

Conifer Quarterly

Vol. 24 No. 2

Spring 2007



Photo Credit: Joy Okazaki

**East Meets West
July 26, 2007**



Photo credit: Joy Okazaki

Stone Bridge at Kubota Garden-venue for ACS National Meeting in Seattle.

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Cover Photo: Kubota Garden - Venue ACS National Meeting

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Spring 2007
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All editorial and advertising matters should be sent to: Evelyn Cox, 342 North Main Street, Suite 202, Alpharetta, Georgia 30004. (770) 663-7576 or email coniferquarterly@bellsouth.net.

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PRESIDENT'S MESSAGE

Hopefully by the time you receive this issue, spring will have arrived in your area of the country. Here in late February in the Atlanta, Georgia area, we are enjoying temperatures in the high 60's with lots of sun today. The star magnolias (*Magnolia stellata*), dogwoods (*Cornus mas*), *Camellia japonica*, and various witch Hazels (*Hamamelis sps.*) are all in bloom. I suppose every gardener watches the weather this time of the year, hopeful of avoiding spring frosts. One of the beauties of conifers is that it is possible to achieve so much bloom-like color without having to worry about the color being decimated by cold.

In addition to anticipation of the arrival of spring, we ACS members have the national meeting in Seattle to look forward to as well as some exciting regional meetings. As president, I have the opportunity to see many of the e-mails that are generated by volunteers as they plan the various events. Were it not for these people that so willingly volunteer their time, our meetings would either not exist or would certainly be less stellar. As opportunities arise, please remember to thank these people; better still, become a volunteer.

Back to our national meeting, I can think of no better setting for a meeting that showcases conifers than the Pacific Northwest. A number of individuals have already contacted me, inquiring about registration. Many of these individuals have never attended a national event. Look for registration material in your mailbox and on our website www.conifersociety.org. This should occur in early April. Since this event will be well attended, make your reservations early.

The first Saturday in February is when the Board of Directors meets for the winter board meeting. Historically, this has always been an intense day that is filled with a full roster of business to wade through. This year was no exception as we started at 8:00 AM and concluded just after 5:30 PM. The follow-

ing is a brief synopsis of some of the highlights. The full minutes will be made available as an insert in the summer issue of the CQ.

- we ended 2006 with a small budget surplus
- current membership as of January 1, 2007 is 1,889 members. This reflects an increase of 31 members from the same period in 2006. Our retention rate is trending at above 80%. Congratulations to the Central Region for having the highest number of new members.
- ACS website is experiencing much more usage and is currently undergoing some revisions that will make it even more powerful. Our conifer database now contains in excess of 4600 records with over 1900 photos. This is a great tool for conifer ID and basic research as well as a guide for new coniferites looking to expand their knowledge.
- Walter Cullerton (past president NE Region) has graciously volunteered to become our first National Public Relations Chair. One of the things that he will be responsible for is working with various garden writers associated with magazines, newspapers and other media to spread the word. We are fortunate to have Gale Steves assisting with this. Since Gale is an expert in this area, she has agreed to provide guidance. Walter will do an excellent job. Thanks for stepping up Walter!!!
- As was the case with Walter, sometimes the stars just seem to properly align and the right person comes along. The next bit of exciting news came when one of our newest members, Jim Morris (Jim & Jo-Evelyn Morris from Georgia) agreed to accept a presidential appointment as official ACS Historian. We are fortunate that our founders and their successors kept excellent records; hence we have a recorded history. Unfortunately, much of this is in the form of numerous boxes that have to be poured through in an effort to construct a chronology of significant events. Jim is a senior judge by profession and possesses the requi-

BY TOM COX

site organization, attention to detail and curiosity necessary to pull this together. The initial idea for this position came as I began considering 2008. For those that might not be aware, the ACS will celebrate its 25-year anniversary next year. The Central Region will orchestrate this event.

- The Board also approved the planning for an international trip in 2008. Our last one was held in October, 2000 to Germany and Holland and it completely sold out. We are currently coordinating with an excellent contact on the ground in the UK, (Daniel Luscombe with the Bedgebury Pinetum). Dan is a worldwide explorer and has already made a number of recommendations. The ability to have a knowledgeable source overseas is invaluable in planning a successful event of this type. Look for more information as this takes shape.
- The last item was allowing non-members to attend our national and regional meetings. This engendered much discussion as we carefully considered any downsides. In the last (winter) issue of the CQ, I mentioned that we have benchmarked the ACS against a number of like societies such as the Rhododendron, Camellia, and Hosta. Each has an open attendance policy and the discussion focused on our policy of restricting attendance to members. It was decided that for this year's National meeting, we would limit non-member participation to the evening meetings at which we have a keynote speaker.

On a closing note, I would like to welcome Mr. Don Shadow (Shadow Nursery, Winchester, Tennessee) as our newest life member and to thank him for his generous contribution. Don is a renowned nurseryman and is known worldwide as one of the giants in the industry. He was also our keynote speaker at the 2006 national meeting.

Please enjoy your spring. I hope to see you at one of our upcoming meetings.



Spring is full of surprises, especially in our gardens where nature's wonders anxiously burst forth shouting, "Here I am again. I made it through the tough times." Those of you who have endured the drastic swings in temperature of the winter of 2007 may feel ready to express yourselves in a similar fashion. By the time you receive this issue, I hope that spring has brought you surprises of a more positive nature.

Spring is also a time when we start thinking about new looks, maybe for our homes or our gardens, even for ourselves. The ACS board of directors voted in January to give the *Conifer Quarterly* a new look inside its covers. Starting with this issue, all issues will be in full color. Thank you Board of Directors for your continued *volunteer* efforts to bring quality services and added value to the membership.

Our Reader's Choice theme for this issue invited some new contributors into the *Quarterly* as well as drawing from some of our regular contributors. From across the pond, Daniel Luscombe sent us an excerpt from his and Penny Jones's journal that chronicles a training and wild collecting project in conjunction with the Royal Botanic Gardens Edinburgh.

While not on a wild collecting project when her discovery was made last summer in the Austrian province of Styria, Rebecca Proefrock tells us about a unique use for conifers (and another one she learned when she returned home). Some of you may wish that these conifer concoctions had been available to you during this past winter. This

proves that conifers are not only beautiful in the garden but useful inside too.

Some of our newer members have requested information to help them learn more about conifers. Our vice president, Ellen Kelley, responded to their call with an article illustrating the importance of understanding what's in a conifer's name.

Don Howse elicited further comment with his article "Changing Genes..." in the winter issue of *CQ*. In this one, Glenn Herold, a professor of Horticulture at Illinois Central College and regular *CQ* contributor, responds with an article about how new plants originate.

Dr. David Creech, a Regent's Professor of Horticulture at Stephen F. Austin State University, directs the SFA Mast Arboretum and various gardens on the university campus in Nacogdoches, Texas. Part one of his two-part article on *Taxodium* studies at the Arboretum begins on page 7 and will continue in the summer issue.

We begin a column, "People, Plants and Places" with this issue. Many of you travel in search of gardens, parks, plants and people you've heard about. We invite your articles and/or suggestions for articles for this new column about noteworthy people, plants or places that you would like to point out to other readers. Joan Kutcher's article about Mountain Top Arboretum brings attention to an interesting arboretum in the Catskill Mountain area of New York State.

This new column will also be an opportunity for our regions to inform

ACS members of significant subjects within their area. ACS director, Gerald Kral, did just that by soliciting an article for this issue from Karen and George Hanford who will so generously open their garden for the ACS NE Regional meeting in September. It looks like a great place to visit - one you won't want to miss. If you can't make the meeting, the garden is open to ACS members by appointment only.

Last but not least, the Western Region provides highlights about the exciting ACS National Meeting which they will host July 26-29 in South Seattle and the post tour that will follow.

All venues promise to be spectacular. Hope to see you there.



Evelyn

Next Issue: Summer 2007 – Highway Treasures

Have you ever seen a really cool plant on the side of a road or perhaps out in a field? Maybe you've spotted something quite unusual looking up high in a tree. (Hmm... next hot conifer?) As lovers of plants, we all notice things about plants that others may not see. For example, longtime ACS member Chub Harper recently mentioned sighting a large witches' broom in a white pine (*Pinus strobus*) at a rest stop on a recent trip down south. As the "broom" was thirty or so feet up, all he took was a picture. Much of the history of where plants were found and the lengths to which people have gone in collecting them reads like science fiction and is downright hilarious. What stories do you have? Share them with readers. If you have pictures to include, they will help tell your story.

Future issue themes:

- Unusual, Rare and Endangered Conifers
- *Cephalotaxus*
- Hidden Garden Gems
- *Sciadopitys*

We welcome news alerts about conifers or about our members. Contact Evelyn Cox to discuss your ideas.

Taxodium Studies at the SFA Mast Arboretum -Part One

Article & Photos by Dr. David Creech

Taxodium is a deciduous conifer in the family Cupressaceae, one of several genera in the family commonly known as cypresses. Once three separate species under the same genus *Taxodium*, current taxonomy places *Taxodium* as one species with three botanical varieties (Arnold and Denny 2006). To derive the current botanical conclusion on this genus, I consulted with Dr. Barney Lipscomb of BRIT (Botanical Research Institute of Texas) and Dr. Mike Arnold, Texas A&M University, College Station, Texas.

Taxodium distichum (L.) Rich.var.
distichum (Baldcypress)

Taxodium distichum var.
imbricarium (Nutt.) Croom
(Pondcypress)

Taxodium distichum var.
mucronatum (Ten.) A. Henry
(Montezuma cypress)

Previous literature is somewhat confusing taxonomically and often refers to three species: 1) *Taxodium distichum* (baldcypress), *T. ascendens* (pondcypress), and *T. mucronatum* (Montezuma cypress). For the purpose of brevity in this article, baldcypress, pondcypress, and Montezuma cypress will be referred to as BC, PC, and MC, respectively.

