants to be planted on the dry side and excellent drainage is a must. What surprised me was the extensive root system it puts out. No doubt this allows it to anchor well on slopes. Along with *Araucaria* and *Pilgerodendron*, this species offers the best garden-worthy attributes.

Summary: For many of our readers, there will likely be no interest in trying to grow these conifers. Aside from availability, as mentioned earlier, they are quite site-specific with varying moisture demands. With the exception of *Araucaria*, they are even rare in botanical gardens and were not even seen in Buenos Aires or Montevideo. Thus, they will likely remain in the domain of the collector and in highly specialized collections.

From a botanical and historical standpoint, they are an important group. It is believed that the southern conifers were much more diverse before the glaciations. Four of the nine conifers are represented by a single species. These are survivors from a much earlier period. As previously discussed, conifers such as *Fitzroya cupressoides* can live for thousands of years. Like *Sequoiadendron giganteum* and *Pinus longaeva*, the Andean conifers offer a glimpse back into the climate history of our

planet. Further, the lineage of conifers from the southern hemisphere show a significantly older distribution than their counterparts in the northern hemisphere and are thought to be an older group. One reason cited is that the scattered persistence of mild, wetter habitats in the southern hemisphere may have favored the survival of older lineages. Once a part of a larger supercontinent (Gondwana) which included Australia and New Zealand, there are numerous disjunctive genera common between the countries. This is similar to the floristic similarities between the southeastern U.S. and portions of China.

Unlike the phenomenon where one waits until they get home to look at their pictures to see if they had a good time, this was a trip guaranteed to please many lovers of conifers and those who also appreciate beautiful scenery, coupled with good food. And, the excellent wine will be a bonus for some.

Acknowledgements: I wish to acknowledge the invaluable assistance we received from Jeff and Patty Bisbee (Gardnerville, Nevada), who suggested many of the locations we visited to find these conifers, as well as Jeff's technical assistance with this article. Numerous photographs taken by Jeff of conifers in the region as well as Mexico appear in the recently published two volume book, *Conifers Around The World.*

References: Farjon, A. 2010. *A Handbook of the World's Conifers*. Leiden, The Netherlands, Brill

Debreczy, Zsolt, and Rácz, István. 2011. *Conifers Around The World*. Budapest, Hungary, Dendropress

Soil Quality for Conifers

By Susan Eyre

Every modern landscape can be enhanced with the use of conifers as foundation plantings or as barriers to negative lines of sight. The diverse attributes of conifers enable them to provide four seasons of interest as the bones in the mixed perennial border.

Pinus densiflora 'Pendula' *in clay soil*

Siting plants on an inclined plane or irregular rolling slope adds interest to a flat surface and provides the opportunity to stage dwarf plants toward the foreground. Large or intermediate conifers can be used to block unwanted sightlines. Color, texture, form, seasonal changes, bark and coning attributes provide great options. Whatever landscape situation exists, there is a superlative conifer available for that site. Basic knowledge of conifers and of the site is required to make wise plant choices.

Before planting conifers, you must be able to answer this critical question: What is the drainage and percolation of the site? Most conifers thrive in well-drained sandy, clay loam in full sun. Not all projects have ideal conditions, but good drainage is essential to guarantee the success of most plantings. Test your soil percolation by digging a hole 2' deep with a post hole digger. Fill the hole with water, let it drain and fill again. If the hole does not drain in two hours after the second filling, the soil is limited for conifers. In heavy clay, raise at least half the root ball out of the clay layer and surround the protruding half with good topsoil. Another solution is to remove narrow channels of clay leading away from the plant, like spokes of a wheel. Replace that soil with sand or pea gravel so that water and rootlets have an easy path. Water must drain away easily, or the roots will rot due to lack of oxygen.

If your soil is heavy and wet and can't be amended, there are some conifers which are naturally predisposed to such conditions. Choose *Larix* (larch), *Taxodium* (bald cypress), *Metasequoia* (dawn redwood), or *Thuja* (arborvitae). *Taxodium distichum* is one of the most versatile conifers because it can thrive in standing water or on a rocky ridge. It is the most adaptable to heavy clay soils. *Taxus* (yew), *Pinus* (pine), *Picea* (spruce) and *Abies* (fir) demand good drainage and will die with too much water in the soil. Provide your trees with good soil, amendments, and sufficient water. Extra watering is needed during drought periods and until the ground freezes.

Picea abies 'Cupressina' *in clay-loam*

Mulch is a positive thing to maintain soil moisture, but it should not be placed too close to the trunk. Chunk bark or coarse wood chips can be beneficial for firs (which prefer an eastern exposure). Pine needles, coarse pine fines or 2" wood chips work well for other conifers. Use a light application of compost, peat moss or worm castings and sulfur in reasonable doses for these acid loving plants.

2014 ACS Scholarship Winner Announced

By Gerald Kral

Stephanie Krieg of Silverton, Oregon, entering her senior year at Oregon State University, is the 2014 recipient of the $2,500 ACS Scholarship Award.

Ryan Contreras, himself a previous ACS Scholarship recipient, and now a professor in the Horticultural Department of Oregon State University, sponsored her. This fall Stephanie will resume her studies to complete her Bachelor of Science Degree in Horticulture with Plant Breeding and Genetics as her majors. The ACS Scholarship will be used by Stephanie to help pay for her educational expenses and perhaps allow her to pursue a "secret" passion she acquired while taking a course in plant propagation at Chemeketa Community College.

Sam Pratt, of Conifer Kingdom, gave a presentation on witch's brooms, and Stephanie was immediately "hooked". Stephanie soon found herself looking for brooms on her commute to and from school. A few days later while playing a golf course with her father in Mt. Angel, Oregon, Stephanie thought she had spotted a broom in an old Douglas-fir. A couple of holes later, she spotted another "mass" in a Norway spruce. She asked Sam to check them out for her.

They both proved to be brooms and, even better, the Douglas fir broom was producing cones. Stephanie, Sam and Doug Wilson returned the next day and collected scion wood from both brooms. The broom

wood was taken to Conifer Kingdom for propagation. The Norway broom was named 'Mt. Angel Blue'. The Douglas-fir broom was named 'Stephanie's Green Ball'. Both brooms are currently for sale and specimens have been planted in the ACS Reference Garden at the Oregon Garden.

