

Conifer Quarterly

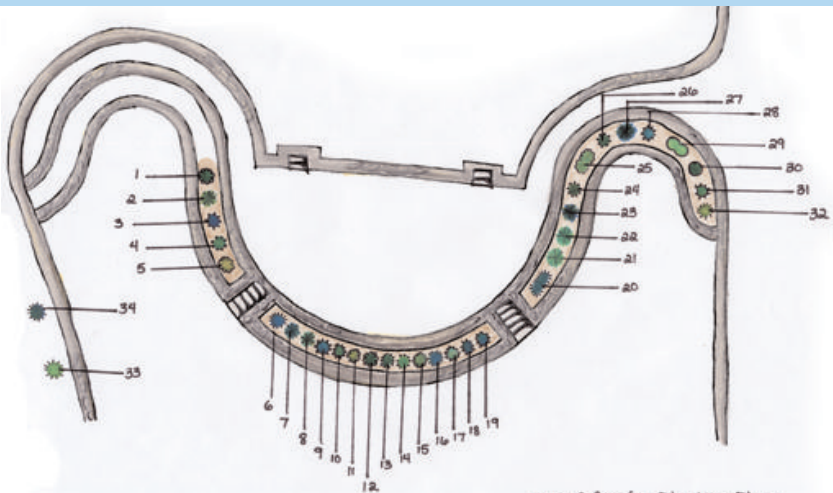
Vol. 23 No. 2

Spring 2006





The garden area in the Margaret Byrd Stimpson Amphitheater (above and below) at the State Arboretum of Virginia will soon be replanted with dwarf conifers. Read more about this project on page 16.



The State Arboretum of Virginia
Margaret Byrd Stimpson Amphitheater

Dwarf Conifer Planting Plan
Designed by: Mac Stiff
Mischele Way
Kim Strader
Fall 2005

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Cover photo: *Picea abies* 'Inversa' at the Morris Arboretum in Philadelphia, Pennsylvania.
Photo by Anne M. Brennan.

Conifer Quarterly

Spring 2006
Volume 23, No. 2

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You are invited to join our Society. Please address membership and other inquires to the Conifer Society National Office, P.O. Box 3422, Crofton, MD 21114-0422. 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.

As of April 15, 2006, all editorial and advertising matters should be sent to: Evelyn Cox, 342 North Main Street, Suite 202, Alpharetta, Georgia 30004. (770) 663-7576, coniferquarterly@bellsouth.net.

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

PRESIDENT'S MESSAGE

BY DON WILD

Spring is here, and it is time for new adventures. We have completed the by-laws rewrite and hope to have the changes confirmed by the time you read this. A special thanks goes to Ellen Kelley, the force that kept the project moving.

Our business meeting in February was another success, due to diligent work by your Board of Directors.

As you may know, Anne Brennan has taken on new professional responsibilities, and this will be her final issue as Editor of the *Conifer Quarterly*. Under Anne's direction, the *Quarterly* has become an outstanding publication. She has handled both the editing and the layout since the winter of 2003, and she has recently produced two issues that included eight pages of color photography.

Anne's idea to organize each publication around a central theme has worked extremely well and has stimulated the submission of photos and articles from members. She has worked closely with our webmaster, Bill Barger, and has been the consummate team player and team leader. We all wish her well and expect to see her on future conifer tours.

Our new Editor is Evelyn Cox from Canton, Georgia. Evelyn has been working diligently to set up the infrastructure necessary to produce a top-quality publication. Evelyn is eager to begin her new responsibility, and we all need to support her with sound articles and photos. Anne will continue to assist Evelyn during the editorial transition.

The inaugural **Collector's Conifer of the Year program** was a success, and we look forward to continuing the program in upcoming years. The committee has selected the plants for 2007 and 2008, and nursery production has begun. I cannot divulge the names of the chosen conifers, but I can tell you that the plants are very special. We have learned much and are thankful to many for completing the 2006 project. Ridge Goodwin was the driving force from conception to completion. We also owe appreciation to Paul Halladin of Iseli Nursery and Talon Buchholz of Buchholz Nursery for their willingness to cooperate with our needs. Flo Chaffin and Randy and Rita Oster also contributed considerable effort to this project.

I was recently contacted by Wayne Jope, who volunteered to coordinate our annual Seed Exchange this fall. Wayne has the facilities, the know-how and, I believe, the energy to breathe life into our Seed Exchange activity.

Flo Chaffin has devised a member-

ship survey aimed at determining ACS members' interest in, and willingness to coordinate, local events to add value to ACS membership. Please take a moment to complete her questionnaire, as we need your assistance to ensure that ACS provides its members maximum benefit.

Our scholarship went unclaimed last year, and the Board elected to roll these funds over, so the scholarship will be worth \$1000 this year.

This column represents my final President's Message, since my term will end with the 2006 National Meeting. As you may know, Tom Cox will replace me as president. Tom has an administrative background and special skill in negotiating contracts, which is one of the more difficult aspects of this position. Tom is an outstanding plantsman and an avid "coniferite," so the American Conifer Society is in good hands.



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Onward and Upward

There are many ways to say goodbye. As I complete my last issue of the *Conifer Quarterly* as Editor, before turning the project over to my successor, Evelyn Cox, allow me to use this column to thank my collaborators.

The *Conifer Quarterly's* editorial staff might appear to be a staff of one. During the crunch just prior to each issue's deadline, I have even been known to describe the project as a "one-woman show" to people who ask me what part of the publication I am responsible for. I deserve to be swatted with a length of *Cunninghamia lanceolata* scion wood for saying such a thing, because I am only one member of the CQ team.

You may not be aware that three

conifer experts have been volunteering as Technical Editors since long before I became involved in our publication. **Ethan Johnson**, **Bill Thomas**, and **Susan Martin** have been more than willing to review article drafts when I am unsure of the details, especially where nomenclature is concerned. You may safely assume that, if a conifer name is not listed correctly in the *Conifer Quarterly*, these talented and generous ACS members were not consulted on that particular item! They are a great asset to the editorial team.

John Martin, who oversees the administrative aspects of our Society, has always had an uncanny ability to identify and take care of details I've overlooked. He all but answers my questions

before I ask them where vendor payments, shipping questions, or membership issues are concerned. More notably, he never complained when my mistakes created more work for him.

I am continually impressed with our

Each of you has a unique perspective on the landscape use, propagation, or culture of conifers

Society's leadership. In addition to the many board members who have offered feedback and suggestions regarding my work, a few people deserve specific mention here. **Marvin Snyder's** term as national president was ending when my predecessor, Jane Frampton, announced

she would be stepping down. He recognized my interest in the position and, I still believe, was largely responsible for my selection. **Dennis Groh** followed Marvin as president, and has continually insisted that the *Conifer Quarterly* is the reason most members renew each year. Current president **Don Wild** has always encouraged me while never micro-managing the publication, a problem in some similar organizations.

Anyone who knows **Bill Barger** realizes that he wears many hats in our Society, and the same is true of his involvement with the *Conifer Quarterly*. As ACS Webmaster, computer expert, talented photographer and occasional author, Bill's contributions to our success are many.

All of the people I've mentioned have been invaluable behind the scenes,

Publication Dates

Issue	Calendar Quarter	Deadline to submit articles	Publication Date (approx. mailing)
Winter	Jan/Feb/Mar	Nov 7	Jan 15
Spring	Apr/May/June	Feb 6	Apr 15
Summer	Jul/Aug/Sept	May 10	July 15
Fall	Oct/Nov/Dec 31	Aug 12	Oct 15

Submit articles/photos to:

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

Next issue:

Summer 2006: The genus Pinus (the pines)

What favorite pine species and cultivars grace your garden? This large and varied plant group includes some of North America's most common and ecologically important species. But dwarf and unusual forms abound also, and ACS members would like to know which cultivars you love and recommend.

Please send your contributions to Editor Evelyn Cox by May 1st, or contact her to discuss your idea.

but the most important force that continues to push our publication forward is the contributions of **authors and photographers** who provide the content. Each of you has a unique perspective on the landscape use, propagation, or culture of conifers, and I encourage you to share that angle with ACS members through the *Conifer Quarterly*.

Finally, I thank my husband, **Tony**, for his dedicated deadline-day proof-reading, skillfully-crafted article contributions, enthusiastic event participation, and all-around support for the work I do.

I look forward to seeing and learning from you all for years to come.

Anne



Conifers are seeping into every corner of outgoing Editor Anne Brennan's garden. While the *Cedrus deodara*, shown at the rear of the photo, jumped into her car at a local garden center, *Chamaecyparis obtusa* 'Crippsii' rode home from the 2002 national meeting in Boston. Other needled plants lurk nearby. Despite the limited space, the number of large-growing conifers is likely to expand indefinitely.

CORRECTIONS

Chamaecyparis nootkatensis remains preferred name... for now



Chamaecyparis nootkatensis 'Pendula'

In several instances during the past year, the name *Xanthocyparis nootkatensis* has appeared in the *Conifer Quarterly* to describe *Chamaecyparis nootkatensis*, the Alaska-cedar. Discussions continue among experts in plant genetics and systematics as to whether this plant properly belongs in the genus *Xanthocyparis*, *Cupressus*, *Callitropsis*, or *Chamaecyparis*.