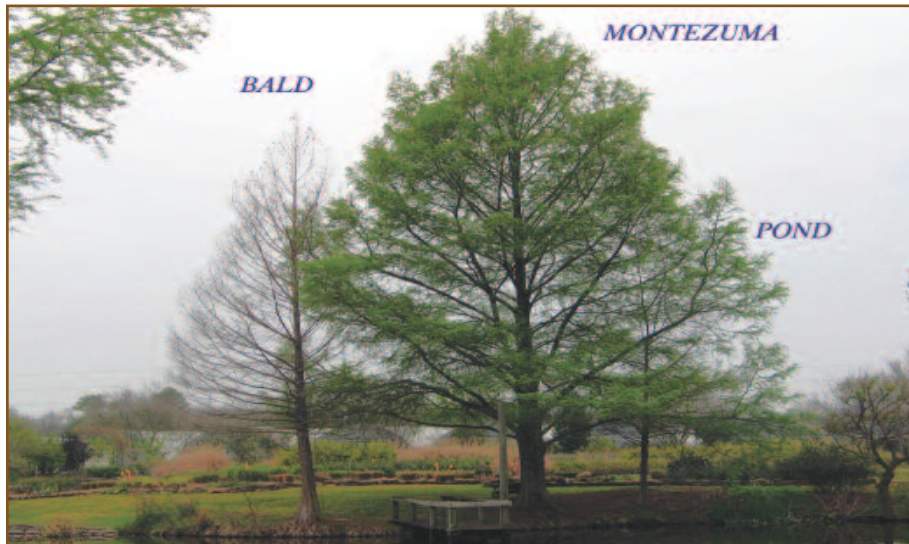


Image of bald, Montezuma and pondcypress at Research Farms, Houston, Texas
– illustrates the growth rate and foliage differences

BALDCYPRESS: Baldcypress (BC) is native to much of the southeastern United States, from Delaware to Texas and inland up the Mississippi River to southern Indiana. It occurs mainly along rivers with silt-rich flood deposits. BC is a durable, long-lived deciduous conifer particularly well-adapted to wetland habitats (Cox 1988). While superior clones have been available for years, they have rarely captured a large portion of the baldcypress market. Most plants sold by nurseries are seedlings and there is considerable diversity in form, shape and salt tolerance. As you might expect by its wide range, BC has the most cultivars, some easier to find than others. The SFA Mast Arboretum in Nacogdoches, Texas is home to ‘Apache Chief’, ‘Fastigiata’, ‘Monarch of Illinois’, ‘Pendens’, ‘Secret’, ‘Shawnee Brave’, ‘Peve

Minaret’, ‘Contorta’, ‘Cascade Falls’ and others. ‘Cascade Falls’ is an exciting, strongly weeping baldcypress found by Cedar Lodge Nursery in New Zealand and released via Monrovia Nursery as a patented plant. At SFA, we have several

The SFA Mast Arboretum in Nacogdoches, Texas is home to ‘Apache Chief’, ‘Fastigiata’, ‘Monarch of Illinois’, ‘Pendens’, ‘Secret’, ‘Shawnee Brave’, ‘Peve Minaret’, ‘Contorta’, ‘Cascade Falls’ and others.

other weeping BC, one a mildly weeping baldcypress received from Yadkinville Nursery in North Carolina, which is certainly less weeping than ‘Cascade Falls,’ but more dramatic than the common



Baldcypress at Mercer Arboretum, Houston, Texas

'Pendens.' In addition, the SFA Mast Arboretum is home to a good number of seedling trees representing a wide range of provenances from across the southern USA. Superior clones are usually grafted but cutting propagation, while a bit difficult, can be successful with vigorous shoots as the cutting source – particularly if the clone is young. According to Larry Hatch's extensive list <http://www.raretrees.org/taxodium.html>, there are over 45 cultivars of *Taxodium* including clones that are pendulous, contorted, dwarf, salt tolerant, of good form, superior foliage color, etc. Many are not readily available or are lost to the garden world.

CENTRAL AND WEST TEXAS TAXODIUMS: It's obvious that BC in the western reaches of its range is more salt

and alkalinity tolerant, and is less prone to push knees than its more eastern types. Eastern genotypes of *Taxodium* planted in San Antonio often turn yellow (chlorotic), and can fail to survive. Some botanists and horticulturists are convinced that the central to west Texas taxodiums are perhaps commingled with MC and represent transitional genetics. Some enthusiasts believe that they are so special they should be *Taxodium texana*. Once again, not being a botanist, I can only observe that dialogue from afar. I'm convinced, having seen them up close that, yes, they are different and interesting. Forrest Mimms from San Marcos, Texas deserves kudos for documenting the amazing diversity of the Guadalupe taxodiums in terms of bark, cones, seed, knees and other characteristics.



Pondcypress recently found on the property of Shangri La Botanical Gardens in Orange, Texas

POND Cypress: Pondcypress (PC) occurs in the southern portion of the range of BC and only on the southeastern coastal plain from North Carolina into Louisiana, and to our observation, perhaps into southeast Texas. It occurs in still blackwater rivers, ponds, bayous and swamps, usually without silt-rich flood deposits. PC is relatively easy to distinguish via the nature of its feathery foliage that is ascendant, rather than more splayed and flat as in BC, but this may not always be consistent. Hardin was first to speculate on the nature of intermediates where BC and PC ranges overlap (Hardin 1983). There are several cultivars of PC. 'Nutans' is possibly a misnomer and represents the standard type. 'Prairie Sentinel' is a well-recognized clone and makes a striking tree when well grown. Landscapers often use PC as a specimen particularly when moist soil conditions exist – and a smaller stature is desired.

MONTEZUMA CYPRESS: Less well known, Montezuma Cypress (MC) is native to Mexico, the tip of South Texas and is also found in a few remnant populations in New Mexico. MC differs from BC and PC in being substantially evergreen, producing smaller seed, never producing distinct knees, and generally being more salt and alkaline tolerant. It is less likely to survive extended periods of flooding. Where adapted, usually in Zones 8 and 9, MC has a much faster growth rate than BC and PC. MC forces new growth early in the spring, continues to grow late into the fall, and tolerates high-salt and alkaline soils better. There are hardiness questions with winter damage a problem, particularly with trees derived from lowland, tropical Mexico

genotypes. These may fail in Zones 7 and lower in the U.S. We feel this is a seed source provenance problem and MC can be grown much further north if the proper genotypes are selected as seed sources. There are a couple of genotypes from New Mexico that show great promise for the northern edge of southern landscapes. These highly disjunct populations can be found near Las Cruces and are reported to have endured -25°F. The stewardship of Michael Melendez and Jeff Anderson must be given kudos for scattering and saving this rare cold-hardy genotype. While the SFA Mast Arboretum has given away thousands of plants to cooperating nurseries and more than a few friends, we have also just made our first selections from a block of 988 seedlings, first year selections based on central leader form and fall foliage color. Twenty selections will be grown on for cutting propagation later if the clones look promising. Selecting superior MC is not exactly a road to glory. I know the arguments. MC is not usually considered a superior landscape tree – it often fails to form a strong central leader and can develop a somewhat wild and unbalanced form. Landscapers in Texas and Louisiana often report that MC “fails to grow old gracefully”. However, there are many exceptions to this rule and MC can be quite balanced, uniform and impressive and it can do it quick. There's something special about a tree that can become so enormous and live to be so old. In fact, a MC near Oaxaca, Mexico, the famous 2500 year-old “*Arbole de Tule*”, flaunts a trunk over 50' in diameter and is often referred to as the world's largest tree.

Nurserymen rarely grow MC and

there are only a few varieties found here and there. Paul Cox of the San Antonio Botanical Garden has introduced ‘Sentido’ (Spanish for crying), which is modestly weeping and a beautiful tree. Cedar Lodge Nursery in New Zealand has a form they have named ‘McClaren Falls,’ a mounding weeper of unknown proportions at maturity. Unfortunately, five grafted plants of that variety failed to survive for us at SFA in spite of good horticulture. I have no idea why. At the SFA Mast Arboretum, we have several MC specimens worth noting. One particular tree, first planted in 1988, survived the hard December freeze of 1989 (0° F) with little to no damage. We also have observed that MC can withstand droughts of considerable magnitude once they are well established. The SFA Montezuma cypresses have lost their

foliage in summer droughts several times, but each time they quickly pushed a new cloak of green when rains or irrigation finally arrived. Vigorous trees often keep their foliage through most of the winter.

IN PART TWO:

In part two, we will describe some of the *Taxodium* improvement strategies in the USA and China, basically long-term projects to select special plants that combine the positive characteristics of superior parents.

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About the author: Dr. David Creech is a Regent’s Professor of Horticulture, Stephen F. Austin State University and directs the SFA Mast Arboretum, Pineywoods Native Plant Center, and Ruby M. Mize Azalea Garden, 60 acres of on-campus gardens with a mission to promote smart plans and plants for the 21st century.

The SFA Mast Arboretum is located on the campus of Stephen F. Austin State University in Nacogdoches, Texas, USA. Center of the Pineywoods region of Eastern Texas; USDA Hardiness Zone 8; annual rainfall 48”; summers are often hot and dry, winter and spring usually wet and cool with temperatures normally falling into the teens only occasionally during the worst of the winter. Land is gently rolling and soils generally leaning to the acid side. Late spring frosts normally end around mid-March, with first freezes in the fall mid to late November.



“Arbole de Tule” near Oaxaca, Mexico

Publication Dates

Issue	Calendar Quarter	Deadline to submit articles	Publication Date (approx. mailing)
Winter	Jan/Feb/Mar	Nov 12	Jan 15
Spring	Apr/May/Jun	Feb 11	Apr 16
Summer	Jul/Aug/Sept	May 13	July 16
Fall	Oct/Nov/Dec 31	Aug 12	Oct 15

Submit articles/photos to:

Evelyn Cox, *Conifer Quarterly* Editor
 342 North Main St, Suite 202, Alpharetta, GA 30004
 PH (770) 663-7576
 E-mail: ConiferQuarterly@bellsouth.net

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Where Do New Plants Come From?

by Glenn Herold

Editor's Note: Don Howse invited additional comment in his article, "Changing Genes—Brooms, Sports, and Other Mutations" beginning on page 38 in our Winter 2007 issue. Here is Glenn Herold's follow-up. Both Don and Glenn are regular contributors.

Plants new to the horticulture industry originate either from seedlings that have been selected out, from mutations on existing plants, or from cultivariants. Though new species continue to be found and introduced, this is a rare occurrence. Today, the plants introduced into the industry are more likely to come from differences within a plant population, rather than from a new population. There are very few places on earth, especially in the temperate world, which have not yet been combed for new plants. The challenge now is to search the existing populations for the unusual.

Variations in seedlings may either be as a chance occurrence, selected from a specific parent, or produced through controlled pollination. An example of a chance occurrence is *Pseudotsuga menziesii* 'Wycoff's Big Blue' Douglas fir, selected by Hugh Wycoff for its foliage color from thousands of seedlings grown on a Christmas tree farm. Attributed to the same discoverer is 'Wycoff's Dwarf' - a diminutive Douglas fir that also originated as a seedling. Seedling mutations are occasionally discovered in nurseries, but are usually found in the wild by people with a keen eye, such as Hugh Wycoff.

Seedlings selected from specific parents have also been introduced.

