Publication of The American Hosta Society Volume 44 Number 1



H. 'Designer Genes' with red petioles (*right*) and Ali and Warren Pollock's pyramid of potted hostas (*bottom*). See "Q&A" (page 16) for more containergrown hostas.

front cover: H. 'White Line Fever'.







CONTENTS

- 5 Notes from the Editor by Bob Olson
- 6 **President's Message** by Doug Beilstein
- 8 Insights into *H.* 'Something Different' by Bruce Banyai
- 10 **Reflections: 2012** by Warren I. Pollock
- 16 Q&A: AHS Ask and Answer Container-Grown Hostas: What Are Your Techniques?
- 29 Troughs and Troves of Tiny Treasures by Larry Tucker
- 34 Becki Grows Giant Hostas on Her Deck— You Can Too, Here's How by Tom Micheletti
- 36 **Growing Mini Hostas in Troughs** by Rebecca Boylan
- 39 Hydroponic Container Gardening by Frank Nyikos
- Hot Hostas:
 H. 'Mango Salsa': Back to Breeding Basics
 by Rob Mortko
- 44 **Kiwi Companions** by Madelon Gilligan
- 48 **The Path to My Raised Bed** by Rod Kuenster
- 50 Hostas and Sunlight by W. George Schmid
- 55 **The Problem with Excessive Sunlight** by Steve Chamberlain

HOSTA JOURNAL

EDITOR Bob Olson

PHOTO EDITOR Andy Marlow

ADVERTISING MANAGER Marlys Anderson

NOMENCLATURE EDITOR W. George Schmid

SCIENTIFIC EDITOR Steven C. Chamberlain

CONTRIBUTING EDITORS Rob Mortko Warren I. Pollock

ASSOCIATE EDITORS Judy Burns Patrick Coleman Carolyn Harstad Andy Marlow Josh Spece Larry Tucker

DESIGNER Janet Mills Mills Design

COPYRIGHT POLICY

In compliance with the Copyright Law of 1989, rights to non-contractual material remain with the author and are assumed to be on loan to The Hosta Journal for one-time use. Such material may be reprinted only by permission of the author. Exempted materials are those created expressly for the AHS by its own staff, board members or committees. Said material is protected under AHS copyright. All artwork appearing in The Hosta Journal, whether in editorial or in advertising, should be assumed to be copyrighted material and should not be reproduced without express permission of the owner.

ISSN 1041-553X © 2013 The American Hosta Society. All rights reserved.

www.hosta.org

HOSTA JOURNAL

HOW TO CONTACT US

Editorial

For editorial inquiries or to submit an article: Bob Olson 2840 Glenhurst St. Louis Park MN 55416 (952) 920-8327 thehostajournal@hotmail.com

To submit photographs: Andy Marlow 10700 Minnetonka Boulevard Hopkins MN 55305 (952) 933-5759 ajmarlow@comcast.net

Subscriptions/Membership

Subscriptions to *The Hosta Journal* are a benefit of membership in The American Hosta Society. For changes of address, renewals, gift memberships and other membership inquiries: Sandie Markland PO Box 7539 Kill Devil Hills NC 27948 AHSMembershipSecretary@charter.net

To order back issues: Barbara Schroeder 1819 Coventry Dr. Champaign IL 61822 barbschro1@gmail.com

Advertising

For advertising inquiries and rates: Marlys Anderson 104 Bluegill Ct. Pella IA 50219 (641) 780-6487 marlys1950@hotmail.com

Opinions expressed in *The Hosta Journal* do not necessarily represent views of the editorial staff or The American Hosta Society. Articles published may put forth theories, observations, etc. with minimal or no experimental or scientific backing. These writings are presented to heighten awareness of hostas and, thereby, stir reader response and further study.

The AHS publishes paid advertisements as a service to its members, but cannot be responsible for the quality of plants, services or supplies received, nor for expressed or implied guarantees.

www.hosta.org

CONTENTS

- 56 Weed-Free Garden by Patrick Coleman
- 58 And the Winner is... A Sequel by Jim Hartmann
- 60 Are You a Benedict Garden Performance Judge? by Jim Hartmann
- 61 The Bee's Knees Or How I Learned to Love 'Vase-Shaped' Hostas by Walter Cullerton
- 66 **The Winning Photo is? Photo Contest Correction** by Andy Marlow
- 67 AHGA's Hosta Clump Size Standard— A Defining Moment by Rob Mortko
- 69 What's in a Hosta Name? Part LVI by Warren I. Pollock

Notes from the **Editor**

Bob Olson St. Louis Park, Minnesota

In this issue of the *Journal* we focus on the rapidly increasing interest in growing hostas in containers. This has been quite popular in Asia and Europe where garden space is often severely limited. Some Americans have long used this approach to overcome in-the-ground growing problems—most notably Warren Pollock who faced an intractable problem with tree roots (Warren describes his intricate system for growing hostas in pots in the 2011 *Online Hosta Journal*).

As you might expect there are numerous approaches to this art, and they vary a bit from place to place depending on climate and other factors. Consequently we invited experienced and skilled gardeners from around the world to share their techniques and recommendations. Experts describe how to grow miniature hostas (Larry Tucker) and giant hostas (Tom Micheletti) in display pots. If you find yourself strapped for new garden space or if you want to find ways to better display your miniature hostas this will be of interest to you.

Also in this *Journal* the American Hosta Growers Association announces they are going to categorize hostas by the size of the clump you can expect to grow. This will be useful to customers who don't want to get a giant plant when they expect a miniature—and vice versa. Putting individual hostas into such categories is harder than you might think—Rob Mortko explains why and how the AHGA is approaching it.

Patrick Coleman left his garden for a year to work in Washington, DC. He carefully planned how it would flourish without a dedicated gardener in residence to weed. His neighbor, Janet Mills, chronicled the result with monthly photographs throughout the growing season.

Madelon Gilligan, our AHS goodwill ambassador from New Zealand, describes how she grows championship rhododendrons amidst her hosta collections; if you are fortunate enough to live in a climate friendly to rhododendrons and azaleas you may want to take note.

There should be something for everyone in this issue—and if there is some-



N HARRI

thing you would like to see next time, contact me by phone or e-mail (or snail mail). We are always eager to hear what people like.

Meanwhile I'll look forward to seeing you at the AHS Convention in Milwaukee June 13-15. If you come, you'll see a lot of great gardens with marvelous hostas—and you'll make some friends who will be very *interested* in hearing about your hostas.

Bob Olson, Editor (952) 920-8327 thehostajournal@hotmail.com



President's Message

Doug Beilstein Mansfield, Ohio

Just returned from my bunker! Deep under our back porch is my seed room. It's a 10-by-20-foot windowless structure that can hold up to about 100 trays of seedlings. Right before Thanksgiving, daughter Megan and I planted 50 trays of seeds that were collected in the fall of 2012. What a surprise! We found a great percentage of germination. Now time will tell if the right crosses were made.

As I write this, while viewing the back yard, I see nothing but snow. Still about 8 inches left. You would think all is in hibernation. A mistake if you do. Too many things are being planned for you right now.

A quick review of some major events I attended in late winter: Midwest Winter Scientific Meeting and Great Lakes Hosta College. It's like experiencing summer in the winter. A chance to learn, share, renew and get ready for summer. Almost 500 hostaphiles gather before a pip springs forth. Come enjoy the fun next time around.

Also, if you are still under your couch cover with visions of sunny gardening days in your head, then enjoy paging through this issue of *The Hosta Journal*. Also, the *Online Hosta Journal* can be viewed at www.hosta.org (password is noslugs2013), where Don Dean has a beautiful treat for you, including last year's convention and much more! And, catalogs keep coming from nurseries like Naylor Creek, Green Hill Farm, Q&Z...the list goes on. My budget is almost filled right now.

The one thing I don't want to forget is increasing AHS membership. My New Year's resolution: Ask somebody else, even another hostaphile, to join at www.hosta.org. Give gift memberships or invite others to join and receive *The Hosta Journal* and so much more.

Let's think summer. We have a great AHS Convention coming up this year. Tom Micheletti and Jack Barta are hosting a one-of-a-kind convention in Milwaukee, Wisconsin. This is a convention that all members of the Society can afford to attend. We have never had a convention with a registration fee of \$139.00. Attendees get to chart their own course as to which tours they will take. Is this the look of our



KEN HARRIS

future conventions? Grab a few friends at the convention and go see the gardens of your choice. I hope to see you there.

Now back to the bunker. More seedlings to transplant...998, 999, 1,000.

Later,

Doug Beinstein, AHS President (419) 526 2966 dbeilsteindds@neo.rr.com

2012 contributions

AHS Alex J. Summers Trust

Burto, Bill, in honor of Karen and Bob Olson – \$1,000.00
Kleckner, Francis and Glenni, in honor of Madelon Gilligan – Donor
McDonell, Katheryn and Harold, in memory of Roy Chastain – Donor
Silvers, Bill, in memory of Annette
Jolly – Donor
Walker, Claudia and Hugh, in memory of Roy Chastain – Donor

HVX Research Project

Green and Gold Hosta Society – \$200.00 Thy, Pia – \$340.00

International Registrar for the Genus Hosta Minnesota Hosta Society – \$500.00

Received January 1–December 31, 2012 Amounts below \$100.00 listed as "Donor."

Sharing Circle

Beilstein, Doug – \$200.00 Black Swamp Hosta and Daylily Society/Doug Beilstein – \$100.00* Daffodil and Hosta Society of Western Pennsylvania/Doug Beilstein – \$300.00* Heartland Hosta and Shade Plant

Society/Doug Beilstein – \$300.00* Hostas of Kentuckiana/Doug Beilstein – \$272.00*

*Dr. Beilstein donated his fees for speeches to these societies.