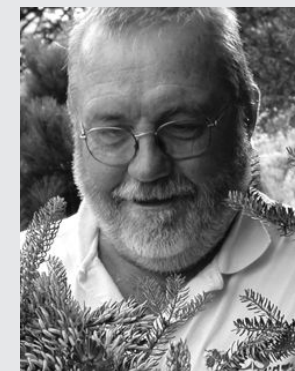
The *Conifer Quarterly*'s technical editors advise that the ACS continue to use the name *Chamaecyparis nootkatensis* in its publications until the issue is settled. When a consensus is reached, a note will be published here.

– Anne Brennan, *Conifer Quarterly* Editor

Due to a typographical error in the Winter 2006 issue on the inside front cover, Don Howse of Porterhowse Farms in Sandy, Oregon, was incorrectly identified as Don Wild, who is the current national president of the ACS.



Don Wild



Don Howse

Evelyn Cox Named New Editor of *Conifer Quarterly*

It is an honor to assume responsibility as Editor starting with the Summer 2006 issue. I realize that the *Conifer Quarterly* is an important part of the ACS's public image, and I will continue the tradition that Anne Brennan and her predecessors have set in positively impacting that image. These previous editors, together with the technical and advisory committees, officers, board of directors and contributing writers, have continually provided a top-quality publication that impacts the plant world in a very positive way.

To those of you who contribute your time and expertise to help make the *Conifer Quarterly* the type of publication that has recipients eagerly going to their mailboxes on a quarterly basis, I say thank you and keep those articles and photos coming. For those of you who have not yet been published in the *Quarterly*, I encourage you to do so.

As a short introduction, my educational background includes a Bachelor of Business Administration degree. My professional experience includes taking charge of a large graphics department within a corporation. That assignment is one of the highlights of my professional experience as my career path, up to that time, had taken me far from my passion – a love of words and the many ways in which they can fit together to influence

and entertain us.

As part owner of an arboretum, my conifer connection includes being surrounded by them at our home just north of Atlanta. When we first started adding conifers to the arboretum, I was not as impressed as I should have been. A little bun here, a wispy stem there did not stand out among so many other plants. Slowly, though, conifers became an important part of the landscape here and, as they began



growing a bit and stealing the show through all of the seasons, I began to give them the respect and admiration they truly deserve in any garden. It is exciting in our drab southern winters to step outside my door and see a palette of tonal greens and glowing yellows among the grays and browns of their twiggy, leafless neighbors. Few other plants can compete with the winter color and textural scene painted by conifers, and this winter our conifers put on a spectacular show.

I have met wonderful people through the Society and look forward to getting to know others of you somewhere along the conifer trail, perhaps at national meetings or other functions. If you have not gotten involved in conifer events, locally or nationally, please consider it. I hope you will seek me out at these events to share your interests and to give me your feedback.

If you are interested in becoming a contributor to the *Quarterly*, visit the website at www.conifersociety.org and click on "Conifer Quarterly" for submission guidelines. In the Summer 2006 issue, we will focus on the genus *Pinus*. We welcome stories and photos which you feel will be helpful to your fellow readers. The deadline for submissions is May 1st; earlier submissions are encouraged. If you have questions or comments, please contact me at coniferquarterly@bellsouth.net, or write to me at 342 North Main Street, Suite 202, Alpharetta, Georgia 30004.

– Evelyn Cox

Contact the New Editor

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Confusion persists in the trade regarding *Picea* cultivar names

Recent photos of *Picea* cultivars that have appeared in the *Conifer Quarterly* provide an opportunity for me to comment about the incorrect names that are often used.

Errors in nomenclature can originate from bad species identification from the beginning when a cultivar is first discovered, or as a result of poor labeling or keeping records.

Here are some examples:

Picea glauca 'Echiniformis' is often confused with *Picea mariana* 'Pygmaea' in labeling, but the difference is easy to see because the foliage and buds are quite different (see photo).

With regard to *Picea glauca*, we can say that there are two categories of foliage: the "normal" type of the species and the "Conica" type with finer foliage and small buds. True *Picea glauca* 'Echiniformis' (see photo) is difficult to find in nurseries and collections. A nice picture of this cultivar appears on page 391 of the book *Conifers: The Illustrated Encyclopedia*.

In recent years, a cultivar has been sold under the name of *Picea glauca* 'Blue Planet'. In fact, it appears to be a cultivar of *P. mariana*, as shown in the photo of a reversion. I do not know the plant's exact origin, but I am interested to obtaining this information.

Another example of a misnamed spruce cultivar is *Picea abies* 'Lombarts', which is often seen with the

name *Picea pungens* 'Lucky Strike'. The plant that currently grows in my collection not only produced cones characteristic of *P. abies*, but it also shows some reversion to normal foliage that supports this. We would do well to give up the name *P. pungens* 'Lucky Strike'.

Further, in the case of the plant often called *Picea jezoensis* 'Yosawa' or 'Chinese Maril', I believe that it is absolutely not *P. jezoensis* but rather a cultivars of *Picea glehnii*.

This problem also arises in other genera and species. For example, people often ask me about *Abies balsamea* 'Prostrata', but to me, it is not a cultivar of *A. balsamea*.

Another example is *Abies homolepis* 'Tomomi', which is often labeled incorrectly as a cultivar of *A. koreana*.

I will say again that it is very important to correctly identify the species from which the cultivar arises. If a new mutation appears on an incorrectly named plant, the resulting new cultivar will also receive the wrong name, and corrections become even more difficult thereafter.

Finally, I believe that it is better to always use cultivar names as originally given in their mother language (without translation, or only translated for information) to avoid other mistakes.

Clement Anthoine



Picea glauca
'Echiniformis'



This reversion indicates that the plant commonly called *Picea glauca* 'Blue Planet' is actually a cultivar of *P. mariana*.



Picea glauca foliage above, compared to *P. mariana* below.

ACS Grant Helps Illinois Central College Arboretum Interpret Conifer Collection

By Glenn Herold

2004 Jean Iseli Memorial Award funds labeling, interpretive conifer brochure

According to the college catalog, “The mission statement of Illinois Central College is to (1) enable students to reach their educational potential and (2) serve as a resource for the educational and cultural needs of the community.” How does this relate to the ICC Arboretum? Mission accomplished.

Illinois Central College was founded in 1966 and opened its doors in September of 1967. Horticulture classes were first offered in the fall of 1970. At that time, plants were obtained for teaching purposes and lined out in evenly spaced rows. When I arrived in the fall of 1979, the inventory was still meager and most samples had to be obtained off-campus. This took up a lot of my time, and students were unable to see the plants in a landscape setting. In the spring of 1980, the arboretum began to take shape and it has been expanding and becoming more complex ever since. Close to 1800 taxa now exist over the seven-acre site.

The arboretum has become a community resource as well as a teaching device. In 2000, a new building was added to the site that included a classroom, construction lab, and state-of-the-art greenhouses. This has allowed numerous garden clubs and plant societies in the area to regularly use the arboretum facilities for meetings, workshops, and tours. Construction within the arboretum has been done exclusively by ICC horticul-

ture students and staff. Projects include a patio and fence, raised planters, lath structure, a flagstone wall, a water garden with a 75-foot stream, and, currently under construction, a Japanese garden. Featured plant collections encompass

The conifer collection is one of the best in Illinois

crabapples, birches, oaks, maples, dwarf and unusual conifers, hydrangeas, and extensive shade perennial beds boasting over 300 varieties of hostas. Through generous donations from my friends in the ACS, the conifer collection is one of the best in Illinois and allows arboretum visitors to gain an appreciation for conifers’ beauty and diversity.

Since 1981, the arboretum has been a display garden for the All-American Selections of flowers and vegetables. Over 200 varieties of annuals are showcased each summer, mainly in the display beds surrounding a 16-foot gazebo that was purchased in 2000 with funds donated by alumni and area garden clubs, but also dispersed throughout the garden. These are highlighted on the first Saturday after Labor Day, when the ICC Horticulture Department hosts its annual Landscape and Garden Day,



Pinus virginiana 'Wate's Golden'
at the Illinois Central College
Arboretum



Pinus sylvestris 'Prairie Dwarf'

All photos by Glenn Herold

which now attracts over 1500 gardening enthusiasts to the one-day event.