Dr. Sidney Waxman, who did his work at the University of Connecticut, evaluated and selected many plants derived from the cones of witches' brooms. An example is *Pinus strobus* 'Sea Urchin' white pine, a tight dwarf form with bluish needle color. Iseli Nursery in Oregon has also done extensive work with seedlings of dwarf conifers. In 1986 they collected and sowed seed from *Chamaecyparis obtusa* 'Nana Gracilis' with the goal of finding a dwarf blue seedling of the species. Over 50,000 seedlings were grown from this crop, but no blue one was found. However, a tremendous variety of sizes and colors did emerge, ranging from large trees to miniatures and with foliage in various shades of green and yellow. Some of the original plants are still under evaluation, and may be named and introduced in the future.

Other seed grown plants are produced through controlled pollination. This method is common in the forestry industry, where they are constantly in search of larger, faster growing, and more uniform trees. Many of these are considered hybrids, where two parents with known desirable characteristics are crossed in an attempt to display both of these qualities in their progeny.

A cultivariant is a plant that displays a certain growth habit based on the

position of the propagule on the mother plant. In other words, a cutting taken from a side branch of a pyramidal plant will tend to form a spreading plant. This tendency to grow in the same direction is called topophysis. Though its form is different than the mother plant, it remains genetically identical, and thus is a clone. Numerous species exhibit this phenomenon, including yews, spruces, and firs.

Seedling mutations are occasionally discovered in nurseries, but are usually found in the wild by people with a keen eye, such as Hugh Wycoff.

Mutations are accidents of nature. The dictionary defines a mutation as a heritable alteration of the genes or chromosomes of an organism. So two things must occur - the genes must be altered, and that change must be passed on to succeeding generations. Essentially, a mistake occurs in the cell replication process, resulting in a recombination of genes. Most of these mistakes will never have outward expression, but a few make themselves known in various ways. One of these ways is as a witches' broom, where the growth rate of one part of a plant is significantly slower than the normal rate, resulting in an area of dense growth. The phrase witches' broom originates from the German word *hexenbesen*, which means to bewitch (*hex*) a bundle of twigs (*besom*). In medieval times, sweeping brooms were made from bundles of twigs, and occurrences that could not be explained were blamed on witchcraft. The term *hexenbesen* came into use as a way to explain this

aberration in plant growth. Some still believe this.

It is not unheard of for a plant produced from a witches' broom to itself have a witches' broom. An example is *Picea abies* 'Little Gem', originating as a witches' broom on *Picea abies* 'Nidiformis', which itself was a broom on *Picea abies* (Norway spruce.) Other ways in which mutations may be expressed are: foliage color (*Picea orientalis* 'Skylands'); variegated foliage (*Chamaecyparis nootkatensis* 'Aureovariegata'); fixed juvenile foliage (*Chamaecyparis pisifera* 'Boulevard'); or a change in growth habit (*Pinus strobus* 'Pendula' or *Pinus strobus* 'Fastigiata'). It is these changes that provide the different shapes, colors, and sizes that give conifers their multi-season interest. Because of the different gene combinations possible in the plant genome, the number of possible variations in conifers is infinite.

Seedling variations are often favored by plantmen because they tend to be more genetically stable than bud sports or mutations. For over 20 years Dr. Waxman collected seeds from witches' brooms and grew seedlings from them. He discovered a high percentage of compact and dwarf forms among them and selected several to be named and introduced into the nursery industry. He discovered that almost 100% of the reproductive structures produced by witches' brooms are female. To produce viable seed, they must be pollinated, and the pollen is likely to come from a normal plant. Any seedling population will show variations in color, rate of growth, or growth habit. Whether in plants or animals, this variation is



This pathogenic witches' broom has succumbed to the fungal attack.

Photo Credit: Anita Gould

normal, but the progeny is usually similar to one or both parents. With one parent being dwarf and the other of normal size, however, one could expect a tremendous variety of progeny, and that is exactly what he found. Others have replicated Dr. Waxman's work and found the same to be true.

Pathogenic vs. Genetic Witches' Brooms

So far, we have talked about witches' brooms as being caused by mutations, but there are also a considerable number of witches' brooms caused by pathogens. Pathogenic brooms are found on sycamore, honeysuckle, hackberry, spruces, and many other plants. They may be caused by fungi, mites, aphids, viruses, or other pathogens. Plants propagated from this material do not retain their dwarf characteristics, but rather revert back to their normal growth habit when freed of the pathogen. Though of horticultural interest, they do not result in new clones. There is no change in the genetic material of the plant. One way to diagnose a witches' broom as being pathogenic is to note the frequency of brooms on trees of like species in the area. If the brooms are a common occurrence, it is likely to be pathogenic, for the discovery of more than one genetic broom in an area is rare.

Witches' brooms can form anywhere on a tree, from the very tip to close to the ground. They may be very small, discernable only to the trained eye, or dominate the tree. Occasionally, more than one genetic broom will form in a tree, but this is a rare find. Though it usually does not adversely affect the health of the tree, sometimes it can lead to tree



This spruce in Alaska has a mutagenic broom both at the top and near the middle of the tree.

Photo Credit: Anita Gould

decline. Perhaps a large broom diverts energy away from the rest of the tree causing it to suffer from poor vigor over time. This may, in turn, make it open to more opportunistic pathogens to invade the tree.

Plants propagated from witches' brooms may suffer a similar fate. For example, *Pinus sylvestris* 'Riverside Gem' develops into a dense, upright plant with a tight eight-foot conical habit. However, it rarely lives beyond 20 years.

Witches' brooms can form anywhere on a tree, from the very tip to close to the bottom.

One year it will be attractive and healthy,

the next year it will be dead. Some broom hunters ("broomers") have found this to be true of brooms on the tree as well.

One explanation for the cause of witches' brooms lies in the hormone levels in the broom. The plant hormone cytokinin is found at a higher than normal level in witches' brooms. This hormone stimulates cell division and tends not to travel freely throughout the plant. On the other hand, gibberellins are present at reduced levels. This hormone is responsible for shoot elongation. Thus, the combination of the two encourages cell division, but discourages shoot elongation.

Broomers have their favorite hunting grounds. Brooms have been found in deserted woodlands, city streets, and rural roadsides. But most will tell you that their favorite place to look for brooms is in a cemetery. Some explain this by stating that solar reflection off of the monuments causes genetic mistakes in the dividing buds. Others simply state that the trees in cemeteries tend to be older, larger, and in an open space, making the broom easier to spot. No doubt those of medieval times have a different explanation. You decide for yourself.

Causes of Mutations

One thing that is agreed upon is that witches' brooms result from mutations. What is not proven is the cause of the mutations. One probable cause is stress, both pathological and environmental. Environmental stresses that injure the growing points of branches can also trigger the formation of brooms. An environmental stress that is thought to be important in broom formation is

radiation. Radiation is around us at all times and may have an adverse effect on the process of cell division. Some broomers surmise that radiation is a major factor, for they tend to find a lot of brooms beneath power lines. If the radiation damages the division process at the right place and time, a mutation will result. The extent of the damage determines the expression of the mutation.

A basic property of genetic material is the ability to exhibit variation over time. This is necessary to explain why individuals within a population are not all genetically identical. It can be both good and bad. Variation within a population is good. It allows a population to adapt to stresses and pressures that are placed upon it. The housefly survived DDT because of a mutant gene that gave it resistance to the pesticide. Douglas fir (*Pseudotsuga menziesii*) has two distinct geographic varieties. The Coastal variety (var. *menziesii*) is a zone 6 plant and typically has a yellow-green foliage color. The Rocky Mountain strain (var. *glauca*) usually has a bluish-green foliage color and is hardy to zone 4. Thus, one of the populations has genes that result in greater cold hardiness. While favorable to the survivability of a population, most mutations reduce the fitness level of an individual. So mutations are good for the population, but generally are deleterious for the individual.

Some mutations occur in regular body cells. These are known as somatic mutations. They are expressed only on the individual in which they occur. In plants, they may be expressed by a branch having a different growth rate, foliage type, or color. A slower growth rate or yellow color may eventually be

swallowed up by the rest of the plant because of its reduced vigor, but if the mutant part is asexually propagated, it will result in a plant with different characteristics.

Other mutations occur in the cells that produce the gametes, or sex cells. These are known as gametic mutations. In most cases, such mutations will not even be noticed by the individual, but they will be passed on to the next generation. They may remain as recessive genes forever or expressed in the next generation. It all depends on the gene combinations.

Mutations may be spontaneous, occurring during the process of DNA replication, or induced through chemicals or radiation. The rate of spontaneous mutation varies with the organism. Those causing visible phenotypic variation have been measured to be in the range of 10^{-5} to 10^{-6} per gamete per generation in corn. In other words, a visible mutation occurs 1 in every 100,000 to 1 in every 1,000,000 times that cell division takes place. This may not seem like a lot, but when you add up the number of buds on a tree and the number of trees in a population, the frequency is significant.

Induced mutations are caused by materials called mutagens. Colchicine is sometimes applied to seedling populations of hostas in an attempt to induce tetraploidy. Seed lots of American elms and American chestnuts have been treated with gamma rays, X-rays, and ultraviolet rays in an attempt (unsuccessfully) to produce seedlings resistant to Dutch elm disease and chestnut blight, respectively. One cannot tell whether a mutation is spontaneous or induced, for the effect is the same. The process of mu-

tation is also random. They do not automatically occur in response to a stimulus. Reverse mutations can also occur. If a mutation occurs once in a gene, there is a very small probability that the mutated gene could mutate back to its original form. We sometimes see this expressed in dwarf Alberta spruce (*Picea glauca* 'Conica'), where a branch grows with the vigor of a typical white spruce.

Mutations can affect individuals in a variety of ways. Among them are: a change in a morphological trait; nutritional or biochemical variation; a change in behavior (in animals - no one has yet demonstrated behavioral traits in plants!); or they may be lethal. It is the morphological differences that have been exploited, though nutritional variation might be important if it could be easily identified. An example of a lethal mutation is when the change prevents the expression of chlorophyll in a plant. If that change were to be asexually propagated, the plant would essentially starve to death.

There are two basic types of mutations – base substitutions and frameshift mutations. A base substitution involves the substitution of one base (adenine, guanine, cytosine, or thymine) for another. A frameshift mutation is the addition or subtraction of a nucleotide from a DNA chain. To illustrate, consider the following phrase, read as a triplet code like the genetic code: The fat cat ate the big rat. A base substitution might look like this: The fan cat ate the big rat, or: The fat mat ate the big rat. The sentence is still readable, but the meaning has been changed.

An insertion, on the other hand, results in a more significant change: The

fan tca tat eth ebi gra t. Insertion of a single letter (the “n” in fat) causes the letters to shift and the genetic phrase to become unreadable. Likewise, a deletion will have a similar effect: The ftc ata tet heb igr at. Though both base substitutions and frameshift mutations are known as point mutations, because they occur at a single point on a chromosome, the effect is profoundly different.

