

Conifer Quarterly

Vol. 26 No. 4

Fall 2009



2010 Collectors Conifer of the Year

Larix decidua 'Puli'

Photo credit: Randall C. Smith, courtesy of Iseli Nursery



2010 Collectors Conifer of the Year
Taxodium distichum 'Peve Minaret'

Photo credit: Randall C. Smith, courtesy of Iseli Nursery

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Conifer Quarterly

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You are invited to join our Society. Please address membership and other inquiries to the American Conifer Society National Office, 175 Charisma Lane, Lewisville, NC 27023-9611. Membership: US \$30 (indiv.), \$35 (joint), \$30 (institutional), \$50 (sustaining), \$100 (corporate business) and \$130 (patron). If you are moving, please notify the National Office 4 weeks in advance.

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MUSINGS...

MUSING #1: Saturday morning, September 5

This morning, I went to the farmers' market in downtown Davenport, located a block north of the Mississippi River. The sky was a cloudless blue, a light breeze was stirring the smoke from a barbeque grill, and the produce was beautiful—watermelons, new potatoes, fall raspberries, green beans. Three-gallon containers of chrysanthemums caught my eye, while the Amish-baked goods caught my nose.

And then I started thinking. There were no conifers anywhere. No hand-made trough gardens planted artistically with miniature conifers. No one-gallon containers of dwarf conifers, though there were many other kinds of plants. Why not a booth at the local farmers' market? Wouldn't this be a place to acquaint people with dwarf conifers? Wouldn't this be a perfect venue for engaging one-on-one, perhaps making a convert?

MUSING #2: The National Meeting

The National Meeting on Long Island was great! Kudos to Ridge Goodwin, Larry Nau, and others of the NE Region who helped make this meeting such a success. Also thanks to those who contributed plants and the members who bought them. We raised more than \$13,000.

We were pleased to have members of the British and Dutch Conifer Societies with us, and we visited some very elegant old estates with some lovely old trees, including an immense *Tsuga canadensis* 'Sargentii', said to have a spread of approximately 58 feet!

One of the highlights for me was Ryan Contreras's presentation on his research

FROM THE PRESIDENT'S DESK

project, "Non-winter Browning of Cryptomeria." Ryan is extremely bright and poised to do leading research in the conifer field. Our Society can be very proud that an ACS scholarship assisted this young man in his graduate studies.

MUSING #3: ACS Elections

Next spring, each region will have an election to fill regional offices.

In order to have a thriving organization, we need to have the involvement of many members willing to share their knowledge and skills and love of conifers. The American Conifer Society only exists for the members, yet only a small portion of our membership is directly involved in keeping this organization going.

Here is my challenge: that each member find one way to contribute. A major way to volunteer is to serve as a regional officer. This spring, when candidates for your regional offices are sought, raise your hand. Don't be bashful. Don't wait to be asked.

Other opportunities: Newsletters almost always need help. Or you could help organize a one-day rendezvous, or work on a special project like contacting your local school and volunteering to teach the students about conifers. Organizations are always looking for speakers. Let the Rotary or the local garden club know you are available.

If you need copies of *A Brief Look at Garden Conifers* or the membership brochure, just let John Martin know how many you want, and they will appear in your mailbox. Each regional president also has a CD of pictures and information on conifers compiled by past president Don Wild for use in PowerPoint presentations.

You don't know how to put together a PowerPoint presentation? Someone in your region undoubtedly knows this stuff. Volunteer to teach a workshop on PowerPoint.

It's said that many people would volunteer if asked. I'm asking. I don't know who all of you are, but I'm asking you to come forward and get involved. You'll be working with great people. You'll have fun. You'll make good friends, as well as help the organization thrive. What more could you ask?

Miss Lily, my office assistant, has indicated that I've said enough for now. She is purring loudly and placing herself between me and the computer key board.

Happy volunteering!

Ellen Kelley



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EDITOR'S MEMO



When I first became interested in conifers, many of the ones we had in our collection were small. I delighted in their color and the softness of new growth. As they continued to mature, something else caught my eye, the cones. It was then that I began to realize that cones enhance the ornamental features of conifers. From the purple cones of *Picea abies* 'Acrocona' to the unusual fruits (cones) of *Podocarpus* and *Cephalotaxus*, cones add additional interest to this fascinating group of plants.

In this issue, Peter Gregg explains how and when to collect conifer seeds from cones for propagation, encouraging readers to try this on their own and perhaps discover the next great conifer cultivar. It takes practice and patience, but Peter tempts us by mentioning some chance selections gleaned from seedling crops that later got top billing as Collectors Conifer of the Year selections.

For cultivars already in the trade, Bert Cregg recommends some more for you in his continuing series on the various size categories of conifers, this time from

the dwarf category. Also, continuing from last issue is the second part of Frank Goodhart's article on Conifer Culture which talks about ways to over-winter your plants and get them into the garden come spring.

You may have already drooled over the cover shots of the 2010 CCOY selections. Take a look inside to learn more about their special attributes, and as supply is limited, return the enclosed order form as soon as you can.

Plant classification is a complex process, sometimes controversial. Those of us not steeped in it must rely upon taxonomic experts to provide a way to bring order to plant classification. One of the most recognized names is Aljos Farjon and we are delighted that he shares his insight regarding the genus *Cupressus* with the *Conifer Quarterly*.

Don't forget to mark your calendars for the 2010 ACS National Meeting to be held in Charlotte, North Carolina. For more details, see the article on page 45.

Evelyn

**Don't miss your
Conifer Quarterly!**

Contact the Society with
your new address.

John Martin

American Conifer Society

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BY EVELYN COX

Next Issue: Winter 2010

Our next issue will feature: **Lesser-known Conifers**

What conifers do you have experience with that are seldom discussed or written about? Are you an intrepid collector or explorer? Do you have a genus or species that you want to tell others about? We want to hear about conifers that are lesser known and welcome your photos and/or articles about the unusual conifer(s) in your life.

Future Issue themes: Please look at future themes and consider sending your articles in advance of published deadlines.

Companion Plants

Spring Flush

We welcome news alerts about conifers or about our members. Contact Evelyn Cox (evcox@bellsouth.net) to discuss your ideas.

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Experiences with Cones: *A seed education at Iseli Nursery*

by Peter Gregg

Photos by Randall C. Smith courtesy of Iseli Nursery

Large production nurseries may inherently bring to mind images of uniform, homogeneous crops. From a propagator's platform, ideally, the nursery is an image of large beds filled with identical plants having known characteristics. Homeowners and

landscape architects alike rely on the known specifications of clonally propagated plants. However, we "plant geeks" and "passionistas" of the world continue to revel in the discovery of new and rare plant varieties. Seed propagation aimed at diversifying our



Chamaecyparis nootkatensis 'Jubilee' with current year immature green cones at the bottom and the mature, ready-to-pick, brown cones above. Also, pollen cones at the ends of the sprays of foliage for the next years cones that will be ready to pick in the fall of 2011.



Picea orientalis 'Aureospicata' with maturing cones almost ready to pick along with the remnant pollen cones that are a sure sign of fertilization; however, we are hoping some *Picea orientalis* 'Skylands' nearby also shed some pollen into the mix.

plant palette holds that same allure. Most everyone in the plant world loves the new and unusual varieties that seedlings generate.

My hope in writing this article is to impart a basic framework and inspiration for propagating seedlings derived from collected cones in order to help beautify the world and increase plant diversity. In addition, I hope to motivate others to enjoy and learn about conifers as they go through the cycle of the seasons and the cycle of life.

The beauty and excitement of seed propagation is the diversity of the resultant seedlings and also the expectations of the unknown. Each seedling has a different genetic makeup altering its visual characteristics. Some seedlings are "true to type," meaning they look very much like their parents. However, most

seedlings have an array of visual differences. The thrill for me is imagining the possibilities of offspring from outstanding cultivars, witches'-brooms, or controlled crosses. These seed parent sources yield the most diversity, and are the cones and seed sought after by seed propagation enthusiasts.

An example of this type of enthusiasm is the work of the late Dr. Sidney Waxman who collected and produced seedlings from cones derived from witches'-brooms. From the hundreds of thousands of seedlings grown by Dr. Waxman, many of his best seedling selections have now become cornerstone landscape conifer selections used in the best of today's landscapes. A few of his notable cultivars that we grow and sell at Iseli are *Larix decidua* 'Varied Directions', *Pinus strobus* 'Blue Shag', and

Sciadopitys verticillata ‘Wintergreen’.