Undesignated

Central Illinois Hosta Society – \$230.00 Shades of Green Hosta Society – \$2,000.00**

**Shades of Green Hosta Society donated the proceeds from the Midwest Regional Hosta Society Convention.

Corrections

In the Fall 2012 issue (Vol. 43, No. 2), the cover photo featured *Hosta* 'Something Different' originated by Pauline Banyai, but the photo index listed the originator as unknown. The bio. for Grace Anderson, author of "Preventing HVX Spread" should have listed her degree: MAg Horticulture. The hosta shown on the upper left of page 43 of that issue was listed as 'Walkon Water' but should have been 'Waukon Water' (B. Axmear - NR). The AHS Photo Contest displayed Debbie Hurlbert's image of *H*. 'Tiny Bubbles' rather than Joanna Kovalcsik's. See page 66 of this issue to view both photos of 'Tiny Bubbles'.

into H. 'Something Different'

by Bruce Banyai Christiansburg Virginia

hen the Fall 2012 issue of The Hosta Journal (Vol. 43, No. 2) arrived, I was intrigued by the wonderful cover photo of Hosta 'Something Different'. In the photo index, the originator information was incorrectly identified as "unknown," even though it was originated in 1990 by the late Pauline Banyai, my mother.

Here is some background on this H. 'Gold Standard' sport. How she found, named, registered and introduced 'Something Different' may bring a smile to you as it does to me to tell it.

Mom always had a keen eye for new hostas, either sports or seedlings. In the early 1980s, all the hostas she sold from her home at the Royal Oak Farmers Market and Detroit Eastern Market were divisions from stock plants grown in her garden.

In addition to her extensive hybridizing program, using H. nigrescens and H. montana, she would watch the tissue-cultured plants growing in the ground as well as her own divided stock

H. 'Gold Standard'.



plants for new sports. The new sports would be added to her seedling and sport grow-out beds. This method allowed her to view them over an extended period to make sure they were stable.

As we now know, 'Gold Standard' has been a prolific hosta

that has produced colorful sports. It has sported into hostas with different margins, color patterns and timing of colorations. Her first registered 'Gold Standard' sport was 'Moonlight', a white-edged version "that glows with its white edge in the moonlight," hence the name.

In the early 1980s, she found another 'Gold Standard' sport with a very early and distinct color pattern. After a few years, this distinctive division became a sizable clump. She divided it and it continued to hold the color pattern and early timing, which she felt was unique.

Each spring, when I would help divide hostas, we would always tour the seedling/sport bed to view her many efforts to produce



distinctive hostas.

Mom would ask my thoughts on this one special hosta. Although she noted its early beauty and vigor, I only commented, "it is something different" without much excitement. Due to my using the same comment over a

couple of years, the phrase stuck and she registered it as *H.* 'Something Different', a nice bit of humor. Finding names for her introductions was always a game for Mom.

Now that I reflect, it is a unique plant and name. The cover photo shows some of the best characteristics of its leaf color. With its light center, it can be a slow grower; in the right growing conditions, however, its center coloration holds for the entire season.

FOR SALE

The Hosta Journal publications

Partial Sets of Journals from 1982 to 2011 36 or more different Journals per set for \$75.00 Free shipping in the United States. All other countries please contact Barbara Schroeder at barbschro1@gmail.com for the additional shipping charges.

Make checks payable to THE AMERICAN HOSTA SOCIETY (AHS) (check drawn on a U.S. bank or money order payable in U.S. Funds) and mail to:

Barbara Schroeder 1819 Coventry Dr. Champaign IL 61822

SUPPLY LIMITED, ORDER NOW!

Reflections: 2012

Excellent Hosta Article in *Better Homes and Gardens*

by Warren I. Pollock Glen Mills, Pennsylvania

I cannot think of a better popular magazine with a huge nationwide circulation and newsstand sales than *Better Homes and Gardens (BHG)* to feature an excellent article on hostas. The August 2012 issue included "Made for the Shade" by Marty Ross. She's a *BHG* Regional Contributor from Kansas City, so I suspect the great photos were taken in gardens in the KC area. I'm told this western part of Missouri spilling next door into Kansas State is prime hosta PollockHosta 'First Frost' (P. Skolnik - 2002),
which Bob Solberg of Green Hill Farm,
now in Franklinton, North Carolina,
named, introduced and registered. Also featured is
a photo of 'Battle Star' (G.R. Goodwin - 2006). H.
'Battle Star' is large with dark gray-green leaves hav-
ing a yellow edge. Its originator, Randy Goodwin,
who now lives in Zionville, Indiana, is the new AHS
Benedict Garden Performance Chair. Even a top
journal like BHG can't get hosta names consistently
correct: The caption reads 'Battlestar'.



H. 'El Niño' in the Thyrum garden—a conversation starter.

country, with potential to host an AHS Convention.

Rob Mortko's Made in the Shade Gardens (Olathe, Kansas) supplies the region with first-class and newly introduced hostas, as well as growing advice. Dubbed the "The Hosta Guy," currently he's AHS VP Genus *Hosta* and also Executive Secretary of the American Hosta Growers Association (AHGA).

The article's lead page is a full-page photo of

features in this much-visited garden featured in a *Fine Gardening* magazine article a few years ago. Attendees at the 2006 AHS Convention in the Philadelphia area will recall that Fox Hollow was a tour garden.

EVE

The Delaware Valley Hosta Society had its June 3, 2012, meeting at Fox Hollow. A couple of attendees thought the clumps were 'First Frost', not 'El Niño'. This started a lively discussion.

H. 'First Frost', I'm sure keen hosta growers already know, is a sport of 'Halcyon' (E. Smith - 1988) having waxy blue leaves with wide whitish-yellowish margins in early spring that turn less yellow later in the season. It's sometimes difficult to tell 'First Frost' from 'El Niño'^{PP14,632} (P.Th. Warmerdam - 2003).

Case in point: Eve and Per Thyrum's garden, Fox Hollow, in Wilmington, Delaware, has 22 'El Niño' clumps surrounding a huge thick-walled Japanese stone dish. It's 5 feet in diameter and 14 inches high, filled to the brim with refreshingly clear water having a few glass globes placidly floating about. (See photo on the inside back cover of this issue.) This showstopping setting is one of many attractive landscape Eve Thyrum keeps careful records of where she obtained her plants. She brought out a notebook containing the original plant labels, their sources and dates obtained. "I bought two 'El Niño' plants in May 2008," she said, "from Waterloo Gardens." This is a large retail nursery near Wilmington, then noted for featuring cutting-edge plants. "I then decided to surround the dish entirely with this cultivar," Eve continued, "and two months later in June I bought 20 'El Niño' plants from Russell Gardens Wholesale." This is a large nursery in Richboro, Pennsylvania, near Philadelphia.

As it turned out, Alan Russell of Russell Gardens was at the meeting. He said he purchased 'El Niño' from an original source, noting, "This is the first time anyone questioned they were not true to type."

As it also turned out, David Chopko, serving again as president of Tri-State Hosta Society, was at the meeting too. Dave and Roberta Chopko's garden in Boonton, New Jersey, is considered by many to be the best and largest collection of hostas in the Northeast Regional. Furthermore, Dave Chopko is among the foremost hosta authorities nationwide.

I asked Dave to take a look. He studied the clumps for a while and announced: "Yes, they're 'El Niño'. I grow both 'El Niño' and 'First Frost'. The leaf center of 'El Nino' is more blue-gray than green, especially early in the season; also the edge is a purer white. The edge of 'First Frost' has more of a yellow tone." (See a comparison on the back cover of *The Hosta Journal*, Vol. 41, No. 1.) That settled it after Dave added, "A couple 'El Niño' plants aren't growing as fast as the others. I don't know why."

Back to the *BHG* article: The second page is a large photo of 'Hudson Bay'^{PPAF} (Walters Gardens, Inc. - 2012). This introduction is cited as an improved 'Eskimo Pie' with leaves having wider blue margins and handsome apple-green centers jetting into the margin. Also claimed is it is a stronger grower and showier specimen overall.

H. 'Eskimo Pie', which Walters Gardens registered in 2004, is a sport of 'Northern Exposure' (Walters Gardens, Inc. - 1997) with reversed-variegation, in other words foliage has a creamy-white center and blue-green margin.

MyHostas.com database furnishes this information: *H*. 'Northern Exposure' is a large sport of *H*. *sieboldiana* 'Elegans'. It is a selection from the several different white-margined sports that were named 'Northern Halo'. It is considered the most attractive one. The leaves are puckered and blue-green with wide yellow-green margins that change to creamwhite as the summer progresses.

H. 'Hudson Bay', 'Eskimo Pie' and 'Northern Exposure' are examples of the TC adage:

If you continue to tissue-culture propagate a hosta long enough in large quantities, there's a fair possibility that interesting new cultivars will develop and likely one will be better than the parent, which means it probably would be highly marketable.

By the way, the cultivar name 'Northern Exposure' is thought to come from the popular TV series *Northern Exposure* that ran on CBS from 1990 to 1995.

The *BHG* article has the usual cultural information about hostas: "Zones 3-8," "Prefers moisture," "Height 3-36 inches," "Shade to part sun," "Few pests bother them, with two notable exceptions: deer and slugs," "They don't need to be divided unless they're too large for your space or you want extra specimens" and "Hostas even thrive in containers."

I especially liked the full page devoted only to single leaves, along with good descriptions: 'Chartreuse Wiggles', 'Hadspen Blue', 'First Frost', 'Pandora's Box', 'Fire Island', 'Love Pat', 'June' and 'Patriot'.

The last page addresses fragrance. There's a large photo of 'Fortunei Hyacinthina'—which certainly isn't the best fragrant hosta. However, included also are short descriptions of 'Aphrodite', 'Fragrant Bouquet' and 'Honeybells'. Mentioned is you can purchase scented 'Aphrodite' from BHGGarden-Store.com. When you go there, it's an advertisement from White Flower Farm in Litchfield, Connecticut, selling 'Aphrodite' at \$21.95 each.

I don't subscribe to BHG but I occasionally quickly thumb through issues waiting in medical and dental offices or on newsstands. Spurred on by the hosta article, I examined the total contents of the August 2012 issue fairly thoroughly, discovering that *BHG* has a perennial plant dictionary online. For hostas it's: http://www.bhg.com/gardening/ plant-dictionary/perennial/hosta/. It gets high marks. Some 30 hostas are listed, each with a short description and small photo. Included are 'Blue Mouse Ears', 'Great Expectations', 'June', 'Pandora's Box', 'Pathfinder', 'Sagae', 'Striptease', 'Sum and Substance', 'Sun Power' and 'Whirlwind'. Also there are some fairly recent introductions, such as 'Déjà Blu', 'Heavenly Tiara', 'Silver Threads and Golden Needles' and 'Stitch in Time'PP18,061.