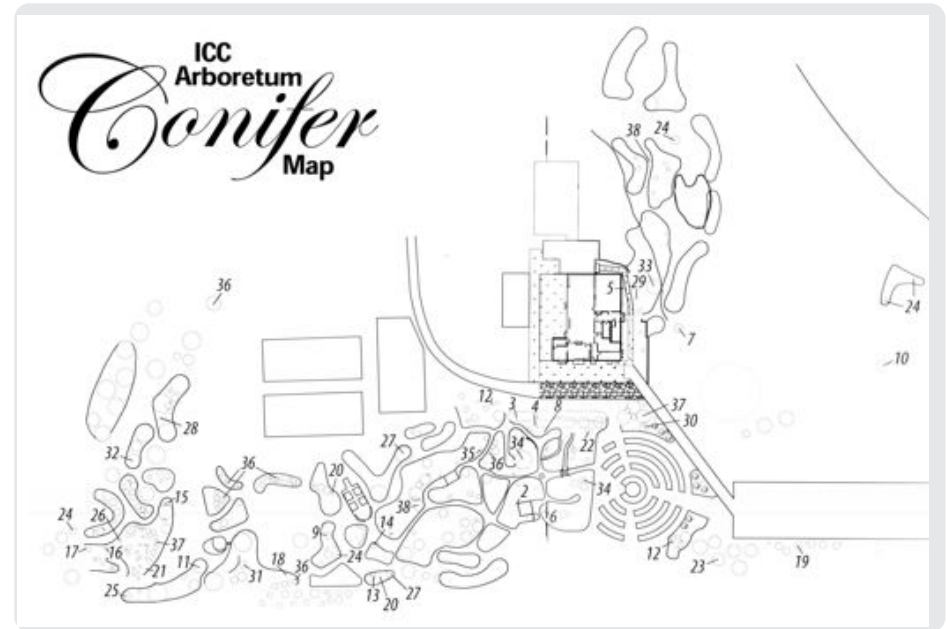
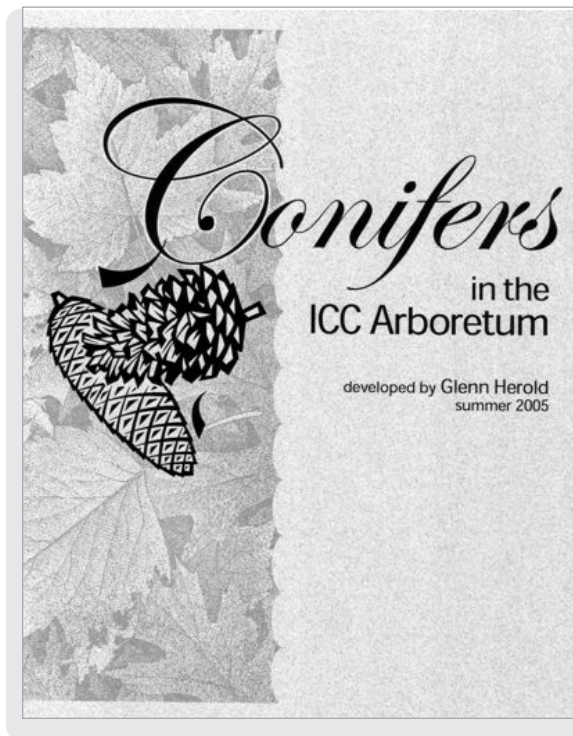
In view of the fact that ICC is an educational institution, labeling and interpretation of the collections have always been major goals of mine. Permanent markers are placed on plants that have proved hardy over a two-year period. Being that quality labels are expensive, and our horticulture budget has no funds allocated directly for the arboretum, we rely on plant sales and grants such as the Jean Iseli Memorial Award to complete this task. It is a never-ending endeavor! Proper labeling and record keeping require full-time attention, which I am rarely able to provide to my satisfaction.

During the spring of 2005, I took a sabbatical to bring the mapping and plant inventory as up to date as 25 years of partial neglect would allow. The entire arboretum is now mapped using AutoCAD, and plant records are in an Access database. In my spare time, I completed an interpretive brochure for the conifer collection which visitors can pick up at the arboretum classroom. Readers can learn what a conifer is, why some conifers are dwarf, and how to identify the various genera, as well as use the enclosed map to take a tour of 38 conifers within the collection. A listing of all conifers in the ICC Arboretum is also included. Jean Iseli Memorial Award funds made possible the printing and distribution of this document. If you would

like a copy, send me a note, or e-mail Gherold@icc.edu.

The Illinois Central College Arboretum is located in East Peoria on the East side of the Illinois River, a quarter mile from the Highway 24 main entrance. We are open sunrise to sunset every day of the year. There is no admission charge, but donations in the form of plants are always welcome. Contact me prior to your arrival, and Ill be honored to give you a tour. ▲

About the author: Glenn Herold is Professor of Horticulture at Illinois Central College, where he teaches courses in landscape plant identification and propagation, landscape design, turfgrass management and other topics.



What is a Conifer?
The word conifer is derived from two Latin words meaning cone bearing. Though some cones do not look like "a cone," their internal structure is the same. Some are even covered by a fleshy layer. However, this material is not a true "fruit," for fruit is derived from the ovary of a flower. Conifers do not have true flowers, but rather structures called strobili.



Internal structure of a cone

The foliage of conifers may be needle-like or scale-like. Sometimes the two types are found on the same plant, such as in many Junipers. Usually the foliage is evergreen, but there are several notable exceptions including those found in the Arboretum: Larches (*Larix*), Baldcypress (*Taxodium*), Dawnredwood (*Metasequoia*), and Goldenlarch (*Pseudolarix*). Because of the many forms and colors of conifers, they provide year-round interest in the landscape.

Conifer Nomenclature
Conifers are classified in a class of the Tracheophytes (plants that contain a vascular system) called the Coniferopsida. They are closely allied with Ginkgo in a group of plants known as gymnosperms, which literally means "naked seed." This refers to the fact that the seed is not enclosed in an ovary, or fruit. It is borne in an exposed position on the cone.

Gymnosperms are the most ancient of the seed-bearing plants. Plants that do have true flowers and fruit are termed angiosperms. Though conifers once dominated the vegetation on earth, angiosperms now have that distinction. Only six families of conifers are now recognized. Two of these are tropical; the ICC Arboretum contains the other four. The scientific name of a plant consists of two parts, the genus (plural: genera) and the specific epithet. Together, they make up the species. See page 3 for the families of conifers and genera included therein.

Dwarf Conifers
Conifers occur naturally in a variety of sizes. The tallest plants on Earth, the Coastal Redwood and Giant Sequoia, reach heights exceeding 300 feet. Others, such as the Creeping juniper, rarely top one foot in height. Most "dwarf" and unusual conifers, however, result from abnormalities in the plant called witches' brooms.

Witches' Brooms can be of two types: Those produced by insects, mites, fungi, or other pathogens, and those that are caused by a mutation in the plant. The first type, called a pathogenic broom, is of little interest to the plant collector, for it is not a permanent genetic change and cannot be duplicated by propagating the plant. Mutations, however, are genetic changes and result in the variety of plants that we see in the conifer collection. These mutations that began in a bud result in a dense cluster of foliage within a normal plant. When propagated by grafting or cuttings, the effect is a much smaller plant. Many of the conifers in the ICC Arboretum originated as witches' brooms.

2

The Jean Iseli Memorial Award funded the production of this 20-page booklet, *Conifers in the ICC Arboretum*. Numbers on the included map (above) correspond to detailed listings for 38 conifer species. General information (left) and identification characteristics that can be used to distinguish between conifer genera are also provided.

Dwarf Conifers Take Center Stage at State Arboretum of Virginia

By Kim Strader

The State Arboretum of Virginia is located near Winchester, Virginia, and affiliated with the University of Virginia's Department of Environmental Sciences. Thanks to the foresight of its first director, Dr. Orland E. White, the Arboretum has an extensive conifer collection that provides a dramatic backdrop to the historic Quarters building and forms a border around the 175-acre Arboretum.

Dr. White created the Arboretum beginning in the late 1920s using the Engler Prantl (German) system of classification as the basis for the design. He used the plantings in his own research, as well as to provide students with material for their research. Some of the Arboretum's more

noteworthy specimens, including Arizona cypress (*Cupressus arizonica*) and China-fir (*Cunninghamia lanceolata*), were planted during Dr. White's tenure. Since then, the Arboretum has added many specimens to its conifer collection including Nikko fir (*Abies homolepis*) and Szechwan spruce (*Picea gemmata*). While the collection is extensive, it is lacking one element – dwarf and miniature conifers.

Recognizing that dwarf and miniature conifers would make a wonderful addition to the collections, Arboretum staff and volunteers redesigned the garden area in the Margaret Byrd Stimpson Amphitheater to incorporate a variety of conifer specimens. The area is slightly

terraced with gracefully curved walls made of native stone. This provides a lovely planting site similar to a trough or rock garden that will be planted with dwarf conifers and a variety of miniature perennials and bulbs.

Previously this area had been planted with Japanese spirea (*Spiraea japonica*), which was removed because it is on the Virginia Department of Conservation and Recreation's list of alien invasive species. Additionally, the spirea completely hid the beautiful stone walls and provided only one season of interest in the early summer when it was in bloom. The Arboretum worked closely with American Conifer Society member and nurseryman Mac Stiff to decide which specimens to use and where to place them within the planting area.

Several considerations were kept in mind when choosing conifers for the project. First, the Arboretum is located

in USDA hardiness Zone 6b. The area faces west and is in a slight depression that should help protect the planting from wind. Unlike the typical acidic soil

Arboretum staff and volunteers redesigned the garden area in the Margaret Byrd Stimpson Amphitheater to incorporate a variety of conifer specimens

conditions that are found throughout most of Virginia, the Arboretum has alkaline soil due to the underlying limestone that is prevalent in the northern Shenandoah Valley. Another consideration is the several herds of deer on the property that have caused significant damage to some mature specimens.



Therefore, the designers made every possible effort to choose only those specimens that are believed to be “deer resistant.” Additionally, it was important to achieve year-round interest and visual contrast. The volunteers chose cultivars that differ in color, texture and shape to achieve this interest.

Several factors played a role in determining the placement of the specimens. This area is an amphitheater that is used for summer concert series and is a popular site for wedding services. Therefore, it was imperative that the view of the stage from the seating area remain uninterrupted. This meant that shorter conifer specimens needed to be planted in front of the stage area. The designers decided that, to achieve maximum variability and interest, the height of the conifers would gradually increase as you reach the outer edges of the planting area.