Personal Experience

I began my practical propagation skills training at Iseli Nursery in Boring, Oregon, under the mentorship of Paul Halladin, a fixture in the world of conifer propagation. Paul has nearly 30 years of experience working with conifers at Iseli Nursery, and is a recipient of the ACS Award of Merit for Development in the Field of Conifers. Over the last five years, I have gleaned valuable understanding from his vault of propagation knowledge and skills. Mentors are a wonderful way to learn and I have been fortunate to have one of the best.

After a few years of gaining experience and confidence with the basics of a large-scale production nursery, I was encouraged to begin seed collection for the

nursery. It quickly became evident that my knowledge base in the collection process was lacking. From that moment I realized that seed collection is not only a skill, but is also an art in itself. Growing and learning through the process is and continues to be invaluable.

Hard Lessons Learned

Research on seed collection and propagation is the starting point, with the goal to gain the basic knowledge of the chosen plant. However, reference information does not provide the finer points needed for successful growing. These details are refined from experience including trial and error. As with most new learning experiences, expect but don't be discouraged by failure. I have had my fair share of failure, for example getting excited for a crop of seed to germinate, only to



Picea purpurea var. *balfouriana* with a developing cone not quite ready to pick but with a good sign of pollen cones, meaning fertilization.



A *Pinus parviflora* 'Aoi' cone ready to pick at the right time. Notice how the cone scales are cracked open slightly and the resin (pitch) is seeping out. The color begins to change from green to brown.

realize it was not viable seed after none sprouted. Or, another example is planting a good crop of seed and losing many to birds just as the seeds were sprouting. Finally, having the most promising looking seedlings unexpectedly die. One of my more frustrating lessons learned with conifer seed propagation is that a mistake made in the process can leave you without seed for two or more years. This is due to the span of time between coning periods.

On the Hunt...Collecting

Start planning in spring for cone collecting later in the year. First, in spring, look for remnant male pollen cones on the plant. These will be a good indicator that female cones have been fertilized when you pick them later in the year. It is a good idea to study the genus you are collecting to know the morphological differences between the two cone types.

Later in the summer, look for ripening cones. The goal is to pick the cones

when the seed is ripe but prior to the cones opening, before wind dispersal. A common mistake in the inexperience and zeal of the process is picking too early. If done, this earliness makes the processing of the cones much more time intensive and difficult. In addition, the seed may be immature, with the possibility of poor results. This step is where record keeping and experience are needed. The clues I use are color and size of cones, with a ripening cone beginning to turn brown. I also use a cut test, where I cut the cone in half and look at the seed to determine if it is viable.

I begin checking cone maturity weekly in late summer. The season starts here in Oregon with *Pinus parviflora* in August. Other species and genus groups have different ripening times stretching into late November. After a few seasons you can more accurately record times to look for seed ripening in your area.

Processing Seeds

After the ripe cones are collected, they are laid out in boxes with screen bottoms in a warm room to dry. A warm area with no direct sun is preferable. If the cone is ripe, most conifers I have dealt with open and seed is easily extracted. Some, such as *Pinus parviflora*, are more troublesome with the seeds needing to be pried out of the closed pitchy cones. The seed is then cleaned of chaff and debris. Most seeds are floated in water; the heavy viable seeds that sink are kept while the light empty seeds that float are discarded. The good seed is dried and stored in a refrigerator. When all seed for the year has been processed, cleaned, and recorded the next step is to determine the germination requirements.



A *Pinus parviflora* 'Kinpo' shot with cones not quite ripe. If picked now, the cones would stay glued shut even with mature seed, due to the pitch. This is known as "hard casing"

Germinating Seedlings

Most conifers being temperate woody plants have a need for the seeds to be treated by a moist, cold period or stratification to break dormancy and germinate uniformly and reliably. This process mimics nature's winter. There are exceptions such as *Picea* and *Cedrus* that do not need a pregermination treatment and can be planted directly from dry cold storage. However, it does not hurt and may even increase your success due to more uniform crop emergence. I take the seed and mix it with moist peat moss and place that in a plastic bag in the refrigerator. After the stratification period, the seeds are planted in a potting mix. At Iseli, we use a fine Douglas fir (*Pseudotsuga menziesii*) bark potting mix, incorporated with time-release fertilizer. The seed is planted, and then topped with just enough fine grade pumice to cover it. Depending on the end product, and the reliability at which it

germinates, the seed can either be planted in a bulk flat or in a plug flat. Plug flats have the advantage of easy transplanting with little transplant shock to the seedlings. Bulk flats are used for less reliable seed, because they are a more economical mode of planting. Also, beware of pests such as birds, rodents, and slugs; they can undo all your hard work in harvesting, processing, and planting of your seed in short order. I watch the progress of germination carefully, cover the crop for birds and put out slug bait and rat poison as precautions to these problems.

In my experience it is beneficial to have the seedlings in a controlled environment, such as a greenhouse. In the controlled environment you can start the seed earlier in the year, and decrease some of the factors that inhibit success. Constant monitoring of the newly planted seed is imperative. If I cannot use a greenhouse, I try and use an area that has some environmental factors I can control, such as shading.

Approximately one month after germination, the seedlings are liquid fed with a water-soluble fertilizer. Some plants may need to be bumped up to a larger pot size during the first growing season but most will be potted the following spring. Reducing nitrogen and water in late summer so that new growth is not too succulent helps harden off these seedlings.

One of my goals here at Iseli is to take advantage of the incredible diversity of rare and desirable cultivars, using their genetics and selecting offspring with improved qualities for our customers and the gardening world in general. Therefore, I collect the seed from the most de-

sirable plants bearing in mind their size, color, and form. One of my early promising seedling crops is from *Thuja occidentalis* 'Zmatlik'. Around one thousand initial seedlings and four years later, we have identified three seedlings that have promise. In another ten years of evaluation and multiplication from cutting propagation and with luck, one of these will be considered good enough to be selected for the next Collectors Conifer of the Year! A few previous CCOY were chance seedlings found by discerning nurserymen. The *Picea omorika* 'Pendula Bruns' and *Metasequoia glyptostroboides* 'Gold Rush' are two such gems gleaned out of seedling crops.

Wrapping up

Here are a few suggestions if you are motivated to start collecting seed. Above all, find a fellow "plant geek" or "passionista" to share in the learning. Realize that failing is part of the process

so don't be afraid to do it. Take notes for future reference: they are invaluable. Know your plants and be able to identify the different cones. Then collect and grow your seed. Good Luck!

About the author: Peter Gregg began his calling in horticulture killing trees. He was fascinated with the art of bonsai and, early on, destroyed many of the trees he touched. This piqued his interest, and he began his journey of horticultural discovery. This led him to Oregon State University where he earned degrees in Horticulture and History. In addition, he did a nine-month internship at Iseli Nursery in Boring, Oregon. After graduating he began his career at Iseli Nursery, working in the propagation area. Peter enjoys seed propagation due to the exciting variability. He continues to work multiplying plants, providing cultural care for specific genus groups, and coordinating the internship program for the nursery.



A *Tsuga canadensis* 'Kelsey's Weeping' with pollen cones on the left and later in the fall ripening cones to the right.

Some helpful texts that have aided me in the process have been;

Seeds of Woody Plants in North America by James and Cheryl Young

Practical Woody Plant Propagation for Nursery Growers by Bruce Macdonald

Both provide excellent references.
Peter Gregg

Do We Have To Chop Up The Cypresses?

by Aljos Farjon, FLS

Royal Botanic Gardens, Kew

In recent years, an increasing number of studies using data derived from the nucleotide sequence in DNA have put forward proposals to drastically revise generic concepts in many families of plants. They have been doing this also at the family level, but unlike with genera, these have no consequences for how plant species are named. This activity has caused deep concern in horticulture (Brickell & al. 2008) because in numerous cases by now, genera with horticultural importance have been split in two or more where no consistent morphological differences can be found, while conversely genera have been united that are clearly distinct. It now appears that this trend has hit the conifers head on in the Cypresses, the genus *Cupressus*. Since 2004 in a small but rapid succession of papers by a few American researchers, that genus has been split, with already two different names now applied since 2006 to one half of it. These authors claim that the data are now in such overwhelming support of this that there is really no other option than to accept it, or face even more widespread name changes as an alternative. Is that claim substantive? Do we really have to chop up the Cypresses? In this article, I wish to argue that we have no such obligation from a scientific perspective, and that it were indeed better if we simply took notice of the interesting findings about certain relationships in the genus *Cupressus*, but conclude that there is no reason to abandon its present circumscription as given in my mono-

graph of the family (Farjon, 2005).