Are 'Good Leaf Substance', 'Heavy Substance', 'Thick Substance' and 'Better Substance' Guises Meant to Indicate Partial or Fully Tetraploid?

I'm sure you've noticed "good leaf substance," "thick substance," "better substance" and "heavy substance" in hosta descriptions. Are these terms just guises intended to mean the cultivars are tetraploids? More to the point: Are they often euphemisms for the hostas with chromosome doubling?

Apparently yes—except for popular 'Blue Mouse Ears' (E.&.J. Deckert - 2000) that is an unusual diploid with thick leaves.

Here are examples of descriptions from the catalog of Walters Gardens, Inc., Zeeland, Michigan, the largest wholesale perennial nursery in North America, with no mention of tetraploidy but specific mention of leaf substance or thickness (emphasized in bold and italic typescript):

H. 'Captain Kirk' (K. Brill - 1999): *Leaves of heavy substance*. This hosta was determined partial tetraploid (L1-L2-L3 = 4-2-2) by flow cytometry (FC) measurement. A sport of 'Gold Standard' (P. Banyai - 1976), chromosome doubling occurred in tissue-culture (TC) propagating 'Gold Standard'.

- *H.* 'Fragrant Queen'^{PP19,508} (J. van den Top 2008): *Better substance*. Originator states 'Fragrant Queen' is tetraploid. Likely tetraploidy was intentionally induced with a chemical.
- *H.* 'Golden Needles' (Walters Gardens NR): *Thick Leaves.* This new introduction is fully tetraploid (4-4-4) determined by FC measurement. It sported from 'Silver Threads and Golden Needles' (J. Anderson - NR), a diploid (2-2-2). Chromosome doubling occurred in TCing ST&GN.
- *H.* 'Goodness Gracious' (Waters Gardens -2009): *Leaves of good substance*. Measured by FC and is partial tetraploid (4-2-2). Sport of 'Satisfaction' (C. Wasitis - 2000), a diploid. In TC propagating 'Satisfaction', chromosome doubling occurred.
- *H.* 'Hudson Bay' (Walters Gardens, Inc. 2012). *Heavy substance.* Most likely tetraploid, but not measured. Found in TC propagating 'Eskimo Pie' (Walters Gardens 2004) where chromosome doubling occurred.
- *H.* 'Liberty'^{PP12,531} (J. Machen, Jr. 2000): *Leaves of much heavier substance than 'Sagae*' [its parent]. *H.* 'Liberty' is tetraploid, unintentionally induced with a chemical.



- *H.* 'Little Treasure'^{PP21,210} (Jan van den Top 2008): *Leaves are of good substance.* This hosta was determined partial tetraploid by FC measurement. Probably tetraploidy was intentionally chemically induced. Sport of 'Little Jay'^{PP19,539} (Jan van den Top 2004), which is diploid.
- *H.* 'Loyalist' (G. van Eijk-Bos 1998): *Leaves* of heavy substance. Tetraploid sport found in TCing 'Patriot' (J. Machen, Jr. 1991) that is tetraploid.
- *H.* 'Night before Christmas' (J. Machen, Jr. - 1994): *Good substance.* Fully tetraploid determined by FC measurement. Sport of 'White Christmas'. Tetraploidy unintentionally induced with a chemical.
- *H.* 'Revolution' (G. van Eijk-Bos & Walters Gardens - 2000): *Thick substance*. Fully tetraploid determined by FC measurement. Sport found in TCing 'Loyalist', a tetraploid.
- *H.* 'Rhino Hide'^{ppAF} (D. Rawson 2007): *Leaves are the thickest of any hosta measured.* FC measurement determined 'Rhino Hide' is partial tetraploid (4-2-2). Probable sport of 'Tokudama Aureomarginata' (1987) or 'Love Pat' (1978), with chromosome doubling occurring in TC propagation.

• *H.* 'Twilight'^{PP14,040} (G. van Eijk-Bos - 1997): *Much heavier substance.* Determined fully tetraploid by FC measurement. Found in TCing 'Fortunei Aureomarginata.'

In addition, here are several hostas in the Walters Gardens catalog with no mention of substance or polyploidy—yet they are tetraploid:

H. 'Cathedral Windows'^{PP17,295} (H. Hansen - 2005) is officially registered as "tetraploid 'Stained Glass'." Tetraploidy was intentionally chemically induced.

H. 'Patriot' (J. Machen, Jr. - 1991) is tetraploid, unintentionally induced with a chemical. FC measurements indicate it is both partial tetraploid (4-2-2) and fully tetraploid (4-4-4). Suspect 'Patriot' was initially partial tetraploid, and continual TCing of (4-2-2) 'Patriot' resulted in 4-2-2 \rightarrow 4-4-4.

H. 'Grand Tiara' (J. Machen, Jr. - 1991), a sport of 'Golden Tiara' (R. Savory - 1977), is both partial and fully tetraploid. Suspect 'Grand Tiara' was partial tetraploid initially, and continual TCing of (4-2-2) 'Grand Tiara' resulted in 4-2-2 \rightarrow 4-4-4.

So, why isn't tetraploidy included in nursery catalog descriptions—especially if laboratory measurements confirm the hostas have double chromosome contents?



I asked some well-known hosta connoisseurs. These two responses reflect what most replied:

Possibly the hostas' tetraploidy is not known when the catalogs are prepared. And once descriptions are written without mention of tetraploidy, nurseries don't usually change them. Also, nurseries copy descriptions from other nurseries; few have originality.

I started out with daylilies. And when tetraploid is mentioned for daylilies, it's the flowers that are bigger and better. But apparently this isn't as much with hostas. A lot of information on tetraploidy has been in *The Hosta Journal* in recent years. But I'd say it hasn't percolated into popular awareness. By that I mean down to average home gardeners buying hostas in local nurseries and garden centers. If catalog and label descriptions did say tetraploid, would potential buyers know leaves have heavy or thick or good substance? I'll be candid: I myself am not sure what substance is. In fact I'll ask: What is substance?"

Hmm! *Substance* sounds like a great discussion topic. I'll be pursuing it more in future columns.

æ

Hosta Genetics: Yellow Leaf Color

For the last several years I have had an extensive correspondence with Dr. Ben J.M. Zonneveld, Leiden, the Netherlands. We collaborated on a large investigation of chromosome contents in the L1, L2 and L3 apical or meristematic layers of hostas. Some 175 different sports and hybrids were measured by flow cytometry. The studies were published in two scientific journals in 2012: *Plant Biology* and *Plant Systematics and Evolution*.

In our many e-mails, several interesting facets of hosta genetics were reviewed. I plan to collect some of these discussions and from time to time include them in this column.

This item is on yellow leaves and has its origin in a comprehensive article, "The Inheritance of Yellow Leaf Color in *Hosta*," by Dr. Zonneveld in the Spring 2002 issue of *The Hosta Journal* (Vol. 33, No. 1, p. 49). It includes private communications that Zonneveld had with Kevin C. Vaughn, who carried out pioneering genetic studies of hostas for his doctorate, publishing many of the findings in *The Hosta Journal* in 1980–1982. Dr. Vaughn, now living in Salem, Oregon, was the recipient of the 2012 AHS Eunice Fisher Hybridizer Award.



In the genus *Hosta*, and probably also in many other plant genera, the gene for yellow is found in the nucleus, not in the chloroplast. If a hosta is green or blue, it does not have the yellow gene. If it has, the hosta is yellow. So, one never gets a yellow hosta from crossing two blue/green hostas. An exception, of course, is a new mutation (but chances are only about 1 in 100,000).

Crossing a yellow plant with a green or blue one, one gets 50% yellow offspring, irrespective of which is the seed parent. Crossing two yellow plants, $\frac{1}{4}$ will be green, $\frac{2}{4}$ ($\frac{1}{2}$) will be yellow and $\frac{1}{4}$ will be white (even as seed). The ratio is 1:2:1.

The ¼ white die, leaving one out of three seedlings as green and two out of three being yellow. That's just 66.7% yellow—not much of an improvement over 50% from crossing a yellow plant with a green or blue one. Of course these numbers apply only under ideal circumstances such as in a sampling of more than 100 seedlings and no other factors interfering.

Yellow is a dominant but homozygous lethal character. This means that every yellow hosta is heterozygous. That is, it has only a single yellow gene. That yellow is homozygous lethal means that two yellow genes makes a plant white and it dies, often already as a seed. The yellow derived from streaking in leaves is different. Mostly it does not survive on its own, only as, say, a yellow L1, L2 or L3 layer.

Postscript: As usual with much genetic terminology, definitions are needed. L1, L2 and L3 refer to the apical or meristematic layers in hostas, which have been detailed in many AHS journal articles in the last few years. In particular, the PowerPoint[®] presentation titled "Chromosomes, More Chromosomes and Also Chromosomes Losses" in the "This and That" column of the 2012 *Online Hosta Journal* is a helpful educational primer.

In addition, here are Wikipedia's definitions: *Zygosity* refers to the similarities of alleles for a trait in an organism. An *allele* is one of two or more forms of a gene or group of genes. If both alleles are the same, the organism is *homozygous* for the trait. If both alleles are different, the organism is *heterozygous* for that trait.

è

More from readers, please

Your comments, anecdotes, quips and whatever about hostas and hosta names are always welcome. My e-mail address is giboshiwip@aol.com. €







AHS ASK AND ANSWER

Container-Grown Hostas: What are Your Techniques?

What potting mixture do you recommend? When and how do you feed, water and re-pot your containerized hostas? Do you give miniature hostas special treatment? How do you overwinter your hostas and what type of containers do you leave outside during harsh winters?

Danny Van Eechaute, Astene-Deinze, Belgium: I use a heavy potting mixture with compost and clay and a little bit of sand. I fertilize when the plants start to grow in April, when they are unfurled at the beginning of June and in mid-July. I give them a combination of organic fertilizer 9+6+8+3 MgO and a coated fertilizer 16+9+12+2 MgO. Time to time, I add some leaf fertilizer. I repot them at least once a year, always in a pot that is one size larger. When they are mature, I divide them.