The following conifers will be used (the numbers correspond to the design plan):

Chamaecyparis

- (1) *C. obtusa* ‘Danny’s Spiral’
- (25) *C. obtusa* ‘Mariesii’
- (5) *C. pisifera* ‘Plumosa Compressa Aurea’
- (12) *C. pisifera* ‘Tsukumo’
- (15) *C. pisifera* ‘White Pygmy’
- (11) *C. pisifera* ‘Cream Ball’

Cryptomeria

- (13) *C. japonica* ‘Araucarioides’
- (26) *C. japonica* ‘Cristata’
- (24) *C. japonica* ‘Kilmacurragh’
- (4) *C. japonica* ‘Elegans Nana’
- (14) *C. japonica* ‘Tansu’

Cephalotaxus

- (30) *C. harringtonia* ‘Fastigiata’

Juniperus

- (32) *J. communis* ‘Gold Cone’
- (34) *J. horizontalis* ‘Wiltonii’
- (33) *J. procumbens* ‘Nana’
- (6) *J. squamata* ‘Blue Star’
- (16) *J. x media* ‘Lemon Hill’

Picea

- (10) *P. glauca* ‘Gnom’
- (31) *P. glauca* ‘Pixie’
- (9) *P. mariana* ‘Nana’
- (28) *P. omorika* ‘Nana’
- (17) *P. omorika* ‘Pimoko’
- (18) *P. pungens* ‘Mrs. Cesarini’
- (3) *P. pungens* ‘Saint Mary’s Broom’
- (19) *P. sitchensis* ‘Sugarloaf’

Pinus

- (23) *P. cembra* ‘Blue Mound’
- (2) *P. densiflora* ‘Jane Kluis’
- (22) *P. densiflora* ‘Low Glow’
- (8) *P. mugo* ‘Mops’
- (21) *P. parviflora* ‘Zui-sho’
- (27) *P. parviflora* ‘Tano-Mano-Uki’
- (20) *P. strobus* ‘Elkins Dwarf’
- (7) *P. strobus* ‘Horsford Dwarf’

Thujaopsis

- (29) *T. dolabrata* ‘Nana’

Arboretum staff and volunteers began planting some of the dwarf conifers in the fall of 2005 and will continue as funds become available. Fortunately, the Arboretum has a very dedicated and knowledgeable group of volunteers that will continue to assist the staff with planting and maintenance.

Please call Curatorial Assistant Kim Strader at (540) 837-1758 ext. 234 or

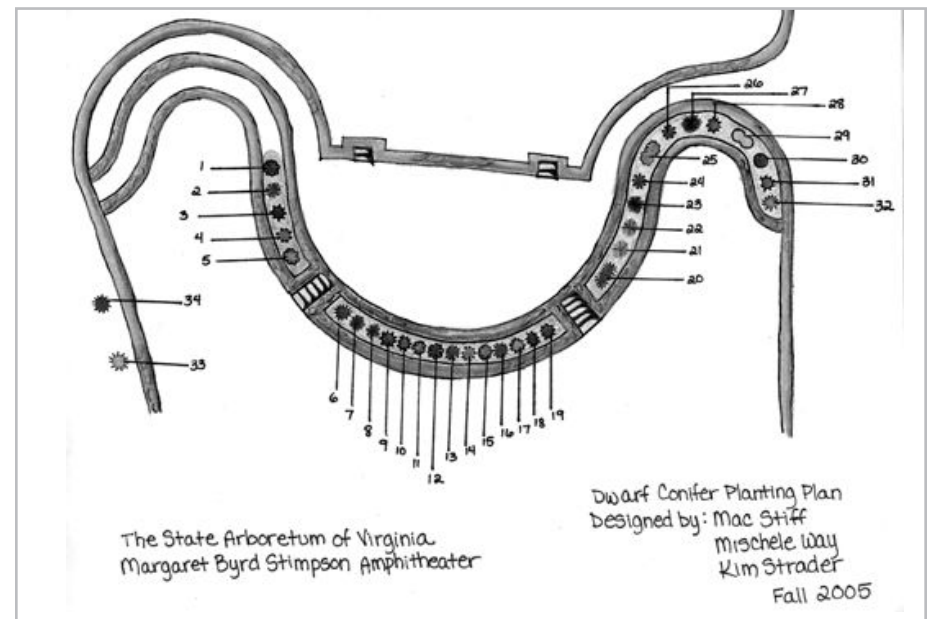


email kas3a@virginia.edu if you have any information, suggestions or comments that may help with this project.

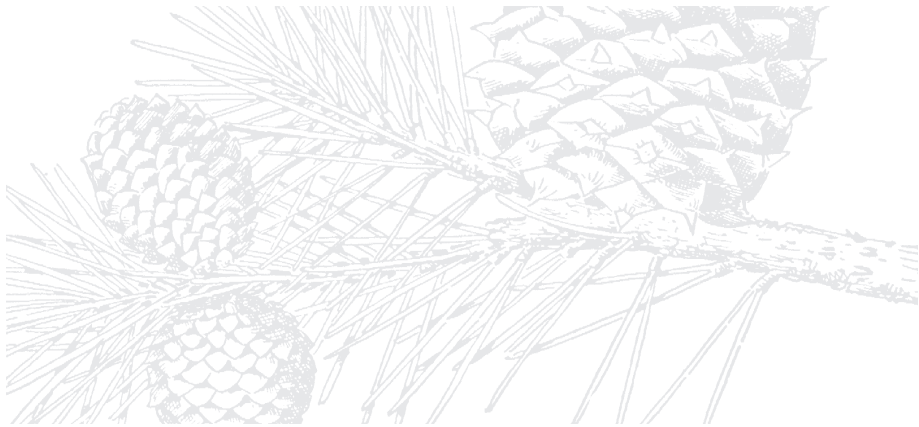
The Arboretum is located in the Northern Shenandoah Valley of Virginia, approximately 10 miles east of Winchester, Virginia, on Route 50. The Arboretum is open 365 days a year from dawn until dusk. Visit online at www.virginia.edu/blandy for addi-

tional information and for upcoming programs. ▲

About the author: Kim Strader has been the Curatorial Assistant at the State Arboretum of Virginia for six years. While she finds the diverse array of dwarf conifers fascinating, her true passion is native plants.



The Dwarf Conifer Planting Plan calls for shorter cultivars directly in front of the amphitheater’s stage area and progressively taller cultivars near the outer edges.



The Jean Iseli Memorial Award

APPLICATIONS NOW BEING ACCEPTED

The Conifer Society, which supports the development, conservation and propagation of conifers with an emphasis on dwarf or unusual varieties, awards a \$1,000 grant to a public garden, arboretum or horticultural institution.

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 the ACS funds would 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

Send applications to:

Ethan Johnson
ejohnson@holdenarb.org (Microsoft Word documents)

or by regular mail:

c/o The Holden Arboretum
9500 Sperry Road
Kirtland, OH 44094

Applications must be received by June 1, 2006

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. Announcements of the award recipient will be made by August 1, 2006.

ACS National Meeting Knoxville TN, Crown Plaza Hotel June 15- June 17, 2006

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Post Conference Tour Asheville NC, Grove Park Inn June 18 – Jun 21, 2006

Featuring the Biltmore Estate – NC Botanical Garden-
Blue Ridge Parkway/ Craggy Mountains
Private Gardens

www.conifersociety.org



Maud Henne

Adventures of a Conifer Detective: Attack of the Reversions

By Chris Daeger

It's the first day of spring. I should be outside. There's a ton of stuff to do in the arboretum, and I'm stuck inside the office. Not literally stuck, though the floor *could* use a good mopping.

The weather outside is frightful. We missed having a white Christmas, but today it is snowing hard, and the forecast calls for it to fall all day. It is grey and depressing; Mother Nature is having a bad day. Same here.

I *really* want to get outside with the conifers. Spring, huh? I don't think so. Winter has been long enough. Let's get

on with it. I think I'll go hang out in the greenhouse. I've got seeds germinating in there. Maybe they'll cheer me up.

My assistant arrives late this morning. I shovel and plow. She made an earlier attempt to traverse the "White Death" but failed. She's from Savannah, Georgia and... well, no mystery there.

Foliage from the *Chamaecyparis pisifera* 'Filifera Aurea Nana' reversion, on the left, is the same color but denser than the thread-like foliage on the rest of the plant.



It is days like this one that resurrect nagging thoughts in a person. I have been haunted by a mystery of my own. Misery loves company, but my assistant tells me to leave her out of it. Smart girl.

While I'm in the greenhouse, it seems to grow darker by the minute, adding to the depressing conditions. Then I realize it's the snow cover. I turn on a light.

On the floor, one particular flat of seedlings among many catches my eye. There are quite a few seedlings emerging, and I'm elated. Some of the seed coats are still attached to the cotyledons.

The label on this flat reads "Reversions." These are seedlings from a *Chamaecyparis pisifera* 'Filifera Aurea

Nana' reversion. I know this plant well. I like its name, too. I once purchased a plant called (incorrectly) 'Mops' whose label included all of that long name fol-

*Who in their right mind
even lets a reversion grow,
much less sows seeds
from one?*

lowed by 'Mops' as the cultivar. It was fun to say, and it impressed people. Turned out the correct name was really *Chamaecyparis pisifera* 'Golden Mop'.

