



conifer

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CONIFER QUARTERLY

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Agathis atropurpurea (blue kauri),
Lihir Island, Papua New Guinea.
Photo by Reuben Wertz.

Inside Cover Photo

Habitat of *Agathis atropurpurea*
on Lihir Island, PNG
Photo by Reuben Wertz.

Back Cover Photo

Base of *Agathis atropurpurea*.
Reuben Wertz (l) and Michael Ferrero (r).
Photo by Jeni Wertz.

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The Next Step Forward

David Olszyk

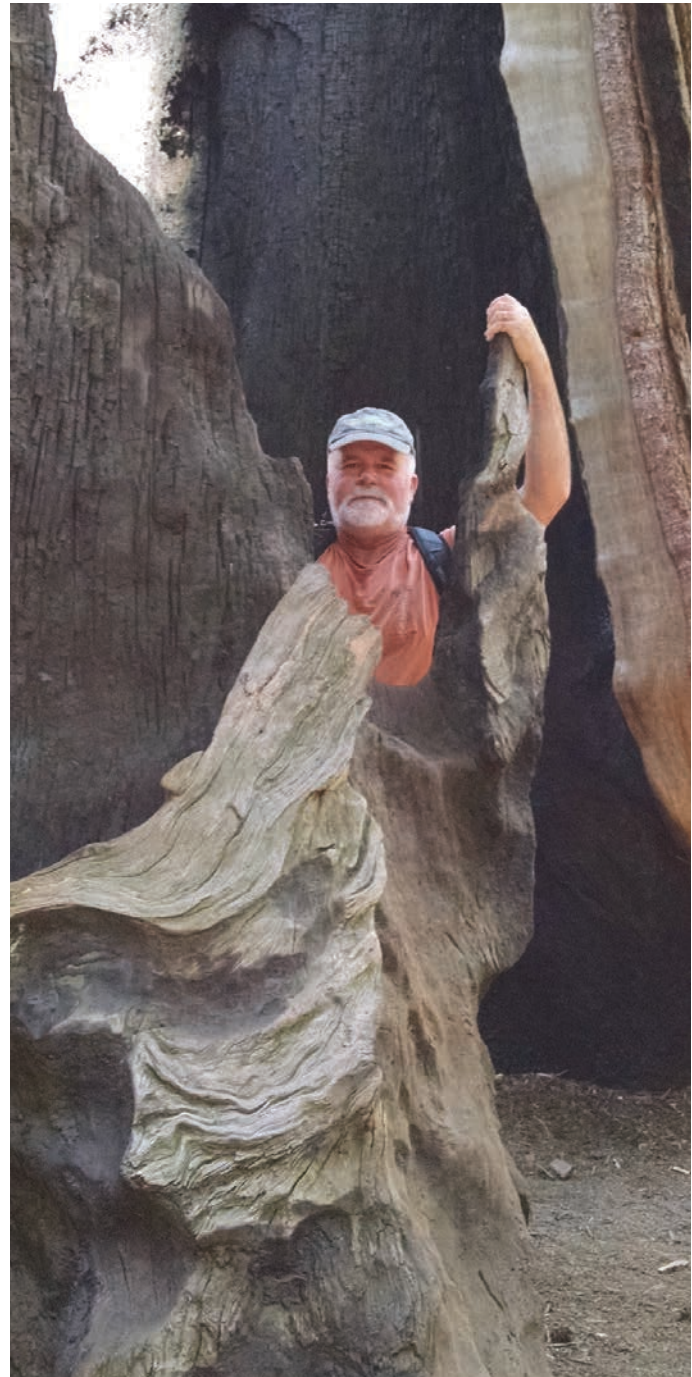
Hello members. When last we spoke, we faced far more unknowns than knowns. Three months later, it's now apparent to most that we are establishing a new normal, where indoor socializing is risky, and where any gathering in a large group, indoors or out, is only slightly better. COVID-19 has resumed a new surge of infection nation-wide, and the ACS social calendar of events has been cleared for 2020. My hope is that late 2020 / early 2021 will bring either a vaccine, a reliable treatment, or that the virus will mutate to the point that it's benign. I fear that those are the only conditions that will signal a green light to return to normal activity.

As they say on Broadway, "The show must go on." With that, I'm prepared to embark on a bold agenda to bring the ACS into the current century. One of the things that this means is the ability to conduct our business meetings via one of the myriad of video conferencing platforms and to enact e-voting (electronic voting) to elect officers and formalize business proceedings. The ACS exists to educate the public about conifers, and that includes awarding grants and scholarships, selecting Collectors' Conifer of the Year plants, and enhancing our website, to name just a few of our activities, many of which require Board involvement, and, in some cases, Board approval. Your dues contribute to the Society's ability to fulfill its mission, hence the importance of sharing this with you and getting your input.

Board meetings are a little trickier. Our bylaws include a provision that we follow *Robert's Rules of Order*. Henry Martyn and Sarah Corbin Robert, the formulators of the Rules, lived in the 19th century, long before the internet. They certainly would never have imagined a meeting that was not face-to-face. Therefore, a narrow interpretation of their rules is that the word *meeting* only connotes an *in-person meeting*, clearly not possible in this time of a worldwide pandemic.

Another provision of our bylaws is that anything requiring a vote of the membership has to be conducted at an in-person membership meeting during our National Conference. This has left us with

a paradox: our bylaws are in dire need of amendment, and we can only change them during an in-person membership meeting. We can't conduct in-person meetings because of the pandemic. With all of those conditions, I believe that we absolutely must broaden the definition of *meeting* to include meeting over an e-platform (electronic platform). This is what many other organizations have already done and are doing.



Going forward, we aspire to rely heavily on technology: notice by email, opening deliberation via email, formal discussion over a membership-wide video conference, then finally holding a vote over one of the online voting platforms. While we certainly hope that in-person meetings become possible before too long, I don't believe that the Society should stop dead in its tracks because of a lack of creativity in our procedures. I am committed, as are my fellow Board members, to ensuring that none of you, who wish to participate in the Society's business, is left out.

I realize that a small percentage of you, for a number of reasons, don't use modern technology. Please realize that, up to this point, voting for changes to the bylaws required you to pay over \$300 to attend a National Conference. This expensive reality has made taking part in our democratic process out of reach for a significant percentage of us. Deliberating and voting virtually will cost the membership nothing. If you personally don't have a computer or smart phone to participate in online discussions and voting, I'm sure you know somebody who does and is willing to help you.

The critical next step forward is for each ACS member, who has a computer or a smart phone, to check to make certain that a valid email address for you is established with the National Office. You can confirm this by going to the website, logging in, and viewing your profile. If there's no email address for you, you can add one, or let Steve Courtney or me know, and we can quickly and easily add it for you. If you have questions, please reach out to one of us, or to your local leadership. If you are not sure how to log in, just call one of us, and we'll help you.

I will end my message by emphasizing that I still really like conifers! Check out the picture I've included. It's a reversion on a *Cryptomeria japonica* 'Twinkle Toes' (Twinkle Toes Japanese cedar) that took hold in my garden. Looks like we may have a nice new intermediate-growth Japanese cedar on our hands.

David Olszyk, ACS President



'Twinkle Toes' reversion. Photo by David Olszyk.

Hidden Lake Gardens Propagation Seminar 2020—A Report

Text and Photography Ron Elardo

In 1945, Harry A. Fee, a businessman from Adrian, MI, donated 200 acres of land with a lake on it to Michigan State University (then Michigan State College). He intended his donation to be used for the education of the public. His gift became known as Hidden Lake Gardens (HLG), which, ever since, has been providing educational opportunities to people of all ages. These have included children's programs, free community programs, how-to classes, art exhibits, holiday celebrations — to name just a few. One such ongoing program is a propagation seminar.