I place mini hostas in more-sunny spots in the garden.

The potted hostas stay in the garden year-round. During summer, I don't let the hostas become totally dry. We often have wet summers with a lot of rain. Winter temperatures reach a low of 5°F (-15°C). Mostly it is warmer. Even in winter, we regularly have rain or sometimes snow. Because it is wet here in winter, ceramic pots crack when the water freezes. I know there are clay containers that can stay outside in winter, but they are very expensive. I prefer to spend my money on a beautiful plant.

Chuck and Sue Andersen, Mason, New Hampshire: We use a medium-textured, well-drained, general-purpose mix made up of pine bark, Canadian sphagnum peat moss and composted peanut hulls. We fertilize containerized hostas in spring with a slow-release product such as Nutricote or Osmocote. Other methods are effective, but we find this the easiest "not to forget."

Containerized plants generally need watering more often, especially if they are in a sunnier location. If Mother Nature is not watering, then containers need to be monitored. Depending on the hosta, it may not be necessary to repot the first season. However, these plants will get bigger as they mature and, as with garden plants, they might need dividing in time.

If temperatures are below freezing at night, it is recommended that containers be moved to a more protected area, such as a cold garage or under a covering of pine boughs and pine needles or a tarp for the winter. We have left containers outside during the winter without any covering. This, however, is only after the plants have been well established.

Mini hostas can be a problem because of their small root structure, resulting in the possibility of water logging the media. We have recently found that mixing the standard potting soil with a gritty amendment such as Turface causes the pots to drain better and we have seen significant increase in vigor with the plants. However, with any positive there can be a negative. These plants must be watered more often.

Many containers are suitable for hosta planting. Make sure they are able to withstand winter cold without cracking. Hypertufa containers have been very successful for us in New Hampshire. They are made with a mixture of Portland cement, peat moss, perlite or vermiculite, a reinforcing agent and water. There are many formulas on the Internet for making these containers.

Warren I. Pollock, Glen Mills, Pennsylvania: I have grown hostas in containers, some 2½ feet and larger in diameter, for more than 15 years with considerable success. Essential were applications of fresh potting soil, copious watering, ample fertilization (because copious watering leaches and drains away nutrients) and suitable overwintering.

Most commercial potting soils contain sphagnum peat moss, perlite and sometimes composted bark. Miracle-Gro[®] Potting Mix is marketed nationwide and adequate. Peat-free soils are gaining popularity. My choice is Organic Mechanics[®] Potting Soil containing pine bark, coir, compose and worm rice hull. Check online for availability in your area.

Soilless mixes are usually satisfactory for plants in pots for only about two growing years. Longer use results in extensive peat and bark decomposition, with original superior water and air retention and excellent drainage markedly diminished.



Hence, I increase the organic matter by adding 40-50% of screened loam, namely the best topsoil locally. Also, I add 20-25% grit (crushed granite) to assure good long-term drainage. Further, for each 5-gallon bucket of the combination, I add two heaping tablespoons of slow-release fertilizer (my favorite is Dynamite[™], but Osmocote[™] is O.K.), five tablespoons of superphosphate and three tablespoons of limestone, mixing everything well. British gardeners will recognize this as a variation on the famous John Innes Loam-Based Potting Compost.

Yes, garden soil brings in some weeds, but they are easily pulled or controlled with Preen[®], a pre-emergence herbicide. In the U.K., John Innes is manufactured with sterilized loam from a special process that doesn't retard plant growth. To control any diseases from the topsoil, I apply an all-purpose systemic fungicide such as Cleary[®] 3336[®].

For pots I can lift myself, in early spring when shoots are just emerging, I carefully remove the plants from the containers and check for rootboundness: roots growing out of drainage holes and tightly winding around. If yes, the root masses are cut vertically several times around the perimeter and aggressively teased to encourage roots to grow outward. Plants are repotted, usually one-container-size larger, using fresh potting mix at the bottom and along the sides. Also, about an inch of fresh mix is applied at the top.

If plants are too heavy or cumbersome to remove from their containers, I still want to add fresh mix. With an electric drill and inch-diameter wood-boring bit, I drill deep holes in the soil, mostly along the pots' sides. Some rhizomes are damaged, but overall injury is little. Holes are filled with new mix, and an inch or more of mix applied at the top.

My experience is that containerized hostas require heavy feeding. From early spring through midsummer, about every other week, I thoroughly soak the root balls and spray the leaves, both sides, with Miracle-Gro Water Soluble Rose Plant





meantime we will move forward with the nursery until it is sold where you can expect great plants as always.

Jay and Dory Venero





left: Hosta maven **Danny Van Eechaute** grows hostas exquisitely.

below: A narrow footpath wends through Danny's 3,600 different hosta cultivars—all of them in pots.



food at one-quarter manufacturer's recommended concentration. Added to each gallon of water is Tonic #1: 5 drops SUPERthrive[®], 1 tablespoon liquid kelp (seaweed), 5 drops HB-101 (a plant stimulant containing trace elements) and 3 drops wetting agent (mild dish detergent). On alternate weeks, I spray the leaves with Tonic #2: 1 tablespoon Spray-N-Grow[®] (a foliar-feeding micronutrient complex) and 3 drops wetting agent in a gallon of water.

I prefer plastic containers, the same utilitarian ones the nursery trade uses. Used discarded pots often are available from nurseries at no cost. They are lightweight and almost non-breakable, with superb drainage from holes at the bottom along the walls. Also, there's no frost cracking problem. Wash them thoroughly and sterilize with 10% bleach solution.

Don't add shards, stones or rocks at the bottom. They don't assure fast drainage as often claimed. Instead, they occupy space needed for root growth. Good drainage comes from a fast draining soil. Also, don't add Styrofoam[™] chunks at the bottom. Though they lighten the container's weight, they consume root space.

There's no single recipe for successfully overwintering containerized hostas. Different procedures are required for different geographic climates and whether pots are exposed outdoors or sheltered. A detailed article on this subject in the 2011 Online Hosta Journal has helpful information.

Sandie Markland, Kill Devil Hills, North Carolina: As many of us have learned the hard way, not all hostas are created equal. A hosta that performs beautifully in the Upper Midwest may prove a dismal failure in warmer climates. The same holds true when considering plants for container culture. While most hostas do well in pots of appropriate size, those with *Hosta sieboldiana* and 'Tokudama' in their heritage fare well in the short term, but they often show a marked and sometimes rapid decline when kept in pots for more than a season or two.

The container chosen for your hosta should be based on the actual size of the plant, not its ultimate size. There should be no more than 2-3 inches of space between the outside wall of the pot and outermost roots of the plant. With more rapidly growing varieties, you might need to pot up each year, but it is well worth the effort to grow a strong and healthy specimen. Never place a tiny young plant in a large container. Chances are that it will languish and die.

The type of container is more or less up to the taste of the individual. I prefer wooden or terracotta pots (both glazed and unglazed). Both materials absorb some moisture from the soil, but this is not a problem if you are watering properly. Plastic pots might seem like a good idea and be better at retaining moisture, but they are also better at retaining heat in the plant's root zone—not a good idea in the dead of summer. Wooden pots will deteriorate over time and some terracotta pots will crack and fall apart during winter's freeze and thaw cycles. I have found that clay pots fired at very high temperatures (and usually manufactured in either Italy or Mexico) stand up to the extreme temperature fluctuations of Zone 5-8 winters

below, left to right: H. 'Kinbotan' and H. venusta spring from stone at Mason Hollow Nursery.

opposite page: H. 'Patricia' cascades from its hanging pot in the Colley-Baker garden.





Q&A

pretty well. In fact, I have several which have remained in place outside for 10 years or more without damage. Such durable containers are inexpensive and readily available at major garden/home improvement retailers.

There are several superior potting soils on the market. Three good ones are Sta-Green All Purpose Potting Soil, Miracle Grow and Fafard 52 Mix. While slightly different, all have certain common elements. They are low in peat (<30%) and perlite, contain pine bark fines and other finely ground organic materials, are medium weight with good drainage, have excellent moisture retention and are relatively inexpensive. However, manufacturers occasionally change ingredients, so always check the label.

Potting mixes heavy in peat should be avoided. Once the peat dries out, it is next to impossible to re-wet and, when you do manage to re-wet the mix, it can remain soggy for some time. This can be a problem in winter. While perlite is useful

in preventing compaction, it adds nothing else to the mix. It is far better to use something like pine bark fines. They maintain space and, as they decompose, feed earthworms and beneficial microbes in the mix—which, in turn, feed your plant.

Hostas in containers should be *thoroughly* watered once or twice a week. If it is necessary to water your containerized hostas everyday, then something is wrong: the plant is root-bound, the potting mix is poor, the container is too small or you are not watering properly. You should always push your finger down into the mix about an inch or so. Water the plant only if the soil below the surface is dry. Light mulch will help prevent evaporation of moisture from the soil.

During weekly watering, fill each pot at least three times and let the water drain through the pot and out the bottom (always leave at least an inch or two of space between the soil/mulch line and the rim of the pot for this purpose). Watering in this manner serves two purposes: first, it ensures a thorough watering of the root zone and, second, it prevents the build-up of harmful salts in the mix.

Many of my hostas have grown in pots for years and I have never found it necessary to do anything special for them in winter. All pots remain in place year-round (with the exception of those grown in bonsai fashion or very small containers; these are moved to a location where they are protected from desiccating winter winds).





SOB OLSO

top: Potted hostas lining the edge of a patio hope for a place in the garden or on the wall.

Tiny H. pulchella thrives in a small pot (above) while 'One Man's Treasure' (right) displays its distinctive red petioles on an elevated Koopmans Garden Torchier. A Torchier can also help show miniatures to best advantage.

opposite page: The fragrant H. 'Crystal Moon'.







JUNE COLLEY

right: Fastidious *H. pulchella* hybrid 'Gosan Mina' flourishes in a container.

below: A hosta "bouquet" was a regular feature at the Warren and Ali Pollock garden.



JUNE COLLEY



Q&A



H. 'Grand Marquee': in the Colley-Baker garden the center streak gets wider as summer progresses, which is not unusual.

BOB OLSON

If all other aspects of your container culture are sound (in particular, the plant is not root-bound, the mix does not become water-logged, there are no large air pockets in the mix) and your plants are healthy, there is simply nothing about USDA Zone 5/6/7/8 winter to require extreme protective measures.

