



Stewartia ovata 'Inner Light', a new PHA introduction

Polly Hill Arboretum Achieves Highest Accreditation

This past February we received wonderful news: PHA had achieved a level IV rating, the highest available, from the Arbnet Arboretum Accreditation Program in recognition of our commitment to the health and diversity of our trees. Level IV has been achieved by only 10 percent of botanic gardens and arboreta participating in Arbnet's program designed to "establish and share a widely recognized set of industry standards for the purposes of unifying the arboretum community."

Arbnet was established in 2011 by the Morton Arboretum of Lisle, Illinois, to support the work of arboreta to save and plant trees. The accreditation program establishes criteria for collections management with an emphasis on woody plants. The review is carried out by a diverse group

of panelists from U.S. and international arboreta. At this time Arbnet has accredited 175 arboreta in 12 countries.

What makes a level IV arboretum? You must have a master plan that guides your collection development and outlines opportunities for expansion. Another critical planning document is a collections policy. Our guiding philosophy is to determine through experimentation the best plants to cultivate on Martha's Vineyard; recognizing both our space limitations and local cultural conditions, we target well-adapted plants. Our collections policy informs plant acquisition and removals.

The level IV accreditation also recognizes our well-qualified staff and our commitment to managing our plant collection for the purpose of conservation, in

addition to supporting the Global Trees Campaign, the only international program dedicated to saving the world's threatened tree species. Who would have imagined when Polly Hill first started planting trees from seed in 1958 that 50 years later nearly 20 percent of tree species worldwide would be threatened with extinction? PHA is dedicated to protecting these vulnerable trees.

We plant and study trees, but we want our work to have deeper impact. We do this through research, education, and community outreach, including growing trees from seed and sharing our results. The Arbnet website states: "Level IV arboreta are world-renowned tree-focused institutions." There are only 20 other institutions to achieve this level of merit! PHA staff and board are proud of this accomplishment.

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The Polly Hill Arboretum

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The mission of the Polly Hill Arboretum is to perpetuate the experimental tradition in horticulture established by Polly Hill by sharing knowledge of plants and scientific procedure through educational programs, research, plant conservation, and exploration. The Arboretum seeks to preserve its meadows and woodlands, to promote an understanding of its collections, and to encourage their utilization for scholarship, observation, and the enjoyment of all.

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Horticulturist/Arborist Ian Jochems teaches a pruning class in the Education Center and Botany Lab.

Message from the Director

Traveling around the Vineyard in the off season you run into familiar people at all the usual places.

This winter was much the same, but with a notable exception: When greeted with “What’s new?” instead of a shrug, or the typical “not much,” I didn’t know where to begin! Here at Polly Hill Arboretum so many things are new and a joy to share.

To begin, in January we hired Ann Quigley as Education, Membership & Outreach Coordinator. She takes on the post that Karin Stanley held for the last 12 years. Ann put together a fantastic offering of winter and early spring classes taking advantage of our new Education Center and Botany Lab (henceforth to be abbreviated as EBL). In addition, Todd Rounsaville began as Curator in May, replacing Tom Clark, in a position dedicated to the development and care of our living collections. Todd has settled in at Littlefield House on State Road, which underwent needed renovations last winter. You will read more about these transitions within these pages.

The completion of the EBL last August was a thrill. Over the past few months we have focused

on its classroom and herbarium. A faithful crew of volunteers have appeared twice a week to glue and mount dried plant specimens in our bright and organized space. The upstairs has been turned into a curatorial area and the home to our extensive archives. The EBL has also become the new location for the laser engraver we use to produce our outdoor display labels. To top it off, we added solar arrays to both the EBL and the Cowbarn rooftops. We have now achieved 100 percent solar power production on our entire campus!

What else is new? This summer we welcome three interns and a terrific line-up of events, classes, and volunteer opportunities. To stay abreast of these activities, join our email list to receive notifications or visit our website at pollyhillarboretum.org. We invite you to explore for yourself what’s new at PHA. Bring your family and friends! We look forward to seeing you.

Timothy M. Boland

Summer Program Preview

Our annual summer lecture series begins in June with a talk by Karen Perkins of Garden Vision Epimediums on a plant she describes as “the perfect shade perennial”—epimediums. Karen will also have plants for sale from her specialty nursery located in central Massachusetts. Later in June, Claudia West, ecological sales manager at North Creek Nurseries, a wholesale nursery in Landenberg, Pennsylvania, will give a talk exploring creative ways to bridge the gap between ecologically sound and aesthetically pleasing garden design. Her new book, *Planting in a Post-Wild World*, will be available for purchase and signing after her talk.

In July, the annual Frank and Lisina Hoch lecture will be given by Jonathan Wright, deputy director for horticulture and natural resources at the Indianapolis Museum of Art (IMA). Jonathan will speak on IMA’s extensive public gardens and their importance to the museum’s mission. Also in July, director of Harvard Forest and PHA research associate Dr. David Foster will give a talk titled “In Defense of Forests.” This special lecture requires advance ticket reservations; for details see “In Defense of Forests” article also on this page. The final lecture in July will be given by Eric Chivian, founder of the Center for Health and the Global Environment at Harvard Medical School, who will speak on global environmental threats and how medical models may help us understand them. This event is co-sponsored by the Vineyard Conservation Society.