The Committee was very impressed with Stephanie's passion for conifers at such a young age. In Stephanie's own words: "I can't stop looking for brooms." College education is very expensive today, and the ACS is privileged to help a very promising young student achieve her goals. Perhaps in her scholarship article next year for *Conifer Quarterly*, Stephanie can regale us with more broom stories.

Selection this year was very difficult. The Committee received six applications, and each had serious merit. Requests from two doctoral candidates requesting financial assistance with their dissertations, an arboretum horticulturist maintaining a dwarf conifer collection wanting to research and acquire new plants, and a web designer already volunteering his skills; all equally deserving of a scholarship.

The American Conifer Society does have the option of offering more than one ACS Scholarship. Your Scholarship Committee did submit a request that the ACS offer a second scholarship for 2014.

It is truly remarkable at the number and quality of applications we receive for a Society as focused and as small as we are. The ACS seems to be building a very nice network regarding its scholarship. The Committee is also often involved behind the scenes with emails asking for suggestions and clarifications as applicants work their applications. We get to know some of these students quite well, exploring their skills, aspirations and love of conifers. The hardest part of our job is writing the rejection letters.

I personally write handwritten notes to these applicants and try to put a positive twist on what must be a major disappointment. Sometimes I can help them look elsewhere for their financial needs. I suggested in my note to the arboretum horticulturist to consider applying for an ACS Conifer Reference Garden and to contact me if interested. All are invited to reapply next year.

I am truly honored to be your ACS Scholarship Chair. As we "age out", it is inspiring to have these young people step up and insure the future of the Society we all love.

ACS Reference Gardens Play a Global Role in Plant Conservation

By Dr. Sue Hamilton, Director of the University of Tennessee Gardens

It is estimated that there are 270,000 plant species in the world, and one in eight are threatened with extinction. According to Botanical Garden Conservation International (BGCI), which has just completed the first comprehensive assessment of the threatened plant species in Canada, Mexico and the United States, only 39 percent of the nearly 10,000 North American threatened plant species are protected in collections. In the United States, although in commercial production, *Abies fraseri, Tsuga canadensis* and *Tsuga caroliniana* are all imperiled conifers due to a non-native pest, the woolly adelgid (specifically *Adelges tsugae; Adelges piceae*). If these conifers are not conserved *ex situ*, meaning conserved in collections outside of their natural habitat, they may not survive in the wild. Whole stands of hemlock in the Blue Ridge Mountains and of Fraser fir in the Great Smoky Mountains are not just threatened, but already gone. Just as the American chestnut was decimated from existence due to a fungal blight, the same could happen to these conifers. *Ex situ* collections which are well-documented and genetically diverse can directly support *in situ* conservation by providing seeds or plants needed to reintroduce extirpated populations. (*In situ* conservation is maintaining populations of plant species in their native habitat, where they are exposed to and affected by natural, ecological and evolutionary processes). ACS Reference Gardens are important *ex situ* plant collections for conserving conifers in the United States outside of their natural habitat, providing a safety net for species whose survival in the wild is threatened. Initiated in 2007, the ACS created its Conifer Reference Garden Program to develop public conifer collections in a variety of geographical locations throughout the United States. They play an integral role in the mission of the ACS to develop, conserve, and propagate conifers; to educate the public about these unique plant species; and to make existing conifer collections known. ACS Reference

Gardens offer visitors an opportunity to see living conifers in a planted setting illustrating their unique characteristics, diversity, colors, shapes and growth habits in their region of the country.

The University of Tennessee Gardens Conifer Collection Development

Being a university garden, we support the teaching, research, and outreach mission of our university. The UT Gardens in Knoxville were awarded ACS Reference Garden status in 2008. This recognition would never have been possible without the invitation to join and get involved with the ACS from members Maud Henne and Flo Chaffin.* The passion and enthusiasm which these two women have for conifers and the ACS is contagious and so, through their encouragement, the UT Gardens joined the ACS in 2005. We only had 70 conifer specimens in our collection at the time. By the time we helped host the ACS National Conference in 2006, we had increased our collection to 185 specimens. By 2008, our collection had grown to 356 specimens and 17 genera and by 2010, the collection had increased to 401 specimens and 17 genera. This tremendous growth in our collection would not have been possible if it had not been for the ACS Reference Garden Grants. A 2007 grant provided funds for plant acquisition and anodized aluminum permanent interpretive labels. A 2009 grant was used to support a 2010 conifer symposium conference, in which there were 75 participants, 5 speakers, and a conifer plant sale. In the summer of 2010, the UT Gardens participated in the 8th World Botanic Garden Congress held in Ireland where we presented a poster on the ACS and the important role the ACS Reference Garden program plays in conserving the world's conifer species. The UT Conifer Reference Garden in Knoxville is in plant cold hardiness zone 6b (-5°F to 0°F) and heat zone 7 (61–90 days > 86°F). Standout selections in our collection include *Cupressus nootkatensis* 'Glauca Pendula'; *Pinus densiflora* 'Aurea'; *Cedrus deodara* 'Glacier Blue'; *Pinus bungeana* 'Temple Gem'; *Cupressus arizonica* 'Golden Pyramid'; *Juniperus chinensis* 'Saybrook Gold'; and *Cupressus glabra* 'Raywood's Weeping'. To learn more about the Gardens visit http://utgardens.tennessee.edu/.

Three hundred miles west of the UT Gardens in Knoxville are the UT Gardens in Jackson, Tennessee. These Gardens are the campus grounds

of UT's West Tennessee Research & Education Center. Jason Reeves is the distinguished horticulturist over the Gardens and is responsible for them becoming a Conifer Reference Garden in 2009. Since then, Jason has grown the conifer collection from 90 specimens to over 200. A 2011 grant from the ACS SE Region provided for new anodized aluminum permanent interpretive labels for the collection. This Reference Garden is in plant cold hardiness zone 7a (0°F to 5°F) and heat zone 8 (91–120 days > 86°F). To learn more about these Gardens visit http://westtennessee.tennessee.edu/ornamentals/. Standout selections in our collection include *Juniperus chinensis* 'Gold Lace'; *Cryptomeria japonica* 'Globosa Nana', *Platycladus orientalis* 'Morgan' and 'Franky Boy'.