June Colley and John Baker, Hampshire, England: Due to limited space in our garden, we have been growing hostas in pots for more than 20 years. Each year, they grow bigger, so we think we have given them suitable conditions.

We have been using the following potting mixture:

4 parts general purpose reduced peat compost (contains balanced fertilizer, but will feed the plants for only 4-6 weeks)

2 parts farmyard manure



2 parts John Innes compost

Loam, peat, sand with added Dolodust and base nutrients

1 part Éricaceous compost

Peat, organic waste and nutrients (including potassium nitrate, sulphate of ammonia, mono ammonium phosphate and trace elements)

1 part horticultural or alpine grit with some fine pieces of old bark recycled from mulch.

For minis, we put a layer of gravel on the bottom of the pots and we add a quarter of the horticultural grit and bark mixture into the soil.

We start feeding the container plants in March with less than the recommended





opposite page: Bob and Karen Olson mix hostas and annuals on their patio: *H.* 'Opipara', 'Abiqua Drinking Gourd', 'On Stage' and 'Hadspen Blue' (*clockwise from bottom*).

this page: Sandie Markland's *H.* 'Sagae' rising up to the deck (*top*), 'Blue Mouse Ears' emerging (*above left*) and a 'Lakeside Elfin Fire' sport (*right*).



PHOTOS: SANDIE MARKLAND

dosage of slow-release (3-4 month) Osmocote granules during repotting. Because we water by irrigation, leaching of the nutrients in the soil can occur, so we remedy this by using foliar fertilizer every two weeks during the active growing season, when the foliage is rapidly expanding.

The automated irrigation system takes care of most of the watering at timed intervals. This may happen daily during the heat of summer and every two to three days when it is overcast. Very often the minis in small pots dry up quickly on a hot day and require extra watering.

Every year, we religiously remove the old layer of compost from the top third of those pots where the hosta has not yet filled the pot. When the clump has reached the edge of the pot, we move it to a bigger pot. This is because we wanted to create a lush jungle garden with large hostas as the main feature. Our largest, 'Sagae', requires three people to move it. The plant is absolutely fantastic, but buying bigger pots each year has proved to be a costly exercise. We were hoping to grow our largest hosta, 'Empress Wu', using a tall barrel so that we could create a hosta tree!

Winters in England are normally mild and often wet. All the large and mediumsize pots are left outside with no protection all winter. However, these last two winters, we have had some very cold spells, when temperatures dropped to 10°F (-12°C). After losing a few hostas, we resorted to covering the containers with horticultural fleece. We also added more bark as mulch before winter, while the minis had pine needles for protection. The most delicate minis are left in the summer house all winter and kept dry. The robust minis are placed against the surrounding walls of the house and are covered with fleece to protect them from freeze and thaw.

We use glazed pots fired at high temperature for our prized specimens. We avoid terracotta pots of any kind to grow hostas. We don't use any unglazed ceramic or porcelain pots either because these crack during the freeze and thaw periods. We use terracotta look-alike pots made by Sankey, which are high-density plastic material. These are light, strong and unaffected by frost. The only disadvantage is their high cost, but they are long lasting.



Hostas in pottery overwinter in the Tucker garage, safe from cracking due to freezing.



An old pig trough at the front entry to the Tucker home showcases *H.* 'Kiwi Jordan', 'Surfer Girl', 'Little Wonder', 'Rebel Rouser' and other small treasures, including a trailing *Bacopa* 'Scopia Great Pink Crown'. text and photos **Larry Tucker** Southaven, Mississippi

ontainers? I know something about containers. Every one of my hostas is in a pot!

Twenty-five years ago, in developing my first hosta garden, I battled both voles and tree roots. Since then, I've concentrated on protecting and maintaining hundreds of hostas in small "container gardens" rather than extensive beds. That strategy has not only kept my hostas healthy, it has also led to proliferation of pots on the patio, particularly after moving to smaller quarters in 2005 and running short of garden space.

Downsizing came with a price. As much as I love hoarding hu-

mongous hostas, reality dictated that I concentrate on a larger assortment of tiny treasures—if not mini, certainly many small specimens. I already had the means to display 6-inch terracotta pots, having acquired a tri-level, 8-foot stand for patio plants.

Shari and I have great appreciation for antiques, so I was pleased when she employed her decorating skills in the hosta garden, starting with an old iron pig trough on a rustic bench at our front door. It's not exactly an elegant welcome, but it says a lot about the Tuckers. And it's the perfect planter for petite performers. Though the lineup



changes, "piglets" in our 5-inchdeep trough now include *Hosta* 'Kiwi Jordan', 'Lakeside Lime Time', 'Surfer Girl', 'Lakeside Baby Face', 'Feather Boa', 'Little Wonder' and 'Sunlight Child' (after ejecting a rambunctious 'Rebel Rouser'). Positioned in a nook next to a climbing hydrangea, these little beauties beat most of our heat with daily sprinkling, two hours of midday sunlight and generous afternoon shade.

Our patio, just off the garden room, has been a bigger challenge for minis. For seven years, these diminutive guys were protected overhead with shade cloth, but hot afternoon sun would still stream through lattice screens at the end of the patio and dry them out. Once again, Shari to

the rescue! We already knew that heavy watering to keep the hosta crop alive was rotting wooden structures on the patio. So, she reasoned, "We need a wall of metal shutters." Of course, but where would we find that extinct breed? After an exhaustive search of antique and salvage shops in six states, we found exactly what we needed-20 vintage aluminum shutters, stacked and ready to transport from northern Illinois to northern Mississippi. That patio wall now blocks the hot western sun, captures random sprinkling and keeps my rack of potted minis consistently moist. Even the most tender foliage looks better. What's more, I have leftover shutters for future projects.





above: An old ammo box as a planter. *below: H.* 'Pizzazz' in a crockery pot.

opposite page, top: H. 'Dream Queen' hangs around the water cooler. below: Vintage shutters and hostas bound for new use in the Old South.



One thing I've learned over the years is the importance of an effective potting medium for small hostas. It took several trial runs, but I'm now satisfied with a 5-gallon recipe: 3 gallons of a good indoor/outdoor potting soil (pre-mixed with necessary minor elements), 1 gallon of mushroom compost and 1 gallon of finely chopped pine bark mulch, plus a half-cup of greensand. Once my little ones are potted up, I add a shallow layer of pea gravel on top to reduce evaporation.

Classy pottery pots in cobalt blue are prominent on the patio and around our compact garden—some on pedestals, some on the ground, but all portable to claim maximum growing conditions for the hostas. Containers just outside the back door house a handsome 'Urajiro Hachijo' and a giant 'Aphrodite'. Also, a number of cultivars are ensconced on antique thrones. 'Dream Queen' rules from atop a galvanized water cooler, 'Formal Attire' admires himself in the mirror of an old shaving stand, and 'Maraschino Cherry', 'Lacy Belle' and 'Lusan' simmer on a kerosene stove.

Hostas in my garden must look their best for more than eight months. They're conditioned to wake up in February and fall asleep in November. Some stay up well past their bedtime. *H.* 'First Frost' commands a corner of the garden and looks perky in its pot as late as Thanksgiving. On the covered patio, most of my potted minis succumb to early hibernation, but a few with good substance, such as 'Blue Mouse Ears' and Mark Zilis's 'Tini' series, stubbornly resist.

All of my hostas in submerged garden pots hold their ground and endure wintry weather, which rarely includes snow. Minis also stay outside on their protected patio "bleachers." Others in fine pottery containers that might crack in unpredictable rain, ice and freeze-thaw cycles spend the winter in our cool, dark garage. (See photo page 28.)



Because hostas here never freeze enough to be fully dormant, I replicate nature and give this cold storage gang a dribble of water every other week.

Come spring, my re-energized hostas fairly leap out of their pots. Rested and ready for another gardening season, I also can hardly contain myself.



this page: H. 'Maraschino Cherry', 'Lacy Belle' and 'Lusan' nestle on a kerosene stove (*top left*) while 'Formal Attire' claims a shaving stand (*above*).

opposite page: H. 'Aphrodite' shelters 'Paradise Island'.



Becki Grows Giant Hostas on Her Deck— You Can Too, Here's How

by Tom Micheletti Deer Park, Illinois

My wife, Becki, stumbled into gardening when we got married in 2001. After all, she married a hostaholic, but she knew this before we got married, and went along with it anyway. Her appreciation of hostas arose early in the relationship and she began to choose some favorites, the first of which was *Hosta* 'Sagae', which we had in our garden. She loved the large colorful leaves and upright growing habit. Shortly thereafter, she spotted 'Victory' in someone's garden and had to have one. We bought a plant and fearing we would lose it if planted in the ground, she wanted it planted in a pot to put on the deck. In the pot it thrived and every other year I had to move it to a larger pot because it out grew the smaller one. The hosta now resides in a pot that measures 24 inches high by 30 inches wide. I thought that pot would be an ample size to accommodate our 'Victory'. Alas, the plant continued to thrive and after five years outgrew even that monster pot. I

H. 'Victory' in a pot.

.



told Becki that we could not get a larger pot because I could barely lift it up the two steps onto our deck. I can move it around by a two-wheel hand truck, but the weight has become too great to lift for this old gardener.

The solution was to divide the hosta. Becki wasn't happy with this solution. She was sure I would kill the plant by dividing it. I assured her that if the plant died, we would have the divided divisions to repot. She reluctantly agreed but carefully supervised my dividing her prize. So, in early September we divided the plant. Half of it (16 divisions) went back into the pot and the rest was lined out in the Hosta Patch. It looked quite tattered after the event, but it was late in the season so would be going dormant soon. It came back and flourished to the point that it needed dividing again last September. Becki wasn't so reluctant this time.

We also have a 'Leading Lady' that grows in a pot that is 21 inches high by 27 inches wide. This hosta has also been divided a couple times and has flourished. Other pots range in size from 3 gallons on up.