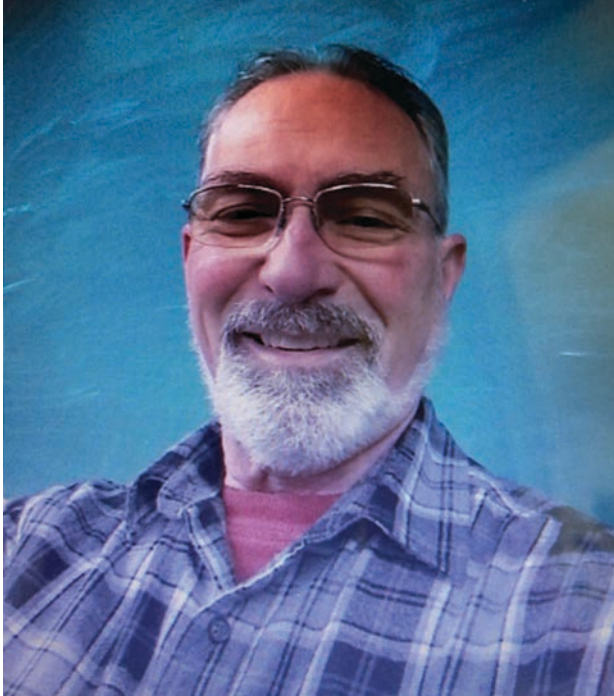
On the HLG campus in Tipton, MI, staff and volunteers held a one-day conifer propagation seminar on March 7, 2020. There were two themes for the seminar: Growing Treasures: Creating Whole Plants from Little Bits; and Age of Discovery: the Botany and Application of Grafting. Seminar participants came from as far away as Colorado and represented more than five states. Gerry Donaldson and Jon Genereaux, HLG's retired Horticulture Manager and Chief Propagator respectively, organized and conducted the seminar. Both Gerry and Jon are members of the American Conifer Society. It is home to The Harper Collection of Dwarf and

Rare Conifers, enjoyed by coneheads from around the world. With its 500+ conifers, The Harper Collection receives thousands of visitors each year. As many of you may remember, the ACS's 2012 National Conference was held there and drew 301 members, the largest attendance of any national event to date.

Richard A. Larson, ACS Conifer Registrar and a member of the staff of the Dawes Arboretum in Newark, OH, authored a review of basics and special problems associated with conifer grafting. Given to the seminar participants and first published in the Combined Proceedings International Plant Propagators' Society, Volume 56, 2006, pp. 318-322, Rich's article provides valuable information regarding the grafting of deciduous trees and conifers; for example, when to take scions, the use of cold frames to house the grafts, the preparation of the rootstocks, side-veneer/modified-side-veneer grafts, avoiding fungal contamination through broad-spectrum fungicides or sterilants, and acclimating grafts to outside conditions. Rich also reviews the advantages and the liabilities of grafting. Although an expensive way to produce trees because of staffing and maintenance hours, as noted by Rich, grafting



Bill Snyder describes construction of mini hothouses. Gerry Donaldson looks on from the door. 6



Gerry Donaldson, self-portrait.

has proven the best way to propagate specialty trees like conifers. Grafting allows for the best reproduction of a specific cultivar.

Each participant in the "prop seminar" also received pamphlets, instruction sheets, root cuttings, scions, and rootstocks for their admission fee, along with the use of grafting tools and supplies. The main instructors and support volunteers presented and assisted the participants in the techniques of stick and graft creation. Gerry Donaldson led the section on creating whole plants from little bits. Each participant received trays and medium for 16 cuttings. The demonstration



'Glauca Prostrata' stick-propagules.



Jon Genereaux. Photo by his son Corey.

showed how one creates "stick-propagules", that is, asexual, or clonal, propagules. Guest presenter, Bill Snyder, co-owner of Blue Horizon Nursery and Display Gardens in Grand Junction, MI, demonstrated how to make small-scale hothouses to promote proper care and nurturing of the stick-propagules. While approximately half of the group worked on their asexual propagules, Jon Genereaux introduced propagating with scions and understocks. As each group finished its work, the participants simply switched simultaneously running sessions.

Jon led his section from the basic cell structure of plants and their biochemistry to the creation of new plants through the union of scions and understocks. Participants had the option to graft eight to ten specimens. Assisting Jon were ACS members Andy Duvall, Paul Surian, and Galen Kenyon. Andy had a nursery near Ann Arbor, MI, and created countless grafts for sale over the years. Paul is also co-owner of Blue Horizon Nursery and Display Gardens, and Galen is a frequent attendee at Central Region Conferences and ACS National Conventions.

Stick-propagules offered included:

- Cephalotaxus harringtonii* 'Prostrata' (prostrate Japanese plum-yew)
- Juniperus × pfitzeriana* 'Daub's Frosted' (Daub's Frosted Pfitzer juniper)

Thuja koraiensis 'Glauca Prostrata' (blue prostrate Korean arborvitae)
Taxus × media 'One for the Money' (One for the Money Foundation yew)
Thuja occidentalis 'Konfetti' (Konfetti eastern arborvitae)
Thuja occidentalis 'Nuclear Blast' (Nuclear Blast eastern arborvitae)
Thuja occidentalis 'Stolwijk' (Stolwijk eastern arborvitae)
Platyclusus orientalis 'Morgan' (Morgan Chinese arborvitae)
Thuja plicata × standishii 'Green Giant' (Green Giant hybrid arborvitae)

The grafting section of the seminar offered scions and understocks of the same genus, species, and cultivar. The only exception was *Abies koreana* 'Aurea' (golden Korean fir). The understock offered for this graft was *Abies concolor* (white fir). The other scions and understocks included:

Chamaecyparis pisifera 'Filifera Aurea' (golden thread-leaf sawara cypress)
Ginkgo biloba 'Jade Butterflies' (Jade Butterflies maidenhair tree)
Larix decidua 'Julian's Weeper' (Julian's Weeper European larch)
Larix laricina 'Blue Sparkler' (Blue Sparkler American larch)
Metasequoia glyptostroboides 'Silhouette' (Silhouette dawn redwood)



Some of the rootstocks available were *Tsuga canadensis* 'New Gold', *Tsuga canadensis* 'Aurea Compacta' and *Tsuga canadensis* 'Curly'.



One example of a mini hothouse.

Metasequoia glyptostroboides 'Ogon' (Gold Rush™ dawn redwood)
Picea abies 'Chub' (Chub Norway spruce)
Picea abies 'Gold Drift' (Gold Drift Norway spruce)
Picea omorika 'Pendula Bruns' (Brun's weeping Serbian spruce)
Picea orientalis 'Skylands' (Skylands Caucasian spruce)
Pinus strobus 'Ottawa' (Ottawa eastern white pine)
Pinus strobus 'Angel Falls' (Angel Falls eastern white pine)
Pinus parviflora 'Bergman' (Bergman's Japanese white pine)





Jon Genereaux's set-up.

- Pinus parviflora* 'Tanima no yuki' (Snow of the Valley Japanese white pine)
- Taxodium distichum* 'Gee Wizz' (Gee Wizz bald cypress)
- Tsuga canadensis* 'Aurea Compacta' (golden compact Canadian hemlock)
- Tsuga canadensis* 'Curly' (Curly Canadian hemlock)
- Tsuga canadensis* 'New Gold' (New Gold Canadian hemlock)

After each section completed its work, participants received plastic bags, in which to house their grafts so to transport them home. Also provided were detailed instructions for these mini hothouses.

Participants learned that cuttings require a higher humidity level than the home affords. Grafts, on the other hand, have to be kept drier than cuttings. Therefore, participants were told to remove the large bags of the homemade hothouses when the plants arrived at their new home, but keep the small bags over the grafted scions. The small bags have to remain in place until seven days have passed. Then the small bags can be removed. "Watering requirements for the cuttings and graft/understocks are easy. Less is best." (Donaldson) Never water the foliage of the cuttings or the scions of the graft/understocks. Keep the medium of the cuttings and the understocks slightly

moist to the touch. A turkey baster and an eyedropper are the best tools to use for watering. Cuttings and grafts should never be placed in direct sunlight, which can dry tissues and kill cells, thus ending the rooting process. Place both kinds of propagules in indoor morning sunlight. Once the roots develop, and scions callous and bind to the understock, the plants can be moved to indoor afternoon sunlight.

I have attended many of these seminars over the years. The resultant conifers live in my garden and also in the gardens of neighbors and friends. I have found the propagation seminars at Hidden Lake Gardens extremely informative and educational. Should you have the chance to attend one or more of them, I would recommend that you do. Not only will you get to grow your own trees, you will be able to network with other conifer lovers, and you may even encourage others to join the American Conifer Society.