The ACS Reference Garden Program Enhances Student Education

The ACS Reference Garden Program at UT Knoxville plays an integral role in the professional education and development of our students. Student interns employed in the UT Gardens and majoring in plant sciences are involved in all aspects of the Gardens' conifer collection development: accessioning, de-accessioning, database management, planting, labeling, GPS documentation, pruning, and fertilization. These students receive invaluable education and training in *ex situ* collection development and management and a unique hands-on opportunity to enhance their understanding of plant conservation. Interns also earn credit towards their degree for their work-study experience with our ACS Reference Garden Program. In addition to interns, numerous students taking plant identification classes in botany, environmental sciences, horticulture, forestry, and ecology are as well exposed to the vast array of conifers in our reference garden collection.

Conclusion

More than 200 million people visit botanic gardens every year, and these institutions often provide the only plant-focused education programs available to students of any age. *Ex situ* collections maintained by botanic gardens, if effectively interpreted and incorporated into programming, can play a critical role in providing information about the importance of plants, the need for their conservation, and the actions people can take to help preserve North America's plant diversity. The UT Gardens are one of 18 ACS Reference Gardens in the United

States which have been established since 2007, when the program was initiated. Although a young program, it shows great promise in encouraging and ensuring the *ex situ* collection of conifers in all regions of the United States for conservation, education, and research purposes. According to BGCI, the following conifer genera and species are threatened and should be conserved in *ex situ* collections. If you know of any of these threatened conifers to be in a collection somewhere, you can report this information to BGCI at the following link and help in the world assessment of plants in ex situ situations. **http://www.bgci.org/usa/MakeYourCollectionsCount**.

Abies nebrodensis
Abies yuanbaoshanensis
Abies ziyuanensis
Amentotaxus formosana
Amentotaxus hatuyenensis
Amentotaxus yunnanensis
Araucaria angustifolia
Araucaria luxurians
Araucaria nemorosa
Araucaria rulei
Araucaria scopulorum
Callitris sulcata
Calocedrus formosana
Calocedrus rupestris
Cephalotaxus hainanensis
Cephalotaxus wilsoniana
Chamaecyparis formosensis
Cupressus chengiana var. *jiangeensis*
Cupressus duclouxiana
Cupressus dupreziana
Cupressus dupreziana var. *atlantica*
Cupressus dupreziana
Cupressus goveniana var. *abramsiana*
Cupressus guadalupensis
Dacrydium comosum
Dacrydium guillauminii
Dacrydium nausoriense
Fitzroya cupressoides
Ginkgo biloba
Glyptostrobus pensilis
Juniperus barbadensis
Juniperus bermudiana
Juniperus brevifolia
Juniperus cedrus
Juniperus deppeana var. *sperryi*
Juniperus gracilior
Juniperus gracilior var. *ekmanii*
Juniperus gracilior
Juniperus gracilior var. *urbaniana*
Juniperus jaliscana
Juniperus standleyi
Keteleeria davidiana var. *formosana*
Libocedrus chevalieri
Metasequoia glyptostroboides
Nothotsuga longibracteata
Picea aurantiaca
Picea chihuahuana
Picea engelmannii spp. *mexicana*
Picea farreri
Picea koyamae
Picea likiangensis var. *montigena*
Picea martinezii
Picea neoveitchii
Pinus amamiana
Pinus armandii var. *mastersiana*
Pinus culminicola
Pinus massoniana var. *hainanensis*
Pinus maximartinezii
Pinus pinaster spp. *renoui*
Pinus radiata var. *binata*
Pinus rzedowskii
Pinus squamata
Pinus torreyana ssp. *insularis*
Pinus torreyana
Pinus wangii
Podocarpus angustifolius
Podocarpus capuronii
Podocarpus costalis
Podocarpus deflexus
Podocarpus globulus
Podocarpus hispaniolensis
Podocarpus humbertii
Podocarpus laubenfelsii
Podocarpus longifoliolatus
Podocarpus nakaii
Podocarpus palawanensis
Podocarpus pendulifolius
Podocarpus perrieri
Podocarpus purdieanus
Podocarpus rostratus
Pseudotaxus chienii
Retrophyllum minor
Sundacarpus amarus
Taxus floridana
Thuja sutchuenensis
Torreya jackii
Torreya taxifolia
Widdringtonia cedarbergensis
Widdringtonia whytei
Wollemia nobilis
Xanthocyparis vietnamensis

**Flo Chaffin is no longer a member of ACS.*

The New ACS Logo

Use it in your Region's Events and Communications

Now that we've introduced the new logo, we've begun to brand all of our communications with it, such as the website, the *Conifer Quarterly*, and messages from the National Office. All of our members can also use it on signage for regional events or when sending out newsletters or other mailings. You can also design and sell ACS logo clothing and merchandise using the logo and tag line.

The logo comes in two different orientations: vertical and horizontal. It is also available with or without the tag line and with or without a box around it. You can select the version that works best for your particular application. The logo is also available in a variety of file types and resolutions, such as PDF, JPEG and TIF. Both Steve Courtney, the National Office Manager, and Sara Malone, the Website Editor, have full sets of logo files and can email them to you as needed. They can also work with you to figure out which file will suit your particular purposes the best.

We will begin/have begun a pilot program to sell logo merchandise on the website. We also plan to provide templates for signage and presentations members may adapt as they wish. This way each region can make their materials unique and distinctive, but insure that the "look and feel" of the logo is the same across the nation.

Don't hesitate to email or call Steve or Sara if you'd like to use the logo for your next ACS event or mailing! Steve Courtney: acsnationaloffice@gmail.com; Sara Malone: webeditor@conifersociety.org.

2015 Collectors' Conifer of the Year

By Dennis Lee • Photos by Randy Smith, Iseli Nursery

Well conifer enthusiasts, it's our 10th year of the CCOY program. Since its inception, it has provided members with opportunities to acquire unique conifers with outstanding attributes as well as providing the Society with incidental monetary support to promote the education and use of conifers.


Pinus cembra 'Herman'

We are fortunate to celebrate our 10-year milestone with three selections. The first one is a very hardy, upright pine which can provide a bold accent with its rigid and sky-reaching structure. The second selection is also a pine, but one more squat, flexible, and with much shorter stature which will brighten a landscape with its variegated needles. The third gem is a diminutive, deciduous redwood with feathery foliage, colored with varied shades of creamy green suffused with hues of yellow. It too will add glow to an area and will also invite a garden visitor to caress the layers of succulent looking foliage. Not surprising, they all can easily cause "Conifer Addiction" to flare up quite suddenly.