To reduce the weight of these larger pots, I bury some plastic 2-liter pop, juice or water bottles. Keeping the caps on prevents the bottles from collapsing. The soil is deep enough for root room even with the bottles at the bottom. The pots are filled with a peatbased potting soil. I use Pro-Mix, a commercial potting soil. There are other brands available with similar properties, containing peat, vermiculite and perlite. Good drainage is important.

As the season winds down, I let the hostas go dormant then clean off the dead foliage. Using my hand truck, I wheel the In the spring the potted hostas will begin to grow before the ones that overwintered in the ground. When this happens I move them outside to get light. I carefully monitor the weather and if there will be a frost or freeze I bring the pots back into the garage. This routine lasts until all danger of frost passes and then I wheel the pots to the deck and hoist them

To reduce the pot's weight, bury empty plastic bottles in the soil.

pots to the outside of my garage where they collect what moisture they can naturally. Usually during November here in northern Illinois, the nighttime temperature approaches 20°F and the hostas begin to freeze. I then move them into my unheated garage to overwinter so they will be on the dry side while dormant, which potted hostas like. When I put them in the garage, I put boards across the top of the pots and stack pots three or four high. I use the boards to create air space so the top pot isn't resting directly on the soil of the one below it. Being such large pots they don't need any supplemental watering. I have overwintered some smaller pots in the garage, but they need supplemental watering. If they dry out, I put snow on the top of the pot and let it melt naturally.

back up to their summer home.

We water the pots as needed, depending on the weather. In last summer's heat and drought we watered every third or fourth day. I also add a slow release fertilizer, Osmocote 14-14-14, when I put them on the deck. Since they are watered frequently and nutrients are leached out, in July we will use a liquid Miracle-Gro fertilizer about every third or fourth watering.

The indicator as to when they need dividing has been the leaves turn brown along the edges in spite of how much we water. When taken out of their pots these hostas have a solid mass of roots and little soil left, a sure sign of needing dividing.

These potted hostas have proudly become Becki's hosta garden and she lovingly attends them throughout the summer.





Growing Mini Hostas in Troughs

No Promises You Won't Get Hooked



H. 'Blue Mouse Ears' at Inta Krombolz's (*above*) and more hypertufa troughs at Conny Parsons' garden (*opposite page*).

by Rebecca Boylan Pottstown, Pennsylvania

Mini hostas have grown tremendously in popularity, as evidenced by *Hosta* 'Blue Mouse Ears' and the plethora of its sports being released into the market. These minis get lost when they are placed into the general hosta population, and many aren't vigorous enough to grow on their own in a garden bed. After spending \$15.00-\$25.00 on precious singledivision plants and then seeing too many disappear, I now grow my mini acquisitions in hypertufa troughs.

My hypertufa formula of Portland cement, perlite, peat moss and builder's sand has several advantages. Because hypertufa is porous, oxygen can get to the hosta roots. These containers withstand freezethaw cycles better than containers made of pure cement. Hypertufa troughs are lighter because part of the cement is replaced by peat and perlite. Though, very large troughs will need to be made on site (unless you have access to movers with strong backs). You can use troughs made from other materials, such as ceramic, but any container that isn't frost-proof must be moved indoors for the winter if you live in a colder zone such as my Zone 6b garden.

It's important to match the plants to the size of the trough. A collection with 'Pandora's Box', 'Cameo' and 'Tiny Tears' would be much more in proportion in an 8-inch bowl than in something larger. Avoid planting minis with slightly larger hostas, such as 'Blueberry Tart', that would overwhelm them. The same goes for companion plants and accessories. Everything needs to be in proportion and have the same growing requirements. Also keep in mind that troughs need to be at least 4 inches deep to overwinter mini hostas, even deeper for small hostas.

Planting the trough is the fun and creative part, but to create a successful mini garden it's important to properly prepare the trough and the soil. Begin by placing a piece of mesh screening over the entire bottom of the trough to prevent soil from seeping out. (If you omit this step, you'll notice your plants sinking lower in your trough over time.) You can cover the mesh with a fine layer of poultry grit or pebbles to keep it in place.

Unlike hostas growing in the ground, the trough is a closed system so the soil is critical. It needs to drain well and also provide nutrients to the plants throughout the growing season. Improve drainage by replacing some of the potting mix with poultry grit, which can be purchased inexpensively at any farm store. I use a rich organic potting mix that is a combination of compost, pine bark, perlite, worm castings and coir. I have also used the typical peat, perlite and pine bark potting mixes, but I prefer the organic blend as it's richer and provides the plants with more nutrients. The trough mix for growing hostas and companion plants is 2/3 soilless mix and ¹/₃ poultry grit. You will need more trough mix than you think, so make an ample supply.

Before you begin planting, consider the size of your trough. A large trough will be very heavy once it's filled, so place it where it will grow before you start to plant. If I'm planting a large trough on the ground, I work sitting down


so I can be comfortable and take my time. Smaller troughs should be placed on a table so you can easily see what you're doing. Before you start to plant, gather your materials: plants, soil, accessories, moss, etc.

Now it's time to plant! Fill the trough to the very top with mix and place your plants and any major accessories (such as rocks, miniature houses or interesting branches) where you want them to go. Start with one plant and work your way around the trough. Unpot the plant, shake off the growing medium and tease the roots apart. Press an indent in the trough mix, spread the roots around in the depression, hold the hosta by the base of the leaves, position the hosta and fill the hole





with trough mix while pressing down to remove any air pockets. Pull the plant up if it's too low in the trough. You want the plants to be situated just about level with the sides of the trough and slightly higher in the middle. Continue to add more mix and adjust the plant until it's properly situated.

Continue planting your trough until you get the effect you want. You may need to replant some plants that just don't look right. For instance, you might want to tease apart a clump of 'Feather Boa' to make a river of hostas running through your trough. Remember that mixing tiny hostas with ones twice their size will cause them to get lost, so save the smaller ones for troughs of their own. When you're done, fill in any empty spaces with more trough mix, pressing down hard, because the planting will settle with watering. You can leave the trough as is, or top it with moss from your garden, pebbles, grit or sphagnum moss. Be warned: birds love to rob troughs of both moss and sphagnum moss all season long.

Once planted, give your trough a good soaking. I add fish emulsion to the water to give the shocked plants a head start. Other gardeners use a 20-20-20 liquid fertilizer or SUPERthrive plant food. Water carefully, as the soil is dry and water may run off at first. Keep the soil in your troughs moist but not wet. This may mean



Unlike hostas growing in the ground, the trough is a closed system so the soil is critical. watering every day during the heat of summer or every three days in the spring. Smaller troughs will dry out faster than the larger ones. Fertilize during the peak-growing season with a balanced fertilizer for container plants, but if you use a rich growing mix you may not have to fertilize the first year.

I leave my troughs in place outside all winter long. Those that spent the summer displayed on a 2-foot stand get moved to the ground, but otherwise they clockwise from upper left: Trough garden materials, potting materials, fertilizers.

remain where they are. Since the troughs are porous, they don't break. If I see a crown popping up due to winter heaving, I push it back into the trough. I actually have fewer crowns popping up in the troughs than among the minis still left in the ground.

Most of my troughs are near the house, so I can easily monitor vole activity. The only time I've seen voles near the troughs has been when we've had deep snow cover. My terriers have found voles hiding between the troughs—and quickly dispensed with them. Squirrels will bury acorns or other nuts in your troughs when you're not looking, but these "gifts" are easily removed.

I keep telling myself, "enough troughs." There's no more room on the patio within reach of the hose. But last season we installed an irrigation system throughout the entire garden, which means the troughs will undoubtedly be expanding into the garden beds. My imagination is working overtime with new ideas for trough shapes. As long as the hybridizers keep coming up with minis, I'll keep planting them in troughs.







Container Gardening

by Frank Nyikos Unionville, Indiana

f you love growing hostas in pots, there's an exciting new world awaiting you in hydroponic container gardening.

You can make this project as easy as you want. Growing hydroponically simply means growing plants in a soil-less mixture while relying on water to provide the nutrients for optimal growth. You can be as basic about your method, as I usually prefer, or as technically complex as you like with all the bells, whistles, meters, pumps and devices you care to employ and tinker with.

Growing Media

I prefer to use a coir blend media when growing hostas outside. Coir fiber is the outer brown husk of the coconut. It is a byproduct from an active industry in the tropics, especially in places such as Sri Lanka, where coconut and coconut milk figure heavily in the cultural diet. Coir fiber readily absorbs water and nutrients but sloughs off any extra it cannot hold. I no longer even consider using peat. Once it finally decides to hold onto the water, peat will hold more water than is helpful. I have overwatered and drowned plants in peat so often I will not use it anymore. Plus, peat is not quite as renewable as coir fiber, which provides a welcome extra income source to third world diners and entrepreneurs.



This year, I am adding vermiculite to fluff up my media. Normally I add perlite, but we had medium-grade vermiculite on sale at work. I also am adding some medium-size chipped wood. This provides nice places for the necessary pockets of air. Allowing air to circulate freely in the hydroponic media is important. I am using roughly a third of each of these ingredients in my blend.

Remember, you can use *any*thing within reason as your media because the water will provide the moisture and nutrients. I probably wouldn't use metal as it could promote toxic levels of undesirable heavy elements to your plants. Certainly river stone or a silica stone are good. Marbles might provide an interesting base for your hostas. We sell a lot of an expanded clay products that many enthusiasts like since it can be easily sterilized and reused with a 10% bleach soaking solution.

Into the coir blend, I like to introduce worms and other micro flora and fauna to provide additional help to the plant. These biological additives digest my media and supply nutrients in a slow-release, easy-to-accept form that the hostas enjoy. I especially like inoculating with a mycorrhizae blend. This is a symbiotic soil fungus. I make sure it has a Trico derma colony as part of the blend. Many growers don't like the Trico derma, but I have found it to be an effective natural control for summer blight as well as other pathogenic fungus.

Equipment

Growing outdoors means lights are not necessary. Nor is the fan needed to provide air movement as well as relief from the heat given off by high-pressure lights. However, I have known some outdoor growers who will turn on their fans during really sultry Frank's hostas growing in a coir-based, soil-less medium.

times in the summer. My set-up is not connected to a pump. For those of you who enjoy the true hydroponic system, you can have your treated water pumped directly to your containers automatically and the excess returned to your reservoir using timers so you do not have to worry about watering. An automated system should be used if you choose to use a "traditional" media such as the expanded clay balls. This type of media holds very little water but encourages large amounts of circulating air at the root level. Flooding and draining your hostas may need to happen several times during the course of a hot summer day. An automatic system will do this for you. Many find once this type of re-circulating system is installed that they have very little involvement with the upkeep. I dislike having electrical devices

plugged in outside, even if those devices are on my sheltered deck.