The seedlings in this flat are not all alike. Just what I've been looking for – variance! It has happened again. I grew seed from this same reversion before with the same results.

I know some of you who are asking, "What in the world is this guy thinking? Who in their right mind even lets a reversion grow, much less sows seeds from one?"

I do. Why? Because it's there!

A plant reversion is an abnormal growth on a plant variety or cultivar that has characteristics of its origin. On a dwarf, the reversion is usually more vigorous



All photos by Chris Daeger

A reversion of *Chamaecyparis pisifera* 'Filifera Aurea Nana'

growth than you expected. (I've heard them called "weird growths" or "wild hairs.") We would expect the reversion, then, to resemble the original parent

We would expect the reversion, then, to resemble the original parent plant

plant; in this case, the plant from which the gold thread-leaf characteristic originated, either from seed or a witch's broom.

But this begs the question: Where did the first golden thread-leaf falsecypress come from? Was it a green plant

with a broom? Did a green plant produce a golden seedling? Was it a golden *C. pisifera* whose prodigy became thread-leaved? Does anybody really know for sure? The reversion I observe has a subdued golden color just like the thread-leaf original, but its foliage is somewhat typical of the *C. pisifera* species.

To what degree, if any, does a reversion retain the characteristics of its host? This reversion has cones, while the thread-leaf portion never has. More questions clutter my mind.

When I first began my investigation, I grew a cutting from the reversion and one from the thread-leaf part of the same plant. I planted them side by side to allow



Chamaecyparis obtusa 'Kamaeni Hiba' reversion

At left, the less compact growth evident on the top half of the *Picea abies* 'Little Gem' is a reversion.

easy comparison. The reversion cutting grew twice as fast and now has an open habit, pyramidal shape, and foliage typical of *C. pisifera*, but it is still droopy, with a slight golden color. So much for finding a new dwarf to name... but it's

still interesting. Then the original reversion started to produce cones. Oh boy, I thought, with an outwardly calm demeanor. Inside, though, I was rejoicing. Now we've got a whole new ballgame!

The seed proved to be viable and produced variable seedlings. I am waiting to see whether a few years' growth will increase or decrease the visible differences.

Remember the two cuttings I men-

tioned? A couple of years ago, the thread-leaf clone decided to produce a reversion of its own. This one looks a little different than my original reversion. Why can't a plant just be satisfied with what it's got?

I've seen a number of *C. pisifera*

The reversion is even a brighter yellow than the dwarf it is feeding upon

'Filifera Aurea Nana' specimens revert, so I don't believe this is uncommon. But when does the madness stop?

For now, it doesn't. The arboretum has a dwarf Alberta spruce (*Picea glauca* 'Albertiana Conica') with a reversion that is overtaking over the dwarf. That's okay; we have another. But the reversion appears to be growing at a slower rate than a typical white spruce. If that isn't enough, the reversion shows signs of clustering growth or – could it be? – a broom! I think it's getting ready to produce cones, too.

But it's not over yet. Another

Chamaecyparis is attacked. This time it is a *C. obtusa* 'Kamaeni Hibi', and the reversion is even a brighter yellow than the dwarf it is feeding upon. Only time will tell me what will happen when a few cuttings are taken of this radical with its fast upright growth. Did 'Kamaeni Hiba' originally come from a bright yellow shrub?

Then there's the *Chamaecyparis* "Heritage Gold" specimen that looks like the whole plant just up and reverted to an open pyramid, leaving the dwarf, mounding habit behind. I've just gotta go buy another one and see what it does.

Spruces do this, too. There's a *Picea abies* 'Little Gem' with a mysterious growth. 'Little Gem' came from a broom on *P. abies* 'Nidiformis' (bird's nest spruce), a dwarf Norway spruce. Our reversion has internode growth much denser than a typical 'Nidiformis', but longer than 'Little Gem'. Anybody interested in trying grafts or cuttings?

I do have one small recourse. I am propagating a witches' broom from an arborvitae. Both cuttings and grafts are showing promise. Now all I can do is wait.



This reversion of *Picea glauca* 'Albertiana Conica' has completely overgrown the original dwarf plant.

I was brought up to believe that reversions are bad – very, very bad. They should be pruned out and burned. Sound familiar? But the way I see it now, these plant no-no's are popping up everywhere, and many seem to have something to offer.

Questions abound. Are we overlooking something that we have been rejecting all these years? How much "dwarfness" can be retained by a reversion, or what other attributes can be held? Witches' brooms for the most part are dwarf or miniature growths on a plant. A reversion is the opposite, usually displaying a faster growth rate than

its host plant. Are reversions the "poor man's brooms"?

The attack continues and the mystery remains unsolved for now. My only means of defense are seed flats, rooting hormones, and my grafting knife. I've hidden the pruners and flame thrower until I see the whites of their eyes. ▲

About the author: Chris Daeger is Manager of the Rowe Arboretum in Indian Hill, Ohio. When the weather keeps him indoors, he enjoys writing about conifer mysteries he observes throughout the property.



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Dicots and Polycots

by David J. de Laubenfels

Many familiar conifers have three or more cotyledons while, as every botanist learns, the flowering plants have but two or one. This has resulted in an erroneous distinction that is made between conifers and the other plants based on the number of cotyledons. I have a book on New Zealand trees in which the authors repeatedly contrast “dicotylous trees” with the conifers., even though every single native conifer in New Zealand in fact has two cotyledons!

It surely is not a surprise to horticulturists that some conifers have two cotyledons. But how many are aware that *most* of them do? Further, the same is true of practically all of the other living gymnosperms and all of the fossil ones so far as we know. Something interesting is going on here.

A variety of strategies bring about the condition of two cotyledons in conifers, the only group of early seed plants that originally persisted with multiple (three or more) cotyledons. A simple reduction to two seems the most obvious route, and there are several examples involving relatively few taxa. The most obvious are the yews (*Taxus* sp.) and their allies, every one of which have two simple cotyledons.

The same condition appears in several sequoia allies, though others have retained multiple cotyledons. There are also some southern hemisphere members of the cypress family that are dicots. Because the most primitive sequoia and cypress species have multi-

ple cotyledons, we must imagine that this reduction occurred at several different times to produce the dicots we know today.

Another more complicated strategy leading to two cotyledons appeared in the cypress family and characterizes almost all of them, even including the Old

If two cotyledons have appeared multiple times among the seed plants, there must be some strong advantage

World cypresses themselves. Instead of developing all four cotyledon initials, these plants suppress two so that only two appear on the emerging seedling. The other two develop later but at the same level. Then, higher on the stem, a whorl of four leaves develops decussately, yielding a total of eight rows of leaves. Later whorls are sooner or later reduced, in most cases, to three or finally two leaves.

Probably the most common manner in which two cotyledons are produced, however, is by lateral fusion. The lateral fusion of two leaves is not so unusual and can be seen from time to time in many places. This seems to be the normal foliage condition in *Sciadopitys*. Both southern hemisphere conifer families, the Podocarpaceae and the Araucariaceae, thus have laterally fused

cotyledons, with each of the two having two vascular traces entering their base and with bifurcated tips. In one group of araucarias, the fusion has been secondarily lost, apparently, yielding four cotyledons which come in two pairs.

Very early, many fossil seed plants began producing leaves split into two halves. This can be seen in the living ginkgo where the two cotyledons are also doubled. Some of the fossils have multiple traces in the leaves, and this condition can be seen in living cycads where they produce “girdling traces.” Their seedlings also have two cotyledons, each with multiple traces. The suggestion is that the fusion of the leaves and of the cotyledons occurred simultaneously. This fusion had to have developed independently in the conifers and in the other ancient seed plants.

Why certain characters develop can only be guessed, but if two cotyledons have appeared multiple times among the seed plants, there must be some strong advantage. I would suggest that protection of the vulnerable apex of the seedling is vital for plants, and two cotyledons do a distinctly better job than do many. The best protection might come from one cotyledon wrapping all the way around the plumule, but getting to one cotyledon is asymmetrical and probably less easily accomplished. One cotyledon has been achieved only two times, once in the monocots and once within the cycad family.

When you see three or more cotyledons on certain conifer seedlings, you will know that you are witnessing a very primitive trait. But you should also know that most conifers, in fact, are dicots, and so cotyledon number does not

define the difference between conifers and other seed plants. ▲

About the author: Dr. David J. de Laubenfels is a retired taxonomist and Professor Emeritus from Syracuse University, who has worked with conifers all his life. He has named over 100 plant species and genera, most of which are found in the southern hemisphere.



Plant Oktoberfest

The Dawes Arboretum's 2006 annual symposium on October 21st will focus on the selection, cultivation and uses of conifers.

Speakers will include:
Dr. Richard L. Bitner
Talon Buchholz
Daniel Luscombe
Susan Martin
Joe Stupka
Gary Whittenbaugh.

For more information, please contact The Dawes Arboretum in Newark, Ohio, at (800) 44-DAWES.

Conifers and Castles Greet Americans on BCS Scotland Tour

by Charles Paquelet

At the time of the British Conifer Society's inaugural meeting on April 3, 2004, their organization had 100 members. Since then, membership has steadily risen and the group has organized several events, including a trip to Holland with the Dutch Conifer Society and, more recently, a tour to Scotland in September 2005. My wife Judy and I attended the latter trip.

The adventure began and ended in Edinburgh, a city with much architectural charm and overflowing with history. The trip was designed to view and identify mature conifer species rather than focus on cultivars.