Cupressus goveniana var. *goveniana*

In order to do this, I must briefly try to explain some of the assumptions, tenets and methods of phylogenetic analysis, also known as cladistics. That useful discipline is full of difficult terminology (or jargon to some) and I must try to avoid as much of that as possible. I show one cladogram, borrowed from the latest paper on the subject (Adams & al., 2009) as an example to demonstrate the issues. I assume here (and I know that it is not true of all of the readers of this article) that little is known about cladistics. Therefore, I shall explain what it tries to achieve and how, what its merits *and* what its shortcomings are for a classification that is 'natural' given here to mean that it attempts to reflect evolution of the group in hand. Much has been written in the scientific journals and textbooks about these matters; this short note is not even a summary. All it wants to achieve is that peo-

ple think again before they accept what is presented as inevitable.

Cladistics is an explicit method by which to order differentiating characters in a logically consistent way. It arose (as did another method, phenetics, which we will not discuss) in the 1960's as a response to what was increasingly perceived as inexplicit, 'intuitive' classification of organisms by taxonomists, who claimed to have all the knowledge and the methods in their heads, which could not be known by anyone but themselves. Like those 'evolutionary' taxonomists (but unlike the phenetic workers), cladists agreed that evolution was a factor to be dealt with in a method. It was Willi Hennig, a German entomologist, who clearly formulated the cladistic method in a book, of which the 1966 English translation is best known. He distinguished two kinds of characters (actually character states: leaf shape = character, lanceolate & linear = character states; one state can theoretically change into another) primitive and derived. The primitive state is the ancestral state and the derived state belongs with the descendant(s). The aim is to find relationships among species (or higher taxa) that are based on shared derived character states. If two species share a derived character state, while the state of that character is primitive in other members of the group (e.g. genus), then it is assumed that these two species got that character state from a common ancestor which had it also, and that they are therefore more closely related 'phylogenetically' than to other species in the group. Methods, like comparison with other, hypothetically related groups, have been found to help determine which of two character states is derived. Only shared

derived character states tell us anything about these relationships. Such calculations become soon astronomical with numbers of taxa and many characters (especially with DNA sequence data) but computers are capable of doing this efficiently and ever more sophisticated algorithms have been devised to cope with these data and the problems that are sometimes inherent in them. No one who understands these methods will deny that they are explicit, that the assumptions made are clearly stated, and that this is the best method discovered and developed so far to formulate a hypothesis of phylogenetic relationships between taxa. [Ultimately, the taxa are represented by very small samples, but I must leave the discussion about a phylogeny of characters versus taxa aside here.]

So, the cladistic analysis gives us the phylogeny (or the nearest we can get at present) of a group of taxa (e.g. species of *Cupressus* and *Juniperus*). What is that? It is a hypothesis of **common ancestry** relationships among the taxa involved in the analysis. It informs us that certain species share a nearest common ancestor not shared by other species in the group. It does not inform us about the ancestors, which remain hypothetical. Since the analysis is based on extant taxa, it also does not inform us about what the relationships of extinct taxa (if known to have existed) might be in the phylogeny. Relationships (A and B are more closely related than either is to C) are therefore relative only to the taxa whose characters were investigated. [Proper taxon sampling is therefore crucial for the validity of the results.] In cladistic (phylogenetic) systematics, the result of the analysis, i.e. the ordering of taxa represented by the

data analysed, is **directly** translated into a classification or grouping of the taxa. Common ancestry is the only criterion.

Let us have a look at the cladogram taken from Adams & al. (2009) to see what this means. [I am choosing the cladogram in Fig. 2 but could have chosen others based on other bits of DNA, they are essentially similar for the purposes of this argument.] At the base is a clade with two species of *Thuja* and *Thujaopsis*, they were chosen as 'outgroup' for character comparison to determine the distinction between 'primitive' and 'derived' among the character states encountered in the 'ingroup' i.e. the group under study. These are, from top to bottom, 3 Californian species of *Cupressus*, *Xanthocyparis nootkatensis* (here called *Calitropsis nootkatensis*), *X. vietnamensis*, 3 species of *Juniperus* and 3 species of African/Eurasian *Cupressus*. The most important result is the placement of *Juniperus*. These 3 species are more closely related to the Californian species of *Cupressus* (only two clades removed) than the African/Eurasian species of *Cupressus* are (three clades removed). It appears that Californian species of *Cupressus* and *Juniperus* share a (hypothetical) common ancestor not shared by the African/Eurasian species of *Cupressus*. A cladistic (phylogenetic) classification is based on relative common ancestry, and it follows therefore that *Juniperus* becomes part of *Cupressus* (as do the two species of *Xanthocyparis*) **if** we maintain the 3 African/Eurasian species plus the Californian species in *Cupressus*. That is one option under this cladistic tenet (also known as monophyletic grouping), and it would mean the demise of the genus *Juniperus*, with all 55 or so species to be re-

named under *Cupressus*. The other option, adopted by the authors of this paper, is to chop up *Cupressus* in an American half (here renamed *Hesperocyparis*) and an African/Eurasian half, that retains the name *Cupressus*. Are we compelled to accept this and call the American species *Cupressus macrocarpa* henceforth *Hesperocyparis macrocarpa*, and ten or more other species with it? If (and only if) you are a cladist, the answer is yes. It is logically consistent with both the tenets and the methodology, and the hypothesis is well supported by the data. But has a 'natural' classification as identified above other criteria that could be brought into the matter? It has, and I will try to explain these next.

Remember, cladistic analysis only finds common ancestry relationships. If a classification should inform us about evolutionary relationships, we are interested in these, of course, but we should also make an attempt to understand **ancestor-descendant** relationships. What is meant by this becomes clear if we look at character states that may have accumulated on a single branch in the cladogram. It will be clear to all who know the important distinctions between *Cupressus* and *Juniperus*, that within this phylogeny (cladogram) these will be apparent on the branch leading to the 3 species of *Juniperus*. You and I know this to be true for morphology, in particular the seed cones and seeds, but it can be predicted to be true for the DNA character states as well. Such character states accumulating on one branch but not on others tell us nothing about phylogenetic relationships with other taxa in the group, which is why cladists ignore them. However, they could tell us a lot about evolution of char-

acters in the group as a whole. And indeed, when we scrutinize these characters, as I and others have done (Farjon, 2005 and references therein), we can arrive at the following hypothesis. The basic structures in the initial stages of the seed cones of *Cupressus* and *Juniperus* are very similar (only numbers of bract scales and seeds differ). But then, in development, they start to diverge more and more, and the juniper cone fuses its bract scales, the tissue remains soft and inflates, often to succulence, and becomes an imitation berry savoured by birds, who of course disperse the seeds. Economy derived from this development led to fewer and fewer seeds, so that many species of *Juniperus* now have just one. Others re-

tained more, but none as many as the likely ancestor of the genus. Yes, you got it that is the genus *Cupressus*! In a phyletic classification, we consider both common ancestry and ancestor-descendant relationships. If birds evolved from certain bipedal carnivorous dinosaurs (only a hypothesis), only cladists would insist that birds are dinosaurs. Birds learned to fly better than any other group of vertebrates and they were enormously successful and became extremely diverse and ubiquitous as a result. They are as a result now very different from their ancestors, the dinosaurs. On a small scale, the hypothesis here presented, *Juniperus* evolved from *Cupressus*, is implying exactly the same scenario.