Nutrient-Rich Water

A current popular trend is to include fish in the water reservoir used as the recirculation tank. The idea is that the fish waste will fertilize your plants, then at the end of the season you have a fish dinner to enjoy. If you plan to go this route, you may want to get further advice. This system is called aquaponic. It is a bit harder as you have to be careful feeding and maintaining the reservoir for the fish environment. What you add to the planting containers is important because this runoff will drain back into the fish reservoir. The waste, while very good, is probably not going to be enough to supply all the hosta requirements for exceptional growth unless you are utilizing a large reservoir with a fair number of fish. Great and exceptional environmental advantages are happening in this exciting field of growing plants. A recent winner of a contest at Worm's Way was a gentleman who had made a home in a cave that had a large aquaponic system where he raised fish and plants. What a set-up!

I try to use an organic mix in my water reservoir. I make an aerated guano tea that I use to supply the water and food to my outdoor plants. I have found that these aerated teas are full of good things for plants. I inoculate it with a subculture of micro-organism blend that digests the small amounts of raw chicken guano I add to the reservoir. I normally do not aerate more than about a cup of guano per 30-gallon reservoir. In the course of a week, the highly aerated water is ready to use. The plants love it. The worms love it too and digest any of the small matter that ends up in their bed

of thick roots. The oxygenated water provides the roots with the necessary air they need. You can certainly go the traditional route, using hydroponic fertilizing blends that you may need to manipulate with pH adjusters to seeds looked like three- and fouryear-old plants at the end of a single growing season. The seed germinated and grew in 100% plain perlite in a traditional flood and drain system using pH controlled hydroponic fertilizers

I can easily gain at least an extra year of growth by raising hostas hydroponically.

work correctly. I like the holistic guano teas just fine and feel better about these blends. They do not smell as long as you do not add too much guano and avoid fish.

Don't forget to add some micro-mineral blends to your container. These blends have the necessary trace elements that your plants need for optimal growth through all cycles of the year. You will want to add this to your reservoir throughout the growing season. The micro minerals serve a wide variety of functions and are necessary for flowering, fruiting, root development and ripening of the fruit. Be sure to splash some of your tea onto the leaves because many of these micro minerals do not travel through the vascular system. Splashing the mixture on the leaves will allow the plant to capture what it needs where it needs it. Nature does this through rain, animal life leaving presents and the wind blowing dust up where the plant can then grab onto those trace elements it requires. Growing hostas on an enclosed deck may require a bit of help from you.

I have found that I can easily gain at least an extra year of growth hydroponically. I donated some *Hosta* 'Undulata' seed from my garden to our testing department, which hydroponically grew these seedlings over the course of the spring and summer. These without micro flora or fauna. The results were impressive.

Give this a try. Most bagged "soils" today are really soil-less blends. For example, both of the popular Pro-Mix blends are peat blends that have been pHadjusted with ground limestone but contain no actual soil. You may already be growing hydroponically and not realize it. The Hosta Journal always seems to have excellent advice for watering and fertilizing concerns. Two excellent articles appear in the Spring 2012 issue of The Hosta Journal (Vol. 43, No. 1). On page 15 is W. George Schmid's article "Magnificent Hostas: It's All About the Water." And on page 52 is Bob Olson's "Beginners Corner: How to Fertilize Your Hostas."

You will also enjoy the added benefits of being able to protect your hostas better. This spring, our growing season was close to a month early. We were still almost a month away from our average last frost day when we had two days of near-freezing weather. My hydroponically potted hosta quickly found a temporary place in my home. They remained beautiful while their soil-dwelling peers looked enviously through the window at them like a Dickens character in distress. Start out small and continue to grow your system as you discover the carefree way to grow hostas a new way.

HOT HOSTAS H. 'Mango Salsa': Back to Breeding Basics



by Rob Mortko Olathe, Kansas

he vending room at a regional is always a good testing ground for new hosta introductions. Wellscripted plant descriptions and accompanying photos are good to whet one's appetite for the latest and greatest hosta, but there really is no substitute for seeing the real thing in person. Seeing an actual mature clump of a new hosta introduction on display in vending is the icing on the cake. And so it was at both the 2012 AHS Convention in Nashville and the Midwest Regional Hosta Society Convention in Rochester, Minnesota, last summer.

Vending is funny though. You have to be fast. By definition a hot hosta is one that disappears from the vending tables quickly. You snooze, you lose.

At both of the aforementioned conventions, the unanimous crowd favorite based on actual vending sales was a new one from Bob Solberg. Given the brutally hot summer that gripped the entire country in 2012, the name of this new hosta was both serendipitous as well as refreshing. Mango salsa is often described as the perfectly refreshing sauce for a warm summer evening. And so Hosta 'Mango Salsa' was an equally refreshing creation to be served up to a couple of very warm summer conventions.

"Killer" red petioles and scapes make *H.* 'Mango Salsa' a super star.



H. 'Mango Salsa' meristem being readied for tissue culture.

What drew convention goers near the vending table was the brilliant yellow foliage of 'Mango Salsa'. This plant seemed like it could glow in the dark. (Never mind that it was an even brighter shade of yellow earlier in the spring.) A closer look revealed the nicely contrasting red petioleswith the red on both the front and back of the petiole. This red crept up the petiole and into the base of the leaf. And if that weren't enough, focus was then drawn to the ruffled foliage. By the time of the July regional convention, red flower scapes were starting to emerge.

The pointed, yellow leaves of 'Mango Salsa' have a subtle sheen. Individual leaves measure about 4 inches wide by 7 inches long. The clump matures to about 20 inches in width with a height of about 12 inches. It also boasts some decent sun tolerance. The red flower scapes reach to about 30 inches tall. The fertile flowers then produce red seed pods. Bob registered 'Mango Salsa' in 2011.

H. 'Mango Salsa' is not one of these by-chance seedlings. Bob

Solberg is one of many in pursuit of the holy grail of hostas: a redleaved hosta. *H.* 'Mango Salsa' is a deliberate and intentional achievement along that journey.

To create 'Mango Salsa' Bob really went back to hosta basics. He went back to our original hosta gene pool with a couple of hosta species that had a least some hint of red in the plantnamely the species *H. tsushimensis* and H. clausa. The final resulting cross was made back in 2007. The adjacent figure summarizes the 'Mango Salsa' family tree. Each of the players was selected with careful forethought. H. tsushimensis would bring red at the base of the petiole, wavy margins, and purple flowers (even coming close to red), but at the expense of thin substance. H. yingeri would bring purple flowers as well as good substance. H. clausa would bring red purple dots on the petioles and rich purple flowers. It is an interesting study of working the red from both ends- from the petioles upward while also working the red of a flower scape (and even possibly the pigment of the flowers) back down into the clump and the foliage itself.

It is fascinating to view the meristem of 'Mango Salsa' prior to tissue culture. Even after the meristem has been prepped with multiple layers of primordial leaves removed from the dormant bud, the deep red color extends completely from the tip of the meristem all the way down to the basal plate. That's a revealing view that is seldom seen by most of us.

Other notable 'Mango Salsa' siblings out of this same cross between *H. clausa normalis* and 'Strawberry Banana Smoothie' include 'Smiley Face', 'Peach Salsa' and 'Lemon Ice', all decent plants in their own right.

You've heard me say it before: a hosta hybrid can be both a destination and a journey. We'll save that story for another day, but these same genetics will be revealed in Bob's highly anticipated "red hosta" introduction. Stay tuned for that in another year or two. The story is far from over. In the meantime enjoy some refreshing 'Mango Salsa' in your hosta garden this summer.

Kiwi Companions

Last November—summer in New Zealand.

text and photos **Madelon Gilligan** Winchester, New Zealand

S peaking for shade gardeners in New Zealand, I believe we have the perfect *Hosta* companion. Thriving in the same soil conditions are multiple varieties of *Rhododendron*, which provide not only colourful bloom but also dappled, moving shade for hostas.

While many gardens in the Northern Hemisphere lie dormant November through March, New Zealand is experiencing spring and summer. My hostas emerge in October and go down in May. Peak bloom time here for rhododendrons is November.

Since 2003, Peter and I have gardened on about 3/4 of an acre in the tiny hamlet of Winchester, situated halfway down the South Island and about 7 to 8 miles inland. It is a sheltered place with a pleasing microclimate that lends itself to growing wind-tender plants. Even with low humidity, our garden is lush because of freedraining, slightly acidic, loamy soil that was blessed with a long history of cattle and horses. We first arrived with pieces of nearly 200 commercial varieties of hostas. We also brought the best part of a thousand seedlings, many of which have since grown into huge specimens.

Much like hosta growers around the world, we require the right combination of sun and shade. With rhododendrons comprising much of the upperstory structure of my garden, these sprawling beauties help filter sun for perennials "down under." Hostas return the favor by spreading their foliage and keeping rhododendron roots cool. We have so many gorgeous rhododendrons that it's hard to pick favorites. Among the best are two

with variegated leaves, the early

above: Hosta 'High Impact'.

left: Hosta 'So Sweet' and *Rhododendron* 'Girard's Mount Saint Helens'.

Hosta 'June' and Rhododendron 'Percy Thrower'.

blooming rosy red *Rhododendron* 'Cornubia', soon followed by *R*. 'President Roosevelt', which flowers red with white centres. Late October brings the subtle beauty of *R*. 'Lem's Monarch', followed by creamy white *R*. 'Phyllis Korn' and lavender *R*. 'Blue River'. Barry Sligh's *R*. 'Smoked Salmon' then astonishes the eyes.

When our camellias, azaleas and rhododendrons are without bloom, I love how hostas put on their own special show and present a different dimension of garden pleasure. Some start as early as September while others wait until November.