Conifers as exotic imports

During the eighteenth century, and even more so in the nineteenth century, at a time when the British Empire was at its zenith, all sorts of merchandise was brought back to England. Such men as Archibald Menzies and David Douglas explored the world on plant-finding expeditions, and seedlings from these collections wound up on many of the large estates associated with Victorian Britain in private gardens or arboreta. Many of those plantings persist to this day in various states of health and decline. Nonetheless, many species of conifers, some quite rare and unusual, are represented in Scotland by one-hundred or two-hundred year old trees.

The weather in Scotland is con-

ducive to conifers. Scotland is almost entirely surrounded by the sea and also benefits from the Gulf Current from the Caribbean to moderate its weather. This means that, even though Scotland is at the same latitude as North America's

Even though Scotland is at the same latitude as North America's Hudson Bay, Scotland is the equivalent of Zone 7 or 8

Hudson Bay, Scotland is the equivalent of Zone 7 or 8. In addition, the country's west coast is warmer and wetter than its east coast, and the north is generally colder than the south. The bottom line is that conifers thrive to some degree in every region, and I was even told that our native Douglas fir (*Pseudotsuga menziesii*) performs much better in Scotland than in its native range.

Memorable giants

We passed many stands of common juniper (*Juniperus communis*) and Scots pine (*Pinus sylvestris*), including one of the latter planted in 1792 and last measured in 1987 at 120 feet tall. We also visited several of Great Britain's champion trees, including Sitka spruce (*Picea sitchensis*), Western redcedar (*Thuja plicata*), silver fir (*Abies alba*),

grand fir (*Abies grandis*), Japanese falsecypress (*Chamaecyparis pisifera*), Patagonia cypress (*Fitzroya cupressoides*), European larch (*Larix decidua*), Dunkeld larch (*L. eurolepis*), Japanese larch (*L. kaempferi*), and Douglas-fir (*Pseudotsuga menziesii*). An allée of giant sequoia (*Sequoiadendron giganteum*) at the Benmore Botanical Gardens was at least 300 yards long and breathtaking.

The oldest living thing in Europe, a 5000-year old *Taxus baccata* known as the Fortingall Yew, is found in a small church cemetery in the remote village of Fortingall. The tree has a girth of 57 feet! I was told that people have attributed religious significance to yews since ancient times, so churches were sometimes built nearby. We also found it interesting that the minister of this particular church is named Anne Brennan, and we wondered if our *Conifer Quarterly* editor is moonlighting?

Scotland's countryside is beautiful. Instead of the grey skies and rain we expected, we were blessed with warm sunshine. Sheep and cattle dotted rolling hills with emerald green pasture surrounded by stone fences. Hay fields were filled with round bales. The moors, covered with heather, were in full bloom.

We passed through many quaint villages and stopped at three castles on our way through sixteen venues in six days.



Our tour group was small – about 18 in all – and Judy and I wanted to bring them something from the States to remember us by. Every town is known for something, and Massillon, Ohio, is known for its high school football team, the Massillon Tigers.

Over the years, we have given away Massillon Tigers T-shirts to visitors to our garden, and many members of the American Conifer Society now have them. With that in mind, Judy and I decided to do the same for our English friends.

Back row, from left: Charlie Paquelet, Christine Hayward, Keith Hayward, Jonathan Tate, Diane Tate and Derek Spicer.

Front row, from left: Robin Jamie, Judy Paquelet, Carol Spicer and Euan Roxbrough.

– CP

In each instance, the property's owner or curator as well as its gardener met and escorted us, introducing us to numerous unusual conifers including *Podocarpus*, *Athrotaxus* and *Araucaria*.

The Royal Botanic Gardens Edinburgh was particularly impressive with its trough and wall garden display, ex-

I was told that people have attributed religious significance to yews since ancient times

tensive rock garden, and glasshouses. Martin Gardiner, Coordinator of the International Conifer Conservation Programme, took us behind the scenes and showed us a large-scale effort to propagate the Wollemi pine (*Wollemia nobilis*) and other exotic conifers, primarily from New Caledonia, Australia, New Zealand and Southeast Asia. He was particularly proud of the herbarium that contains thousands of specimens of pressed and dried foliage as well as cones, stored in a climate-controlled environment and meticulously catalogued.

Tillypronie House and its gardens were of special interest. The Honourable Philip Astor, owner, and his gardener, Mike Rattray, greeted us and led us through the collection of high-altitude-adapted conifer species and cultivars. The arboretum there appears to be in a mild state of decline, and it seemed to me that the owner was struggling to decide how best to restore and exhibit these plantings. I think that the friendships formed that day with some of the British Conifer Society members may go a long way in that regard!

We also found the garden at Glassell House to be very interesting, and it is said to be the largest rock garden in Europe at two-and-a-half acres. The garden with its 150-foot drop has recently been renovated and replanted by conifer enthusiast and head gardener, Mike Flatters. I can say without reservation that this garden will achieve international distinction.

Our tour group was small and consisted of nurserymen, academics, and hobby gardeners. Some of the participants were remarkably knowledgeable, while others like myself found it necessary to remain quietly in the background to listen and learn. We generally arrived back at our hotel late in the evening, but

after a rejuvenating hot shower, we always found supper to be a delightful experience. Scottish specialties were plentiful, such as haggis (a kind of sausage made from the spare parts of sheep), black pudding (a form of blood sausage), venison, pheasant, duck, pigeon, lamb, and kippers (smoked herring). As we consumed pints of beer and ale, storytelling became more intense and convoluted.

Judy and I were very well received; I don't think the group could have treated us better. Our memories of the trip will remain with us forever, and we hope we may eventually host some of our British conifer friends. ▲

About the author: Charles and Judy Paquelet reside in Massillon, Ohio.



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A Visit With Joel Spingarn

by Walter Cullerton

I had never met Joel Spingarn. He was the recipient of the 2005 American Conifer Society Merit Award for Development in the Field of Garden Conifers and a founding member of the American Conifer Society. A founding member! If I could deliver the award to him it would afford an opportunity to meet him and chat about conifers. Joel lives in Georgetown, Connecticut, a short three hour drive from my Pennsylvania home. My trip started out on December 29 in pouring rain, but no matter, as I was going to meet an icon of the conifer world.

In preparation of my visit, I had the chance to read "Joel Spingarn, Portrait of a Founding Member" by Helen Donn and Frank Goodhart, who are both friends of mine. The article appeared in the *ACS Bulletin*, Volume 14 No. 3, Summer 1997. Without repeating all in that article, I will highlight a couple of important matters.

First, Joel was a member of the North American Rock Garden Society as well as a founding member of the American Conifer Society, and therefore his love of conifers leaned to the dwarf and miniature, with preferences for *Tsuga* and *Chamaecyparis*. Starting back in the '50s, Joel scoured the nurseries, corresponded with nurserymen in Europe, Canada, Japan and of course the U.S. As his collection grew, so did his knowledge of propagation by seeds, cuttings and grafting. His passion for conifers also resulted in a number of ar-

ticles in both the *American Rock Garden Society Bulletin* and the *American Conifer Society Bulletin*. In 1986, Joel moved from his home on Long Island to his present home in Georgetown. New gardens were started.

Upon my arrival, Joel warmly greeted me and we went inside, sat

Joel received the Award of Merit and I met a friend that I will visit again as the weather warms

down and I made my presentated the Award of Merit, which he graciously received. Joel was thrilled to be recognized for his achievements and at the same time humbled. We started talking about the early days and some of Joel's Long Island conifer friends. There was Ed Rezek, Joe Reiss, Henry Weisenberger, Paul Aden, and other familiar and some not-so-familiar names.

With time flying by, as it does when enjoyment is at hand, Joel reminded me that we could grab a bite of lunch at a nearby café. We did, and the conifer conversation continued nonstop. Upon returning from lunch, I took a quick peek at his garden (it was raining quite hard) and it was time to go.

Joel received the Award of Merit, and I met a friend that I will visit again as the weather warms. Joel gifted me a photo of "the founders" which I will

cherish and share and also two dwarf plants from cuttings that he previously introduced.

It doesn't get any better. ▲

Conifer Society Northeastern Region President, Walter Cullerton, presents the 2005 Award of Merit for Development in the Field of Garden Conifers to Joel Spingarn at Joel's home in Georgetown, Connecticut, last December.



Cultivar Overload

By Jan Kools and translated by Dick van Hoey Smith

Can it be true that, owing to too many conifer cultivars, we cannot see the forest for the trees?

As a boy of 10 to 15 years, before I had become engaged by dendrology, I had learned already that many street trees, grown from seed, could be very variable. One tree sprouts earlier than its neighbor; another has lighter or darker leaves.

I am now 65. About 35 years ago, I got interested in trees, shrubs and conifers. A truck loaded with hot dogs brought me to Boskoop, in the Netherlands, at 7 A.M. My only luggage was a big empty suitcase and some money. I borrowed an old bike to travel around Boskoop, and what I saw was overwhelming. I went home by train, tired but with a suitcase full of plants. Since then only plants have prescribed my way of life.

I like most plants, provided they are beautiful and healthy. Yet, now I like conifers best. Thirty-five years ago, conifers were not widely offered for sale, and very few new introductions came on the market.