***Pinus cembra* 'Herman':** This selection of Swiss stone pine was introduced by North Dakota State University and was named for Dr. Dale Herman, Professor Emeritus of the Department of Plant Sciences. It is often promoted under the trademark name of Prairie Statesman, and that attests to its origin and to its prominent, refined appearance. It is an extremely hardy, drought-resistant specimen, suitable for harsh, natural

or urban settings, and yet has an elegant, stately manner. Its narrow form has a strong central leader and lateral branches which markedly curve upward and slightly inward, allowing it to resist snow loads well. The branches are graced with soft, 2"–3" emerald green needles with silvery blue overtones which tend to concentrate toward the tips. The needles are held in bundles of five, retained for four or five years, and they maintain their color through the winter. Cones start out as violet-brown and mature to brown.

It performs well in USDA Zones 3 through 7 and should be planted in sunny to mostly sunny sites with well drained soils which are moderately acidic to neutral. Well sited plants will easily grow 6"–12" a year with an expected height of 6'–12' feet in 10 years. The width can easily be approximately a third of the height at this time. 'Herman' is considered a low maintenance plant with a striking silhouette.

***Pinus parviflora* 'Tanima-no-yuki':** The origin of this Japanese white pine is unknown. According to ACS past President, Dennis Groh, who took an interest in researching an appropriate translation for the Japanese name of this cultivar, the English version would be snow-of-the-valley Japanese white pine. Slow growing, young plants generally start out as small, irregular mounds. At this stage, 2"–3" of annual growth is typical. Consequently, they can almost become 2'–2 ½' high

Pinus parviflora 'Tamina-no-yuki'

and a little wider in 10 years. As pines go, it is one of the last to complete its new growth, but what a spectacle it is, because as the new growth elongates, it wows the observer with colors of pink, cream and green. The pink fades in a few weeks as the curved needles unfurl, and varying degrees of whiteness develop at the end of the branches. The underlying foliage is a bluish green so that the plant appears to have been flocked or dusted with snow, so-to-say.

'Tanima-no-yuki' performs well in USDA Zones 5 through 7, although siting of this plant is important because intense summer sun can burn out the variegated needles. Although losing the variegation doesn't seem to affect the health of the plant much, it does make for one which is significantly less interesting and appealing in hotter and sunnier climates. Afternoon or general, high overhead shade is of great value for preserving the beauty of the plant. In a good site as the plant becomes well established, growth can pick up to 3"–4" a year, and the plant will gradually take on a more upright and sizable form. If a lower growing or more subdued plant is preferred, it can easily be obtained with some judicial pruning. Another siting consideration is a well-drained soil which is somewhat acidic to neutral. It is best that it does not dry out too readily. This variegated pine can be a rewarding addition not only for illuminating a garden spot, but also for often amusing the owner with its evolving beauty and form.

***Metasequoia glyptostroboides* 'Schirrmanns Nordlicht':** This selection of dawn redwood was found by Winfried Schirrmann in Germany as a witch's broom on another selection of Metasequoia known as 'White Spot'. On this side of the Atlantic, it is often promoted under the English translation of 'North Light', but of course this is not proper botanical nomenclature. Besides its bright, cheerful, colorful foliage, it is a very much smaller and globular garden ornamental compared to the species. Although 'Schirrmanns Nordlicht' has lush growth, it may only be 5'–6' high and 3'–5' wide in 10 years. On ideal sites, it may grow larger during this time, but it down-sizes exceptionally well with careful pruning or shearing if a smaller specimen is wanted. Since it is relatively new, an ultimate size and form are not known. Over time, it seems to take on a more conical shape if left on its own.

Dawn redwood is considered suitable for USDA Zones 5 through 8. Ideal sites are sunny areas with moisture retentive acidic to neutral soils.

When plants become well established, they tolerate drier conditions much better, but generally produce less vigorous growth. Frost pockets should be avoided as tender new growth is easily damaged by spring frosts. 'Schirrmanns Nordlicht' does well in full sun to half sun. If it is in full sun, the yellow hues will become more pronounced while increasing amounts of shade will allow for the creamier tones to dominate. Afternoon shade would be preferred for hotter, drier sites. In either case, the somewhat waxed appearing, fine, ferny textured foliage makes for a great show. The foliage finale occurs in late autumn as it turns pleasing shades of russet before dropping. This colorful redwood can surely liven up a spot and provide for a feel of soothing comfort without the concern of dealing with a future dominating giant.

Ordering:

Metasequoia glytostroboides 'Schirrmanns Nordlicht'

The Collectors' Conifer of the Year program is restricted to active members of the American Conifer Society. Purchases are limited to one of each selection per member. The cost for any of the three offerings is $75.00 each. Each offering comes with a conditional one year/one time replacement guarantee. Accompanying each plant will be an anodized aluminum tag with its holder, which identifies the plant as a winner of the American Conifer Society's annual award of "Collectors' Conifer of the Year". Shipping is included in the above costs. For ordering, please complete the form in this publication. Orders will be filled by date of receipt until inventory sells out. All orders must be received by February 2, 2015. We cannot ship outside the United States. Happy coniferring to all of you!

Effective Pruning

By Elmer Dustman

There is a different concept of pruning, called **Aesthetic Pruning**. My Aesthetic Pruning definition is: controlling plant growth in a way which results in plants which look convincingly natural and untouched by human hands.
The gardener must have two arsenals of knowledge: the growth habit of the plant and the use of proper pruning tools. The reference I use is Edward Gilman's 2012 book, *An Illustrated Guide to Pruning* (Third Edition), Chapters 5 and 18, Pruning Cuts, and in *Pruning Landscape Trees and Shrubs*, published by Delmar Cengage Learning.

There are three basic pruning terms:
Reduction Cuts, Removal Cuts and Heading Cuts

There are two additional cuts to be used:
Tipping and Shearing

5 PRUNING TERMS DEFINED:

Reduction Cuts are used to "reduce" or shorten the length of a branch by pruning it back to a branch junction which is large enough to assume apical dominance. This branch varies by species, but should be 1/3 to 1/2 the diameter of the cut stem. To make the cut, bisect the angle between the branch bark ridge and an imaginary line perpendicular to the branch to be removed. This cut is used to maintain the size and shape of the tree or shrub.