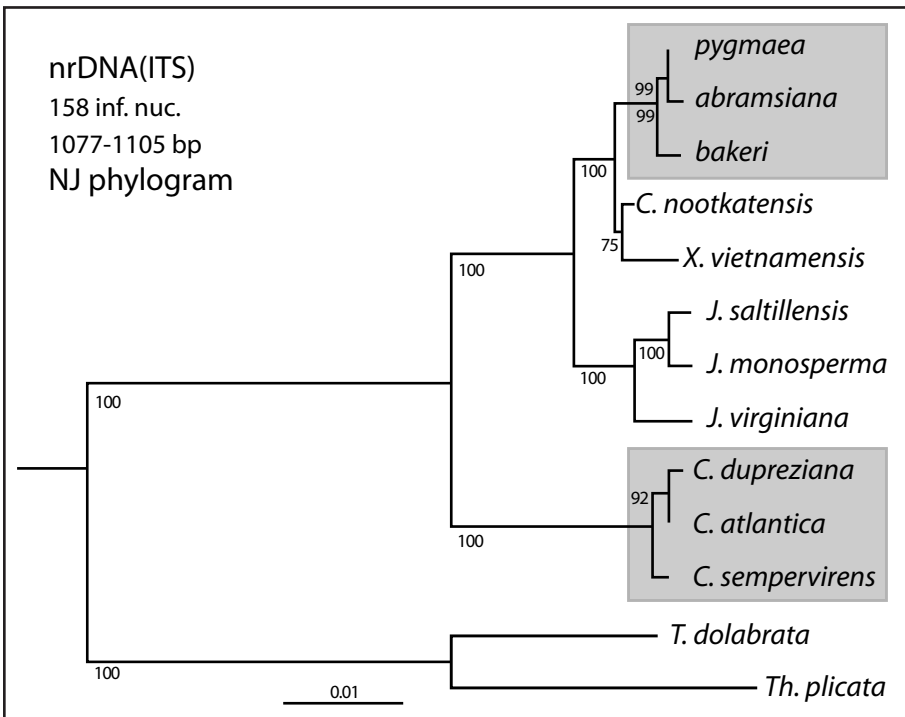


Fig. 2 in Adams et al., 2009 showing a cladogram with paraphyletic *Cupressus* and *Juniperus* nested within it. See the text for an explanation.



Cupressus sempervirens

In cladistic classification, such considerations have no part; all that matters there is common ancestry relationships. Are cladists denying that evolution could have happened along these pathways? No, but they say it is not relevant. As a result, we lose potential information on evolutionary pathways, and thereby predictability of character states in related groups. Character evolution is relevant, and the case with *Cupressus* and *Juniperus* demonstrates it. Long before these cladistic studies based on DNA data were undertaken and published, my German colleague Thomas Stützel and his students and I suspected this evolution from studies of the early phases of cone development (using Scanning Electron Micro-

scopes, making SEM images). These cladograms now appear to support our hypothesis nicely.

But, you may ask, how to explain, in evolutionary terms, the fact that the DNA shows the Californian species of *Cupressus* to be more closely related to *Juniperus* than to the African/Asian species of *Cupressus*? To explain this, something must be said about the nature of the DNA used in the analysis. The researchers have chosen sequences of the four nucleotides from various regions along the long 'string' of DNA in the samples. Much of DNA is so-called non-coding; it plays no part in protein synthesis, the building blocs of cells. This DNA is not subject to natural selection, the weeding of usually

deleterious mutations, little errors in the code. If such errors occur in coding DNA, they won't be passed on for long to the next generations. But mutations in non-coding DNA do not affect the development of the organism, they are retained and passed on, accumulating over long periods of time. They give us the character state changes for a cladistic analysis. We can now understand what happened. America became separated from Eurasia millions of years ago, perhaps even before the 'split' between some species of *Cupressus* and the first of *Juniperus*. This separation allowed mutations in *Cupressus* DNA on both continents to diverge further and further, without a chance of a re-mixture. If *Juniperus* split from *Cupressus* later, its mutations as a result will show a closer relationship with one group of *Cupressus* than with the other. They share a nearer common ancestor. That is interesting, but not a sufficient reason to amend the classification.

My conclusion is therefore, that we are justified to adopt the hypothesis that *Juniperus* evolved from *Cupressus* and that we can continue to recognize both genera as previously circumscribed. I began this argument by saying that cladistics had been developed to make systematics that recognizes evolution more explicit. It has done that, but it threw a few evolutionary babies away with the bathwater. Methods to make phyletic systematics explicit are well under way (Stuessy, 2009) and will make use of, but not be dictated by, cladistic methodology. Long live *Cupressus* s.l. and *Juniperus*!

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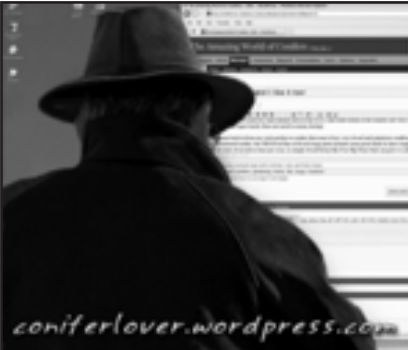
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Dependable Dwarfs

Text and Photos by Bert Cregg, Ph.D.

Michigan State University, Department of Horticulture and Department of Forestry

This article was originally published in the August 2007 issue of The Michigan Landscape magazine, a monthly publication of the Michigan Nursery and Landscape Association (www.mnla.org). Reprinted with permission.

It was the second of a four-part series in the Conifer Corner section of the magazine. The remaining two parts will be published in the winter and spring 2010 issues of the Conifer Quarterly. We had arranged to reprint this series prior to the passing of our friend Chub Harper. The references to Chub point to his significance in the world of conifers.

In the last edition of Conifer Corner (*Michigan Landscape*, June 2007), I began discussing plants in each of the size classes of conifers recognized by the American Conifer Society with a discussion of the miniature conifers. In this article, we turn our attention to the next size class recognized by the ACS, dwarf conifers. Based on the ACS classification, dwarf conifers grow one to six inches per year and reach one to six feet by age ten. Their slow growth rate combined with a variety of growth habits and colors make dwarf conifers a great choice for a wide range of landscape uses. Dwarf conifers, like the miniature conifers we discussed in the last issue, are outstanding accent or specimen plants that add unique character to the landscape. Dwarf conifers can be especially effective in combination with perennials or ornamental grasses. They are also great additions to rock gardens or other specialty gardens.

Aging gracefully

Dwarf conifers grow slowly, but they do grow. Many dwarf conifers can reach 12 or 15 feet after 30 or 40 years in the landscape. As they grow, dwarf conifers often take on a unique character that is difficult to duplicate. At the Harper Collection of Dwarf and Unusual Conifers at Hidden Lake Gardens in Tipton, Michigan, many of the specimens are 30-plus years old and are taking on distinctive personalities. In addition to the Harper Collection,



Pinus pumila 'Glauca' is a slow growing, bushy form of Japanese stone pine with striking blue-green needles.

conifer connoisseurs can see dwarf conifers with character born of age at the Morton Arboretum in Lisle, Illinois and in the Gotelli Collection of Dwarf and Slow-growing Conifers at the United States National Arboretum in Washington, D.C.

Alternatives for yews and junipers

Dwarf conifers can also provide an interesting and appealing alternative for yews and junipers as foundation plants. While the term "dwarf conifers" usually conjures up an image of cone-shaped mini-Christmas trees, many dwarf conifers have irregular or spreading growth habits and can be used as a

substitute for yew or juniper hedges.

When thinking of dwarf conifers as specimen, foundation or accent plants, here are some conifers to consider:

***Picea abies* 'Nidiformis'**

Irregular, spreading spruce with dense, horizontal layers of branches, much wider than tall. Light green color. Zone 2, grows 3-6" per year. Bird's nest spruce is a prime example of a dwarf conifer that can be used as a foundation plant. Conifer expert Chub Harper notes: "This is an iron-clad plant. We used a 'Nidiformis' to replace my neighbor's raunchy juniper."

***Chamaecyparis obtusa* 'Nana Lutea'**

A dwarf form of Hinoki falsecypress with bright yellow foliage. The yellow color is a blend of golden yellow foliage and white foliage, the white often being a band interior to the golden yellow. If the plant is put into the shade the golden yellow foliage tends toward lime-green. Grows at about the same rate as its green counterpart, *Chamaecyparis obtusa* 'Nana Gracilis', at about 4" to 6" per year.

***Abies koreana* 'Prostrata'**

A reliable plant. Specimen at Hidden Lake Gardens is 35 years old. Needles are blue on the underside. Like most Korean firs, expect lots of colorful cones.

***Picea omorika* 'Nana'**

Serbian spruces are always a great choice for those suffering from "blue spruce burnout." Serbians can't match *Picea pungens* for color, but they are adaptable to a wide range of sites and have fewer pest problems than their blue-blood cousins. More upright than spreading.



See me... Feel me... (With apologies to The Who) According to Chub Harper, everyone that sees this 'Green Globe' alpine fir (*Abies lasiocarpa* 'Green Globe') has to touch it.

Picea pungens 'Montgomery'

For those that still need a blue spruce fix and are short on space, here's your plant. Globe-shaped when young, Montgomery is often grafted high on a standard for the "lollipop-on-a-stick" effect. Becomes broadly pyramidal with age. Bright blue color is a real show stopper. Chub notes: "This one's going to take over the world."