Should you have further questions, you may contact the instructors of the seminar at:

donald38@msu.edu
genereauxjm5@yahoo.com

Happy conifer creating!

Moment of Fertilization

Text and Photography Jon Genereaux

As Chief Propagator at Hidden Lake Gardens (Michigan State University), Tipton, MI, I have developed a procedure using my iPhone 10 and a MicroStar biological microscope to observe, store, and share some incredible moments in the life cycles of conifers.

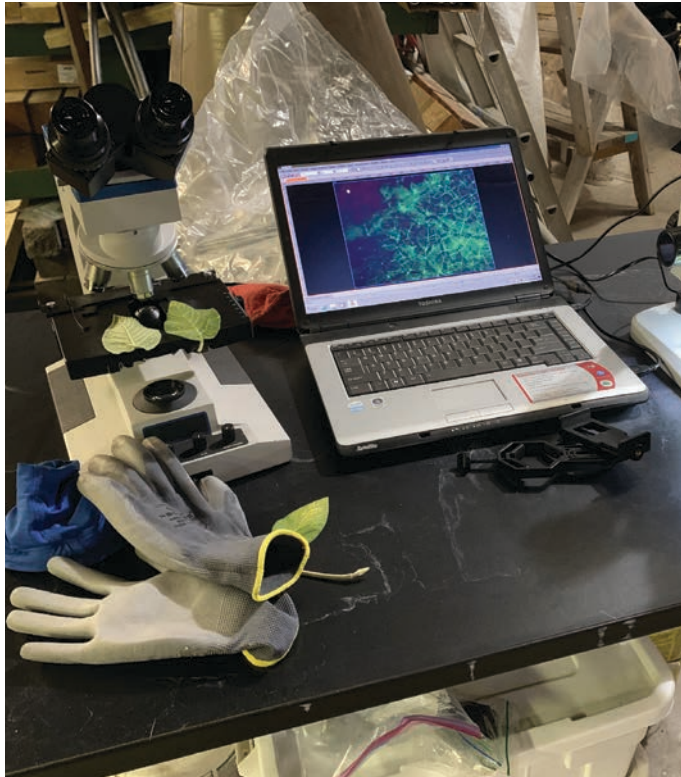
I begin by photographing the subject.

I transfer the image to the microscope for magnification and examination. The microscope allows me to zoom in on one location on the photograph.

I photograph the magnified image, by mounting my camera on a bracket.

I then transfer the magnified image to my laptop, where I am able to edit it to my satisfaction. The images you see are the results of this process. In this example, I captured the moment when a pollen organelle of *Picea abies* 'Vermont Gold' (Vermont Gold Norway spruce) joined with an ovule of 'Vermont Gold', showing the moment of fertilization.

In the following photos note:



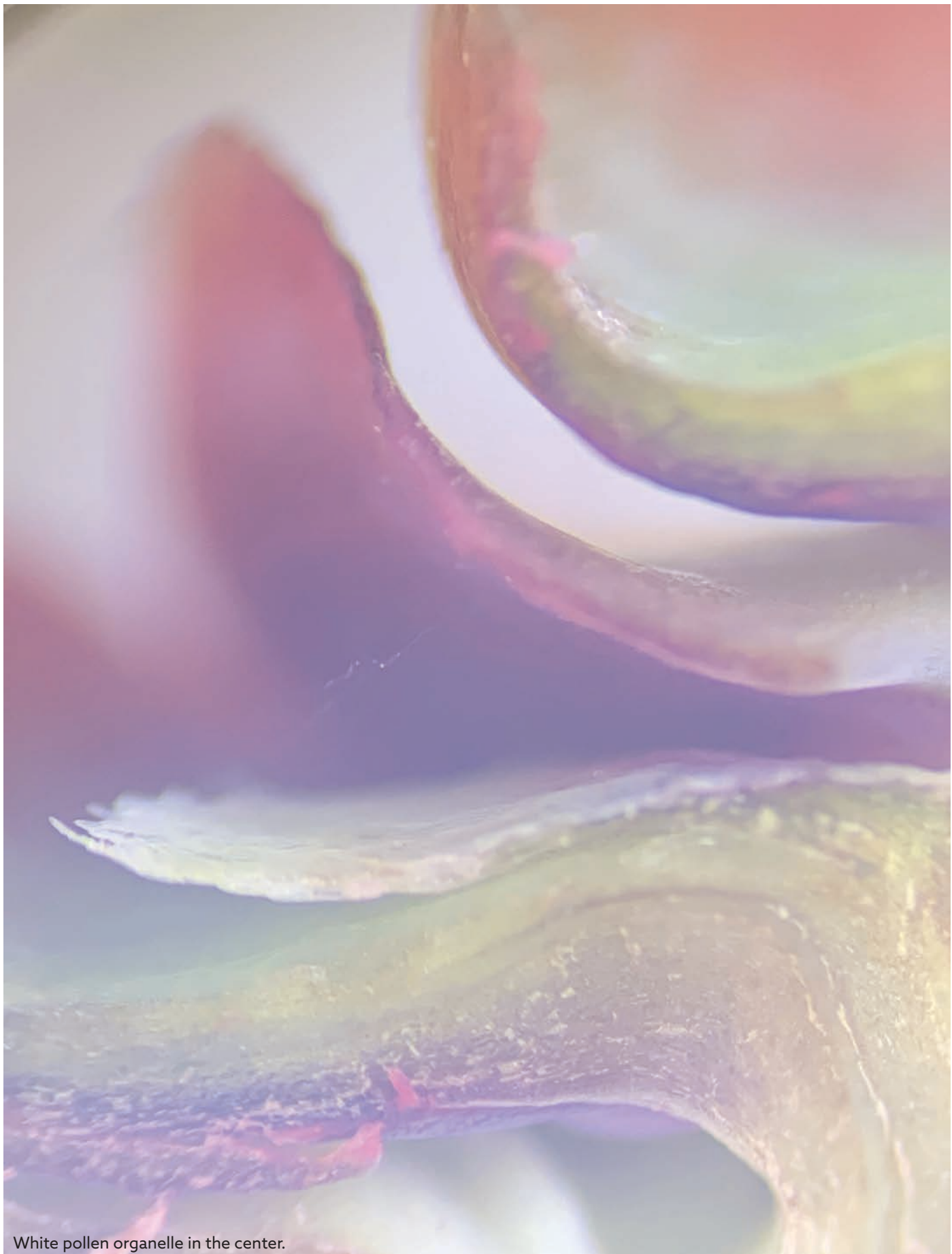
My work station.

1. Pollen organelle in the center.
2. Pollen organelle entering the ovule.
3. Close-up of the structure of the organelle.
4. Organelle attached to the ovule.

My work set-up and microscope are also included.



This is the microscope I employ.



White pollen organelle in the center.



Pollen organelle entering the ovum.



Organelle attached to the ovule.



Closeup of the structure of the organelle.

It's Not Nice to Garden Anywhere

Text and Photography Tom Cox

After last year's late summer and fall drought here in North Georgia, coupled with losses of rare and likely irreplaceable trees due to beavers and other critters, I began to think about something that I once read from J.C. Raulston Arboretum's *Friends of the Arboretum Newsletter* (No. 5, May 1982). In it, Dr. Raulston quotes from the book, *The Essential Earthman* by Henry Mitchell (Indiana University Press, p. 244); "It is not nice to garden anywhere. Everywhere there are violent winds, startling, once-per-five-centuries floods, unprecedented droughts, record-setting freezes, abusive, and blasting heats never known before. There is no place, no garden, where these terrible things do not drive gardeners mad."

It's been said that if you live long enough, things come full circle. Some years ago, I visited with long-time friend Kathy Musial, who is Curator of Living Collections at the Huntington Botanical Gardens (Pasadena, CA), where she has worked for more than 25 years. I mentioned that it must be wonderful to garden in Pasadena. Her response came as a surprise. She said: "Not really. We have no humidity, and it gets very dry here. This limits what we can successfully grow."