Until we have a complete map of the genetic code of each organism, it is impossible to predict the effect of any given mutation. But it is the discovery of these changes that has made broom hunting challenging and exciting. And when one of these discoveries results in a desirable, unique plant, the discoverer is even more pleased. But when first discovered, the potential is not yet known. It's like the

birth of a daughter. The parents are proud and excited when they first set eyes on her, but they do not realize the fruits of her upbringing for 20 or 30 years. Like raising a child, plant parenthood requires patience.

About the author: Glenn Herold is Professor of Horticulture at Illinois Central College in East Peoria. He is also curator of the Illinois Central College Arboretum which he founded in 1980. In addition to dwarf conifers, he is interested in woodland wildflowers, small maples and hostas. He, and his wife Terry, are members of ACS. He has served as vice president of the central region and is a past president of the Central Illinois Hosta Society.

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tions and makes its recommendation to the ACS Board of Directors at the annual summer meeting. Announcements of the award recipient will be made by August 1, 2007.

Modern Plant Hunters

by Penny Jones and Daniel Luscombe



Nezahat Gokyigit Botanic Bahcesi (botanic gardens)

We were invited to join the Royal Botanic Gardens Edinburgh (RBGE) on a training and collecting project in Turkey in 2005. The work being undertaken is part of a RBGE/UK Darwin Initiative project advising the Nezahat Göküygüt Botanic Gardens in Istanbul on collecting seed, propagating plants, preparing, mounting and storing herbarium samples and record keeping.

September 20-Arriving in Asia

We met at the airport in Istanbul, drove through Istanbul and crossed the Bosphorus, indicating that we were in Asia.

September 21-Nezahat Gokyigit Botanic Bahcesi

The Nezahat Gokyigit Botanic Bahcesi (botanic gardens) must be one of the most unique botanic gardens anywhere in the world; completely surrounded by motorways and high rise blocks of flats. Each different section of the garden can either be reached by risking life and limb crossing the road or by the safer, and more unusual, route of walking through the flood drains. Mr. Nihat Gokyigit established the garden in 1995 as a way of providing the city with “green lungs” and it is named in memory of his late wife. The whole site is about 50ha. (123 acres)

“The intricate detail of creative design – That’s why I love the conifers.”

Edward Remsrola



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which provides locals with an opportunity for education and recreation, amongst some amazing flora.

September 22-The Long Drive

Five a.m.! We left Istanbul to drive to the Black Sea town of Trabzon. The roads through Istanbul were thankfully quiet and after 22 hours on the road, we eventually reached a hotel just west of Trabzon at 2 a.m.!

September 23-South toward the Mountains

The road south snaked alongside cultivated tea plantations and then into a very steep, high sided, gorge full of natural forest. One of the main goals of the trip was to collect autumn flower bulbs and we were really pleased to see carpets of beautiful *Colchicum speciosum* in grassy clearings alongside the road. Some of these were collected as herbarium specimens and others were carefully dug up for planting in the Istanbul garden.

September 24-Summer Pastures

We followed a winding, twisting road through deep gorges until we reached and passed through the alpine village of Golyayla at 2407m (7,897 feet). Yayla means summer pasture. There are many wooden chalet style buildings hugging the mountainside and local people move their livestock up for rich alpine-grazing from June to August.

It was a hot sunny day and Sabina Knees from the Royal Botanic Gardens in Edinburgh and Basak Guner from Nezahat Gokyigit Botanik Bahcesi were busy pressing collections made earlier in the day before the material wilted in the heat. The kettle was on and our picnic lunch was about to be started when a mini-bus arrived alongside and out stepped six Jandarma with rifles/shotguns who questioned our motives for being there. Basak explained the situation and they left satisfied but with instructions that she and the driver report to the local barracks on the return journey.



Roadside Sorting

Most alarming, but they are aware of the diversity of flora and do their utmost to prevent theft

September 25-In Search of *Rhododendron caucasicum*

As we made our way along the road to Artvin the sight of a new hydro dam construction greeted us. This is one of three such dams being built in the area. The next day we explored the area around Artvin, rich in native temperate forest. The bus snaked its way around the side of the mountain towards the forest. From this height the view was spectacular. Our idea was to follow the valley up through the forest and try and get above the tree line to collect *Rhododendrons*. On the third day, still hopeful of collecting some of the *Rhododendron* species, we headed for Damar to pick up our guide. On the way up we came across a single plant of *Rhododendron smirnovii* in full flower. It was less than a metre (3.3 feet) high and at the bottom of its altitudinal range. It was growing with *R. ponticum* and *R. luteum*. Another bonus was that it also had seed, which we collected.

Our aim was to drive as high as we could then walk to above 2000m (6,562 feet) to collect *Rhododendron caucasicum*. The first part of the walk along a logging road was quite steep and trees were few and far between. After 20 minutes or so we reached older forest that hadn't been cut too recently and there were good-sized *Picea orientalis*, *Acer platanoides* and *Fagus orientalis*. The locals were in the process of creating a track around the mountainside so tourists could walk up to one of the lakes. We followed this track until it ended, then scrambled the rest of the way.

When we arrived above the tree line the area was covered with an amazing display of autumn colour from the *Vaccinium arctostaphylos* (covered in black berries), bright orange/red berries of *Sorbus aucuparia* set off against the various *Rhododendron* species and the elegant *Picea orientalis*. At 1830m (6,004 feet) we came across *Rhododendron luteum*, *Rhododendron ponticum*, a small patch of *Betula medwediewii* (with a rich golden autumn colour), and a white-stemmed species of *Betula*. This was possibly the best display of autumn colour imaginable. If you could recreate this in a garden it would be amazing.

On the fourth day, Basak thought we should try looking around the Ardahan Pass. We drove along a small track leading around the mountain where we could stop for lunch. As we rounded the corner we were greeted to more stunning displays of autumn colour mixed with huge stands of *Abies nordmanniana* and we became more hopeful. After a short hunt, the elusive *Rhododendron caucasicum* was discovered - covered with seed!

Unique Junipers October 2

Near the Morass Pass at 1437m (4,714 feet) the vegetation started to change again. The mountainsides were covered with *Juniperus excelsa*, *Juniperus foetidissima* and on the higher slopes *Abies cilicica* subsp. *cilicica*. This warranted a long overdue chance to stretch our legs and to do some more collecting. Penny collected *Acer monspessulanum* while the staff from the Botanic Gardens was busy collecting bulbs and Dan and Martin were seeking the *Abies*. Seed and herbarium collections were made and the



Juniperus drupacea white cones

artists were busy sorting out the best bits for illustrating that evening at our Maras base.

October 3

Only a short drive out of Maras, as we gained height, the *Pinus brutia* thinned out and was replaced by amazing juniper species. Further up the mountain we spotted a tall upright *Juniperus* with huge silver cones on it.

When we stopped we found it was *Juniperus drupacea*. This is the most unique of any *Juniperus* because of the huge cones up to 24cm (9.5 inches) across. The whole area was covered with old *Juniperus*, probably the nearest to what you could call a forest, but *Juniperus drupacea* seemed to be quite rare, as only a few plants were seen compared to *Juniperus excelsa* and *Juniperus foetidissima* which were plentiful. We were also fortunate to collect the rare endemic *Helleborus vesicaria*, easily identified by

the huge bladder-like seed heads.

October 6-Conserving Cedars

Near the town of Ermenek we were suddenly faced with a small stand of blue *Cedrus libani* subsp. *stenocoma*. As we had been on the minibus for most of the day, this was an opportune moment to stretch our legs. The area around the stand had been previously fenced off. This was now inadequate as many seedlings were there but no plants between seedling and mature were present.

There were, however, a few *Quercus trojana* growing amongst the rocks as shrubs, with heavily grazed *Berberis* sp. and a few hundred *Cyclamen cicilicum*. It would be so easy to preserve this bit of forest cheaply by fencing the stands and paying one of the locals to maintain them. If something isn't done soon then these few remaining cedars will disappear.

Identifying First October 9

A local tour guide accompanied us into the National Forest to see the rare *Abies nordmanniana* subsp. *equi-trojani*. It has to be said that they looked very similar to the *Abies nordmanniana* subsp. *nordmanniana* (and as we would find out later on Mt Uludag, the taxonomic differences between *Abies* subsp. *bornmuelleriana* and *equi-trojani* are minor if any differences exist at all. We await the results of Sabina's studies with interest).

October 10

We set off early to travel up to the ski-centre perched high on Mount Uludag near Bursa. First specimens collected were *Pinus nigra* subsp. *pallasiana* and *Abies nordmanniana* subsp. *bornmuelleriana*. As we climbed higher up the mountain, the mix of *Abies* and *Fagus*

orientalis was stunning. At the top, 2543m (8343 feet), the tree-line gave way to low growing woody specimens dominated by *Juniperus communis* var. *communis* from which seed was collected. Other collections made that day were *Crataegus laciniata* (syn. *C. orientalis*) spotted on the roadside as we descended the mountain.

Accessioning Plants October 12

Our last two days in ISTANBUL were spent accessioning plants, cleaning seed and dividing the sum-total of the collections between the three participating organisations. It was incredibly satisfying to view all the collections laid out on two tables – in total over 200 plants were collected. These days were also a time to get our hands dirty as we helped teach the staff in the garden about different propa-



Cedrus libani subsp. *stenocoma*



Abies nordmanniana subsp. *bornmuelleriana* at Uludag in mixed forest

gation techniques. First though all of the seed needed cleaning. With the *Abies*, this involved breaking the cones apart and getting covered in resin; with the broad-leaved species, this meant squashing the fruits up in water and removing the seed. All in all it was great fun and everyone learned new things.

THE TEAM

From Nezahat Gokyigit Botanik Bahcesi: Basak Güner, Seçgül Çelik, Belgin Kusoglu, Banu Altinay, Ali Çelik, Isik Güner, Gülnur Eksi
 From Royal Botanic Gardens Edinburgh: Sabina Knees, Martin Gardner
 From National Arboreta: Penny Jones (Westonbirt), Daniel Luscombe (Bedgebury)

ACKNOWLEDGEMENTS

We would like to take this opportunity to thank Royal Botanic Gardens Edinburgh for their enthusiasm, inspiration, patience and good humour; the Nezahat Gohyigit Botanik Bahcesi for their kind hospitality, generosity and friendliness; the Friends of Bedgebury and Westonbirt for funding the trip; and the Forestry Commission for their support. The full report is available on www.fowa.org.uk
 For more on the Darwin Initiative visit www.darwin.gov.uk



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What's in a Name?

by Ellen Kelley

“*What's in a name?*” Poor Juliet! Her poignant lament questions the importance of the names that threaten to keep her and her lover Romeo apart. But for a gardener, “a rose by any other name...” could be a dandelion, a daisy, a lily – or just about anything else.