Picea abies 'Pygmaea'

Irregular and often variable in form. Usually listed as globose, this Norway spruce can be somewhat conical or even spreading. Bright green color.

Thuja plicata 'Grune Kugel'

This cultivar of western redcedar may make a good alternative to Golden Globe arborvitae. A dwarf, globose selection with dark green shiny foliage. The tips have a very nice bronze to purple tint in the winter months in Zone 5. Appears to resist heavy snow loads and maintains an erect upright form without damage.

Picea glauca 'Sander's Blue'

The variation on dwarf Alberta spruce (*Picea glauca* 'Conica') is a real eye-catcher. Tight, upright conical plant forms a mosaic of blue and green. It usually starts out very blue when young and juvenile and starts turning green as it gets older. On older plants it produces a nice tapestry effect between the blue and green needles. A classic case of photos not doing a plant justice.



Curious yellow. This *Chamaecyparis obtusa* 'Nana Lutea' is a dramatic specimen plant. Photo: Hannah Cregg



Hemlocks, such as 'Guldmonds Dwarf' Canadian hemlock are adapted to shade, but can also grow well in the sun if acclimated properly.



Bird's nest spruce (*Picea abies* 'Nidiformis') is a reliable performer and an alternative to other foundation plants.

Ornamental conifer size classes recognized by the American Conifer Society

Category	Growth per year ¹	Approx, size at 10 years ²
Miniature	<1"	<1'
Dwarf	1" to 6"	1' to 6'
Intermediate	6" to 12"	>6' to 15'
Large	>12"	>15'

¹Size may vary due to cultural, climatic and geographical region

²Refers to growth in any direction

Source: American Conifer Society: www.conifersociety.org

CHUB'S CHOICES.

Chub Harper lists his "top five" favorite plants in the ACS dwarf conifer size class.

Dwarf Conifers - Growth per year: one to six inches. Size at age ten years: one to 6 feet.

- | | |
|--|---------------------------|
| 1. <i>Abies lasiocarpa</i> 'Green Globe' | Dwarf Rocky Mountain fir |
| 2. <i>Picea abies</i> 'Nidiformis' | Bird's Nest Norway spruce |
| 3. <i>Picea glauca</i> 'Conica' | Dwarf Alberta spruce |
| 4. <i>Pseudotsuga menziesii</i> 'Little Jon' | Dwarf Douglas fir |
| 5. <i>Tsuga canadensis</i> 'Lewis' | Dwarf Canadian hemlock |



Dwarf conifers, such as 'Sander's Blue' white spruce (left) and 'Rainbow's End' white spruce (right), are great accent plants.

Dr. Bert Cregg is an Associate Professor in the Departments of Horticulture and Forestry at MSU.

Introduction to the 2010 Collectors Conifers of the Year

by Ridge Goodwin

This year we have the remarkable coincidence of offering three deciduous selections for our discriminating collectors and what is even more interesting, two of them were discovered by the same person! The three are *Taxodium distichum* 'Peve Minaret', *Larix decidua* 'Puli' and *Ginkgo biloba* 'Mariken'. Although the latter is not technically a conifer, it is a gymnosperm and comes pretty close to being a conifer by occupying a taxonomically ambiguous position between the cycads and conifers. So, to the purist we'll have to say "alright, it's not a conifer so it can't be a Collectors Conifer of the Year unless the Society in the future elects to adopt it, so for the time being we'll just consider it a bonus plant!"

Piet Vergeldt from the Netherlands is a member of the Dutch Conifer Society and the discoverer of both 'Peve Minaret' and 'Mariken' which were introduced to the trade in 1998. Both of these plants have been on the Committee's list ever since we began compiling it over five years ago, but it has taken this much time to develop sufficient stocks for our program. If you are curious of where the names come from, Mariken seems to be a Dutch girl's name, "Peve" came from an acronym of the finder's name Piet Vergeldt plus the plant name, in this case, 'Minaret'. The third deciduous offering 'Puli' also has a curious name unless you are aware of the ringlets of hair typical of the Hungarian herding dog known as the "Puli" which pretty well describes the foliage of this weeping larch!

Wherever they came from and whatever the origin of their names, the year of the deciduous conifer is here and they are all quite exceptional!

Ginkgo biloba 'Mariken'



Ginkgo biloba is a remnant species, having existed in prehistoric times, closely related to modern conifers. This dwarf broom form is truly a gem of the species, a prehistoric dwarf. 'Mariken' is a flattened sphere, with a compact habit of growth and leaves of normal size. The thick twigs and branches are short, thus forming very dense foliage. Like the species, the fan-shaped leaves are pale green, becoming a rich golden yellow in the fall. Piet Vergeldt of Lottum, The Netherlands, saw this broom in the branches of a tree in 1995 in Kronenburger Park in Nijmegen, and propagated it. Because it was found in Nijmegen, Mr. Vergeldt gave it the name of Mariken van Nijmegen, a historic girl from medieval literature. The species is very adaptable to a wide range of environmental conditions, tolerating extremes of heat and cold.

Larix decidua 'Puli'

A curtain of light green, lacy foliage is draped across the rocks in a raised garden, and cascades down the slope. In November, the curtain turns to a vivid golden yellow color. Like all other larches, this European weeping form is deciduous, shedding its foliage in late fall. The new grassy green growth appears in March or April, heralding the approach of spring. Left on its own, it would become a spreading ground cover; but, staked and trained, it achieves very interesting forms. It will not grow any taller than it is staked and cascades in beautiful curtains from the highest point of training. The framework of foliage that reaches the surface soil spreads like a skirt about the plant among the boulders arranged skillfully in the garden.

Taxodium distichum 'Peve Minaret'

Dutch nurseryman Piet Vergeldt ("Peve") found this unusual seedling of baldcypress among seedlings he was growing at his nursery in Lottum, The Netherlands. This slow growing, dwarf upright selection has very soft and dense, dark green foliage, with a feather-like quality. In late autumn, the foliage turns to burnt umber and is very colorful for several days and weeks before the leaves descend to the ground. The winter appearance is also quite interesting with the tiered branches pointing upward, especially at the tips. As with other forms of baldcypress, this plant can grow in good garden soil, or in standing water. Also, the species is very adaptable to a broad spectrum of growing conditions, tolerating the extremes of summer heat in southern gardens and winter cold in the north.

Conifer Culture Part II

Storing, Over-wintering, and Planting

by Frank Goodhart

In the last issue of *Conifer Quarterly*, we discussed some factors related to buying plants for your particular climate, how to assess the condition of the plants, and what to do with them if not planted. This part offers suggestions on some different ways to store conifers over the winter and factors to consider in the planting process.



When storing plants over the winter, cold frames and white plastic bags are excellent ways to minimize temperature variation and cycles of freezing and thawing. This helps containers to stay frozen. This protection minimizes temperature swings that can damage roots to the extent the plant will die. Other means, such as piling plants tightly up against each other and covering with white plastic, are less expensive. White plastic is better than black or translucent types because it minimizes temperature variations.

Also, some sort of structure with minimal heat (e.g., a coldhouse) may be utilized. Coldhouses are constructed from

a variety of materials, such as double-walled sheeting that is insulated by circulating air between the layers. Double-walled plastic and glass may also be used. In this application, the house is kept just above freezing by use of an auxiliary thermostatic heater. Only minimal watering is needed in coldhouses.

I have kept plants unprotected as late as early January (only once) but generally find that November is the time when plants should be put away for winter storage. If one has many plants, this needs to be staged so that the work is broken down to a one- or two-day job. Usually adequate moisture is supplied before freezing temperatures occur. If not, the plants need to be well watered before winter storage.



Generally, I begin to vent the cold frames in February on warm sunny days and close them again at night. This continues at various degrees until April 1 when I can completely uncover the

frames. For plants kept in the coldhouse, a similar venting schedule is followed. But since the plants weren't frozen, some will begin to grow early. One always wants to get plants outside as soon as possible, but if this is done too soon, the tender new growth will be nipped by the frost, and the plant could lose a season's growth or even die.

Permanent containers are another way of displaying conifers and minimizing adverse winter weather effects. This can be done with hypertufa troughs for miniature plants or with large plastic containers for dwarf and intermediate-sized conifers. Pines, spruces, and hemlock (*Pinus*, *Picea*, and *Tsuga*) do well in large individual containers throughout the year. The containers are sometimes placed on shallow dollies, which allows one to move them around the patio and easily store them in the garage or shed for extra

winter protection.