Removal Cuts are made back to the collar, or to the point of attachment. This cut is often used to thin-out the plant's foliage. This encourages light and air circulation resulting in a healthier specimen. Removal cuts can be used to lighten the weight of branches and removal of dead wood.

Heading Cuts shorten a branch to a stub or to a bud or a lateral branch not large enough to assume the terminal role. This can cause the tree to sprout excessively from the cut.

Tipping/Pinching is a technique of removing the last few buds, leaves or sprouts from the end of a stem. It is performed for a number

of reasons. It can slow down a tree's rapid growth; it can redirect a tree's energy into smaller more desirable shoots or buds, and it can give a consistent texture and appearance to the newly pruned plant. Tipping is easiest during the soft-lush-growth stage by using the fingers. For pines, breaking the new growth candles to the desired length before hardening controls the total yearly growth. The use of hand shears for removals must be done on new growth after it has hardened, which can cause browning of foliage and needles.

Shearing. The overuse and misuse of sheared shrubbery is one of the most common forms of landscape mismanagement. Because shearing is non-selective heading, you will stimulate bushy growth. You create a twiggy outer shell on sheared plants. This layer of twigs shades out the interior, which then becomes leafless and full of dead leaves and dead wood. Meanwhile the outer shell becomes thicker and larger farther out to retain its greenery. The dense outer shell makes size reduction difficult because cutting back too far exposes the ugly dead zone. Although most plants will bud back and eventually reform, there are some species like junipers which won't regenerate. Power hedge shears do tremendous damage with [lots of] broken and crushed stem tips, torn bark and chewed leaves. This leads to wound responses and both bacterial and fungal invasions.

THE ALTERNATE TO SHEARING:

The only plants I shear are Boxwood and Privet, using manual hedge shears held in the horizontal position. This is because they have small leaves and are formal in appearance.

The highest quality "shearing" isn't even shearing at all. Instead it consists of the carefully performed "snip-by-snip" technique, which leaves no heading cuts at all; the manual head shears are held in an vertical or right angle position for "targeted" cuts on junipers, barberries, *Spiraea*, hemlocks and many more species with follow up use of hand shears for fine pruning removals. Targeting cuts to inner branchlets opens up the plant to let in more light and air circulation, allows new growth to emerge from buds or side branches, and controls plant size.

I prefer that certain shrubs be pruned in a semi-spherical and not a ball-like shape. The preferred ratio of height to width is 1 to 3. This allows the entire bush to have new foliage or flowers and appear

ground-hugging. Many shrubs with sheared tops have exposed sides which have little new foliage and the shape is of little interest.

THE OBSERVATIONS AND QUESTIONS YOU SHOULD MAKE AND ASK BEFORE AESTHETIC PRUNING:

- What does the tree or shrub look like in nature in its most mature form?
- Find examples in the landscape as you drive down the street and in books and garden magazines!
- Check branch forms, hanging or upright shapes?
- Observe ratio of height to width to inform your pruning goals!
- Where are the empty spaces between branches and note branching pattern?

Information selected from *The Journal of Japanese Gardening,* published by Douglas M. Roth, *Plant Amnesty Newsletter,* www.plantamesty.org

Another Little Slice of Paradise

By Dan Spear

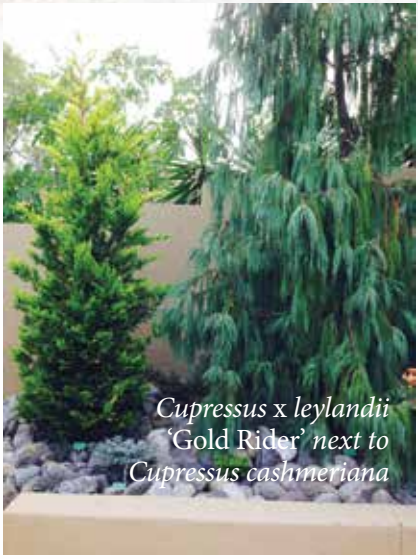
This piece is about a small suburban garden, getting inspired by others in the American Conifer Society, and how I was able to increase the amount (and variety) of conifers to fuss over, enjoy and admire.

My property in Orange, California, 50 miles southeast of Los Angeles, is about 1/3 of an acre, but being on a hill with a very strange pie-shaped lot, concrete takes up a fair portion of the space. I was able to acquire more room for conifers the same way many of us suburban hobbyists get more space: take out more grass. This project was in my back yard. The original owner/builder of my twenty-eight year old house landscaped the backyard into thirds, going uphill from the back of the house. One third concrete patio, one third grass, and one third 4' high raised planter, totaling about 78' wide by 45' back, up the hill. My newest conifer garden laid out to about 78' by 15'.

Adding another layer of challenge was my lack of soil. I live on a 400' high hill, about 100' from the bottom, which has some sort of volcanic origin. I constantly dig up red, gray, and black lava rocks which have been rounded like river rock, but much of my back yard consists of pyroclastic flow (a volcanic rock mixture which flowed down hill as a molten liquid before cooling and hardening) which is completely exposed in some areas, or lying a few inches below the soil. Because of these conditions, I have established two very strict gardening principles: plant small and plant up. My new conifer garden would be in raised beds to give me another 10"– 12" inches of soil.

I had been planning this new garden for several years, but the horror of having to get all of those rocks, soil, gravel for paths, up all of those steps from the front of the house to the backyard prevented me

from moving forward. As I said, I live on a hill, where the front of the house is two stories, but the back is only one story, the top floor. What really inspired me, and gave me the impetus to get started, was visiting two gardens during the ACS's Western Region meeting in Tacoma, Washington, in September last year. If you have not seen these two gardens, please add them to your bucket list. You will thank me.



Cupressus x *leylandii* 'Gold Rider' *next to* *Cupressus cashmeriana*

Will Fletcher and Dave Olszyk have extreme Addicted Conifer Syndrome, as their incredible gardens reveal. I was absolutely amazed at the number of conifers each of these men had been able to plant in their gardens; all the while keeping their gardens looking uncluttered and fantastic. They have really taken it to another level, and made me realize I had way more room for conifers in my garden, and, so, I decided to dip my toe in the water, and plant my new conifer garden in that vein, sort of. The timing was just right to be so inspired, considering I was in the heart of conifer country and we were bidding on plants at auction, as well as visiting some of the best

conifer growers in the world. Additionally, the best time for planting in my area is December and January, so all of the stars were aligning.