Yes, names are important, especially in the world of horticulture. Unfortunately, most people shy away from learning and using botanical names for plants. Botanical names are intimidating because they are mostly in Latin, not only a foreign, but also a dead language. They often appear hard to pronounce. They may be hard to remember.

Common names, on the other hand, are user-friendly, and may be very descriptive of the plant, its history or its uses. Cardinal flower, naked ladies, pussytoes, and lungwort all bring to mind very specific plants.

So what's the problem with using the common names? Let us count the ways: 1) common names can be confusing and inaccurate; 2) many different names may have been assigned to the same plant, or conversely, some plants have no common name; 3) common names are of no use in identification; 4) usually the use of a common name is restricted to a given region or language, but a valid scientific name is valid world-wide, regardless of language or politics. For example, *Carpinus caroliniana* is variously known as American hornbeam, blue beech, musclewood, water beech and ironwood. The botanical

name for a plant often called “eastern red cedar” tells us it is not a cedar at all, but *Juniperus virginiana*.

To paraphrase T. S. Eliot's “The Naming of Cats,”

“The naming of *Plants* is a difficult matter,
 It isn't just one of your holiday games;
 At first you may think I'm mad as a hatter
 When I tell you a plant may have
 THREE DIFFERENT NAMES.”

The human mind craves organization for all of the information it is expected to retain. Thus it was that 18th century Swedish botanist Linnaeus devised a system of classification that is the basis for the system used today. The parts of that classification system that we as gardeners are most concerned with are the **genus** (plural – genera), the **species**, the **variety** and the **cultivar**.

A **genus** is a related group of plants consisting of one or more species that share some characteristics, such as leaves and seeds. For example, most members of the genus *Acer* (maple) have palmate leaves and winged seeds. The name of the genus is always capitalized and italicized.

Members of the same **species** share a greater number of characteristics. **Species** within a genus, however, may vary greatly from one another in form,

size, color, hardiness, or cultural needs. The species name follows the genus name and is also italicized, but not capitalized. Thus a Colorado spruce (common name) is *Picea* (genus) *pungens* (species).

The name of a **variety** is italicized and is often preceded by the abbreviation var. which is not italicized. A variety is a naturally occurring species that has some distinct feature that separates it from another variety. Varieties are normally genetically stable and therefore generally breed true from seed. An example is *Pinus contorta* var. *latifolia*.

A **cultivar** is a natural mutation that exists in the trade because someone has chosen to propagate it, usually by either tissue culture or cuttings. Seeds from a cultivar are seldom true to the form. If a plant is a cultivar (the short name for cultivated variety), the cultivar name will follow the species name, will be capitalized but not italicized, and enclosed in single quotation marks. For example, *Picea pungens* 'Fat Albert'.

A **hybrid** can come about as result of crossing 2 distinct *genera*, as in the case of X *Cupressocyparis leylandii*, which is an intergeneric cross between the genus *Cupressus* and *Chamaecyparis*. Note that the X appears in front of the genus to reflect that it is an intergeneric cross. The second form of **hybrid** is referred to as an intraspecific cross which results from the crossing of two (sometimes more) *species*, sometimes naturally, but often intentionally. *Pinus armandii* x *koraiensis* is an example of an intraspecific cross. Note that in this instance the x appears between the 2 species.

And what about pronunciation?

Many of the plant references include pronunciation guides. It just takes practice, and there are often alternative pronunciations. I say "clem'-a-tis," you say "cle-ma'-tis."

WIIFM – What's in it for me as a gardener if I learn the botanical names of plants? I will have an invaluable tool in knowing my plants, and in my ability to access good information about it. I think it's also an important part of the body of knowledge an educated gardener should master. As gardeners, we surely want to know exactly what we are getting when we add a plant to our landscape.

A rose by any other name might *not* smell as sweet.

About the author: Ellen Kelley is an Iowa State University Master Gardener, and an Iowa Community Tree Steward. She is a member of the Bettendorf Tree Board and Trees Are Us Committee, and was honored in 2002 as the Urban Forestry Volunteer of the Year for the state of Iowa. In 2003, she founded Partners in Horticulture which offers a Certificate in Home Horticulture, a 40-hour program focused on promoting sustainable landscapes. Ellen is national vice president/treasurer of the American Conifer Society. Thoroughly infected by Chub Harper with Conifer Addictive Syndrome, she and husband Jim have over 300 conifers in their home landscape.

In Memoriam

The American Conifer Society mourns the passing of Bill Janssen. In the words of long term member, Don Howse, "Bill was a fine conifer collector and good friend. He was a very talented man, with an artistic flare."

Don went on to say, "We both became acquainted when he came to visit at Iseli Nursery when I was working with Jean Iseli back in the early 1980's, or perhaps earlier in the 70's, looking at unusual conifers. He was at the time managing Oregon Bulb Farms which was located nearby, here in Sandy, Oregon. They were setting up a wholesale nursery, featuring unusual conifers and other woody plants."

Bill later moved to Vancouver, Washington and became the grounds manager for the Fort Vancouver Historical Site and VA Hospital administered cooperatively by the US Dept. of Interior, and the US Veterans Administration. He collected and planted on the grounds many unusual conifers. At the same time he was an avid collector of plants for himself.

He and Diana Reeck formed a partnership and eventually a marriage. They became known as Collector's Nursery and began their operation on land adjacent to his mother's home east of Vancouver. Later they moved their operation to its current site in Battle Ground, Washington.

They both had a keen interest in rare and unusual plants, with Bill focusing on the conifers and woody plants while Diana collected and grew herbaceous plants. They have been known for the past several years as one of the finest nurseries with rare plants in the country.

They traveled throughout the Pacific Northwest, from the Columbia River Gorge, through the Cascade Mountains,

and down to the Siskyou Mountains of southern Oregon botanizing and collecting plants. They have introduced many fine selections. In recent years Bill had an interest in collecting and introducing plants with significant variegations.

Among the conifers that Bill has introduced and named are:

Cedrus atlantica 'Sahara Ice'
Cedrus atlantica 'Sahara Frost'
Chamaecyparis obtusa 'Shogun Gold'
Chamaecyparis obtusa 'Star Spangled Banner'
Larix siberica 'Rasputin'
Picea abies 'Gold Strike'
Picea sitchensis 'Sugar Loaf'
Pinus cembra 'Ed Wood's'
Pinus strobus 'Pacific Sunrise'
Pinus sylvestris 'Cutty Sark'
Pinus sylvestris 'Inspire'
Pseudotsuga menziesii 'Salmon Creek'
Pseudotsuga menziesii 'Wind Surfer'
Tsuga heterophylla 'Avalanche'

Bill also had a keen interest in growing and introducing new hosta seedlings. He had several named forms which are collected and grown by hosta aficionados. Bill spent many hours researching information about the plants he grew and often offered interesting theories about the heritage of some plants. He propagated and produced fine copies of his introductions and other conifers from his collection. He was a good communicator with other collectors. If you ever visited their beautiful gardens, you would be amazed at the hand written tags with his very artistic script. He also did the artwork that could be seen in the Collector's Nursery catalog and on their website.

All who knew Bill or who were customers of Collector's Nursery will surely miss him.

Planting and Taking Care of your Collectors Conifer of the Year

by Gerald P. Kral & Elmer Dustman, Jr.

Know your plant. Consider cold hardiness, heat tolerance, drainage, light requirements, soil type, pH, and both growth rate and habit. The ACS brochures included with your plant contain good information. So does our web site. Conifer miniatures and slow-growing dwarfs may need special attention when choosing a site because of their small size and growth rates. Many conifer enthusiasts display their miniatures in troughs, dedicated raised beds, rock gardens or large pots.

UPON ARRIVAL:

Carefully unpack your plant removing all packing material. Water and place it a cool, airy and shady place. Gradually, over a few days, move the plant into the type of lighting in which it will be growing.

CHOOSING A SITE:

Most conifers require full sun – defined as at least 6 hours of direct sunlight. The nursery tag attached to your plant will tell you if your plant will benefit from any special light needs such as PM shade. Locate your planting site to meet these needs as closely as possible. Some conifers will do quite well in part shade (less than 6 hours of direct sun) but will still look better with more sun. Hemlock and yews will grow and look good in the filtered to full shade of deciduous trees if the root competition is not extreme.

Some gold or variegated conifers may need protection from direct sunlight especially in winter.

SOIL PREPARATION:

The ideal soil for most conifers is a well-drained, sandy, clay loam slightly on the acid side (pH 5.5–6.9). Good drainage is critical except for a few conifers. Be cautious of the soil around the foundation of your house. Plugged, damaged or inadequate gutters can create areas of poor drainage. Lime from the foundation can leach into the surrounding soil and make the soil alkaline (pH over 7.0). Add peat or sulfur to make sure the soil is acidic.

Sandy soils benefit from the addition of peat, aged compost or leaf mold. Avoid using organic amendments that aren't completely decomposed. Rapid decomposition of these materials in the soil can stress your plant. Clay soils are best handled using raised beds or berms and actually planting on top of the clay.

PLANTING:

Water your plant and set it aside. Dig a planting hole only a few inches wider and deeper than your plant's root ball. Fill the hole with water and let it drain. You need to provide better drainage if the water takes more than an hour to drain. Form a mound of soil in the bottom of the planting hole and firm it down using hand pressure. Gently remove your plant from its pot. Prune out any damaged roots or

roots that circle the root ball. Gently tease out any roots that have grown between the pot and the root ball. Make sure the plant's "root flare" is actually at the surface of the root ball. Set your plant on the mound and adjust the height of the mound until the "root flare" is one inch above the surrounding soil. Err on the high side. Half fill the planting hole using the exact same soil you removed in digging the hole. Fill the planting hole with water. Let it drain. This will settle the soil you have added. The object is to form as close a bond between the root ball's soil and your soil as possible. This process is the best way to do it. Finish filling the hole with soil and again fill the planting hole with water. Let it drain and then top off the slight depression left with loose soil.

POST PLANTING CARE:

Staking is not usually needed unless your plant is large or you wish to protect it from mowers, string trimmers and pets, or want to train the plant to grow higher if it is a weeping or prostrate form without a leader.

First year watering is critical. Do **NOT** let the root ball of your newly planted plant dry out. Until the roots of your plant have grown into the surrounding soil, your plant can often remove water from its growing medium faster than the surrounding soil can replace it. Be especially vigilant on hot, dry days the first year. Supplement natural rain to achieve at least an inch a week both the first and second year. By the third year your plant should be established enough to tolerate some drought stress. It is still a good idea to apply water during long periods without rain.