After traveling to 51 countries and visiting numerous gardens, I have come to believe that Mitchell's observation is true: every location has its challenges. Upon visiting our arboretum for the third time, famed conifer expert and co-author of the tome, *Conifers Around the World*, Zsolt Debreczy, wrote an article for this publication that referred to our arboretum as 'a gardening sweet spot'. We have elevation, slope, good soil, normally enough moisture each month, and no real temperature extremes. Thanks to a gradual decline in seasonal



Beaver-stripped bark of a variegated *Cryptomeria*.

temperatures, plants harden off before the coldest weather arrives. This affords us the opportunity to grow a wide range of woody plants from both hemispheres and, by many accounts, the largest species collection of conifers in all of North America. This is not without significant challenges. In early 2020, we experienced record rainfall and a heavy, wet, four-inch snowfall. Conifers such as our prized 18-foot-tall Jelecote pine (*Pinus patula*) were almost horizontal from the snow. Years of growth and care were obliterated in minutes.



Picea orientalis 'Filip's Little Mound' used to be a perfect bun before deer got it.

The following is a compilation of my experiences here in Georgia, as well as observations from other gardens. I am confident that readers will be able to relate.

Beaver: Nothing has proven more frustrating or fatal for our plants than beaver. Once they have done their deed, any conifers that they have attacked are pretty much history. If you own property in their environment, with a stream or moving water, beavers are pretty much a reality. In our case, two streams, wetlands, and a pond afford them a happy home. They are at their worse during heavy rains and periodic flooding, as they arrive with an appetite for conifers. Over the last two years we have lost a rare *Pseudotsuga sinensis* var. *gaussenii* (Gausse's Chinese Douglas-fir), and a one-of-a-kind, weeping *Cryptomeria japonica*, which I had named 'Weeping Beauty' (Weeping Beauty Japanese cedar). Fortunately, we had previously sent ample material to Europe, so that the plant is not lost. Recently, I

noticed where they had completely girdled another unusual and unnamed selection of variegated *Cryptomeria* received from Quarryhill Botanical Garden (Glen Ellen, CA). This one showing even better color in the spring than the better-known 'Sekkan' (Sekkan Japanese cedar). It too, is backed up in European collections and at least one Tennessee nursery - all the more reason to share plants.

We recently hired a trapper who has thus far removed three beavers this year. About the only other deterrent is to wrap the trees. We use rolls of plastic fencing that we cut to size and wrap around the trees to a height of three to four feet. As long as it is high enough during flooding, this appears to work.

Deer: Everywhere I travel, deer seem to be one of the chief complaints. Fortunately for us, deer have never developed an appetite for any of our conifers (exotic broad-leaf evergreen flora are another story).

Our challenge is deer rub, where each fall during their rut, male deer must get rid of the skin or velvet from their antlers. They use the base of a tree as a rubbing post. They also leave a scent that communicates a challenge to other male deer, while also attracting potential mates. It has been my experience that male deer will only select trees that will not break, but will slightly bend. Once a tree ceases to be flexible, deer seem to avoid it. In his book *The Hidden Life of Trees*, author Peter Wohlleben also mentions that "...deer go for whatever is unusual" and will "always choose whatever is uncommon locally." Speaking again from years of experience, I find this to be true. It is a horrible experience to walk out and see a pristine conifer that you have carefully nurtured for years be destroyed in minutes. This last fall for us it was a perfectly formed eight-foot tall Silveray Korean pine (*Pinus koraiensis* 'Silveray') that had one side mangled. Notwithstanding the above, we have found that the placement of bamboo stakes will generally act as a deterrent. In early September, we go to each conifer and other small trees and simply lay bamboo poles (usually four- to six-foot long) across the plant, teepee style. The Korean pine referenced above was missed. In the winter of 2018-2019, it was *Pinus koraiensis* 'Cis' (Cis Korean pine), *Pinus × schwerinii* 'Wiethorst' (Wiethorst hybrid white pine) and several *Thuja occidentalis* (eastern arborvitae). We did not get bamboo poles set across them. Similarly sized native pines were avoided.

If you live in a deer-infested area, then the issue of your conifers being turned into salad is a real concern. To mitigate this, public gardens and homeowners sometimes go to great expense. This includes installing elaborate fencing of sufficient height (eight feet tall), as well as low-voltage electrical types. Others resort to chemical sprays, ultrasonic devices, and netting. We have experienced mixed results with spraying repellents on our broadleaf evergreens. We also have tried Irish Spring™ soap bars in mesh bags, hung from trees. This might have some benefit. The final mitigation for us is that we allow hunting during fall deer season. This serves to lower our population and reduces the pressure.

Several years ago, I was fortunate enough to spend time with famed conifer expert Jerry Morris, who took me out into the Rocky Mountains to photograph *in situ* populations of the Rocky Mountain bristlecone

pine (*Pinus aristata*). There I observed a new form of damage – porcupine. It seems they have an affinity for stripping the bark. In the Blue Ridge Mountains of Appalachia, black bear climb conifers and destroy the crowns. Several years back, they climbed a rare Canton water pine (*Glyptostrobus pensilis*) and completely broke the top out. ***It's not nice to garden anywhere!***

Insects: While the list is long, no pest has done more damage to our pines and selected Himalayan cedars (*Cedrus deodara*) than European pine sawfly (*Neodiprion sertifer*) larvae. The larvae are voracious feeders that can completely strip all the needles from a branch in one day. They are host-specific and, here, in the Southeast, they prefer two- and three-needled pines and the glaucous forms of Himalayan cedars. On rare occasions, they have been found on five-needled species. Most attacks are in the fall, and they can produce multiple generations. On smaller plants, these infestations can prove fatal. If discovered in time, needles can be pulled off and destroyed. Do not throw them on the ground where they can later hatch. Sometimes when I discover the larvae, I will pick them off and smash them. While I don't like using horticultural oils, insecticidal soaps, or insecticides such as Sevin (carbaryl), they are effective as a last resort.

Diseases and Pathogens: The list is long, so, given space limitations, I am focusing on three of North America's high-elevation white pines and their unique ecosystems that are under threat. Under the right conditions, they are among the most beautiful pines in the world. These are whitebark pine (*Pinus albicaulis*), Rocky Mountain bristlecone pine (*Pinus aristata*), and limber pine (*Pinus flexilis*). Each of these is susceptible to the non-native pathogen, *Cronartium ribicola*, which causes the lethal disease white pine blister rust. The fungus affects trees of all ages and sizes. The fungus grows down the needle and into the bark, forming a canker that eventually girdles and kills the tree.

It is worth mentioning that no matter where you garden, a healthy plant, not under stress, is much more able to deal with the challenge of diseases and pathogens.



Pinus koraiensis 'Silveray' shows deer rub on one side that destroyed the nice form.

Weather: From the grandeur of California all the way to the more traditional landscapes of the East Coast, we gardeners constantly struggle with the vagaries of erratic weather patterns. For over two months last summer and fall, seemingly all we did was drag hoses to recently planted conifers spread out over 13 acres; most of the work falling to Evelyn and neighbors, who kindly volunteered. This spring and summer we have been blessed with an abundance of rainfall.

While weather patterns are beyond our control, there are measures we can take to mitigate effects. The principal drivers of how weather impacts plants are temperature and moisture, both of which we have some (if minor!) control over. The next aspect of winning the weather game is plant selection. As I travel portions of the midwest such as Ohio and Michigan, I find a paucity of *Cryptomeria* — too cold in winter. Here in the Southeast, where I garden, I have learned through trial and error that certain conifers are simply not adaptable to our heat, humidity, and moisture regime. At the top of the list are the true firs (*Abies*), all except *A. firma* (momi fir). While there are some species that have seemingly prospered, such as *Abies nordmanniana* (Nordmann fir), we have learned not to waste our money. Since one of our missions as an arboretum is

the preservation of rare and endangered conifers, we continually push the zone limits of more tender species. This takes me to the next consideration: **placement**. Full sun in USDA Zone 7 Oregon is not the same in Zone 7 in Georgia. Knowing that, we sometimes try to provide afternoon shade. We also create drainage to alleviate flooding during periods in the summer, when heavy downpours may occur. For some exotics, planting in a sheltered micro-climate may be the tipping point that allows you to keep a certain plant through the winter. I emphasize this point irrespective of where you garden, as there are always periods of weather extremes. A healthy, well-sited plant can better withstand those extremes.