I had a handful of anchor trees in this area I had planted several years earlier; a 15' *Araucaria columnaris*, two *Ginkgo biloba* 'Saratoga', a peach, an avocado, and a couple of sweet gum trees, which were really ideal for the structure and the shade they provided; which is required to grow many of the conifers I had been dreaming about. Our hot, dry weather, with pronounced lack of winter chill, really limits the number of species which can grow here, and forget about the recommendation of "Full Sun" on the labels and in the books, with the exception of junipers, cedars, and some cypresses. For the most part, full sun equals dead plant in short order.

I decided to make the raised beds with 12" to 16" granite cobblestones with a centered meandering path of ¼" gravel. In some areas, I was able to go two rocks high for a tiered look. I ignored my ego about doing the back-breaking task of carrying all these materials up the steps myself and hired some men to do the heavy lifting, but I did place every rock and was the official compactor of soil, and sand/gravel for the path. It was still a ton of work, and one of the three hired hands only made it for day one, never to be seen again. My little backyard makeover ended up taking 12,000 lbs. of rock, 9 yards of soil, and 5 yards of sand and gravel. Quite an effort just to get started.

These poor, but well-paid guys crawled away barely alive; so now it was time for the fun stuff; planting about 130 of the most beautiful conifers I had recently purchased. Laying them out to get the best combinations of color, texture, size, form, and architecture, all the while considering sun exposure, was a challenge, but incredibly fun too. Fir are one of my favorite plants, but also very challenging to grow in our hot, dry climate. Given this new garden had more shade than in other

areas of my yard, I decided to give it a go (yet again) with *Abies koreana, A. nordmanniana, A. numidica, A. cephelonica,* a number of *Chamaecyparis obtusa*, as well as *Cryptomeria japonica*, all of which don't do well with sun here. I also found two darling dwarf seedlings of *Abies concolor* var. *lowiana* in our local mountains over the summer, and was able to bring them home in January while they were dormant. They're fairly blue, with needles about one third the length of the standard Low's fir. They also love shade in their natural environment, and all are doing quite well.

Abies cephalonica 'Meyer's Dwarf'

In the sunnier areas of this new garden, I planted some great cedars, which thrive here, a really cool *Juniperus communis* 'Oblonga Pendula', and a great variety of dwarf pines; *Pinus strobiformis, P. nigra, P. flexilis, P. heldreichii, P. sylvestris.* Again, most have done well, losing about 5% in all.

It was quite a transformation from the grass I was used to looking at, and like all of our new plantings, it is such a joy to see the new growth, color changes, and my plans coming together just as I imagined. The bonus for me with this project, as I see it, constantly comes from inside the house, with views from the kitchen and family room. It is also the view any and all see when they reach the top of the stairs, coming from the front entrance down below. It is not grand, but I like it. Only now I have the same old problem: I am out of room for conifers again.

Drought-tolerant Conifers for the West…and the Rest

By Sara Malone • Photos by Janice M. LeCocq

The ACS, although an international organization, is divided into regions primarily because growing conditions differ so markedly across the globe, and even the country.


Juniperus horizontalis 'Blue Chip'

What thrives in New England languishes in Georgia, and what over-winters happily in California succumbs to brutal Minnesota ice and snow. Like those of taxonomy, regional distinctions can be "split" or "lumped", and by creating only four regions, we are in the lumper's camp! The USDA makes more distinction, with 10 zones based on average low winter temperatures. However, those of us who garden know that there are many times when we feel as if our garden is in a zone of its own.

The Western Region is not only the largest ACS region geographically, but also has the greatest range of climatic conditions, from the tropical Hawaii to the Rocky Mountain states of Colorado and Wyoming; from the deserts of Arizona and New Mexico to the rain forests of Western Washington. We clearly can't all plant the same conifers and have them flourish, but we do look for similarities in conditions and try our best to understand the needs of each genus to try to make the best choices for our gardens.

While the West has a wide variety of climates, we do share a few common attributes. Most of the West, for example, enjoys much cooler summer nights than the states east of us. No matter how hot we get during the day, we can almost always count on the heat mitigating significantly

once the sun goes down. We also tend to have much drier summer air than the eastern two-thirds of the country. The cooler nights make it easier for many of us here to grow conifers which struggle in the South. The drier summer air means that those conifers native to places with warm weather humidity don't do as well here as they do in Georgia. But all of the various climatic attributes which have occupied our collective Western consciousness when selecting plants have coalesced over the last couple of years into one: drought. And, it's not just California; even the Pacific Northwest, the land of 'liquid sunshine' (as they cheerfully refer to rain), has seen lower-than-usual snowpack in Washington and severe drought ratings in Oregon. The Smithsonian Magazine reports that Arizona could be out of water in six years and scientists at UC Irvine and NASA recently completed a study which suggests that the groundwater reserves in the Colorado River Basin are being depleted at a rapid rate.

So what's a conehead to do?

Most of us have long recognized the wisdom (although we often stubbornly refuse to heed it) of "right plant, right place". Gardening success comes most easily when we choose plants suitable for the climate and setting. For much of the West, that means selecting plants which can withstand our lower water situation. While I will specifically discuss my

Microbiota decussata
in winter color

own garden conditions, it is a simple matter to follow the same thought-process for your own climate, whether the prevailing adverse condition be drought, warm summer nights, or low winter temperatures.

Conifer lovers are fortunate, because compared to many other kinds of plants, in general, evergreen conifers are well prepared to deal with adverse conditions. These ancient plants evolved during a time of great climatic change in the world and consequently have dealt with conditions far more extreme than we are facing today. They are wind-pollinated, hence are not affected by any asynchronicity between themselves and insects which might arise from drought or temperature fluctuations. They also can conserve nutrients by not being forced to produce a full, new set of leaves every year. They can photosynthesize if conditions are harsh and prevent—or delay—new growth. Because they are always "in leaf", they can photosynthesize whenever conditions are right—they don't have to wait for bud break. This also means that they can take advantage of irregular rainfall, even if it is outside of the normal growing season.