Mulching will set off your plant and make it look more attractive. It helps maintain soil moisture and keeps the root zone cooler. It can also insulate the soil in winter. A conifer-based mulch is best. It is already slightly acidic. It decomposes slowly and mimics the natural "duff" on the floor of a conifer forest. Aged pine bark mulch is especially good as it is already partly decomposed. Apply the mulch to a depth of 2-3 inches and make sure you do not let it contact the trunk or lower branches of your conifer.

FERTILIZATION:

Fertilization is not recommended as it can cause uncharacteristic growth. Slowly decomposing mulch will gradually fertilize your plant in a natural way. Recent evidence shows many plants respond to mycorrhizal soil inoculants at the time of planting with better rates of survival. This may also be true for conifers. Use broad-spectrum, mycorrhizal soil inoculants if you wish to try this.

PRUNING:

Pruning is usually not needed with miniature and dwarf conifers. Their slow and compact growth habits keep them in bounds for decades. *Tsuga* and *Taxus* can be pruned into whatever shape you desire as they carry extra buds on most of their stems and small branches. Some *Chamaecyparis*, however, are just a shell of foliage at the end of branches that carry no extra buds. Prune out a branch and you leave a gaping hole that may take years to fill in. When you think pruning is needed, it is best to consult a good reference on the topic.

Tight growing spruces and pines benefit from the removal of dead and lodged needles. You can gently comb the plant using your fingers or a small stick. This should be done yearly.

WINTER PROTECTION:

Newly planted conifers benefit from winter protection. Conifer needles lose water throughout the winter. This plus the fact that the plant may not have had a long enough time to grow lots of new roots can result in desiccation and browning of needles. The damage is at best cosmetic and at worst fatal. There are several things you can do.

Plant as early in the growing season as you can. Planting after the first of September is **NOT** recommended. Plants in containers after September are best "heeled-in" in a protected, well-drained site. Use plain soil and bury the pot to its top. Water well and to avoid attracting voles apply 2-3 inches of mulch only **after** the ground is frozen. Keep the mulch away from the trunk. Baiting your plant can also prevent vole damage. Just place the bait trap next to the trunk of your heeled-in plant.

Plants already in the ground all benefit from a late fall or early winter watering. Applying a foliar anti-desiccant can reduce water loss. Make sure you follow the label directions. It is also a good idea to water conifers in unfrozen soil during winter dry spells.

SPECIAL CARE FOR COLLECTOR'S CONIFERS OF THE YEAR (2007):

Picea orientalis "Tom Thumb" is a beautiful golden-needled plant and requires a special site. Full day sun will kill it. It tolerates shade but loses color. AM sun with

PM shade is recommended. Filtered sunlight or high shade with lots of indirect light suits it best. PM winter shade is essential. Protect your plant with a conifer branch or a shade fabric if it is not present. An Eastern site close to the base of a large rock, your house or a larger conifer will work. *Slight* scalding (10%) by summer sun may still occur. This is not bad and a good indicator of correct sun exposure for maximum color. This scalding will go away as the plant ages.

Picea omorika 'Pendula Bruns' benefits from an open site with good airflow. If you already grow *omorika* cultivars, use the same cultural practices for 'Pendula Bruns'.

Both cultivars are on *Picea abies* understock.



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Move Over Sun Tea: Conifers "Cooking" in My Window

Article & Photos by Rebecca Proefrock

While traveling through the province of Styria in Austria this past summer, I made a wonderful discovery; conifers are a must in the kitchen and the medicine cabinet! *Pinus cembra* (Swiss stone pine in the United States; Arve in Switzerland; Zirbe in Austria) is not only a lovely tree, but the sap from the green cones can also be used to make *cembra*-infused schnapps. The schnapps, while itself a delightful treat after hiking in the foothills of the Alps, is also used to make gourmet chocolate bars with *cembra* schnapps filling called Zirbentrüffel. Likewise, the sap from young *Larix decidua* (European larch) shoots makes an excellent cough syrup, and both the schnapps and the cough syrup can be made at home easily by placing the

various ingredients in a glass jar on a sunny window sill - next to one's sun tea.

The following recipe for *cembra*-infused schnapps was given to me by the owner of the Familie Thanner Gasthaus in Mariahof - an area known for its stands of *Pinus cembra*. The owner collects the cones from the 100+ year-old tree in her dooryard, and many of the items on the menu at the Gasthaus are flavored with them.

Take the young, green cones from a *Pinus cembra* tree and slice them from top to bottom. Put the sliced cones in a glass jar in at least 40% alcohol (50% is preferable), and place the jar in the sun for three weeks. If you wish to reduce the



Dark chocolate bars filled with *Pinus cembra* cream filling. *Larix*-cream bars are also available.

alcohol content to 38% or so (apparently a fairly common percentage in those parts of Austria), add “some sugar”.

Although the precise number of cones to quantity of alcohol was not disclosed, I’ve found that 2 cones per pint of 50% alcohol is sufficient. The resultant schnapps has a refreshing fragrance reminiscent of a pine forest - nothing like turpentine!



Styrian household “staples”?: *Larix decidua* shoots and *Pinus cembra* cone

My mother-in-law, Irene Grassl, is a former instructor of botany (now retired). When she saw my interest in the *Pinus cembra* recipe, she reminded our group of her recipe for conifer cough syrup – a recipe proven by many years of Grassl household use!

Editor’s note: We asked Rebecca what kind of alcohol to use and how long these would keep. This is her reply: “If the reader uses anything near 50% alcohol it will keep until h _ _ _ freezes over – especially if the reader strains the pine cone matter out well. Pure grain alcohol (usually sold at 98% - WOOF!!!) is sold at just about every liquor store, but one can use a good quality vodka and skip the need to cut the alcohol content. For example, I used a brand name 50%/100 proof vodka, and the results were very, very tasty and authentic to the original Styrian recipe.”

Cut several young larch shoots, keeping in mind the size of jar one plans on using. Layer the shoots at the bottom of the jar, and cover completely with a layer of sugar. Continue layering the shoots and sugar until the jar is full (it will settle), then place it in the sun for 6-8 weeks. It will gain a honey-like consistency. Take one spoonful in a cup of linden tea, hot water, milk, (whatever) three times a day.

Of course, these findings beg at least two questions: 1) who thought of using these cones and shoots in the first place, and 2) what other culinary conifer blessings are we missing?

About the author: Rebecca Proefrock has been an ACS member since about 1992, quietly gathering information and planting dwarf and intermediate conifers and Japanese maples wherever she goes. She is a Presbyterian pastor and commutes to Chicago from Green Bay where she is working on her doctorate in theology and ethics with an emphasis on the theology of nature (what else?).

2007 National Meeting East Meets West

South Seattle, Washington
July 26-29, 2007



DoubleTree Hotel



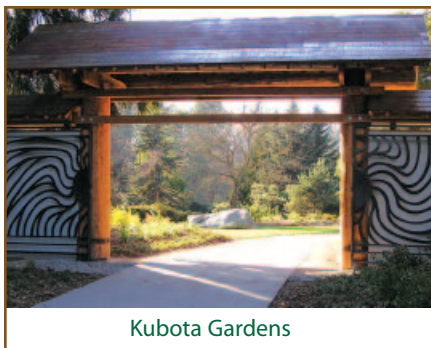
Coenosium Gardens

Final preparations are under way for the 2007 National meeting scheduled for July 26-29, 2007 in the South Seattle, Washington area. The host hotel is the DoubleTree Hotel at Seattle-Tacoma International Airport. Reservation information will be included in the registration packets to be mailed out later this spring or you can visit the ACS website at www.conifersociety.org for more information.

We will be visiting the gardens of Bob and Diane Fincham. **Coenosium Gardens** offers a unique collection of rare and unusual conifers. We will see more of their collection at the **South Seattle Community College Arboretum**. The tour includes a stop at the foothills of Mt. Rainier to visit **Pack Forest**, managed by Washington State University and demonstrating sustainable forestry. There, we’ll take a walk through an old-growth forest.



Pack Forest



Kubota Gardens

Kubota Gardens with 20 acres of hills and valley features a five-acre American-Japanese garden with serene trails through mature conifers in a setting of ponds, waterfalls and traditional Japanese artifacts.

The Pacific Rim

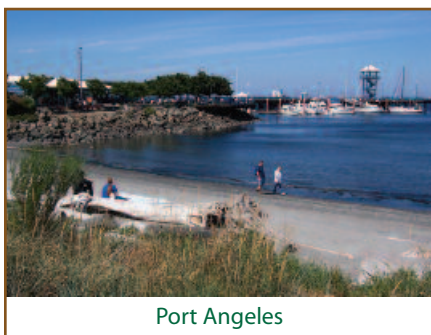
Bonsai Collection features over 50 bonsai exhibits from Canada, China, Japan, Korea, Taiwan and the United States. Curator Dave Degroot and Joe Harris will offer bonsai demonstrations during the tour. The adjacent Rhododendron Species Botanical Gardens offers one of the largest rhododendron collections in the world with over 10,000 rhododendrons in a 22-acre woodland setting of native conifers.



Our keynote speaker will be Dan Hinkley former owner of Heronswood, traveler and collector of rare and unusual plants. Our meeting will end with a dinner cruise on the Puget Sound serving Pacific Northwest salmon cooked on cedar planks.

Post Tour

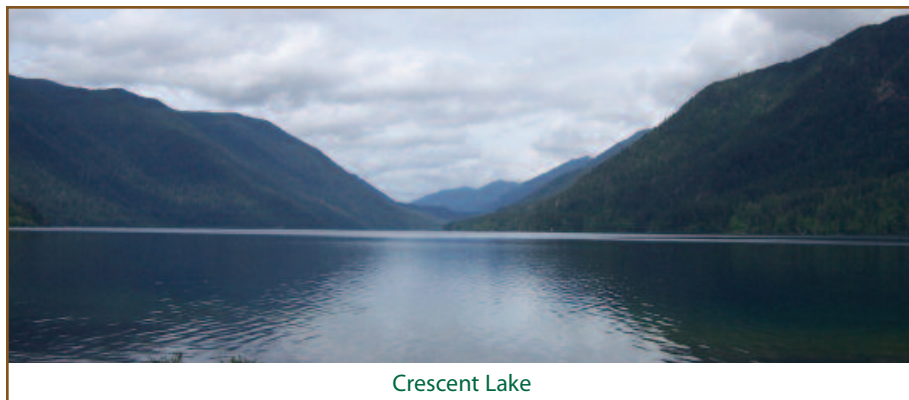
On Sunday, July 29 the post tour will head over to the Olympic Peninsula for three days of Pacific Northwest splendor. The post tour will visit the natural bonsai collection of Dan Robinson at Elandan Gardens with a barbeque lunch on the sound. We will take guided tours through the 150-acre Bloedel Reserve on Bainbridge Island. Our host hotel is located in Port Angeles, Washington on the Strait of Juan de Fuca where the ferries go to and from Victoria, BC dock.