Nothing frustrates gardeners more than droughts, especially if we have added new plants that are not yet established. We always plant or transplant with the thought in mind of how we will provide supplemental moisture during lean periods. That always includes the addition of mulch.

Lastly, when to water? Here in Georgia, we water less often (usually weekly), but deeper. A common mistake is to miss a cycle(s), and then the conifer has started to shut down as a defensive mechanism. Then you water it. This has the effect of waking the plant cells up — much like cold water on your face in the morning. If you then start to deprive the plant of water again, it is often worse than no water in the first place. In other words, once you start, continue to do so on a periodic basis. Also, in humid climates, always try to avoid sending a plant to bed at night with wet foliage, as this is a recipe for fungal diseases.

Conclusions: So, in the final analysis, every gardener in the world must deal with challenges unique to their environment. As I began writing this, it occurred to me that we plantspeople should run the world — we should be the ones holding elected office. I say this because we are the most optimistic people on earth. Who else would pay over \$100 for a plant and then lose it, and then purchase it again, and even a third time? Each spring finds us in our gardens looking for evidence of life. While it may not be nice to garden anywhere, it sure is nice to garden. After the tragedy of 9-11, the most visited place in New York City was the New York Botanical Garden. Here's hoping that you enjoy a great year in your garden.

Derek Spicer, Memories and Remembrances

Text Charles Paquelet



Left to right, Derek Spicer, Charlie Paquelet, and Aris Auders at Aris's Garden, Plieciems, Latvia. Photo by Bill Hendricks.

Derek Spicer, a man totally immersed in the study of conifers and their promotion as garden plants, died on March 30, 2020, near his home in the UK, due to complications following surgery. He was 77 years old.

HOW IT ALL BEGAN - IN DEREK'S WORDS

It started with catching that small tortoiseshell butterfly in grandfather's garden when I was five. Frogs, toads, newts, lizards, snakes, birds, and eggs (40 or 50) soon followed. So, it was obviously zoology at A-level. Did I want to do botany as well?

Ok, it seems like a reasonable idea. The lecturer from Regent St. Poly took all five of us from school to Box Hill. Eleven orchid species and four pints at lunch time, and I was hooked. The animals got shelved for 40 years.

Botanizing in western Ireland for three months and four collecting expeditions to Spitsbergen and Northeast Greenland resulted in a Masters in Science in taxonomy, but also the realization that measuring plant parts all

day was boring (no DNA work in those days). I spent the next 35 years buying scrap metal and traveling the country. A field by the house tempted me into growing alpines, my first love; and I even tried fruit tree budding. John Kelly, then selling alpines in Stoney Stanton, wanted dwarf conifers, which were popular in the 1960's. In spite of a botanist's instinctive disdain for 'mutant' plants, my underlying appreciation for things bonsai, combined with my collecting instinct, soon caused me to build what turned into probably the country's most comprehensive conifer cultivar collection. Propagation seemed easy, and wholesale sales to the then-fledgling garden center trade were simpler than retailing (might be a different decision today with the internet).

My familiarity and knowledge of dwarf and colorful garden conifers continued to grow, but it was not until my first trip to New Caledonia that I truly appreciated how tough some of these plants are. Under pressure from newly evolved angiosperms, conifers colonized the inhospitable parts of the planet: toxic, metalliferous soils, poor acid bogs, high

mountains, hot deserts, and the northern wastes. More trips abroad soon followed. New Zealand, Australia, New Caledonia again, Europe, and North America, all in pursuit of seeing the species in their natural habitats.

PROMOTION OF CONIFERS FOR GARDENS

Derek was a member of the now defunct Conifer Growers Association, formed in the early 1990's to promote conifers in home gardens in the face of criticism of Leyland cypress (*Cupressus x leylandii*) and large-growing Lawson cypress (*Chamaecyparis lawsoniana*), both of which had been planted in small urban gardens in the 70's and 80's and which quickly had outgrown their spaces. The CGA shared their knowledge and expertise to bring more suitable conifer selections into favor with gardeners. Derek was an inspirational member of the Association, and through his efforts, it was invited to exhibit for many years at the world-famous Chelsea Flower Show. He was a regular participant at the Royal Horticultural Society (RHS) weekend shows in London, promoting conifers. He served as a judge at RHS regional and national shows.

FORMATION OF THE BRITISH CONIFER SOCIETY

Daniel Luscombe, Collections Manager for the Bedgebury National Pinetum, met Derek during the 2002 International Dendrological Society tour of New Caledonia, an island noted for its vast number of plant species, most of which are endemic, including 43 species of conifers. The British Conifer Society was the result of a chance conversation between the two. Soon after returning home, with Luscombe's urging, five conifer growers met at Bedgebury, with the idea of forming a plant society to promote conifers. It was open to any conifer enthusiast, whether professional or amateur. Derek was the first chairman.

Derek attended the 2003 ACS National Conference to observe the workings of a successful conifer society and distributed applications for membership in the BCS. My wife Judy and I became members. Many events that occurred over time are compressed into a few memories. Why I remember some and not others is a mystery. At that meeting, I remembered seeing a tall, thin man wearing a broad-brimmed, leather hat, taking long strides, walking alone among the trees, and taking notes. That man was Derek Spicer, although I did not know it then.

The first meeting of the BCS was held at Bedgebury in 2004. Jonathan Tate, a compatriot and founding member, served as vice chairman from the start. Derek and Jonathan

spent many an evening on the phone discussing conifers, society business, and "the meaning of life". Jonathan noted that Derek produced many conifer oddities and he regularly chastised him with: "Derek, you will never sell that." Sound observation, for few were ever sold.

Derek was everywhere. He served as chairman of the BCS much of the time and was responsible for the BCS Journal. He and Peter Schrauwen of the Dutch Conifer Society (*Nederlandse Coniferen Vereniging*) planned and organized yearly summer tours through most of the countries of Europe and twice to the United States. He was always in attendance at BCS local and regional get-togethers. Eventually, he was appointed to and served on the Royal Horticultural Society Subcommittee on Conifer Registration from 2006 and the prestigious Woody Plant Committee from 2009.

SOME PERSONAL REFLECTIONS

David Sampson of Cedar Lodge Nursery, New Zealand, met Derek and his wife, Carole, at the Araucariaceae Symposium in Auckland in 2002. "This tall, gangling bloke approached us and introduced himself. He knew who we were, but we did not know who he was. It transpired that he had previously sent for and received our conifer catalog. That started it all. After the symposium, he and Carole drove the five hours down to New Plymouth and stayed with us for two or three days, conifering. I know there is no such word, but it fits. We ended up sending him quite a few conifers that he did not have, including some that we had developed ourselves."

The BCS planned a tour to Scotland in the summer of 2000 and Judy and I signed up. (This was the first of what was to become annual tours with the BCS and NCV.) We were to meet Derek in the busy Edinburgh airport. I had no idea how to identify him. However, the encounter is vivid in my memory, as he turned out to be that same fellow I had seen at the ACS meeting two years before! Several years later, Judy and I visited the Spicers in England. I was impressed with his well-kept nursery and large selection of rare and unusual conifers. Along the drive to his home stood an iconic, red, English phone booth in disrepair, a vestige of his scrap collecting days. (When visiting me some years later, he saw my restored, red, English phone booth with a functioning phone. He offered a litany of reasons why his phone booth remained nonfunctional. I didn't believe any of it!) We were taken to see the sights, and see them we did. When we saw Derek and Carole in 2005, they took us

to see many of the champion yew trees (*Taxus baccata*) in the UK, and we hiked some glorious peaks in Wales. A drive through Sherwood Forest and a stop in a medieval church cemetery that contains the grave of Little John convinced me the story of Robin Hood was true.

Stephen Sillett, PhD, professor at Humboldt State University, in California, is world-renowned for his study of old-growth, redwood forest canopy. He and his wife and research partner, Marie Antoine, first met Derek in 2004 on an International Dendrological Society (IDS) tour of the Pacific Northwest. Marie Antoine described Derek best: "He was brilliant, kind-hearted and irascible. He was easily stirred to angst by injustice and inattention. He was motivated by justice and detail. I have seldom met a more indefatigable hiking partner and will never forget his wry sense of humor."