Once the little 'darlins' have grown large enough and you have a place to plant, it's on to the next critical step, the actual planting. My soil is about half rock and stones, so planting anything anywhere is a challenge. The adage of preparing the entire garden before planting anything is very worthwhile. It turns out that just planting a few plants at a time and extending the garden a little at a time is not the same as preparing the entire garden area with compost and amendments. Plants will do much better when the soil around them has been well prepared.

In my case, I rototill lightly several times to loosen the rock. There is some risk here in damaging the rototiller since some rocks can bind up in the tiller and stall the machine. After the rocks are removed, the ground is tilled to maximum

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depth, and 6 inches of compost is rototilled into the planting bed. The rocks are collected by hand, put into large plastic pots, and then used for a bank stabilization project.

The part above is by far the most intensive and exhausting work in planting a garden. Now comes the fun part, the actual planting. In my case, the drainage is good everywhere, so I just plant a little above the soil level. I don't prepare planting holes deeper than the plant ball. I use several inches of pine bark, tapering the depth down to near zero at the base of the plant.

Other soil conditions require a different approach, especially if it is clay-like, quick-draining, or often wet. Clay soil can be amended with tons of organic material and gravel, but getting rid of the mucky clay by dilution is really a lot of work. An alternative to this is the use of berms and building them high enough to avoid a poor-draining water sink underneath.

Where the soil is like a gravel pit, an extra amount of organic material needs to be added. This can be achieved by using peat moss, compost, and some pea gravel. The amount added should be 50 percent of the total cultivated bed volume.

There are some trees, shrubs, and perennials that can withstand high water tables. Although the number of plants that can be used is limited, the challenge of designing a natural landscape in a wet area can be interesting and a lot of fun.

Screens are useful for alpine plants and miniature conifers that grow high in the mountains. These plants need excellent drainage and can be grown in a soil mix of 80 percent pea gravel and 20 percent organic material. The best resource here is to start with the Web site for the

North American Rock Garden Society, www.nargs.org.

In summary, one can improve on the survival rate of conifers by choosing the appropriate winter storage method and, if needed, improve the soil with various materials to provide good drainage and water retention.

About the author: Frank is a hobbyist gardener who has been collecting and propagating plants since becoming an ACS member 25 years ago. He was formerly on the Board of Directors of the ACS and is a past president.



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Abies alba 'Barabit's Star'



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Abies koreana 'Silberlocke'



Abies koreana 'Silberlocke'



Abies numidica



Picea orientalis 'Aureospicata'



Pinus thunbergii 'Kotobuki' in cone
Photo by Dennis Groh



Abies vietchii 'Pendula'



Picea orientalis 'Glauca'



Cephalotaxus harringtonia
Photo by Tom Cox



Tsuga dumosa Female cones at
Hillier's Arboretum, Hampshire,
England
Photo by Tom Cox



Araucaria araucana
Photo by Tom Cox



Abies procera in Balatka Garden
Czech Republic
Photo by Jim Kelley



Tsuga canadensis 'Everitt Golden'
Photo by Dennis Groh



Cedrus atlantica in Malik Garden Czech Republic
Photo by Jim Kelley



Pinus x schwerinii Cones
Photo by Christopher Carley
U.S. National Arboretum



Japanese Umbrella Pine in cone
(*Sciadopitys verticillata*)
Photo by Dennis Groh



Abies fraseri spring color
Photo by Kary Gee

Marty Brooks Receives the Award of Merit for Development in the Field of Conifers

by Larry Nau, President, Northeastern Region

Marty Brooks is best characterized by the phrase "He has dared to innovate, dared to be different." Marty graduated from the Delaware Valley College of Science & Agriculture in 1954. He went on to garden design and worked with unusual plants that were emerging, including ornamental conifers. Marty discovered a 1938 edition of Murray Hornibrook's Dwarf and Slow Growing Conifers. He insightfully reasoned that future home sites would get smaller, and dwarf conifers would play a more important role in home landscapes.

Early in his career, Marty won several important design awards that helped build his reputation and clientele. He had a knack for finding mature specimen plants from estates and other sources. These specimens were the beginning of the Martin Brooks Rare Plant Nursery and its accompanying arboretum. In 1978, Marty quit the landscape design work and began to concentrate on his specialized nursery.

Marty's trees, frequently in the ground for a minimum of 10 years, are expertly grown without the use of herbicides or fertilizers. He feels it is essential to hand dig any tree that he sells even though these are at least 10 to 20 feet tall. He is also widely known throughout the nursery industry as a pioneer and promoter of grafted conifers.

Marty is a recognized authority on the value of trees and is frequently consulted by people wanting valuations for insurance claims, appraisals, and donations for tax purposes. He is gener-

ous with his support and personal involvement with Delaware Valley College, including encouragement for those who are working toward a career in the nursery industry. This includes educational trips to his nursery.

Marty is well respected by conifer enthusiasts and is a go-to source for specimen-sized plants, particularly among universities, arboreta, and botanical gardens. He is often seen strolling around ACS events, ala George Burns, with his trademark cigar in hand.



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Kathleen Pottratz Receives the Marvin and Emelie Snyder Award of Merit for Dedicated Support of the ACS

Kathleen Pottratz served as the ACS Western Region president from 2001–2002. During this time, she helped organize regional events and recruited other regional officers and new members.

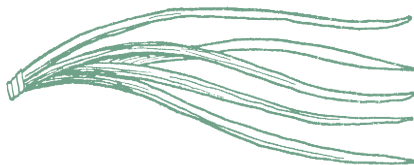
Kathleen has served as the ACS national secretary since 2002. She continually ensures that all key individuals attending the ACS Board of Director's meetings have the agenda items in an organized booklet. This activity involves collating reports from all committees and other contributors and duplicating and mailing those reports prior to each board meeting, twice each year. She is also responsible for recording all motions, seconds, and votes that occur during the Board of Director's meetings.

Following each Board of Director's meeting, Kathleen publishes the complete minutes and distributes them to the attendees. She also prepares the summary of the Board of Directors' meeting and sends it to the editor of the *Conifer Quarterly*, to be then distributed to the entire membership.

Kathleen has been involved with several ACS national meetings, most recently being the chair of the committee that hosted the 2007 National Meeting in Seattle, Washington. She also hosted a very successful post tour of Puget Sound and the Olympic Peninsula.

Anyone who has worked with Kathleen knows she exemplifies the volunteer role vital to any successful society. She always has a can-do attitude and innova-

tive spirit that has been important to the success of the ACS since she became involved.



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The award was established in 1986 in honor of the memory of plantsman, Jean Iseli of Boring, Oregon. Jean Iseli was an ACS founder and conifer propagator.

Proposals must contain the following:

- a. Name, full address, and phone number of the applicant/institution
- b. Brief description of how ACS funds will be used
- c. List of plant materials (if the request involves conifer purchases)
- d. Budget
- e. Short overview of mission statement or horticultural background of your institution