Port Angeles



Marymere Falls



Crescent Lake

The tour includes a drive up to Hurricane Ridge at an elevation of 5700 feet where we will see old growth Sitka spruce, yellow Alaskan cedar, western hemlock and Alpine fir. We will stop at Crescent Lake Lodge for tranquil walks or a short hike up to Marymere Falls. Dinner will include a traditional Native American salmon bake on the beach with storytelling on the sound. The last day will include walks through the Hoh Rainforest, a stop on the Pacific Ocean, and stops at giant Sitka spruce and western red cedar. Our last night on the peninsula will conclude with a catered dinner at Camaraderie Cellars.




Hurricane Ridge

On Wednesday, August 1, we will make our way back to Seattle-Tacoma, stopping for lunch at Deception Point and a visit to the Museum of Glass in Tacoma where we will walk over the Chihuly Bridge of Glass and watch glass-making demonstrations. The Post Tour is limited to the first 100 members to register. Hotel, food and transportation are all inclusive.



Correction:
On the back cover of our last issue (Winter 2007) we incorrectly identified the plant on the top left. It is *Pinus parviflora* 'Tamina No Yuki' not *Pinus parviflora* 'Fubuki Nishiki'.

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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.

People, Plants and Places

Mountain Top Arboretum: Hardy Trees in a Picturesque Location

Photos and Text by Joan Kutcher

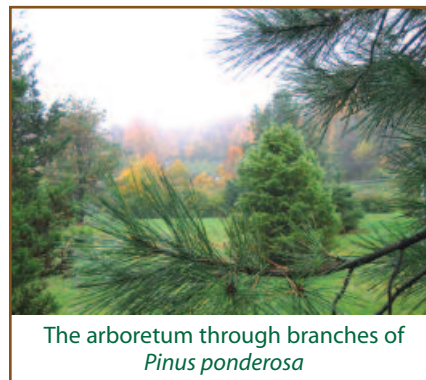
Tucked in a valley formed by the Blackhead and Jewett ranges of the northern Catskill Mountains of New York State, crossed by old abandoned paths that Indians once used to transport their colonial captives to Canada, and within easy hiking to scenic overlooks where Hudson River School painters defined America's sense of the picturesque, sits the Mountain Top Arboretum. A living museum of native and exotic trees and shrubs founded by the Ahrens family in 1977 to display the range of native flora that can successfully adapt to the rigorous climate at 42.22 North latitude and at 2,500 feet elevation. From an initial seven acres, the Arboretum has grown to a 23-acre facility and its mission has grown to encompass three goals: to engage in the applied science of horticulture; to promote stewardship of the environment; and to offer a diversity of

Mountain Top Arboretum is located west of the Hudson River between New York City and Albany, New York.

For directions and more information about Mountain Top Arboretum, including a list of the deer resistant perennials mentioned in this article, visit the website www.mtarbor.org.

programs for the education and enjoyment of the public.

The Arboretum relies on self-paced, self-guided tours with the aid of plant labels, interpretive signage, and literature to educate visitors on a daily basis concerning horticulture and environmental issues. This is augmented by lectures, demonstrations, hands-on workshops, and expert-led tours to provide more in-depth information. The bulk of such programs are offered primarily, though not exclusively, between June and September. Applied research is conducted year



The arboretum through branches of
Pinus ponderosa



Mountain Top Arboretum
 dwarf conifer berm



New cones on *Abies fraseri*

round and the results as well as the extensive plant records maintained by the Arboretum are accessible by the public to assist in making informed decisions concerning best horticultural practices in this environment.

The Arboretum's collections contain over 1,500 accessioned and mapped trees and shrubs on display, as well as deer resistant perennial borders planted outside of the deer fencing that surrounds the main collection areas. The initial plantings in the West Meadow focused on non-native temperate trees and shrubs. The conditions at this site are the most challenging for plants. Not only is the Arboretum located in a zone 4b snow belt, but the West Meadow is directly below a mountain notch which channels fierce north wind across the plantings. In addition, the meadow consists of a thin layer of soil above glacial bedrock, left during the Devonian Age, which prevents deep root penetration and exacerbates dry conditions in summer. Although oaks, ash, and deciduous azaleas have struggled here, most of the conifers planted over the last two decades have thrived. In 2003 a dwarf conifer area was established, and it too has prospered.

A Woodland Walk, begun in 1997 and located on a three-acre plot of pre-

dominately oak, beech and maple, adjacent to the West Meadow, was developed to showcase and preserve native, rare, and endangered plants which have been under considerable pressure from over-grazing by an ever increasing deer population. This area, protected by rigorously maintained deer fencing, has allowed native wildflower populations to reestablish themselves. Ginseng, mountain laurels (*Kalmia*), and New York fern are some of the highlights.

The Arboretum acquired an additional 11 acres and in 2004, created the East Meadow for further programs. Working with the American Chestnut Society, the Arboretum undertook the first of these by establishing a small enclosed American chestnut plantation to test the hardiness of non-blight resistant *Castanea dentata* seedlings in this region. Those that prove hardy may be used in future breeding programs to produce locally hardy blight resistant Chestnuts.



Nikko fir (*Abies homolepsis*)

Adjacent to the Chestnut Plantation, an American hedgerow display was installed in 2006. This hedgerow of predominately native species will be a mini-ecosystem with nearly all the ingredients that local small animals and birds

will need to survive: food, shelter, and nesting and denning sites. Summer-fruiting plants include shadblow or serviceberry (*Amelanchier*), blueberries (*Vaccinium*), cherries (*Prunus*), and blackberries (*Rubus*). Fall-fruiting species will include mountain ash (*Sorbus*), dogwoods (*Cornus*), crabapples and apples (*Malus*), and various *Viburnums*. Plants holding fruit into winter and notable for picturesque structure will include many hardy roses (*Rosa*), and holly (*Ilex*).

But the major focus of the East Meadow will be the North American Pine collection, designed around an existing allee of mature *Pinus strobus*. The purpose of this two-acre project is to establish a comprehensive collection of North American pines to determine the hardiness and vigor of all the different pine species that might be expected to survive in the rigorous zone 4b environment of the Arboretum. Land clearing and initial site preparation began this year. Young pines are lined up in the nursery area, waiting to be moved, to be planted, to thrive, and to be admired by the public in the next few years as this collection develops. We invite you to visit us.



Bristlecone pine (*Pinus aristata*)

About the author: Joan Kutcher is Executive Director of Mountain Top Arboretum and a member of the Society. In our summer issue, excerpts from Joan's article "The King's Pines" were printed on page 42.

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People, Plants and Places

Foreword by Gerald P. Kral

The Sycamore Hill Garden will be the premier garden stop for the ACS NE Regional, September 14-16, 2007. This private garden is only open on rare occasions. The American Conifer Society is privileged to be one of those occasions. We will have a Rochester catered lunch at the garden and spend the afternoon. A leisurely stroll through the gardens can take several hours if you stop to identify and admire all the specimen quality conifers and deciduous trees.

A golf cart shuttle will be available to take attendees from point to point including a rest area with refreshments and lavatory facilities. Attendees will be provided with an aerial map and plant lists. All the conifers will have 3"X 5" signage listing genus, species, cultivar and common name. This garden will appeal to all levels of expertise from professional to amateur and to those just wishing a quiet repose in the beauty and grace of this grand garden.

Sycamore Hill Gardens

by owners George and Karen Hanford

With 30 hillside acres, Sycamore Hill Gardens is a destination for everyone from dedicated plant collectors to picnicking families. Each year, to benefit charity, several thousand people tour the grounds, eat picnic lunches, feed the Koi, and enjoy a garden experience with family and friends. The garden's scale allows for sweeping lawns, internal and external vistas, lake-sized ponds, and water features such as fountains, tabletop steppingstones, bridges, waterfalls, and islands. The gardens contain over 80 statues and fountains, extensive stonework, a Victorian greenhouse, a one-acre maze, collections of conifers and deciduous trees, one million spring and summer flowering bulbs, 200-plus varieties of flowering shrubs, and thousands of perennials.

With something for everyone, you, your spouse, and your whole family are guaranteed an enjoyable visit. The gardens are composed of many settings and rooms and have a mile and a half of gravel road, a circular entrance drive for "drop-offs," and a seven-passenger golf

cart all of which make the gardens, shaded patio picnic area, and restroom facilities easily accessible to all. The enormous 300-year-old sycamore tree for which the garden is named dominates the entrance area.

Sycamore Hill's feature conifer garden is the Bell Garden. Large individual local limestones weighing up to five



Sycamore Hill Gardens is named for this 300 year old American sycamore, *Plantanus occidentalis*. It is an officially registered Bicentennial Tree (the tree was almost 100 years old in 1776).

tons provide beautiful backdrops and foundation pieces for specimen conifers. These include the golden Korean fir (*Abies koreana* 'Aurea'), a dwarf Korean pine (*Pinus koraiensis* 'Dwarf'), and a pair of weeping Alaskan cedars (*Chamaecyparis nootkatensis* 'Jubilee' and 'Strict Weeping'). Specimen sized plants of weeping Serbian spruce (*Picea omorika* 'Pendula') and Oriental spruce (*Picea orientalis* 'Skylands') along with Mugo pine (*Pinus mugo* 'Big Tuna'), common juniper (*Juniperus communis* 'Gold Cone'), Scotch pine (*Pinus sylvestris* 'Beacon Hill'), Alcock's spruce (*Picea bicolor* 'Howell's Dwarf Tiger-tail'), Himalayan pine (*Pinus wallichiana* 'Nana'), and Bosnian pine (*Pinus leucodermis* 'Green Bun') add color and texture. Placed amidst the conifers and stones are oriental bells and gongs from Thailand, Burma, China, and Viet Nam.

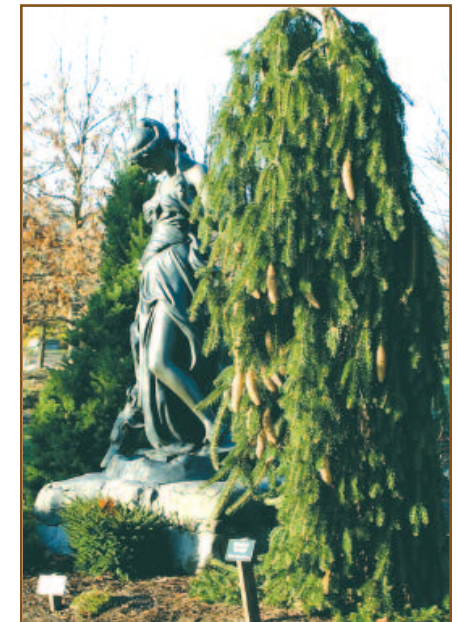
This garden is entered through a vine-covered archway surrounded on either side by birches with an under planting of hosta and woodland columbine varieties. It is exited between two large Burmese stone Foo dogs guarding a land bridge with waterfall that leads to a room defined on the west by Ted's Teeth, a half-mile row of 20-year-old arborvitae donated to the garden by local nurseryman, Ted Stetler. A pair of stone columns topped by classical bronze urns signals the entrance to the Nymphs and Satyr Room with two bronze sculptures made in Thailand for Sycamore Hill. Once again, a wide variety of conifers are featured in this garden.