Roger Ward, a fellow nurseryman, admired Derek's laid-back attitude. "If we had a blistering hot period, and his irrigation failed, Derek would just shrug it off as just one of those things, whereas most of us would be tearing our hair out. I rang him once during a very busy time and Carole said 'Oh, he is playing in a golf tournament today'. A lesson for all of us. He was truly interested in most of the natural world. Derek was an inspiration to us all, and I will miss his quiet greeting delivered from the side of his mouth with a slight inflection at the end, 'all right!'"

Adrian Bloom, internationally known plantsman, television personality, and author, writes: "Derek was instrumental in forging closer links between the BCS and RHS. In recent years, the annual BCS meeting has been held at the RHS center at Wisley. The present curator of the Wisley Gardens, Matt Pottage, is a conifer enthusiast, and the gardens now represent conifers more completely. In February 2020, Derek, as chairman of a committee on conifers, invited me and a panel of conifer experts to Wisley to review and recommend pines with golden needles worthy of an Award of Garden Merit, the highest accolade the RHS can bestow on a plant. These were mostly *Pinus mugo* (mugo pine) and *Pinus sylvestris* (Scots pine) cultivars, *Pinus strobus* 'Louie' (Louie eastern white pine), and several others. *Pinus contorta* 'Chief Joseph' (Chief Joseph lodgepole pine) is almost a certainty for an AGM."

RHS ENCYCLOPEDIA OF CONIFERS

Derek's legacy is most likely the landmark publication, *RHS Encyclopedia of Conifers*. His interest in writing such a

book goes back to the 1970's when nurseryman Don Hatch said that he was going to put all his conifer knowledge in a book. Sadly, he did not survive to do it, but that inspired Derek to write a book before he lost all that Don, and other experts, had passed on to him. The idea stayed with Derek until one day, out of the blue, Aris Auders, a conifer collector, showed up at Kilworth Conifers and approached Derek about writing such a book. Derek, due to his background in taxonomy, would write the text, and Aris, an accomplished amateur photographer, would supply the images. It took two and a half years to complete and was published in 2011.

Adrian Bloom recalls: "I heard that Derek was doing this book on conifers, and, when I eventually received a copy of the two weighty volumes for review, I realized one of the reasons why he was always short of time! It was a work few would have been prepared to take on, and, although Derek had considerable knowledge of his subject, no one could have found the detailed information on the thousands of cultivars without copious research. In reviewing the books, I made 20 pages of notes, and drove one hundred miles to his nursery, where I spent several hours with Derek, going through the copy to either add a few bits of information, or to ask questions. It was a worthwhile experience, particularly when I returned with a few conifers from his nursery that I couldn't resist."

AWARDS

Derek received two major awards: the 2015 ACS Chub Harper Award for Development in the Field of Conifers, and the Veitch Memorial Medal for Services to Horticulture, which is the second highest honor that the RHS bestows.

FINAL THOUGHTS

Most will remember Derek for his keen knowledge of horticulture and passion for conifers, but, for me, it was his kindness and generosity with his most precious possession: time. The annual tours allowed Judy and me to see a wide range of conifers in a variety of settings, and even more importantly, to form deep and long-lasting friendships that otherwise would not have been possible. The plants in my garden remind me of special places and people. When I walk through my garden, Derek Spicer always comes into my mind.

David Speth, 2020 Snyder Award Recipient

Text Byron Baxter and Ron Elardo



David and Sherry Speth in Takamatsu, Japan. Photo by Dennis Groh.

David Speth is the 2020 winner of the Marvin and Emilie Snyder Award of Merit for Dedicated Support of the American Conifer Society. Byron Baxter and Ron Elardo nominated David for this award.

David has served for five years as an officer of the Central Region, as director of the Central Region and also as its treasurer. During that time, David has been an outstanding member of the Board of Directors of the ACS. In the past year, David assembled members for the ACS's Research Committee, which had been inactive for many years. He then wrote the policy defining the group's mission and responsibilities.

David has chaired or co-chaired the organization of the last three ACS National Conferences held in the Central Region. He has implemented advanced planning for future Central Region Conferences that, in the past, were cobbled together in an annual scramble. His work in this regard has established, in advance, locations and teams to do the work for the Conference.

He has assisted and managed the plant auction check-outs at Central Region and ACS National

Conferences. He has been co-chair for the next planned Conifer College.

While David and Sherry, his wife, are familiar faces at Central Region Conferences, they also attend many other ACS events. They are ever-present at National Conferences, as well as the pre- and post-meeting tours, Iowa rendezvous, Ohio's Conifer Connection Weekend, and the Indianapolis Circle Garden Tours. David not only donates his time to these meetings and events, but he also actively supports the ACS by participating in the fundraising auctions. He has made other financial contributions to the ACS for specific purposes too.

David's organizational skills, personal dedication, and substantial time commitment have been important and essential for most Conference activities that have occurred in the Central Region for the last eight years.

David served with distinction at both the regional and national levels. The ACS has benefited greatly from David's efforts. His support of the ACS matches the high standard established by prior recipients of the Snyder Award.

Randy Dykstra, 2020 Harper Award Recipient

Text David Horst and David Speth



Randy Dykstra in his Garden, Clinton, IA. Photo by Dennis Groh.

Randy Dykstra is the 2020 recipient of the American Conifer Society Justin C. "Chub" Harper Award for Development in the Field of Conifers. David Horst and David Speth nominated Randy for this award.

Randy is a nurseryman, gardener, and an avid, long-time member and supporter of the ACS.

Randy has an amazing collection of unique conifers in his garden, which is open to the public. Since the 1980's, his garden has been featured in many regional and local ACS events.

After meeting in the early 1980's, Randy and Chub found themselves traveling throughout Iowa and Illinois searching for and collecting conifer witch's brooms. In

February 2005, Chub published a booklet listing the witch's brooms that they had found, which totaled 511 unique plants. After the first few years of working together, Randy took on the propagation of the new witch's brooms that they had collected, representing the introduction of hundreds of new conifer cultivars. Many of these original brooms are still growing in Randy's garden, along with other rare and unique conifers.

In addition to his work with Chub Harper, Randy also joined Jerry Morris in searching for conifer witch's brooms and subsequently propagated the collected plants.

Randy has been a champion of new conifers for garden use for more than 40 years. His garden, with its large collection of unique conifers, has been the subject of many tours, which always turn out to be educational experiences for anyone attending. Although he is a quiet person, Randy has a passion for educating the gardening public about the plants that he has propagated, and demonstrating his techniques for grafting, raising cuttings, and seed propagation.