In August we welcome Kris Bachtell, vice president of collections and facilities at the Morton Arboretum in Lisle, Illinois, to present this year’s David Smith memorial lecture. His talk will focus on the ongoing effort to study and preserve the endangered paperbark maple (*Acer griseum*) and how

this project can serve as a model for conserving other threatened plant species. In mid-August, Art Cameron, director of the Michigan State University Horticulture Gardens will give a talk on landscaping in tune with nature, highlighting his favorite plants for diverse environments. And to round out the season, the featured presenter at our Fall Plant Sale in early September will be Rebecca Lindenmeyr of the sustainable design and interior design company Linden L.A.N.D Group in Shelburne, Vermont. Rebecca will demonstrate how to create beautiful yet functional pollinator gardens and habitat hedgerows.

This season also brings a wealth of classes and workshops. We are offering photography with Jocelyn Filley, drawing with Genevieve Jacobs, and watercolor with Lynn Hoeft. Environmental consultant and plant taxonomist Lisa Standley will teach a class on sedges in July, and in August, multimedia artist Marlene Cameron will give a papermaking workshop. Staff-led programs include fruit tree pruning, plant propagation, and the ever-popular Edgartown tree tours. New Curator Todd Rounsaville will give a talk on plant nomenclature in July and a travelog on the flora of Kentucky in October. Our in-depth “Looking Together” tours take place twice per month May through September. The theme will change throughout the summer.

For dates, details, and our complete summer schedule, look for our summer/fall program guide mailing or visit our programs calendar at pollyhillarboretum.org. More events and classes are added throughout the season. To receive email updates, subscribe on the homepage of our website.



David Foster

In Defense of Forests

Special Lecture Tuesday, July 18
6:00 pm Reception
7:30 pm Lecture

You are invited to a wine-and-cheese reception followed by a special lecture with director of Harvard Forest and PHA research associate David Foster. This talk will examine the history, ecology, and conservation of forests, broadly across New England and in detail on Martha’s Vineyard. It will advance the notion that as we call on populations across the globe to stop the deforestation and degradation of forests to aid humanity in combating climate change, those of us in one of the most heavily forested and densely populated parts of the richest country in the world should do the same. The talk will draw from the author’s recent book—*A Meeting of Land and Sea: Nature and the Future of Martha’s Vineyard*, a forthcoming *Wildlands and Woodlands* report, and botanical and ecological studies by staff and members of the Polly Hill Arboretum.

Tickets are \$100, and include entry to the reception with Dr. Foster, admission to the lecture, and one copy of his book, *A Meeting of Land and Sea*. Advance ticket sales only. Tickets will not be sold at the door.

Dukes Conservation District Grant Awarded

The Polly Hill Arboretum, in partnership with the Martha’s Vineyard Agricultural Society and Island Grown Initiative, received a grant from the Dukes Conservation District. The grant funds six educational programs with a focus on soil health topics.

These include the benefits of riparian buffer zones along streams and wetlands; promoting native bees for pollination services; native vegetation on the farm for wildlife habitat; and invasive species identification and control. PHA extends

thanks to Bill Wilcox, former water resource planner for the Martha’s Vineyard Commission, and Kristen Fauteux, director of stewardship for the Sheriff’s Meadow Foundation, for administering the grant.

Welcome Summer Interns

Student internships are an integral part of PHA's educational mission and have been since our founding as a public arboretum in 1998. Our summer internships are made possible through generous support from the Feldman family. We are grateful for this ongoing funding that benefits the Arboretum and furthers the horticultural careers of many students. This year we welcome Torie Jones from Fargo, North Dakota, and Julia Craddock from Severna Park, Maryland.

Torie will be entering her senior year at North Dakota State University this fall, with a double major in horticulture and public history. The combination enables her to study living collections from the perspec-

tives of history and humanities in addition to plant science. She sees her internship at PHA as an opportunity to put into practice some of what she's learned in her interdisciplinary coursework.

Julia Craddock arrived on Martha's Vineyard having just graduated with a bachelor's degree in horticulture from the University of Maryland. She looks forward to gaining knowledge in plant management and observing the public's interaction with the landscape. Julia is pursuing a career in public horticulture with a goal of "improving the ecology of urban areas through the creation of beautiful and engaging public gardens."

Curatorial Intern Thomas Murphy

PHA welcomes Thomas Murphy as our 2017 curatorial intern. Thomas is a native of Louisville, Kentucky, and a recent graduate of Western Kentucky University in Bowling Green. In May he received a bachelor's degree in horticulture with a minor in geographic information science. Thomas comes to PHA with a love of plants, a dedication to public gardens, and a plan to pursue a career in living collections management. He spent last summer working as the plant records intern at Mount Auburn Cemetery in Cambridge, Massachusetts, where he gained experience in plant

identification and mapping. Thomas is interested in PHA for many reasons. He explains, "The unique climate of Martha's Vineyard along with the high quality collection of rare plants sparked my interest from the start. And both conifers and rhododendrons are favorites of mine, which I discovered when looking through PHA's living collections inventory." He says it felt like the perfect fit. The curatorial internship will strengthen his experience in curation and plant records and provide the opportunity to work in our new herbarium.