From there the garden takes several directions, a columnar oak and hornbeam lane leads to a 12-foot-tall statue of two ospreys wrestling a salmon from one another at the west end of the Tree Island garden. Another option is to continue on the gravel road to the Lookout Garden with another conifer collection and a fine

view of the classical maze comprised of 2,100 emerald green arborvitae. At its center are two more statues, a bronze Minotaur and fallen maiden. The lookout is constructed of cut limestone blocks from a former local penitentiary built in 1880 and demolished in 1998.

Beyond the maze you will see the beginnings of a medieval tower 27 feet tall that will reach 57 feet when completed. The stone for this tower and the majority of cut stone used in the rest of Sycamore Hill Gardens is also from Jamesville Penitentiary. (We view the tower as we do the rest of the garden; it is growing, and we are enjoying the process and are patient as regards the outcome.)

At the heart of the garden is Tree Island, a collection of conifers, deciduous trees, and shrubs. It includes a nice grouping of *Larix decidua* 'Varied Directions' and 'Diana' as well as *Pseudolarix amabilis*. Groups of dawn redwood

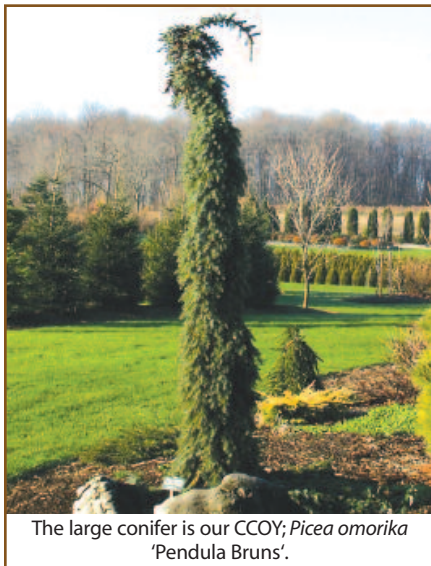


The conifer to the right is *Picea abies* 'Pendula'. The statue is a bronze representation of "Diana the Huntress".

(*Metasequoia glyptostroboides*) and baldcypress (*Taxodium distichum*) are located in other areas of the garden. Stone carvings, benches, and a barn with unique stone features provide a central focal point for this elongated "island" of trees with its winding paths and hidden statuary. Directly behind this garden is the Diamond Garden devoted to the three major species of peony including Chinese tree peonies whose flowers delight but whose habit can be less pleasing.

Between the tower and Tree Island various large berms contain a wide variety of conifer species including a well-placed, large specimen of (*Picea omorika* 'Pendula Bruns'), the ACS Collectors Conifer of the Year. Multiple varieties of deciduous trees include oak, beech, hawthorn, dogwood, locust, birch, linden, magnolia, katsura, redbud, ash, maple, hornbeam, elm, catalpa, and of course individual specimens of any tree that will grow at 1,000 feet of elevation in a strong Zone 5.

Nearer to the house and barn a seasonally tulip-lined curve of Bradford pears leads to three large ponds, two sep-



The large conifer is our CCOY; *Picea omorika* 'Pendula Bruns'.

arated by table-top-sized stepping stones, another connected by an Asian style bridge to an island, the third divided by a stone bridge crossing a waterfall leading to a round stone tower. Japanese Koi, many approaching three feet in length, provide entertainment to young and old alike at annual open garden events and are easily fed from stone steps leading down to the edge of the largest pond.

Below the ponds is the Dragon Woods with a bronze dragon housed in an open-sided stone floored pagoda surrounded by pines and woodland shrubs including azaleas and rhododendrons. Beyond this is the latest area of the garden to be developed. Mature conifers form the backdrop for deciduous varieties and specimen conifers. Several bronzes "hide" in this area among birches and pines and a loop of the gravel road that encircles the garden connects it to both the Dragon Woods and the Tree Island areas.

We have one full time employee, Tina Wiers, whose degree in Landscape Management has provided us with a more professional approach to maintenance, purchasing, and planning and in 2006, resulted in our first truly formal garden which we call Tina's Garden. It is located west of the hoop house and nursery area. We do not use a landscaper or garden designer; somehow the plants seem to design themselves into the landscape in a unique way that fits with the surrounding countryside while still being special. A gardener's work is never done, but every year a thousand smiles fill us with visions for next year's families to enjoy. We look forward to your visit in September 2007 and sharing our gardens with fellow conifer enthusiasts.

ACS Regional News

Northeast Region

by Larry Nau NE Region President

On March 20, Suzanne Mahoney and Colleen represented the ACS on "Gardeners Night" at the New England Spring Flower Show. Live specimens of conifers from A to T that could be found and carried were featured in this display. The goal of this display of live plants was to inform the average home gardener about the many uses of conifers. Membership recruitment in the ACS was an underlying goal. The Northeast Conifer Group also sponsored a grafting workshop in March and a speaker program in January featuring past NE President Walter Cullerton.

On May 20 (rain date May 27) the Northeast Conifer Group will visit the gardens of Joe Parks in Dover N.H. Our rendezvous will also tour Parkwood Farm which will reward us with conifers, grasses, wildflowers and over 1000 perennials and rhododendrons to examine and purchase. We will start at 10 AM. For further information contact Suzanne Mahoney at: misue150@verizon.net.

The NE region is embarking on a new program to support new or existing public conifer gardens in the NE Region. This program is called the ACS Reference Garden sponsored by the Northeast Region. Our goal is to assist a garden with funds for construction, purchase of conifers or signage to educate the public about the uses of conifers in the landscape. These gardens will also provide examples of correctly labeled conifers for our membership. Gardens must have an ACS member as a sponsor who will pro-

vide yearly updates. There must also be some means to distribute the ACS membership application and *A Brief Look at Garden Conifers* at each garden. Already, our committee is considering several projects in Pennsylvania, Massachusetts and New York.

Plans are being finalized for our NE Region Meeting in Auburn, New York, September 14-16. This meeting will feature a visit to Cornell Plantations in Ithaca, a lengthy stop at Sycamore Gardens in Marcellus, New York and a visit to Topiary Gardens, a small nursery specializing in Japanese maples. Topiary's secondary plants include rare and dwarf conifers, unusual perennials, ornamental shrubs and trees with an emphasis on new introductions. Join us for a Friday night speaker, fabulous auctions, great food and camaraderie in the heart of New York's wine country. Look for complete details on the ACS website.

Southeastern Region

by Flo Chaffin, SE Regional President

The SE Region continues to show strong pockets of conifer related activity. The Tennessee group has lined up maybe as many as six gardens to host get-togethers there across the spring and summer. Maud Henne's conifer garden in Charlottesville will be filmed for a PBS broadcast on May 11. We'll keep you posted on the air date. The Georgia group met at Atlanta Botanical Garden in January and has several gardens in line for upcoming gatherings as well. Our newsletter has produced a good handful of budding authors, too!

Our regional meeting this fall looks to be a very good event in Louisville, Kentucky on Sept 21-22. Fabulous Yew

Dell gardens will be the base garden, the beautiful Marriott Louisville East will be our base hotel, and we will have excellent private gardens in the area. Expect an article in your next CQ outlining all the events.

Our membership chair, Kathryn Moomaw, is going thru our survey respondents one by one to help identify state reps and other such volunteers. We

hope to be able to report from all the southeastern states very soon.

Central Region

The Central Region's 15th Annual Meeting will be hosted by the Region on June 22-23, 2007 at the Radisson Hotel Madison in Madison, Wisconsin. Look for more information at www.conifersociety.org.

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The American Conifer Society will offer a \$1,000 Scholarship for 2007. Eligibility requirements and applications may be downloaded from the TOPICS section of the ACS website or from:

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Gardening with Conifers

Kim Strader, curatorial assistant at the State Arboretum of Virginia sent in these photos and descriptions as a follow-up to her article which appeared in our spring 2006 issue. The article about the new dwarf conifer garden at the Arboretum in Winchester, Virginia showed a design plan along with a list of conifers to be planted.



In above photo: Beginning in the foreground with *Juniperus squamata* 'Blue Star' with lime green ground cover Moss Sandwort (*Minuartia verna* spp. *caespitosa* although there seems to be confusion over the correct genus for this plant). The next conifer is *Pinus strobus* 'Horsford Dwarf' Then *Pinus mugo* 'Mops' *Picea mariana* 'Nana' is next although it is a

little difficult to distinguish this from the *mugo* in the photo. *Chamaecyparis pisifera* 'Cream Ball' is the last one you see in the bed area.

Just in case you are interested, the large conifers in the background from left to right are: *Metasequoia glyptostroboides* in fall foliage. The blue one in the middle is *Cupressus arizonica* and then the green one is *Picea abies*.



In above photo: From left to right: *Chamaecyparis obtusa* 'Spiralis', *Pinus densiflora* 'Jane Kluis', *Picea pungens* 'St. Mary's Broom', *Cryptomeria japonica* 'Elegans Nana' and last but not least *Chamaecyparis pisifera* 'Plumose Compressa Aurea'. The fall foliage in the background is *Cornus florida*.

Kim requested that we acknowledge the following for donations to the project: Betty's Azalea Ranch in Fairfax, VA Girard Nurseries in Geneva, OH Middleburg Garden Club Charlotte Miller Meredith Morris, Mountain Meadows Nursery in Weaverville, NC Dr. Albert Paulsen Mac Stiff

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Conifer Society Staff

<i>National Office</i>	John Martin, 175 Charisma Lane, Lewisville, NC 27023-9611 PH (336) 945-0483, FAX (336) 945-0484, E-mail: conifersociety@aol.com
<i>Editor, Conifer Quarterly</i>	Evelyn Cox, 342 North Main St, Suite 202, Alpharetta, GA 30004 PH (770) 663-7576 E-mail: ConiferQuarterly@bellsouth.net
<i>Graphic Design & Printing</i>	Monya Barnes, 2255 Barrett Drive, Cumming, GA 30040, PH (770) 888-0434, E-mail: monya@mindspring.com



Photo by: ?

Bloedel Reserve on Bainbridge Island - venue for ACS National Meeting in Seattle. Post Tour.



Elandan Gardens - venue for ACS National Meeting in Seattle. Post Tour.

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