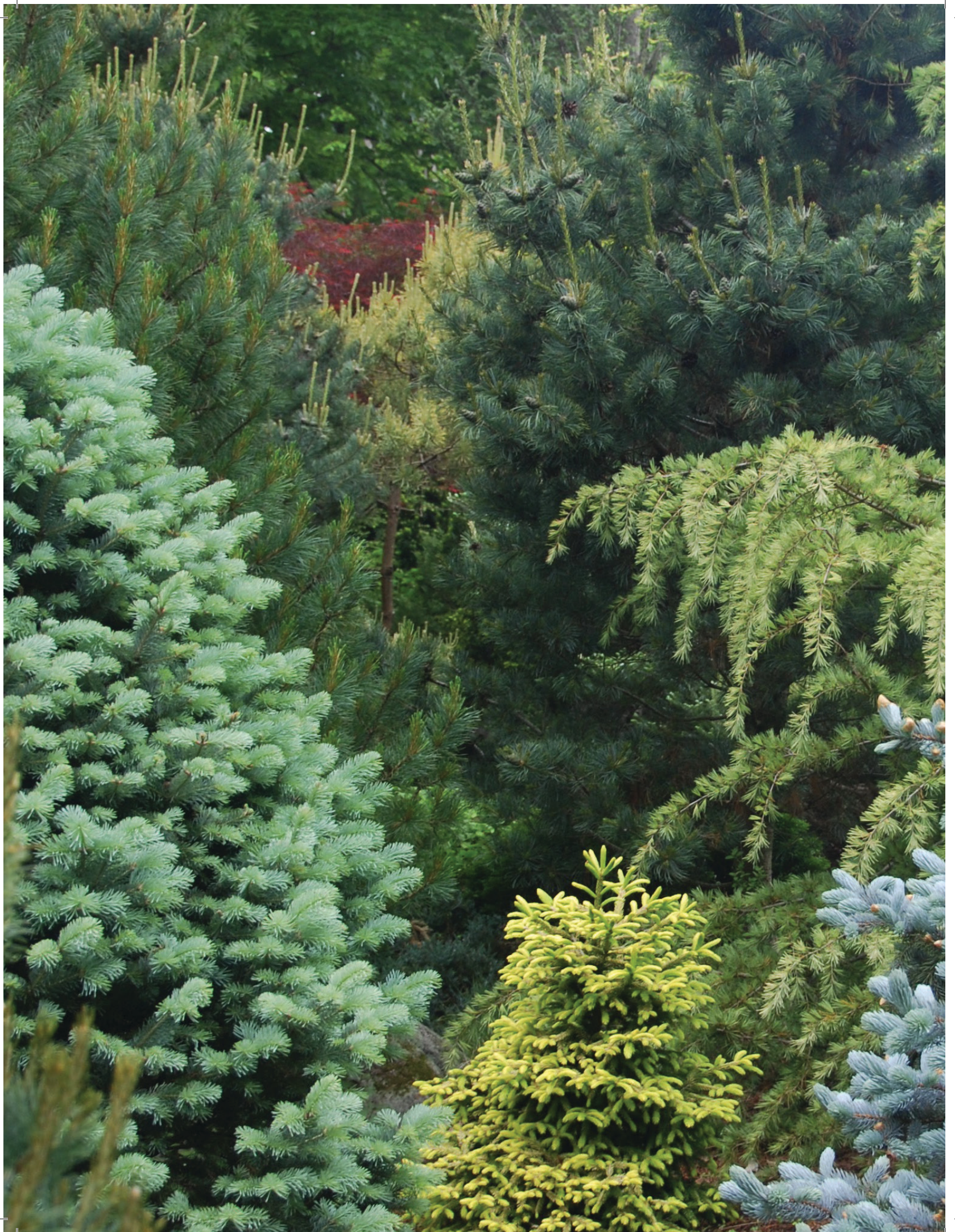
Of the hundreds of witch's brooms and seedlings that Randy has propagated, many are readily recognized by conifer lovers and are still available to collectors. As an example, he has worked with Iseli Nursery, supplying several of his unique plants for large-scale development and sales. Iseli currently has two of Randy's plants in production:

Picea pungens 'Christina'
(Christina Colorado spruce)

Thuja occidentalis 'Golden Blush'
(Golden Blush eastern arborvitae)

In 2019, Randy received recognition by the ACS Central Region with its Distinguished Service Award for exhibiting extraordinary volunteerism in support of the goals and operation of the region, while contributing greatly by introducing new plants and educating interested gardeners in his techniques and experiences.

Randy epitomizes the attributes of the Harper Award.



Larned Garden Update

Text Ron Elardo, Photography Michael Larned

Beazie and Michael Larned moved into their 18th Century house in Connecticut's Miamus River Valley in 1977. When their children grew up and left home, the Larneds, who had always been avid gardeners, set about transforming their "jungle", as Michael called it, into the beautiful landscape you see today. An article about their efforts appeared in the Winter CQ 2013, pp. 37-39.

Michael has provided us a pictorial update on how their garden has developed since then. Enjoy!



Workers lay out the hardscape.



The hardscape work continues.

Opposite page: The Larned Garden in 2020.

From left to right:

Pinus parviflora 'Blue Lou' (Blue Lou Japanese white pine)
Abies lasiocarpa 'Compacta' (compact subalpine fir)
Pinus cembra 'Blue Mound' (Blue Mound Swiss stone pine)
Acer palmatum 'Hubbs Red Willow' (Hubbs Red Willow Japanese maple)

Pinus sylvestris 'Gold Coin' (Gold Coin Scots pine)
Picea orientalis 'Firefly' (Firefly Caucasian spruce)
Pinus parviflora 'Gimborn's Ideal' (Gimborn's Ideal Japanese white pine)
Cedrus deodara 'White Imp' (White Imp Himalayan cedar)
Picea pungens 'Thompson' (Thompson Colorado spruce)



The plants installed.





Peter Vani holding a branch of *Retrophyllum filicifolium*. Lihir Island, PNG. Photo by Reuben Wertz. Peter Vani is a member of Reuben's team.

Chance Seedlings and their Selection

Text and Photography Brandon Johnson

Introduction

One of the perks of being the Inventory Manager at a large seedling producer is finding something called a chance seedling. At Vans Pines Nursery, West Olive, MI, we produce over 1.7 million conifers per year, all grown from seed. The seeds are collected from various locations around the world, including the United States, France, China, Georgia, Denmark, and

Turkey. We produce the majority of the seedlings in a seed orchard.

Seed orchards are almost like factory forests and are intentionally designed to mass-produce seedlings of superior genetic quality. They are intensely managed and are planted with the intent of reproducing a specific, superior gene. Many seed orchards for conifer



Abies nordmanniana (Nordmann fir).

species are open-pollinated; nature takes its normal course, which, for conifers, is wind pollination. Seed orchards can also be control-pollinated. This means that someone physically takes pollen from the male cone of one tree and inserts it into the female cone of another. In an open-pollinated system, especially in a large orchard of thousands of trees, the genetic variability is extremely high. Any tree could pollinate another, and that is what gives rise to chance seedlings. It is the combination of one plant's genetic code with that of another that creates the opportunity for mutations to occur.

What is a chance seedling?

In short, a chance seedling is the term for a seedling that has a genetic mutation that stands out. This mutation can take many forms, which include, but are not limited to, variegation, growth habit, growth rate, disease- or drought-resistance, and morphology. The term that we use for a chance seedling after it has been discovered and is in observation is a *seedling selection*.



Picea abies (Norway spruce).

How are they discovered?

It is easiest to see a chance seedling when you have hundreds of plants blocked together, as shown in the pictures accompanying this article. Chance seedlings also exist in the wild, but they are much more unlikely to be noticed. During the course of the year, while I am diligently counting 1.7 million seedlings, I am simultaneously on the hunt for these chance seedlings. I discover dozens, maybe a hundred per



Picea pungens (Colorado spruce).

year, which statistically is not unusual when you're dealing with millions of trees.

In late winter, when plants are fully dormant, I search for mutations in morphology. I walk the container production area and look for anything that stands out, like columnar growth, dwarfism, or fasciation. This is a good time to find variegated seedlings as well. In late May, when bud break has begun, I look for what I call colored flushes: new growth that is often white or yellow. During the summer and fall, I look for abnormal growth — for example, a seedling that is twice as tall as its siblings, or a seedling with only vertical growth (think Cobra Norway spruce, *Picea abies* 'Cobra').



Pinus strobus (eastern white pine).



Juniperus virginiana (eastern red-cedar).

What leads to observation?

For a seedling to be considered for observation, the biggest contributing factor is simple: how much space is available?! I'll observe everything interesting if I have enough room available. The most common unusual trait that I find is variegation, especially in eastern white pine (*Pinus strobus*). Another common characteristic is yellow new growth in Black Hills spruce (*Picea glauca* var. *densata*), or a columnar growth habit in balsam fir (*Abies balsamea*). I say common; but statistically, I find only about five colored-flush Black Hills out of a block of 20,000, or 10 columnar balsam in a bed of 10,000. Yellow new growth on Black Hills spruce may not be inherent in the entire species, but instead may merely be the result of specific trees in the lot, where the seed was collected.

What observation process and how long?

The process of observing mutated conifers can be as simple or as complicated as you'd like to make it. Basically, physical characteristics can be observed in only physical ways. Over the course of a few years, the most attractive of the bunch can be kept and



Abies balsamea (balsam fir).



Cedrus deodara (Himalayan cedar).

the remainder eliminated — composted or donated. In some, like the columnar balsam firs (like *Abies balsamea* 'Glauca'), it is a simple process to compare them against each other and make a selection. Others, like a collection of dwarf hemlocks (*Tsuga canadensis*), could require more careful measuring of internodal growth to compare them among themselves and as a control. Internal characteristics, which include things



Pinus mugo (mugo pine).