COMMUNITY ECOLOGY

Phragmites Research Collaboration



Staff from Martha's Vineyard Shellfish Group collected seed of the invasive common reed (*Phragmites australis*) from different populations around the Island and germinated it in the PHA greenhouse. The germination rates varied wildly. These results may imply that the seeds were actually at various maturation stages, and raised the question: Can a strategic harvest time prevent the spreading of viable *Phragmites australis* seeds to the fuel production or waste site? The results warrant further study.

Edgartown School Orchard Project

PHA Horticulturist Ben Madeiras and Executive Director Tim Boland continue to work together with Edgartown School students to revitalize the school's fruit tree orchard. On Ben's most recent visit (on Arbor Day), he led fourth, fifth, and sixth graders in preparing new planting areas: cutting tree rings, mulching, and weeding. On previous visits, students have had the opportunity to learn basic tool use and pruning techniques. The fruit trees are situated on the south side of the school alongside raised vegetable beds, a greenhouse, and native plant patches. The Edgartown School's Farm and Garden Program is coordinated by Melinda Rabbitt DeFeo. Melinda—Islander, educator, and plant lover—has worked with many Vineyard organizations to develop environmental education programs. With the help of Arboretum staff, Edgartown students will soon be reaping the "fruits of their labor" from the school's orchard.



A student prunes a fruit tree at the Edgartown School orchard.

Tick-Borne Disease Prevention

In an effort to keep Arboretum visitors safe from tick-borne diseases, PHA aims to alert you to some helpful resources and prevention strategies. The following recommendations were specifically written for this article by Richard Johnson, an Island field biologist who is part of the Martha's Vineyard Tick-borne Illness Prevention Program.

While it is not possible to guarantee that you will never be bitten by a tick or get a tick-borne illness, taking a few simple safety measures can make it much less likely. Taking personal precautions, conducting thorough tick checks, and consulting a doctor if you do get bitten will dramatically reduce the danger.

Personal Precautions

Use repellent or wear clothing impregnated with permethrin when working outdoors or walking in tick habitat. You can buy pants and long-sleeved shirts that are pretreated with permethrin or buy a spray and treat clothing yourself. Consider keeping a separate set of clothes that is worn only when working or walking in areas where ticks are likely to be present. If you prefer to use a repellent, those containing 25% DEET are most effective. If you do not want to put DEET on yourself or your children, there are natural tick repellents available. However, these have not been scientifically tested and their effectiveness is not known. Each individual must weigh the use of chemical preventives versus the dangers posed by ticks and tick-borne illnesses and determine what is best for themselves and their families.

Tick Checks

Even if you wear protective clothing or use a repellent, it is still important to do a thorough tick check of yourself and your children. Deer ticks usually head for warm, moist places such as behind the knees, under the arms, and the groin area. Anecdotal evidence suggests that dog ticks often end up at the hairline and back of the neck, while lone star ticks tend to bite more quickly wherever they are on your body. Make tick checks part of your routine. A good time to check for ticks is in the shower; as you soap up, feel for unusual bumps. When checking, remember that the nymph

stages of the deer tick, which are active from about mid-May until the end of July, are tiny, about the size of a poppy seed, so you really need to look closely to find them.



Deer tick (*Ixodes scapularis*) life cycle (not to scale).
Courtesy of the U.S. Center for Disease Control.

Consult a Doctor If You Do Get Bitten

No matter how careful you are, you may still get a tick bite. Remove all ticks as soon as possible using a pair of tweezers (or your fingernails if tweezers are not available) and use cellophane tape to stick the tick to a piece of paper for later identification. For most tick-borne illnesses, including Lyme disease, the tick has to be attached for 24 to 72 hours to transmit the disease agent. Thus if the tick does not show signs of swelling from ingesting blood, dispose of the tick in a small jar of rubbing alcohol. If the tick shows signs of swelling or you are unsure and want to be cautious, bring the tick to a medical professional. Doxycycline, a common antibiotic, is effective against most tick-borne illnesses. If taken in the first couple of days after being bitten, a double dose of doxycycline has been shown to be about 85 percent effective in preventing Lyme disease, thus avoiding a much longer regime of antibiotics. Make your doctor aware of any previous negative reactions you may have had with an antibiotic so they can prescribe a safe alternative. Finally, if you do have summer flu symptoms, unexplained aches and pains, or other unusual symptoms, see your doctor. We must always be aware that despite our best efforts, we may acquire a tick-borne illness. Prompt and proper treatment can prevent a great deal of future suffering.

For More Information

For a web version of these recommendations, visit the Resources page on the PHA website. Mr. Johnson has graciously shared his email address; if you have specific questions, you may contact him at ticksmv@gmail.com.

Sustainable Practices at PHA

Polly Hill Arboretum engages in sustainable practices wherever possible. When it comes to landscaped areas, these practices include limiting the use of pesticides, preserving existing plantings, and proper plant selection. We adhere to “right plant, right place” in an effort to promote plant health and reduce the demand for irrigation and other inputs.

Sustainability does not end in the garden though. Sustainability calls for the use of renewable energy throughout our campus. PHA has addressed this with solar panels positioned on the Littlefield Maintenance Building, the Cowbarn, and the new Education Center and Botany Lab, where photovoltaic cells convert the sun's energy into electricity, reducing our dependency on fossil fuels.