It is interesting to note that conifers dominate in the mild climate of the Pacific Northwest—most other places dominated by conifers have much harsher climates (e.g. boreal forests). Why would that be? The answer seems to be the modified Mediterranean climate of the PNW, which while it has mild, wet winters, also has mild but dry summers. The evergreens can produce food during the mild winters, when deciduous trees are bare and ineffective, and the summer dryness is hard on deciduous species, which can't compensate by photosynthesizing in the other three seasons.

The coastal West

In fact, much of the coastal West enjoys a Mediterranean, or modified Mediterranean, climate. That means wet winters and dry summers, with much of our weather directly influenced by the Pacific Ocean. The conifers we plant in our gardens generally receive supplemental irrigation, but we cannot replicate humid summers with reliable rainfall. With water a scarce commodity, most of us use drip irrigation, which does not humidify the air at all. The readings on the hygrometer at my house are in the 30-40% range from June-September. So, where do we go to find conifers which will not just survive, but flourish in this kind of summer-dry environment, especially when drought is always on our minds?

Going native

The first place to look, when seeking conifers which will do well in our gardens, is in our own native plant population. These conifers, such as *Pinus contorta, Pinus ponderosa, Sequoia sempervirens, Pseudotsuga menziesii* and *Cupressus macrocarpa*, have evolved to deal with the specific conditions of the area, so should work best in our gardens, right? In California alone there are over 50 native conifers, about half of which have more garden-appropriate cultivars. Some of the darlings of the conifer aficionado's collection are amongst these plants: *Pinus contorta* 'Chief Joseph' and 'Taylor's Sunburst' and *Picea engelmannii* 'Bush's Lace' and 'Blue Harbor'. Where it gets tricky is that California is a big state, with coastal, mountainous and desert regions. *Sequoia sempervirens*, for example, are only truly happy in a narrow band practically within sight of the Pacific, and *Picea engelmannii* prefer the moist slopes of the Klamath Ranges. I grow cultivars of all of these species here in my garden, but I wouldn't classify them as "low water" conifers. Going native

sounds good, but doesn't always produce the best choices. In addition, of garden-worthy note is *Pinus ponderosa*, which has several cultivars. Ponderosa pine has a long tap root, which makes it able to reach water sources. It needles, like those of Sequoia, absorb the gentle moisture from fog.

When seeking natives, focus on those which can handle the specific extreme, to which you will be subjecting them. *Cupressus macrocarpa*, for example, withstand low rainfall, poor soils and Pacific gales, so is an appropriate California native conifer for low-water situations. The 'Lone Cypress' of the Pebble Beach golf course is a *Cupressus macrocarpa* and is said to be one of the most photographed trees in North America. It is estimated to be 250 years old and has survived not just wind and low rainfall but fire. Now there is a tough plant! The garden cultivars are lovely, with 'Coneybearii Aurea' and 'Greenstead Magnificent' among my very favorite of all of my conifers.

Extreme measures

Even better than many of our natives, the conifers which truly seem to deal with the dry summers and extended periods between waterings are those which are native to regions with extreme conditions. The Mediterranean conifers, for example, are the best equipped to handle less-frequent waterings. *Abies pinsapo* (with some great cultivars such as 'Horstmann', 'Glauca' and 'Aurea') and cultivars of some of the cedars, such as *Cedrus libani* and *Cedrus atlantica*, are standout performers in my garden, and, once established, can handle much less-frequent waterings than *Sequoia sempervirens*. There is a wide range of size, color and form amongst the cedar cultivars; thus, you can have quite a bit of variety within this one genus.

Conifers from other regions, such as those with mountainous terrain with irregular rainfall, appear to be able to soldier through less-than ideal conditions and still look attractive. *Picea pungens*, which are native to the Rocky Mountains, are prized for their intense blue color. That color results from wax on the needles which is believed to reduce their temperature, as well as transpiration and light absorption. That protective wax helps Colorado blue spruces retain moisture and deal with low-water conditions. Once established, *Picea pungens* cultivars are some of the summer-hardiest conifers in my garden.

Pinus mugo hail from mountainous regions of Europe and Asia, many of which suffer severe, desiccating winds. Consequently, *mugos* have developed tough needles to retard water loss, enabling them to handle our dry summers. They have an exceptionally large native range, which yields the longest list of synonyms of any pine and a dizzying array of variation among the cultivars. Some, such as 'Mops', 'Sherwood Compact', 'Slowmound' and 'White Bud' are reliably slow growing, so that, if you select one of these, you will avoid the dreaded guessing game of wondering how fast (and how large) your *mugo* will grow.

Junipers as a genus are generally regarded as drought-tolerant and their wide distribution in the wild covers many arid areas. We have native *Juniperus* in rocky, dry areas in California, and there are others endemic to the Mediterranean, North Africa and other desert or quasi-desert locations. There are hundreds of juniper cultivars and almost all of the ones available in the trade can handle low-water conditions.

(Junipers have the added advantage of often being more reasonably priced than other genera; they do not command the respect of *Abies koreana* or *Pinus parviflora*! When I fell in love with a large *Juniperus cedrus* at a wholesale nursery and was astounded to hear how inexpensive it was, the owner explained: "It's a juniper—no one will pay up for it.") Likewise, *Ginkgo biloba* (while not a conifer, is a gymnosperm and under the ACS umbrella) is drought-tolerant and withstands poor conditions.


Ginkgo biloba in fall color

Keep it in the family

Finally, once certain species have survived and flourished through several cycles of arid summers in the garden, the best chance of finding successful additions is to look for more species in that genus. It is not a coincidence that the list of conifers, which I have found most equipped to deal with drought conditions, are all members of the cypress and pine families (other than *Ginkgo*, which is, as usual, an exception!) Within Pinaceae, certain genera are much more widely represented, with *Pinus* itself the most frequently occurring genus. While there are a few firs and spruce which do extremely well in drought conditions, there are far more which would languish, if not die outright. The cypress family representatives are all in the subfamily Cupressoideae. It's interesting that the members of this subfamily are native to the Western United States, with the exception of *Microbiota decussata*, or Siberian cypress, which, as its common name implies, is native to the mountainous region of southeastern Siberia. Even though it calls home a spot far from the rest of its subfamily, its morphology puts it amongst them and it shares with them the ability to endure drought.