Picea glauca var. *densata* (Black Hills spruce).

like disease resistance, irregular juvenility, or maturity, and differences in heat and drought tolerance, require extensive testing.

What traits lead to elimination?

I learned from a long-time ACS member that the late Dr. Sydney Waxman would observe his selected seedlings for 10 years or longer before he was willing to introduce them into the trade. I think that method has been slowly lost among the conifer community today. Although I am excited to observe hundreds of these mutated conifers, very, very few will ever be introduced into the trade. The unfortunate part about collecting chance seedlings is that, more often than not, they aren't all that special. They are either unstable mutations, which revert to normal growth after a few years, unimpressive mutations that don't offer anything novel to propagate, or relatively identical mutations that look the same as something already introduced. For these reasons, out of more than 300 chance seedlings I've collected in the past four years, only about 10 of them look worthy of intensive propagation and observation.

Conclusions

Thanks to the process of open-pollination, there is great variety in the gene pool, which allows chance seedlings to occur. Although many, if not most, chance seedlings will never become the next big hit in the conifer world, it's the process of collecting and observing them that makes this endeavor worthwhile. I know that I have lots of fun doing it!

Mary May Binney Wakefield Arboretum: A new ACS Reference Garden in the Northeast Region

Text and Photography Deborah Merriam



Picea abies 'Perry's Gold' (Perry's Gold Norway spruce).

The Mary May Binney Wakefield Arboretum, in Milton, MA, was originally home to 10 consecutive generations of the same family, beginning with John Davenport in 1706 and continuing through Mary "Polly" Wakefield, who died in 2004. Before her death, Polly created the Mary May Binney Wakefield Charitable Trust to preserve and restore the buildings and gardens that she and her predecessors had built.

Polly Wakefield trained as a landscape architect and plant propagator. She began her love affair with plant collecting in 1956, when she started taking classes with Roger Coggershall at Harvard's Arnold Arboretum. Each year, participants in Roger's propagation class received permission to collect seed from one tree in the Arboretum's collection. Polly fell in love with *Cornus kousa* (Korean dogwood) and took seed from the same two trees for more than 40 years. Polly grew fond of *kousas* because, to her, each tree had unique bark, bracts, fruit, and leaves. She ended up selecting and patenting eight cultivars of *Cornus kousa* after planting more than 600 *kousa* seedlings on her property.

Her interests in plant propagation and in developing a collection grew far beyond *Cornus* to include a wide

variety of conifers. Because she enjoyed trees with unusual bark, she collected *Pinus bungeana* (lacebark pine), *Sciadopitys verticillata* (Japanese umbrella pine), *Cryptomeria japonica* (Japanese cedar), and *Chamaecyparis pisifera* (sawara false-cypress), all originating from seeds, cuttings, or grafts from the Arnold's collections. She created a four-square planting of *Metasequoia glyptostroboides* (dawn redwood) around 1958 that is even now the anchor of the formal gardens.

Polly developed a fondness for dwarf conifers while working with Al Fordham, and Donald Wyman, the Arnold propagator and arboretum horticulturalist, respectively. Al Fordham wrote extensively for *Arnoldia*, the quarterly magazine of the Arnold Arboretum, about conifers and dwarf conifers. He was a leading expert on the propagation of gymnosperms and published the *Propagation Manual of Selected Gymnosperms*. His expertise in woody plant propagation was widely acknowledged, and colleagues, both here and abroad, sought his advice. After learning from these two men, Polly created a small garden of dwarf conifers and Japanese maples in 1990 and named it "The Witches' Garden". Today, the 30-year-old dwarf conifers have outgrown their space, and Japanese maples are shading them out. Careful restoration of healthy conifers and the removal of dying ones are allowing the garden to survive for a few more years before a more drastic renovation will have to take place.

The Arboretum's staff thoughtfully designed and installed a wide array of colorful gates and finials in the landscape. Handmade, colorful lanterns, and carefully placed mirrors add elements of whimsy that visitors of all ages appreciate. Polly loved animals of all kinds, and artists sculpted these animals as statuary in many parts of the garden. There is even a colorful wooden bird swing at the end of a long avenue of dogwoods!

Polly Wakefield passed away in 2004 and left her property in a private trust to be used for education and community engagement. Ten years of neglect prior to her death and heavy deer browsing led to the severe decline of old, massive *Taxus* (yew) hedges and much of the woody understory. In 2012, the trustees created



Abies koreana 'Horstmann's Silberlocke' (Horstmann's Silberlocke Korean fir).



A wider view of part of the Reference Garden.

a landscape management plan, beginning with the installation of deer fencing. Five acres of the formal gardens now have fencing, in order to protect newly planted specimens and old, severely damaged yet salvageable, yew hedges. Since that time, staff have rejuvenated many of the plants in the landscape, and have added new ones, focusing on Japanese maples, *Magnolia*, and several dwarf conifer cultivars.

In order to highlight Polly's interest in dwarf conifers, the Arboretum staff has created a brand-new garden. This garden tackles a difficult site on the property, highlights Polly's love for unusual conifers, and continues her legacy of developing unique garden spaces in her landscape. The dwarf conifer garden is a wonderful addition to a beautiful landscape.

New plants have come from Broken Arrow Nursery (Hamden, CT) and from ACS plant sales, using grant money provided by the Northeast Region. More recently, a staff trip to Iseli nursery in Oregon resulted in the procurement of many new plants to be added in the future.

The American Conifer Society certified the Arboretum as a Conifer Reference Garden in 2018. Since that time, the Arboretum has held a wide variety of classes and events that focus on the collection, led by conifer enthusiasts Christie and Elmer Dustman. The Arboretum is home to 400 species of woody plants, 120 of which are conifers. Wakefield is a place well worth visiting!

The beginning of the Reference Garden.





Polly's dogwood lane.

There are a total of 76 conifer cultivars in the Wakefield Arboretum. These are some of the conifers.

Abies concolor 'Wintergold' (Wintergold white fir)
Abies koreana 'Horstmann's Silberlocke' (Horstmann's Silberlocke Korean fir)
Abies procera 'Glauca' (blue Noble fir)
Calocedrus decurrens 'Berrima Gold' (Berrima Gold incense-cedar)
Cedrus atlantica 'Sapphire Nymph' (Sapphire Nymph Atlas cedar)
Cephalotaxus harringtonii 'Fastigiata' (fastigiata Japanese plum-yew)
Cupressus nootkatensis 'Sparkling Arrow' (Sparkling Arrow Nootka cypress)
Chamaecyparis obtusa 'Chirimen' (Chirimen Hinoki false-cypress)
Chamaecyparis pisifera 'Curly Tops' (Curly Tops sawara false-cypress)
Cryptomeria japonica 'Mushroom' (Mushroom Japanese cedar)
Ginkgo biloba 'Jehosephat' (Jehosephat maidenhair tree)
Juniperus communis 'Gold Cone' (Gold Cone common juniper)

Juniperus horizontalis 'Mother Lode' (Mother Lode creeping juniper)
Juniperus × *pfitzeriana* 'Daub's Frosted' (Daub's Frosted Pfitzer juniper)
Metasequoia glyptostroboides 'Schirrmann's Nordlicht' (Schirrmann's Nordlicht dawn redwood)
Picea abies 'Acro-yellow' (Acro-yellow Norway spruce)
Picea glauca var. *albertiana* 'Daisy's White' (Daisy's White dwarf Alberta spruce)
Picea omorika 'Kamenz' (Kamenz Serbian spruce)
Picea orientalis 'Firefly' (Firefly Caucasian spruce)
Picea orientalis 'Skylands' (Skylands Caucasian spruce)
Picea pungens 'The Blues' (The Blues Colorado spruce)
Pinus strobus 'Mini Twists' (Mini Twists eastern white pine)
Pinus densiflora 'Burkes Red Variegated' (Burke's Red Variegated Japanese red pine)
Pinus mugo 'Aurea' (golden mugo pine)
Taxus baccata 'David' (David English yew)
Taxodium distichum 'Gee Wizz' (Gee Wizz bald cypress)
Tsuga canadensis 'Moon Frost' (Moon Frost Canadian hemlock)



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