The solar project began in 2013 when we contracted with South Mountain Company to install solar on the then new Littlefield Maintenance Building. This array of 32 modules provides an annual production of 13,300 kilowatt-hours toward the estimated 34,400 kilowatt-hours the entire property uses, or 38.5 percent of the total annual load for the PHA campus. Three years later, they installed a second array of panels on the new Education and Botany Lab and adjacent Cowbarn. This array of 76 modules (divided between the two buildings) provides an annual production of 27,000 kilowatt-hours, totalling 78 percent of the annual load for the Arboretum.

We are proud to report that the combination of these two arrays provides over 100 percent of PHA's energy requirements from a sustainable, renewable energy source. The installation of the arrays has slashed our electric bills to zero, cut the Arboretum's carbon footprint, and built up energy credits for the winter months. PHA is also eligible for Solar Renewable Energy Credits made to solar owners through the Massachusetts Department of Energy Resources. Our credit will amount to approximately \$5,000 annually.

Arboretum Welcomes Todd Rounsaville

Dr. Todd Rounsaville joined the PHA staff as our third Curator in May. Todd arrived from The Arboretum, State Botanical Garden of Kentucky, located at the University of Kentucky in Lexington. During his five-year tenure as native plant curator at The Arboretum, Todd led the development of several new landscape plantings based on his seed collection expeditions throughout the state. In addition, he completed a PhD in forest ecology! Todd's academic research focused on seed ecology, invasive species dynamics, and plant conservation—topics with practical applications both at PHA and on the Vineyard. Prior to his move to Kentucky, Todd earned a master's degree in horticulture from North Carolina State University working with plant breeder Dr. Tom Ranney.

A New Englander by birth, Todd grew up in New Hampshire and received his undergraduate degree in environmental horticulture from the University of Rhode Island. From there he participated in several public garden internships, most notably at the Arnold Arboretum when he visited



New PHA Curator Todd Rounsaville at Cumberland Falls State Park in Kentucky

PHA on the Arnold's annual intern trip in 2003. He recalls meeting Polly Hill on the Cowbarn porch! Executive Director Tim Boland formally met Todd at the Scott Arboretum of Swarthmore College where Todd was working as the curatorial intern in 2005, a position Tim held twenty years earlier. In addition to his passion for plants, Todd is a musician and looks forward to learning about the Vineyard music scene. He moves here with an extensive woodshop to practice his favorite hobby: woodworking.

After accepting the Curator position, he wrote, "My interaction with the staff was the biggest selling point of this position. I expected they would be friendly and highly skilled, but on top of that the camaraderie and welcoming nature of the group says a lot about the PHA work environment, as well as the close community that supports it." We are in hearty agreement. We all look forward to welcoming Todd to the PHA staff and the Martha's Vineyard community. Please stop by and introduce yourself to our new Curator.

In Memoriam: Frank Rees Smith *by Tim Boland*

PHA lost an important advocate this past January with the passing of former board member Dr. Frank Rees Smith. Frank joined the PHA Board in 2006, and stayed actively involved until he retired from our board in 2009. His first connection with the Arboretum was as a volunteer docent. Frank led captivating and popular visitor tours. He had a fondness for Polly Hill's story and the historic landscape and buildings, and an admiration for our scientific collection of woody plants. Frank was a scientist, who graduated from medical school at Columbia University College and embarked on a distinguished career in public and occupational health. Frank and his wife, Gwynneth, and their extended family were seasonal residents of Edgartown.

I first met Frank in 2003, when he enthusiastically volunteered to help plant the Homestead Border designed by my wife, Laura Coit. Laura fondly remembers working with Frank planting perennials and bulbs and talking about plants. Frank was

interested in native plants and was an early supporter of MV Wildtype, PHA's native plant production program. He was already involved with rare plant monitoring with the Massachusetts Natural Heritage Program when he convinced me to volunteer for Sheriff's Meadow Foundation's restoration of the Oyster-Watcha Midlands Preserve in Edgartown. It was during one of our many hikes in the State Forest that I discovered Frank was a Michigander, just like me! And just like me he also enjoyed a good Belgian beer. We were kindred.

At Frank's suggestion, we began to grow beach plum from wild-collected seed as part of our nursery program. Today, three beautiful beach plums, grown from seed Frank collected, thrive in the North Field. The Arboretum was heartened to receive so many gifts in memory of Frank, several with accompanying notes recalling Frank's kindness and warmth and fond memories from those who enjoyed one of his special Arboretum tours.



Frank Smith worked on many projects for the PHA, including collecting native plant seed. He is pictured here at the Oyster-Watcha Midlands Preserve in Edgartown.

Karin Stanley Retires

In January our previous Education, Membership & Outreach Coordinator Karin Stanley retired from her position after 12 years. Over her tenure she coordinated special events, educational programs, and publications. Karin's vision and hard work led to our outstanding summer lecture series

Welcome Sanford Brown



Sanford Brown

The Arboretum recently appointed Sanford Brown of Darien, Connecticut, and Vineyard Haven, Massachusetts, to the Board of Directors. Currently a managing director at Alternative Investment Group in Southport, Connecticut, Sanford brings 20 years of hedge fund industry experience to the PHA Board, where his principal assignments will be the finance and investment committees, and guiding the Arboretum's sustainable and ethical investment program. Sanford has strong Island ties. He spent his early summers on West Chop. Sanford, his wife, Krista, and their children: Morgan (11), Charlotte (8), and Finley (8) spend summers on the Vineyard and visit at other times of the year when possible. "I am delighted to join the Polly Hill Arboretum team," says Sanford. "The Arboretum is a marvelous public garden and has become one of our family's favorite spots on the Vineyard. I'm looking forward to doing all I can to continue Polly Hill's legacy and support the Arboretum's educational, research, and outreach mission." We warmly welcome Sanford to the PHA Board and look forward to working with him in the years ahead.

as well as many popular hands-on workshops. She was active in bringing PHA's programs to a wider audience through publicity that reached local, regional, and national audiences. Executive Director Tim Boland adds, "When I think of how far PHA has come as a public garden and community resource, much is due to Karin's energy and determination. As a result, the Arboretum has a national reputation for the quality of our educational programming."