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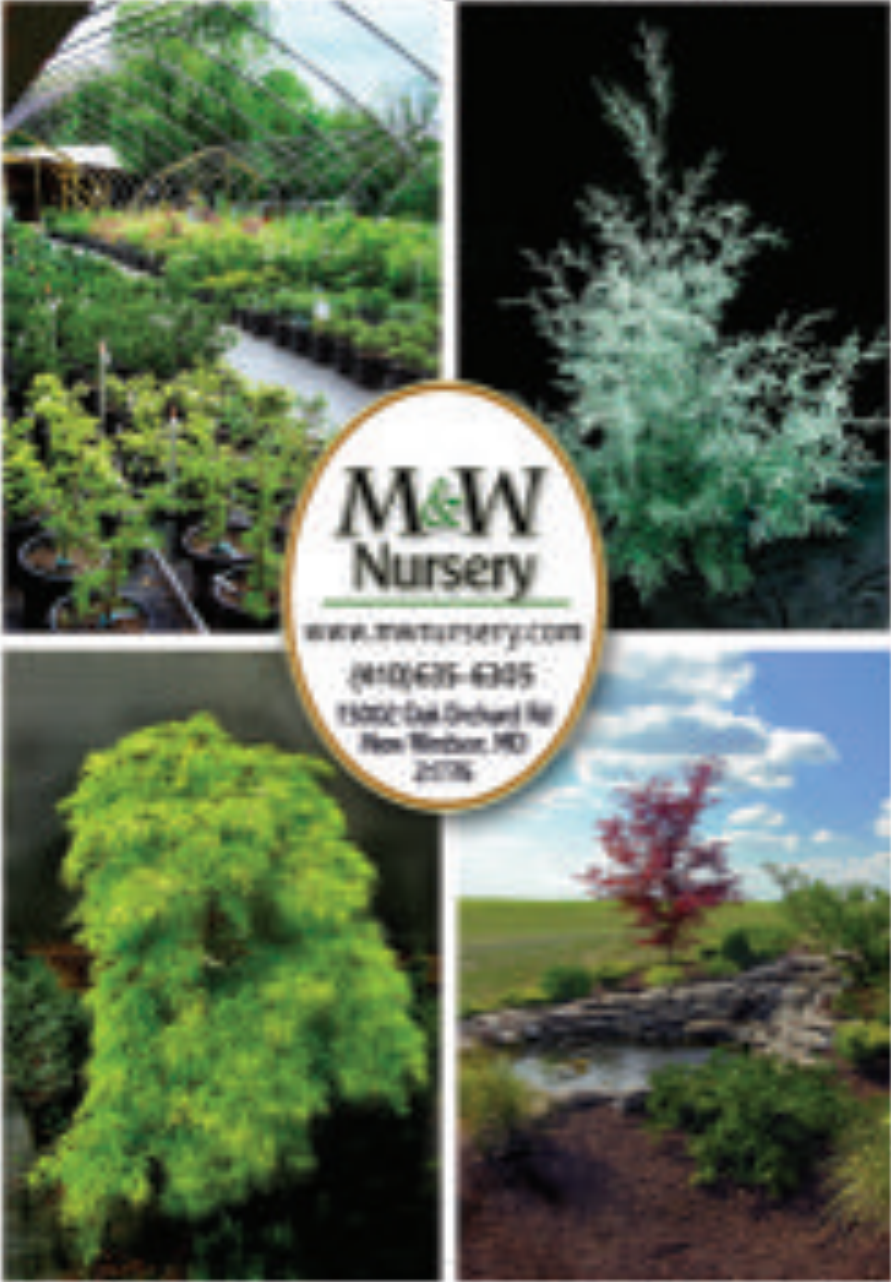
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Ethan Johnson chairs a three-person committee that reviews applications and makes its recommendation to the ACS Board of Directors at the annual summer meeting.

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The Answer Guy

I am looking to use evergreen shrubs and ornamental trees in place of flowers in my yard. The yard gets between 2 to 4 hours of sun in most areas, more or less in others. I am looking for something weeping, columnar, upright, and miniature to mix in with existing grasses, hydrangeas, and mature maple trees around the perimeter of my yard. I am looking for these evergreens to be heights of approximately 2 to 4 feet; shrubs to be approximately 6 to 10 feet; weeping and columnar at full maturity. I did find trees and shrubs that were perfect in height and appearance only to find out the heights represented were at approximately ten years of growth versus full maturity, when they could be double or triple the size.

My question is, “What do you recommend for a part-shade area, mature heights of approximately 2 to 4 feet global and/or conical in shape, to weeping and columnar 6 to 10 feet in height at maturity?” Also, any info on where to find these conifers would be helpful. I would prefer to purchase them in 1- to 2-gallon size, as I cannot afford to spend \$300 or more per mature tree.

Thank you for any information you can give.

Maria

Long Island, NY

Hello Maria,

Welcome to the exciting world of conifers! Yeah I know it sounds a little corny, but after you start looking into the many thousands of possibilities, you’ll understand what I mean.

It sounds like you have the room for

a number of specimens that will undoubtedly become highlights of your garden. However, you seem hesitant about the sizes that some plants can eventually reach. To put your mind at ease, try to realize that no woody plant is going to get to a particular size and stop growing. If it does, it’s dead, and it’s time for the chain-saw! Only annuals and perennials get to a particular size each year, though some perennials do spread indefinitely.

Back to conifers—you mention you found that some had a 10-year-size consideration. That follows an unwritten rule of sorts that landscapes usually are made over after that period of time. As for conifer specimens and any other woody plant, it helps to know the growth rates so that you can design with plants that you will eventually have to deal with if they grow out of the boundaries you desire. That can involve as little as an annual pruning in its location, to transplanting it someplace else, to outright removal. The main reason for the rate figures is to, hopefully, help people understand the plant’s needs and locate it in a landscape where it will do as well as expected and maybe never need attention. That is the ultimate goal of all gardeners; to be completely no maintenance. That never happens, as there is always something to do in anyone’s garden. That’s why they call it gardening and not landscaping with plastic stuff.

To follow the guideline “the right plant for the right location,” one does have to take into consideration how fast or slow it grows. Of course some of the other elements to consider are light re-

quirements; soil types; and drainage, wind, and temperature protections. For example, a space 4 feet by 4 feet is not the place for a weeping white pine that grows about a foot or so per year, and that goes for height and in all horizontal directions!

Our society recommends that collectors follow these categories to use when selecting a conifer. (It works for all woodies.)

Miniature	– grows less than 1 inch per year
Dwarf	– grows 1–6 inches per year
Intermediate	– grows 6–12 inches per year
Large	– anything more than 1 foot per year

I do agree that maybe there are dwarfs that could be categorized into something like “sub-compact” and/or “medium range,” given that the category by itself contains plants that can be 1 foot or 6 feet after 10 years. That’s a big difference when it comes to a limited rock garden space, for instance.

Here at the arboretum, we have specimens that are more than 80 years old, and yes, we have had to remove some because they got too large, were in the way, or were of little use horticulturally. Gardening is not a perfect science, and we all make some mistakes. However, we all learn as we go, and much of that comes from those before us. Mature healthy plants do keep growing, and yes, we do have dwarfs that are 40 feet tall, but they are 80 years old, so that makes sense. The darn things can’t read books or fertilizer bags. They keep going if all is well.

Given your light conditions, it sounds like your garden could use plants from the following genera: *Tsuga*, *Chamaecyparis*, *Pinus*, and *Abies*. There

are thousands of cultivars and varieties in those groups alone, with all sorts of colors, shapes, and growth habits. Start there and see what you like.

As for locations for nurseries in the New York area, I can only suggest you check out some of the local garden stores. As a member of the American Conifer Society, you could also contact other ACS members in your area, and they would have more than enough information on where to find specimens for your garden. Some even get together and place orders from other nurseries around the country. Others trade plants, and still others just share them with you. ACS members have some great sites to visit and get ideas for your own garden. We find that vacations make great excuses for gathering new specimens.

The Answer Guy
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2009 National Meeting

by Evelyn Cox

The Great Gatsby Tour, otherwise known as the ACS 2009 National Meeting, kicked off in high style on Thursday, August 6. The next few days were spent strolling gardens around Long Island and New York City.

The British and Dutch Conifer Societies, winding up their two-week garden tour of the U.S., added the perfect continental touch. Members of all three societies mingled on buses, and notwithstanding the sometimes lack of foreign language skills, all shared a common theme – a love of plants. Another common denominator, Latin nomenclature, came into play as we settled in, and the language of conifers began to flow. It was great fun to spend time with like-minded individuals from the Dutch and British Societies.

The event officially started with Thursday evening social hour, always a great time for rekindling old relationships and making new ones. Each night at dinner, a speaker familiarized us with the gardens we were to visit on the following day. On the first night, Fred Soviaro of the Hofstra Arboretum introduced attendees to a new descriptor for conifer nuts (“the ones who walk on terra firma”) calling us gymnospermites.

Derik Spicer from the British Conifer Society thanked us for our American hospitality during their extended visit. The evening ended with a big bang as President Ellen Kelley and Vice President Ridge Goodwin recognized outstanding members Kathleen Pottratz and Marty Brooks. Kathleen received the Marvin

and Emelie Snyder Award of Merit for Dedicated Support of the ACS. Marty received the Award of Merit for Development in the Field of Conifers.

We awoke on Friday to a beautiful day on Long Island. Energized by mid-60s temperatures and mild breezes, we were ready for a full day of touring gardens and were not disappointed. Our first stop was Hofstra Arboretum where we wandered among large conifers such as *Pinus jeffreyi* and *Picea abies* (Norway spruce). These were intermingled with numerous non-coniferous specimens, all tastefully arranged with accents of stonework and sculpture. A stunning weeping eastern white pine (*Pinus strobus* ‘Pendula’) standing gracefully in a raised stone-walled planter caught the eyes of many. Hofstra’s original mandate was to plant 60% conifers. The present collection includes *Pinus*, *Picea*, *Chamaecyparis*, *Sciadopitys*, *Thuja*, *Cunninghamia*, *Larix*, *Cedrus*, and *Tsuga*. Also, to the surprise of many, there was a Chilean monkey puzzle tree (*Araucaria araucana*) that has survived a number for winters. While situated against a building where it possibly received radiant heat, this affirms the notion of experimentation because plants don’t read labels.