However, twenty-five years ago new introductions began to pop up like mushrooms. As an example, *Pinus mugo* has over 125 cultivars, and *Sequoiadendron giganteum* has four blue cultivars alone, which are hardly distinguishable from one another. Nevertheless they have different cultivar names.

My son, Nelis, has about 15 different *Metasequoia glyptostroboides* plants se-

lected from thousands of seedlings. From these 15, only one is unusual and interesting, and this specimen was given a cultivar name. If we were to bring each of the remaining 14 unnamed plants to the market, chances are good that somebody else would name it. Then, in order to collect all the cultivars, we would have to buy it! That is ridiculous.

If an amateur cannot see the difference, the plant should not be named and marketed

Together, we sow 4000 *Sequoiadendron* yearly, and we could easily select 100 with some difference. We restrict our selections to the most interesting 15 seedlings that are planted in the nursery. During the next few years, the differences between these chosen plants becomes clearer and, through this process, we now have only five distinct selections in ten years. All five are interesting for collectors, though only one or two of them have commercial value.

Somebody finding an apparently-unique seedling or witches' broom often celebrates immediately and thinks he has found a gem. I know this from my own experience with nurserymen I know.

If each new find is examined yearly and compared with the existing cultivars in one's collection, one often finds simi-

lar characteristics have been seen previously, possibly even in a foreign country. My son and I are fond of new plants, especially new conifers. We get buy them both from Holland and abroad, and there are too many to mention.

New cultivars are often shown to a board of experts and to colleagues in the nursery business; such professionals are able to see even minor differences. In my opinion, it would be better to ask the opinion of an amateur. If an amateur cannot see the difference, the plant should not be named and marketed. The only alternative is to name all of them, and in that case there is no stopping.

Actually, it is not my intention that only amateurs should assess new conifers. In my opinion, before naming a new cultivar, a knowledgeable committee of professionals, supplemented by one or two interested amateurs – who only have an advisory role – examine the new cultivar and compare it with the existing assortment. Only after approval by this commission would the new cultivar name be used and published, and rejected cultivars could not be commercially distributed under the intended name.

I know that the above will be very difficult to enact. Multiple countries would need to cooperate and accept the same procedure, which can be difficult. My view is that somebody has to put the cat among the pigeons. If nothing is done, the confusion and frustration multiply.

NEW SEED EXCHANGE COORDINATOR

Wayne Jope of Amesbury, Massachusetts has become our new Seed Exchange Committee chairman and will oversee our 2006-2007 Seed Exchange.

Send seed donations to:

ACS Seed Exchange
c/o Great Hill Hort Foundation
137 Kensington Road.
Hampton Falls, NH 03844

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A seed order list will appear in the Winter 2007 *Conifer Quarterly*.



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Contact coordinator Byron Richards at barhr@cytechcis.net or (828) 696-0801 to borrow the slides.

I hope that future generations will be better able to “see the forest for the trees” – those trees being the conifers.

About the author: Jan Kools is the founder of Nursery Sierteeltkwekerij Kools. He likes all kind of plants, but in particular he loves conifers. Jan is now retired and lives in southern Holland near Eindhoven, and his son, Nelis, manages the nursery.

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Grafting Season Heats Up with Winter Workshop



Mark Sutcliffe of Manchester, Connecticut, led the February 19th grafting workshop in Mike and Susan Mahoney's garage in Hanover, Massachusetts. Participants each took home about a dozen grafts on understocks of *Picea abies*, *Picea pungens* and *Pinus strobus*.

Contact Suzanne Mahoney if you are interested in attending a similar workshop next year (misue150@verizon.net).



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

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Conifers to the Rescue: Treating the Flu

by Kimberly Karlin

Always on the lookout for unusual and bizarre uses for conifers, I noticed a recent news story about recycling Christmas trees to help combat the bird flu. I was amazed when I researched further and found that, literally, the whole world is anticipating this remedy to the Tamiflu shortage

Let's start from the beginning. The bird flu or avian flu, also known cryptically as the H5N1 virus, has spread across Southeast Asia and some parts of Europe. Though it is not easily transmissible to humans at this time, viruses do mutate, and this one has killed 70 of its 130 human victims.

Tamiflu, manufactured exclusively by Roche Pharma, is the first-line drug for this virulent flu strain, and is already widely used to treat seasonal influenza. With today's unprecedented access to world-wide travel, the avian flu presents a global threat to human health if it should mutate.

Shikimic acid is a precursor to the active ingredient in Tamiflu (oseltavir phosphate). The acid is abundant in the somewhat rare oriental spice, star anise (*Illicium anisatum*). Many steps are involved in this complex azide chemical process, and it takes several months to produce the drug. The current supply, as reported by a Canadian newspaper, would only be enough to treat two percent of the world's population should a

pandemic occur. We here in the United States have already seen flu vaccine shortages.

So, where do conifers come in? Well, the star anise is a slow-growing

By drying, grinding and processing certain trees, the acid can be extracted for medical use

evergreen plant in China. Looking for alternative sources in other plants, Canadian pharmaceutical company Biolyse Pharma Corporation discovered that two to three percent of the biomass from some pine, spruce and fir trees contain usable shikimic acid. So, by drying, grinding and processing certain trees, the acid can be extracted for medical use.

According to the *Sioux City Journal Online*, Biolyse's V.P. for new product development, John Fulton, states their process for creating shikimic acid, or possibly a generic form of Tamiflu, is viable due to the abundance of the tree species being used. His aim is to produce one to three tons of the chemical per month. World prices of shikimic acid jumped from \$45 a kilogram to

more than \$500 in the last year, due to the increased demand. Biolyse specializes in extracting chemicals from plants and already creates the generic form of the cancer drug paclitaxel from yew trees. An Indian pharmaceutical company, Cipla, says it too can use the same process to make Tamiflu, possibly even faster as they have experience with other drugs, such as AZT, that use the same complicated technology.

And the news program I saw? On Fox News, a Canadian laboratory technician was shown working with a myriad of bottles, test tubes and a rich-looking brown powder. Beside him was a white plastic container clearly la-

beled "*Pinus strobus*." We already know that conifers have many uses in our lives, from paint thinner to gin, but who knew they might one day save us from the flu? ▲

About the Author: Kimberly Karlin is a former labor and delivery nurse now assisting her husband with the nursery and the aquariums business. She stays home with her young girls, ages one and three. She currently serves as the Southeastern Region's Vice President and edits and produce that region's newsletter.



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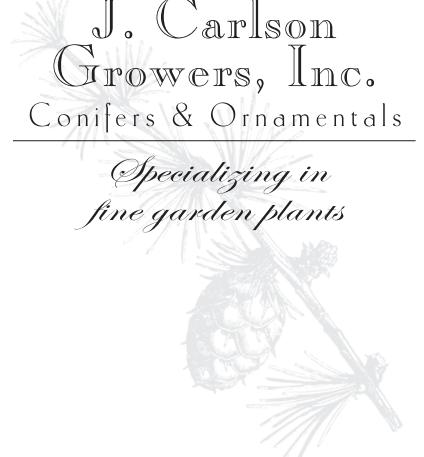
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Dutch Conifer Society Publication Highlights Worthy Conifers

The Dutch Conifer Society has published *Promising Conifers*, a 168-page softcover book featuring full-color photographs and descriptions of 75 conifers that the group feels are worthy of greater use in the landscape.


The introductory material and plant descriptions, which include information about origin, growth rate, cultural requirements, diseases and propaga-

tion, were translated into English by Bob Fincham.

The book costs 25 Euros and can be ordered directly from the Dutch Conifer Society. E-mail Ronald Vermeulen to arrange payment:

E-mail: RVermeulenNCV@cs.com

Fax: 0031-345650336



Calocedrus decurrens 'Berrima Gold'

With older specimens the bark has a fine red/brown color.

Coming from Australia, 'Berrima Gold' was found as a seedling by Claude Rowe of Berrima Bridge Nursery and was imported into Europe by Hillier Nurseries, England.

Side branches on older specimens exhibit an upturned growth habit and in 16 years a typical plant will be \pm 250cm high and 100cm wide. If shaded, it will grow faster and be narrower. The leaf scales have a yellow/green color, and the interior foliage is pale yellow. The young growth is remarkably orange/yellow in autumn and winter.

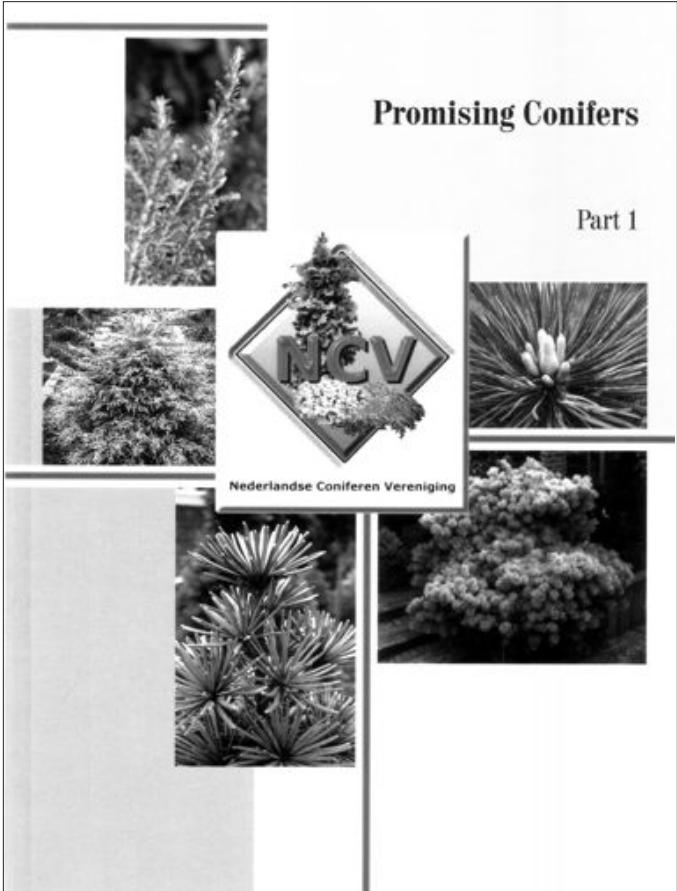
It may be used for a variety of applications, for example as a solitary plant in the small garden or in combination with other plants or as a group for the combined silhouette they produce.