A keen amateur historian, Karin is deeply interested in the history of the Arboretum's landscape and buildings that create our picturesque setting. Her interest and participation with West Tisbury's historical commission led to PHA's well-documented application to the National Park Service's National Register of Historic Places. We received this honor and designation in 2015.

With a wealth of memories and friendships from her time at PHA, Karin departs richer for the experience. "Leaving PHA is bittersweet for me," she says. "But now is my time to do some things I need to do, and want to do. For the past 12 years I have grown with the Arboretum. I'm very proud



Karin Stanley

of PHA and my involvement in the remarkable achievements made over its short life as a public garden." But the connection with people means the most to her. She adds, "It's the people I have come to know over the years—staff, volunteers, members, speakers, and visitors—that made all the difference."

Karin says she will miss her daily walk through the grounds to her office in the historic Homestead, however she plans on volunteering and looks forward to seeing everyone in the near future. We look forward to that too. Thank you to Karin Stanley for her commitment to PHA.

Ann Quigley Joins PHA Staff

Ann Quigley joined the PHA staff this January as our new Education, Membership & Outreach Coordinator. She is responsible for planning and advertising programs, expanding the visibility of the Arboretum, and managing our membership base. Her previous position as the programming coordinator at the West Tisbury Public Library provided her with excellent experience to excel at PHA. In addition to coordinating programs and collaborating with Island organizations on a variety of community events, she wrote press releases and designed graphics from posters and brochures to their newsletter. Ann graduated from UMass Amherst with a bachelor's degree in sustainable landscapes for social justice; her major was the result of an independent study connecting the disciplines of landscape architecture, botany, sociology, and ecology. Ann says, "I've loved visiting the Arboretum ever since I moved to the Vineyard in 2010. I'm excited to be joining the team,

and I look forward to helping connect visitors and community members with plants and nature through my work." Ann's creativity, collaborative work style, and cordial personality are a welcome addition to the PHA team. Please introduce yourself to Ann on your next visit.



Ann Quigley

PHA's Stewartia Collection: Patience, Persistence, Pride

by Tim Boland

Silky stewartia at the entryway to the Visitor Center. This 2007 PHA accession was grown from seed collected in Chesapeake, Virginia.

Our commitment to building PHA's stewartia collection is based on our founder Polly Hill's history with the genus and our own desire to encourage the cultivation of these superb small-flowering trees in home gardens. As part of our mission of research and horticultural experimentation, we also bring a plant conservation focus to stewartias, particularly the two North American species: mountain camellia (*Stewartia ovata*) and silky stewartia (*Stewartia malacodendron*).

Partnership Leads to National Collection

In 2006 we were recognized as co-holding the national collection of stewartia together with the Arnold Arboretum of Boston, Massachusetts. Administered by the American Public Garden Association, and now called the Plant Collections Network, this cooperative program has grown stronger to become the recognized standard of excellence in plant collection management. Manager Pam Allenstein explains, "The

Network coordinates a continent-wide approach to plant-germplasm preservation among North American public gardens and promotes high standards of collections management." Accreditation as a national collection demonstrates a garden's enduring commitment to global efforts to save plants. Today, over 70 stewartia trees representing 22 taxa can be found in PHA's collections, many of them PHA's introductions.

Seed Expeditions Yield New Bounty

The two North American stewartias, mountain camellia and silky stewartia, are endangered in many parts of their natural range. In the wild we have encountered trees laden with seed and others with no seed at all. Conservationists believe the trees exhibit what is called inbreeding depression. This occurs when small populations become isolated over time. Isolation is the result of habitat fragmentation (often from deforestation for agricultural use or

development) causing ever-widening gaps between populations.

On our past trips to the southeastern United States, and my trip to Kentucky last fall, we focused on mountain camellia. From nearly 50 separate seed collections made over the last 10 years, only a small percentage of seed has germinated, and only a scant few have made it into the collections. Why? Seed propagation is difficult: the woody seeds take up to five years just to break open! And once opened, they must still overcome internal dormancy mechanisms to germinate. Polly Hill understood this lengthy process and sowed seeds directly in the ground, patiently letting nature do its work.