Actual garden drought conditions

When I speak of drought-tolerant plants or gardening in a low-water environment, I do not mean to suggest that I provide no supplemental water. Northern California generally only has rainfall between

November and April. We had no rain at all between late December 2012 and December 2013. An added complication is that many drought-tolerant plants are from places with poor, rocky soil. My local soil is clay-based and heavy (a mile away is General Vallejo's Petaluma Adobe, the largest adobe building remaining in the United States, built in the mid-nineteenth century from adobe bricks made at the site). The clay is water-retentive and poorly draining. Therefore, I add generous amounts of lava pebbles to increase drainage. Amending soil to accommodate plants which are native to other parts of the country or the world is a subject for a separate discussion; suffice it to say that it is as important as far less water than overhead spray and also reduces weeds.

Most parts of the garden are watered weekly, although in the hottest part of summer I water twice a week. I use a 3"– 4" layer of mulch, which vastly improves water retention. For those of you in areas which generally enjoy summer rain, but have had—or fear—drought conditions, some of the plants on my list will work in your climate as well. You can also use the same rationale for making a list of those best suited to your zone, humidity, and so forth.

Most importantly, there is an enormous difference between the water needs of a newly planted conifer and one with an established root system. When I say that a conifer is drought-tolerant, that always means

Cupressus macrocarpa 'Coneybearii Aurea'

Juniperus squamata 'Blue Star'

once established. It generally seems to require at least 2–3 years for conifers to develop large enough root systems to deal with less-than-ideal watering. Also, even for species which prefer full sun, providing a bit of afternoon shade helps their ability to conserve water and retain their good looks. I do water overhead 1–2 times per summer to provide a good soaking and flush off dust. Really established mature conifer trees can get by with much less than a weekly watering. The *Sequoia sempervirens*, which were planted by our predecessor and are over 40' tall, for example, get no supplemental water at all, and they are further inland than their ideal situation. I water full sized trees once a month at most.

Best low-water conifers—from my own garden experience

All have cultivars available in the trade

Abies pinsapo (Pinaceae)
Cedrus atlantica (Pinaceae)
Cedrus deodara (Pinaceae)
Cedrus libani (Pinaceae)
Cupressus nootkatensis (Cupressaceae)

Cupressus arizonica (Cupressaceae)
Cupressus macrocarpa (Cupressaceae)
Ginkgo biloba (Ginkgoaceae)
Juniperus spp. (Cupressaceae)
Microbiota decussata (Cupressaceae)
Picea pungens (Pinaceae)
Pinus banksiana (Pinaceae)
Pinus contorta (Pinaceae)
Pinus jeffreyi (Pinaceae)
Pinus mugo (Pinaceae)
Pinus ponderosa (Pinaceae)
Pinus sylvestris (Pinaceae)

Sources: ACS ConiferBase, Centralia College lecture, Aris G. Auders and Derek P. Spicer, *RHS Encyclopedia of Conifers*

Directorate

National Officers

President	**Brian Jacob**, 334 Suncrest Ct NW, Salem, OR 97304, PH (503) 754-1307, E-mail: brianejacob@ymail.com
Treasurer	**Tom Neff**, 4000 Lindsey Rd. NE, Marietta, GA 30067-4224, E-mail: tsneff2003@yahoo.com
Secretary	**Kathleen Pottratz**, PO Box 292, Scott Mills, OR 97375, PH (503) 985-7561, E-mail: kpotzz@gmail.com
Past President	**Larry Nau**, 25 Knollwood Dr, Churchville, NY 14428, PH (585) 202-1815, E-mail: lnau@frontiernet.net

Regional Directors

Northeastern Region President	**Colby Q. Feller,** 5 Peter Cooper Rd. Apt. 7E, New York, NY 10010-6629, PH (347) 661-5478, E-mail: colbyfeller@yahoo.com
Director	**Michael Mahoney**, 150 Elm St, Hanover, MA 02339, PH (781) 826-2915, E-mail: misue150@verizon.net
Southeastern Region President	**Dr. John M. Ruter**, Dept. of Horticulture The University of Georgia, 327 Hoke Smith Building Athens, GA 30602, PH (706) 542-9059, E-mail: ruter@uga.edu
Director	**Tom Neff**, 4000 Lindsey Rd. NE, Marietta, GA 30067-4224, E-mail: tsneff2003@yahoo.com
Central Region President	**Ethan Johnson**, The Holden Arboretum, 9500 Sperry Rd., Kirtland, OH 44904, PH (440) 602-3803, E-mail: ejohnson@holdenarb.org
Director	**Bill Barger**, 3200 Rohrer Rd. Wadsworth, OH PH (330) 336-9695, E-mail: bilb@conifergarden.com
Western Region President	**David Olszyk**, 6810 44th Ave NE, Olympia, WA 98516-6220, PH (360) 456-2896. E-mail: david.olszyk@gmail.com
Director	**Anton Klemens**, 5203 Summit St., West Linn, OR 97068-2920, PH (971) 269-9609, E-mail: coniferklemens@gmail.com

Staff & Volunteers

National Office Manager	**Steven W. Courtney**, American Conifer Society, PO Box 1583, Maple Grove, MN 55311, PH (763) 657-7251 Email: nationaloffice@conifersociety.org
***Conifer Quarterly* Editor**	**Dr. Ronald J. Elardo**, 5749 Hunter Ct, Adrian, MI 49221-2471, PH (517) 902-7230, E-mail: ConQuartEditor@gmail.com
Website Administrator	**Sara Malone**, 909 Mustang Ct., Petaluma, CA 94954, PH (707) 486-0444, E-mail: webeditor@conifersociety.org
Collectors Conifer Chairman	**Dennis Lee**, PO Box 1332, Stow, OH 44224, PH (330) 688-4283, E-mail: coniferden@msn.com
Seed Exchange Chairman	**Jim Brackman**, Old Highway 410 SW, Olympia, WA 98512, PH (253) 736-5864, E-mail: james.brackman@weyerhaeuser.com
Conifer Registrar	**Richard Larson**, The Dawes Arboretum, 7770 Jacksontown Rd, Newark, OH 43056, PH (800) 443-2937, E-mail: ralarson@dawesarb.org

Tahquamenon Falls,
Michigan's Upper Peninsula
Photo by Bob Weber