We traveled next to Old Westbury Gardens which we entered through a well-tended, fragrant rose garden. Hardcore gymnospermites tip-toed quickly through the roses, making a beeline to the hemlock (*Tsuga*) and yew (*Taxus*) groves, spotting a *Sciadopitys verticillata*, approximately 40 feet high, and a huge,

silver-barked Korean fir (*Abies koreana*) along the way.

The crowd's interest was similarly split between strolling the extensive, manicured grounds of Old Westbury or touring Westbury House, a Tudor mansion built more than 100 years ago by Jay and Dita Phipps. The lavishly furnished home and grounds have been the backdrop for movies such as *Love Story*.

After a gourmet lunch in the beech grove at Old Westbury, we headed down a long, black road cut through a forest to Oyster Bay, for our next stop at the Planting Fields Arboretum. A "Gold Coast Era Estate," Planting Fields is listed on the State and National Registers of Historic Districts. The hands-down star of the show was a Sargent's weeping hemlock (*Tsuga canadensis* 'Sargentii'), estimated to have a spread of approximately 50 feet and to be about 150 years old. Childlike, we parted the branches of this beautiful tree to walk inside and around the massive trunk, looking up in wonder at the overarching branches that completely encircled us. We also spotted stately beeches, a gigantic Atlas cedar (*Cedrus atlantica*) with cones galore and, from a distance, huge Deodar cedars and cedars of Lebanon (*Cedrus deodara* and *libani*).

Tired but happy we returned to the hotel with visions of auction trophies dancing in our heads. It was a roaring good time back at the Hyatt with lots of friendly competition for the trophy plants which were made available through the generous donations from long-time supporters of ACS.

Saturday morning, Ryan Contreras (PhD candidate, University of Georgia) made a presentation on non-winter

browning of *Cryptomeria*. Ryan, a recent ACS scholarship recipient is a lively, knowledgeable speaker. His talk was well received and concluded with an interesting question and answer session.

By 10:00, we crossed the Throgs Neck Bridge with Long Island in the rear-view mirror, headed into Brooklyn for a visit to the New York Botanical Garden. We were treated royally at NYBG, beginning our tour on motorized trams for an overview of this fantastic garden. As one might expect, the Benenson Ornamental Conifer Collection, was where many of us chose to spend most of our time. The late Dr. Sid Waxman, a friend and member of ACS, was instrumental in making this collection a reality. Another popular venue was the rock garden. At lunch, we were entertained and informed with a presentation about the living collections at NYBG and with another about deviant behavior in plants.

At our last stop at Bayard Cutting Garden, we leisurely strolled across the grounds and down along the Connetquot River on the south shore of Long Island, an ideal setting for any occasion. (A wedding was taking place simultaneous to our visit.) Smiling, friendly greeters stationed around the grounds made us feel very welcome. We learned that Mr. Cutting was fond of conifers and had assembled a large collection with the assistance of Charles Sprague Sargent, director of Arnold Arboretum at the time. While much of the original collection has been lost due to a 1985 hurricane, the present collection includes an impressive array of fir, spruce, pine, cypress, hemlock and yew planted during and after the 1940s.

So many plants, so little time. We arrived once again at the Hyatt tired but

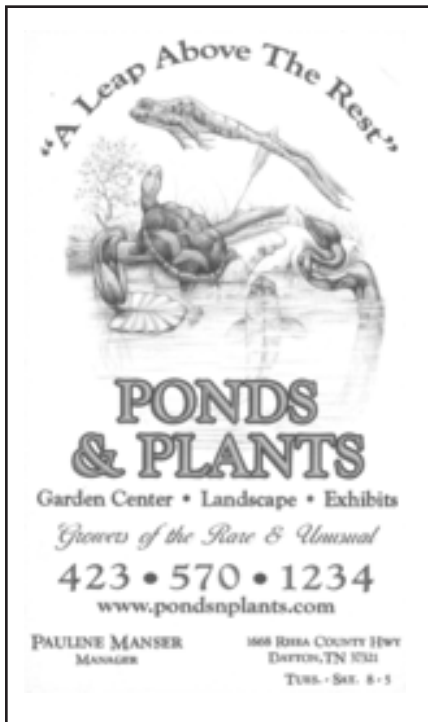
happy. What better time for Happy Hour? Sadly, the Great Gatsby Tour was soon to end. Beer, sangria and a delicious Caribbean picnic was a great transition

back to the present. We said some good-byes and planned some hellos for 2010 in Charlotte, North Carolina. If not sooner.

THANK YOU:

- Northeast Region for a great 2009 meeting
- Other faces from other places that handled all the tasks, unseen but indispensable for such an event's success
- Long-time friends of ACS who provided plants for the conifer auction

You are all important parts of the continued success of the American Conifer Society.



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ACS 2010 National Meeting to be Held June 17-19 in Charlotte, North Carolina

The South's Greatest Secret Revealed

Charlotte, North Carolina, plays host to the 2010 National Meeting, June 17-19. Charlotte is one of the South's premier cities. Located on its outskirts is one of the best arboretums in the country. Usually closed to the public, the arboretum at Bartlett Tree Research Company is opening its doors to ACS members for an exclusive tour and is hosting a once-in-a-lifetime learning opportunity in the company's state-of-the-art educational facility. Arboretum curator Greg Paige gives us a sneak peek.

Sometimes it is hard to dispel the myth that conifers cannot live in the South. Well, one visit to Charlotte and the Bartlett Tree Research Laboratory will bust this myth



Abies firma cone



View from Dwarf Conifer Collection

into oblivion. Through the rolling 350 acres of property that is the Bartlett Tree Research Laboratory, you will discover an incredible and diverse arboretum and research grounds. Whet your appetite, clean off the camera lens, and walk through 8 acres of conifers in our large and dwarf conifer collection. With every color, texture, size, and shape under Carolina blue skies, a better representation will not be easily found. A few additional arboretum highlights include one of the best collections of oak in the Southeast, the biggest collection of magnolia in the country,



View into Conifer Collection

as well as extensive collections of holly, elm, crape myrtle, crabapple, maple, rhododendron, and numerous display gardens. In addition to the collections and research areas, several ponds, natural areas, and woodland nestled throughout the arboretum provide a home to a variety of wildlife.

The Bartlett Tree Research Laboratory is the technical support branch of The F.A. Bartlett Tree Expert Company,



Espalier Collection in Shrub Garden

founded in 1907 and now, a century later, is the world's leading scientific tree and shrub care company. The research laboratories were formally founded in 1927 by Dr. Francis A. Bartlett in Stamford, Connecticut. Early Bartlett scientists and technicians developed or perfected many of the materials and procedures that are standard in arboriculture today. An arboretum was started, and the laboratories were relocated to Charlotte in 1963. In addition to our Charlotte lab, Bartlett operates a facility in New Jersey that provides technical and research support to branch offices in the Northeast. We also operate a research lab at the University of Reading in England that provides the same support for Bartlett's United Kingdom and Ireland operations.

The laboratories' primary missions are to research and evaluate new products and procedures for maintaining the health of our client's landscape plants; to provide technical support to our arborist-representatives, technicians, and our



Conifer Area pond

clients; and to provide training to company employees to ensure our clients' plants receive the highest level of care.

Mark your calendars today for this conference in a great city with a well-laid-out program. Excellent Southern hospitality is guaranteed as well as great plant gawking, networking, and catching up with friends and making new ones. We

look forward to seeing you all in June 2010.

About the author: Greg Paige joined the Bartlett ranks as arboretum curator at Bartlett Tree Research Laboratory in May 2005. Greg has a long and diverse career, working in public horticulture for more than 15 years.



Pleached Arches in the Shrub Garden

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2010 Collectors Conifer of the Year
Ginkgo biloba 'Mariken' – autumn
Photo credit: Randall C. Smith, courtesy of Iseli Nursery



2010 Collectors Conifer of the Year
Taxodium distichum 'Peve Minaret' close foliage
Photo credit: Randall C. Smith, courtesy of Iseli Nursery



2010 Collectors Conifer of the Year
Ginkgo biloba 'Mariken'

Photo credit: Randall C. Smith, courtesy of Iseli Nursery