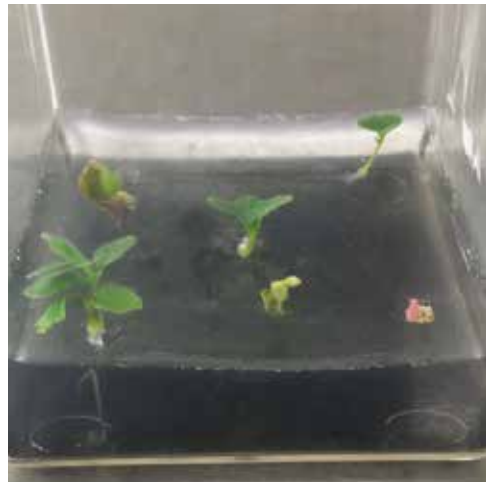
Despite our frustration with growing stewartia from seed, when, eventually, you meet with success, you experience "stewartia euphoria," as we did this past spring when two silky stewartia trees (grown from seed collected ten years ago) finally blossomed! We collected the seed in their natural

habitats: one comes from Winston County, Alabama, and the other from Chesapeake City, Virginia. Found at PHA's entrance, the trees are an entrancing sight when blooming in mid June.

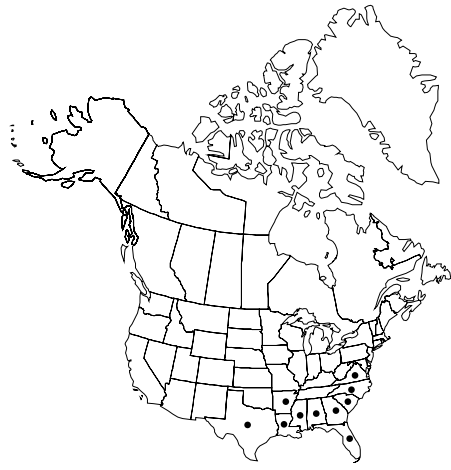
Propagation Yields Promising Results

PHA has been working cooperatively on stewartia propagation with Heather Gladfelter, a researcher at the Warnell School of Forestry at University of Georgia in Athens. We sent Heather seed of *S. ovata* 'Red Rose' and *S. malacodendron* 'Delmarva' in 2013. She extracted the embryos and grew them in a Petri dish using plant growth regulators to encourage the formation of roots and shoots. This technical process called tissue culture has been used to propagate plants that are difficult to grow by more traditional methods like cuttings. Heather has produced dozens of plants using this procedure.

At PHA, Plant Propagator/Horticulturist Brian McGowan has been successful with growing certain stewartias from cuttings including several of Polly's Asiatic introductions. In the past we have rooted cuttings, however, the following year the small plants unfurl new leaves only to rapidly perish. We hypothesize that the cuttings do not produce enough growth to accumulate the necessary carbohydrate reserves to support growth the following season. Brian has worked hard to circumvent this through striking cuttings earlier in the season. In addition, the small trees are overwintered in the protective confines of the greenhouse.



Embryonic tissue from *Stewartia ovata* 'Red Rose' is placed in agar with plant growth hormones allowing small plants to flourish without the strong growth inhibitors typically found in the woody seeds of some stewartia. Photos by Heather Gladfelter.



Natural distribution in North America of silky stewartia (left) and the mountain camellia (right). Maps courtesy of the Flora of North America

Stewartia Serendipity

While extraordinary efforts to grow stewartias take place, sometimes you just get lucky and find a remarkable seedling with enough merit to become a new introduction. I lucked out in 2006. When weeding close to *S. ovata* 'White Satin', I discovered a foot-tall seedling that had sprouted nearby. I transplanted the tree to a full sun location in my home garden. This stewartia has dark stems and a burgundy blush to the emerging foliage that persists into late summer. Seven years later, the moment we wait for arrived: the first flowers—white ruffled petals with a stunning golden boss of stamens. A cultivar was born! I named this exquisite tree 'Inner Light' in reference to the striking gold stamens, and in deference to my wife, Laura Coit, who suggested the name. (See photo on page 1.) Propagation from cuttings has gone well. Soon this stewartia will be shared with the wider horticultural world.

PHA Designated as Registration Authority

PHA director emeritus Stephen Spongberg produced the monograph on the genus *Stewartia* in 1974. This publication served as the authoritative resource for much of our work. In 2015, then curatorial intern Victoria Stewart used Steve's monograph to develop a web-based pictorial key creating a comprehensive resource for the genus. Her work, combined with our efforts to research, collect, and grow our collection, resulted in the International Society for Horticultural Science appointing PHA as the international cultivar registration authority for the genus. This designation positions us for working with plant breeders, commercial growers, and other arboreta to further expand the availability and use of this incredibly beautiful group of trees.

Stewartia ovata 'Inner Light' as rooted cuttings in the greenhouse



Pitch Pine: Gnarly Native Opportunist

by *Tim Boland*

For a botanist, the first introduction to a tree species is cause for excitement, however my initial encounter with pitch pine (*Pinus rigida*) caused some skepticism. In 2005 after living several years on the Arboretum's property, my wife, Laura, and I were looking to purchase a home. The rural town of West Tisbury, the community we had embraced since our arrival three years earlier, was our preferred location. We fell in love with, and eventually bought, a house adjacent to the State Forest surrounded by scrubby oaks and towering pitch pines.

After moving into the newly constructed house, we found the surrounding landscape posed some major challenges. Foremost among them was the low nutrient and excessively free-draining soils resulting from the post-glacial deposit of sand over gravel. In most places it was difficult just to dig a hole. Welcome to the sandplain of Martha's Vineyard!