It can survive the winter in the Netherlands, but young plants should be covered in a cold winter. It is resistant to diseases and plagues. It can be multiplied by grafting onto *Platycladus orientalis* (syn. *Thuja orientalis*) or the species.

Planting in the full sun, because of the yellow scales, and a nutritious, somewhat moist and permeable soil are recommended.

During the "Herfstweelde" fair 1990 in Boskoop, Netherlands 'Berrima Gold' was awarded a gold medal.

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Promising Conifers

Part 1

NCV
Nederlandse Coniferen Vereniging



Conifers in the News

Compiled by Tony Green

The Mystery Conifer

The Columbia, South Carolina, *Star* holds a regular Mystery Plant Contest. Recently, the mystery plant was a conifer, specifically a pine. See if you can identify it from these clues: “A beautiful native of the Southeast, often forming large trees with dense crowns up to 100 feet tall... The bark on mature trees is thick and chunky, commonly peeling into orange to brown papery plates and flaking... It holds its medium-sized needles, up to about 12 inches long, in bundles of twos and threes on the same branch. Its seed cones are stalked and when mature are reflexed on the stem.” Although the mystery pine shares a “great similarity with both loblolly pine and longleaf pine,” the identity of the mystery pine was the slash pine, *Pinus elliottii*.

Members in the News

Two ACS members were featured in the news. Martha Smith, University of Illinois Extension horticulture educator, presented a program entitled “Dwarf and Unusual Landscape Conifers” at a number of locations including the University of Illinois Extension and the Fulton County Gardeners’ Big Day on March 11 at Spoon River College. Her lectures received publicity in a number of papers in Illinois.

Jerry Kral, a Director of the Society, was profiled in the *Rochester Democrat and Chronicle*. Naturally enough, Jerry heartily endorsed using conifers in the

garden. “They probably offer more variety in terms of color, form, texture and size than any other plant group I can think of,” he said. Jerry also discussed using raised beds, recommended some best practices for planting, and offered lots of advice on how to create interesting compositions in the garden by employing contrasts in size, color and texture. The article concluded with a link to the Society’s web site.

Award-Winning Conifers

In a story about the 2006 Northwest Flower & Garden Show, the *Seattle Post-Intelligencer* singled out a display garden designed by Monte Speyer titled “Plant Passion: Experience a New World of Plants.” The exhibit, which won a bronze medal, featured “rarely seen conifers,” including a “pendulous Kashmir cypress with silky blue foliage” and a specimen of *Abies beshanzenensis*. Another show winner was Choice Landscapes, a nursery in Wisbech, Cambridgeshire, which won a silver award at the Royal Horticultural Society’s London Flower Show for their exhibit of dwarf conifers.

Protecting Rare Conifers

China is considering the creation of a special zone near the city of Zhaotong, in southwest China’s Yunnan Province. The newest five-year plan for economic growth lists protection of the environment as a fundamental priority. Under the plan, a special zone will be set aside

for *Pinus squamata*, which is found only in hilly regions near the Fushan Village of Zhongzhai Township, Qiaojia County. There are now only 31 *Pinus squamata*, in the wild. This rare pine species was first described by Professor Li Xiang-Wang with Southwest Forestry College, who first found it in 1992.

Learning from Conifer Damage

The *Visalia Times-Delta* in California reported that the General Sherman Tree in Sequoia National Park, the largest tree in the world by volume, lost a large (100-foot) branch in a winter storm on New Year’s Day. The article explained that sequoias are adapted to survive high winds by their ability to shed branches, which are comparatively weak in comparison to the trunk. Losing a branch reduces the tree’s total exposure to wind, relieving stress on the trunk and preventing catastrophic failure.

The Park Service is planning to use the downed branch to help explain the defensive shedding process to visitors. The article compares the sequoia to pines and firs, which are more likely to be toppled completely. Such a catastrophe befell the Thessalon (Ontario) Giant White Pine in 1997 when the 355-year-old tree blew over in a storm. The Thessalon Pine was in the news recently for its “cookies” (trunk cross sections), which were harvested and preserved at the time. The Ontario Forest Research Institute has begun donating the cookies to area organizations to help teach about trees and tree rings.

Authoritative Wollemi Article

Russ Fling alerted me to an article in the *American Scientist* (Nov-Dec 2005),

titled “Ancient Wollemi Pines Resurgent” and was kind enough to send me a copy. Although at this stage in the Wollemi saga, even people with no interest in conifers know the story, this piece is worth reading as it is probably the most authoritative overview I’ve seen on the Wollemi. The article begins by retelling the story of the trees’ discovery by David Noble in 1994 and the subsequent identification of the Wollemi as “not only an unknown species, but

Losing a branch reduces the tree’s total exposure to wind, relieving stress on the trunk and preventing catastrophic failure

also a tree outside any existing genus of the ancient Araucariaceae family of conifers.” After ten years of study, it is still not clear to taxonomists exactly how the Wollemi fits within the Araucariaceae.

The Wollemi helped “solve several paleobotanical riddles, and the fossil record has, in turn, elucidated much about the ancient history of this plant.” Living Wollemi leaves and branches, cones, and even pollen match 100-million-year-old fossils.

Conservation was an immediate concern. Besides the threat of unauthorized collection, the “plant’s lack of genetic variability... made it highly vulnerable to diseases carried by visitors.” This threat has actually materialized recently.

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Northeastern Region Plans September Meeting in Connecticut

We're going to college. The University of Connecticut, that is. Or UConn to basketball fans. But we're conifer fans, so we're heading to the Trial Gardens of the late Dr Sid Waxman.

Dr Waxman received the ACS Award of Merit for Development in the Field of Garden Conifers. He also received similar awards from the Connecticut Nursery and Landscape Association and the International Plant Propagators Society. Sid, as he was known to his many friends in the ACS, grew many different conifers from witches' broom seed,

studying their characteristics and value as garden worthy plants.

The Trial Gardens include a wonderful collection of many pines and spruces grown from seed of witches' brooms, most growing for many years. Seed selections of *Acer griseum* 'Cinnamon Flake,' are also growing there, along with a number of *Sciadopitys*, with which Dr. Waxman is commonly associated. This mature garden – actually an arboretum – occupies five acres. Both the conifer scientist and conifer gardener will love this unique collection.

In addition, we will visit several terrific home gardens. Patti and Ed Williams have been collecting for about 20 years, and their conifer collection is extensive. Dr. Ben Thaw's garden was a tour destination during the Northeast Region meeting in 1997 and will highlight our trip again this year. Our third stop will be a new, young garden that belongs to Jonathan Stone and Tom Flanigan. A full day of old and new, some tried and true. A day not to be missed.

Camaraderie, good food, and great auctions await us. Notice I use "auctions" in plural form; a surprise is in the works that we know you'll love.

September 15-17, 2006 – Mark your calendar and look for a registration mailing in early summer. ▲

– Walter Cullerton
Northeastern Region President

Woody Plant Conference

Friday, July 28, 2006

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<http://www.scottarboretum.org/>.

Conifers in the News

continued from page 45

Two trees have been found infected by *Phytophthora cinnamomi*. The New South Wales EPA has been treating the trees. The species' future seems assured, however, now that it has been widely propagated, despite its susceptibility to root rot. Besides its use as an ornamental conifer, study has shown that "a so-called endophytic fungus, which grows inside the plant itself, produces the chemical taxol – an important cancer-fighting agent." Meanwhile, the Wollemi is also threatened by more pro-

saic hazards. A six-foot (2 m) Wollemi donated to Orange City Council in New South Wales has died, a victim of hot, dry conditions and apparently "lack of proper care."

Tony Green works as a software developer, but he dusts off his English degree to abstract conifer-related news stories for ACS members. If you find an article that should be included, please send it to the Editor.

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Conifer Society Staff

<i>National Office</i>	John Martin , P.O. Box 3422, Crofton, MD 21114-0422 PH (410) 721-6611, FAX (410) 721-9636, E-mail: conifersociety@aol.com
<i>Editor, Conifer Quarterly</i>	Evelyn Cox , 342 North Main St, Suite 202, Alpharetta, GA 30004 PH (770) 663-7576 E-mail: ConiferQuarterly@bellsouth.net

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This reversion of *Chamaecyparis* 'Heritage Gold' at the Dawes Arboretum is but one of several mysteries under investigation at the Dawes Arboretum in Ohio. See page 22.



It's not too late to register for the 2006 National Meeting in Knoxville this June. Visit www.conifersociety.org for details. *Photo by Maud Henne*