Despite the initial shock, I learned that our property was part of an ancient forest. The lichen-covered multiple trunks of post oak (*Quercus stellata*) indicated that the trees



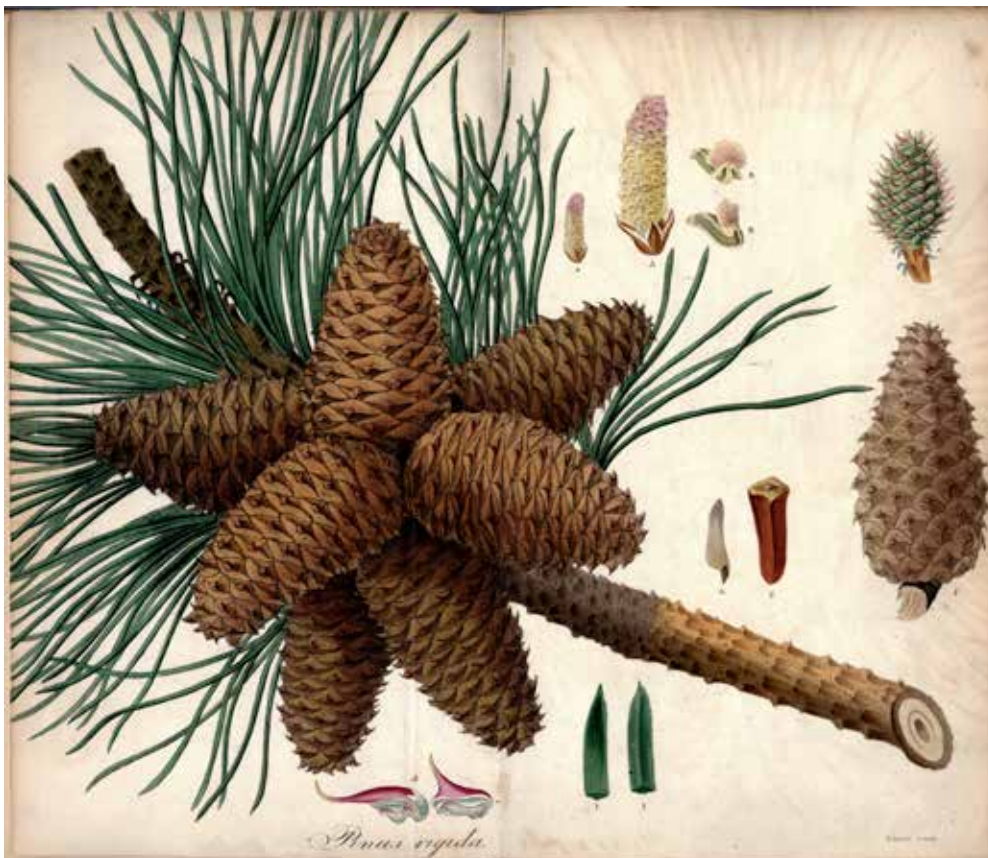
Two pitch pines in silhouette against the sunset in the town of West Tisbury, Massachusetts

had been harvested from just above the soil line. Never completely pulled out of the thin soil, the roots re-sprouted to form the trees we see today. As a result, both white and post oak and an impenetrable understory of scrub oak dominate the site. The exception to the oak uniformity is pitch pine. Two tall

gnarled trees that flank either side of the dirt driveway appeared as giant bonsai. The thick, dark trunks topped by irregular and rugged crowns were, if nothing else, beautiful to see backlit by the setting sun. Additional pines were scattered around the fringes of the site—tall, scraggly trees with broken side branches; they moved ominously in the wind.

Evaluating the landscape as an arborist would, I saw that the construction excavation had damaged large portions of the pines' root systems. The trees continued to sway back and forth. I envisioned them crashing down on our house. Several of the most threatening had to go! A few more I had removed to create more sun for a future vegetable garden. I found a local woodworker who milled the felled trees into floor boards; the rest became mulch for our front walk.

Pitch pine owes its common name to the intensely resinous qualities of all parts of the tree: trunk, twigs, needles, cones. Pick up a cone, break a twig, or wound its bark, and out flows the sticky sap called pitch that created an industry with its use as turpentine, tar, and as an energy source for light and heat in colonial New England households. Before establishing animal agriculture, the colonists rapidly harvested pitch pine throughout New England including Cape Cod and the Islands. Its re-establishment was due to its opportunistic tendency to take over abandoned agricultural sites and its



Pitch pine illustration from *A Description of the Genus Pinus* by Aylmer Bourke Lambert (London, 1828). Courtesy of the Arnold Arboretum Libraries

Gregory Palermo

innate ability to withstand fire and flourish in its aftermath. It does this in every part of its natural range in eastern North America from New Brunswick to Georgia, and west to Ontario and Kentucky.

In his book, *A Meeting of Land and Sea: Nature and the Future of Martha's Vineyard*, PHA research associate Dr. David Foster outlines the human connection between past land use activities and modern day vegetation patterns that influenced the Island's sandplain forest of pitch pine and oak. Foster notes that the forest was well established before colonization—some trees dated at 300 years or older! He also points out that pitch pine was planted on the Vineyard from the 1850s on. In fact, the Martha's Vineyard Agricultural Society offered prizes for the best pitch pine plantations. In the late 1920s Polly Hill's mother, Margaret Butcher, got caught up in the fervor. She purchased 15 trees for 10 cents each and planted them where they reside today on our eastern border along State Road.

Today, as I look out my window on a maturing landscape, I see hundreds of pitch pines that have filled in the septic field to the east of my house—they don't need fire to take over a disturbed site, just an opening. I have removed scores of wayward seedlings in my garden beds and witnessed their remarkable ability to re-sprout when I have flush cut them to the ground. After an ice storm one of our pitch pines did snap, but fortunately it caused no damage.

With this unending battle with pitch pine in the landscape, it's possible to forget their enduring worth. PHA and other Vineyard conservation organizations are part of the Massachusetts Coastal Pine Barrens Partnership. When you look at pitch pine as part of a globally rare ecosystem, you understand their immense value. Indeed, you realize that these trees should not be judged for their ornamental assets (or lack thereof) but on their substantial value as part of a remarkably rich coastal plain forest that regionally supports over 180 state-listed species of rare, endangered, and threatened plants and animals. So the next time you gaze off to the side of the road and spot the twisted outline of our most abundant Island evergreen tree, come to peace with pitch pine as I did. It's here, there, and everywhere, and it's not going away!

The PHA herbarium holds 1,967 vouchers (individual pressed plants) that are part of the Flora of Dukes County. 1,090 of those plant specimens were collected over a 4-year timespan by Arboretum volunteer and research associate Gregory Palermo or by staff with his assistance. Since 2014, Greg has made the majority of the collections that make up the PHA herbarium.

Following his retirement in 2012 from medical practice in New Jersey, Greg sought out volunteer opportunities across the Island that would allow him to spend time outdoors. Having not yet discovered the perfect fit, he pursued weekly lessons in field botany from an Island naturalist. At the end of 2013, Greg learned of the Flora of Dukes County project that was gaining momentum at PHA and immediately started contributing his time. He had finally found the right project.

In 2014, Greg delved into plant collecting, wrestling with botanical tomes to learn plant morphology and botanical names. As an art history major who went to medical school, he had a steep learning curve. That year he collected plants with many different people, but often with Visitor Services/Resource Specialist Erin Hepfner, who was then field collecting and processing previously collected vouchers in the herbarium. Proud of Greg's accomplishments, she says, "When Greg and I began collecting together, I was able to share my taxonomy knowledge with him; but now, I look to him for his understanding of Island flora." In his own words he describes what he does, "I go out with my partners and look for plants that are not yet collected, are interesting or unique, and make sure the population is large enough to collect from. We then take a sample, press it, and dry it. It involves a lot of study—it takes a lot of work to make sure of the correct identification. It's important to be thorough."

Greg's dedication, perseverance, and meticulous work style are evident. He arms himself with plant ID books and hauls them into the field. Imagine carrying a bag of books along a State Forest fire lane on a hot, humid July day—just for fun! Yet there



Greg Palermo

you will find Greg with a hand lens, face inches from a plant, determining its species. If he can't identify it in the field, he will take a small sample home (if the population is large enough) and study it under a microscope in his kitchen. His desire to study plants exceeds what can be gained from books and microscopes. As a result, Greg has sponsored plant classes at PHA that are taught by experts in their field, an act that benefits not only himself, but Island naturalists and ecologists as well.

The main purpose of the Flora of Dukes County project is to document all the species of plants that grow wild on Martha's Vineyard and in other locations in the county. This effort supports the conservation aspect of PHA's mission. When asked why he thought this endeavor was so important, Greg eloquently revealed a major goal of the project, "With so many things under threat of disappearing, documentation is important so we know how to protect what we have. This kind of work helps bring these concepts to people's attention—there's a consciousness-raising aspect to it." He admits, "Plant collection is a commitment, but there is a great need for more volunteer collectors."

In 2016, he and fellow volunteers spent 1,400 hours collecting, studying, identifying, pressing, and drying plants, finding one species previously unknown in the United States and another previously unknown in Massachusetts. Here's to at least another 1,090 plant collections, Greg! For information about volunteering at PHA, contact Erin Hepfner at 508-693-9426.

THE POLLY HILL ARBORETUM

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ADMINISTRATIVE OFFICES

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VISITOR CENTER

795 State Road
West Tisbury, MA 02575

ACCESSIBILITY

The Visitor Center is wheelchair accessible.

VISITOR CENTER HOURS

Memorial Day weekend to
Columbus Day: 9:30 am–4 pm

ARBORETUM GROUNDS HOURS

Sunrise–sunset, year-round

TOURS

Daily July and August at 10 am,
or by advanced reservation

ADMISSION

\$5
Free to members and children under 12

FREE PARKING

DRIVING DIRECTIONS

See www.pollyhillarboretum.org

mer.i.stem: *n. botany.* The growing point or area of rapidly dividing cells at the tip of a stem, root, or branch.



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Holly Park

Holly Park is found at the northern border of PHA just after leaving the Visitor Center. Originally a native oak woodland with lofty black and white oaks, it also prominently features the American holly (*Ilex opaca*) that gives this area its name. In our early development, large rhododendrons that were crowding out the Play Pen were transplanted to this area. Director Emeritus Stephen Spongberg wrote in the fall 2000 issue of *Meristems*,

“Years from now, we trust this area will rival Polly’s Play Pen in its beauty, horticultural and botanical interest, and year-round appeal.” Today, 17 years later, Holly Park contains a tapestry of beautiful shade-tolerant groundcovers along with many rare plants. In addition, it provides visitors with limited time or mobility an opportunity to take in a huge sampling of plant diversity within an accessible and well-designed space. Come see for yourself!



2015