New Zealanders have an excellent variety of hostas available in every size, shape and colour. For gardeners with generous space, large plants or drifts can be considered. These hostas certainly impact on viewing during the late spring and summer months. Purists often like just shades of blue, blue-green, green or gold, but more gardeners now seem to be matching their personalities with specimens of variegated color.

Among the best growers here are Hosta 'Sagae', the large greygreen beauty with wide yellow margins. It's definitely one of the top hostas of all time. Others are H. 'Kiwi Green Gourd', a handsome round-leaved and cupped plain green; H. 'Abiqua Drinking Gourd', the deeply cupped large true blue; H. 'Kiwi Gold Rush', a clear bright yellow; H. 'Fragrant Bouquet' with its yellow-green center and wide white edge; and, not to be overlooked, the magnificent H. 'Blue Angel', which may not be as blue as some wish but the flower display is impressive when well-grown.

Where size is a consideration, hostas of more moderate dimension can be selected from a wealth of proven sound growers. Reasonably easy to obtain are *H*. 'Pizzazz', blue with creamy edge; *H*. 'Invincible', shiny green and fragrant; *H*. 'Hadspen Blue', one of the bluest; *H*. 'Shade Master', a vivid yellow; and *H*. 'Patriot', outstanding green with broad white margin. For a real charmer, though, it's hard to beat that wonderful, glorious *H*. 'June' with its yellowish center and blue-green edge. Like 'Sagae', one is often tempted to plant more of these beauties.

Healthy hostas may be planted from spring to autumn. For sufficient growing room, newly planted hostas should be in holes wide enough and deep enough to accommodate spreading root systems, yet at least three feet from the base of any rhododendron. Keep them well-watered until established, when new leaf growth appears. My hostas appreciate an Hosta 'Blue Maddren' (center) and 'Gene's Joy' (lower right).

occasional feeding of pelletized sheep manure and a sprinkling of Dolomite in the root zone. Snails and slugs can be a problem here, so many gardeners use snail bait. I use Quash! Slug & Snail Stoppa by Tui, which is safe to handle. I scatter it over the emerging sprouts in early spring and again a few weeks later to reduce the damage.

Though some gardeners are tempted to split their hostas, I prefer to leave mine alone so they can develop to full potential and maximum display under my colourful canopy of rhododendrons. That's why I'm always delighted to share my garden joys with friends and promote rhododendrons as the perfect foil for hostas.

The Path to My Raised Bed

text and photos Rod Kuenster Iowa City, Iowa

While reading my favorite magazine, *The Hosta Journal*, I was excited to see an article by Bob Olson about "My Favorite Tool" (Vol. 43, No. 2, p. 10). It made me think about some of my favorite tools and tricks to save time and energy working in the garden.

I have been gardening for 50 years. I started as a young lad helping in the family garden. We grew vegetables for the dinner table as well as for canning. As life passed and my love of gardening grew over the next 25 years, my focus changed to perennials. Over time I narrowed my preferences even more to shade gardening, and the shade garden plant we know and love, *Hosta*. Part of the choice was made for me when we moved to our current home in Iowa City, an area with lots of large, mature trees.

About a dozen years ago I found myself looking to add to my winter

hobby of woodworking. A few of my hosta friends talked about how it was possible to grow hostas from seed. It did not take me long to realize that this was something I wanted to try and, now, years later growing hostas from seed has become a passion that at times controls my life, all my thought and free time. At least this is what my wife tells me. She says I have a problem, and I suppose she is right.

It is human nature to be on the lookout for things that will make any task we enjoy doing a little easier. This past winter I was thinking about the question Bob had asked, "What makes your gardening easier?" Since I am getting a tad older, I wanted to do something to help me now as well as in years to come.

I got my inspiration from my own back yard. I have a fenced-in area that is pretty flat and has a 4-foot-tall wooden fence around it. This area is filled with my hosta seedlings. On the backside of the fenced area is a steeply sloped area that I call the far back yard. Shortly after moving into the house I made about a dozen raised beds back there to make gardening a little easier. I had made these out of 6 by 6 inch treated lumber. The beds are 3 by 6 feet, 8 by 8 feet, and 3 by 8 feet. These were all filled by hand with compost and leaf mold, which the plants seem to love. It took around 20 dump truck loads to get them all filled. Since I have a fence around the entire back yard, all the growing media had to be hauled out back a wheelbarrow load at a time. I think I wore out a pair of boots on this part of the job alone.

I built these beds before I was a true "hostaholic," but other plants did not do well in the shady areas. Now these beds hold only hosta seedlings from my hybridizing efforts. Actually, my whole vard is now packed with hosta seedlings. It used to be only my wife that thought I was a little strange, but now my neighbors are wondering about me, too. They ask, for instance, what is that guy doing out in the yard with a flashlight at 5:00 A.M.? When I tell them " I was having sex in the garden" all they can do is shake their heads and walk away. I try to tell them I was not kidding, it is just part of the hybridizing process. As you can imagine, this does not help me convince them or my wife that I am normal. I enjoy these sloped raised beds in the far back yard for many reasons, one of them being I can sit on the edges of the beds and weed, or as my wife says, "daydream."

Since every year it gets a little more difficult to walk into my sloped far back yard, I decided to make a raised bed in the flat part of the yard. This was to be a hybridizing bed where I could plant some of my favorite breeding plants in an area that I could easily reach even as I get older. My plan was to fit 15-18 breeding plants in this bed, a number that I could be very happy with. My neighbor, Dan, has a couple large maple trees on one side of his yard and the roots from these are really close to one area of my yard. I figured this would be a good spot for a raised bed, raising the hostas up from the maple roots. I planned the raised bed to be 16 inches tall, a nice height for me to sit on, and 30 feet long by 48 inches deep.

This project took me weeks to dream about, but only a day to build. I made it out of large block stone that I recycled from a friend's yard. I filled the new bed with equal parts of topsoil, compost and leaf mold that once again I had to wheelbarrow into the back yard. I watered the mix well to make sure it settled before I planted it with a few of my own named hostas which I had grown from seed over the years. By planting some of my favorites, such as H. 'Cosmic Hippie', 'Fudge Ripple', 'Ma Breeder', 'Outrageous Dragon', 'Frosted Morning' and 'My Mom', in this new raised bed, they now have a home in an area that was not being used well because of the maple roots.

The new raised bed will make my gardening easier for years to

come. Now I sit on the edge of the bed while making early morning crosses—that "sex in the garden" we talked about—as well as doing a little "daydream weeding" later on in the day.

There came an evening after was all done that I told my wife that I was going out to the garden and have a drink with Dan. Of course when she came out to the garden to tell me it was time to eat, she found was me sitting on my new raised bed having a beer, admiring and talking to the seedlings. She would not ever believe that Dan (the neighbor) had just gone into the house.

Now I sit and look at the seedlings or talk to my favorite breeding plants about what I expect of them. Plus, I don't have to get down on my hands and knees to dab the pollen. This will allow me to enjoy my passion for hosta hybridizing a few extra years into the future. Don't worry, the hostas have not talked back to me yet. My "hosta problem" has not gotten that out of control!

What have you done to make your hosta hobby a little more enjoyable?

opposite page: New raised bed by far fence is easier to weed.

right: Raised beds in sloping far back yard also are easy to tend.

Hostas and Sunlight

H. hypoleuca growing in direct sunlight on the sheer rock face of Japan's Mount Chichi Iwa.

BOB OLSON

The Nature of Sunlight

As every other plant in our garden, our hostas use the light of the Sun to grow and prosper. Sun energy reaches Earth as electromagnetic radiation and interacts with living plant matter both as waves and as particles. Particles of light are known as photons, the smallest divisible units of light. The brightness of light depends on the number of photons absorbed per unit of time. Each photon carries a fixed amount of energy that varies with its wavelength (color). Wavelength is measured in nanometers; a nanometer (nm) is 1 meter divided by 1,000,000,000 and is usually written in scientific notation as 1×10^{-9} m.

Electromagnetic radiation has a broad range of wavelengths, the shortest being gamma rays, which have a wavelength between 10⁻³ nm and 10⁻⁵ nm and the longest being radio waves which have a wavelength between 10⁹ nm and 10¹² nm. A very small part of the spectrum is visible light, which can be seen by the human eye. Visible wavelengths range from 380-750 nm, and the different wavelengths of the visible light are perceived by the human eye as different colors.

Nearly all life on Earth depends on this very small part of the visible spectrum for its energy. Beyond it, ultraviolet light contains too much energy and infrared too little energy to be useful for most living organisms.

Photosynthesis

Most gardeners consider members of the genus *Hosta* to be "shade plants." Shade changes with the time of day. It also changes from year to year as shade-giving trees grow larger or dead trees have to be removed. Sites that might be in full sun in early spring, become heavily shaded as trees leaf out. Moreover, day length increases up to the summer solstice and sunlight gets brighter. This effect becomes more prominent further north or south of the equator. Location is also a factor to consider. As an example, a south-facing slope receives more light than a north-facing slope.

Sunlight drives photosynthesis in plants, a process that is essential to plant life and growth. Photosynthesis uses light energy to convert carbon dioxide and water into sugar and oxygen, as shown in the formula in Figure 1.

The Hosta Journal, (Vol. 43, No. 1, p. 15). In Japan, *Hosta* species grow to considerable sizes in rock fissures with hardly any supporting soil. The secret is abundant rain: Plentiful rain in the natural habitat during spring growth and throughout the growing season caused the species precursors of our cultivars to require plenty of rain. As shown in the formula (see Figure 1), they also require sunlight for photosynthesis. The correct balance between available water and sunshine is essential: Too much sunlight and too little water can cause leaf burn, and too much water and not enough sunlight can

Figure 1. Photosynthesis.

As can be seen, carbon dioxide and water are essential to support photosynthesis that captures sunlight as photons to convert atmospheric carbon dioxide and water into sugar, which is used as food by the plant. Carbon dioxide is present in the Earth's atmosphere in minute amounts of 395 parts per million (ppm) [measured in June 2012 according to the National Oceanic and Atmospheric Administration (NOAA)] and water is supplied by rain. The native habitat of the genus Hosta receives rainfall amounts that are much higher than those in Europe, North America, Australia, New Zealand and other areas of Hosta cultivation. Refer to my article: "Magnificent Hostas: It's All About the Water" in the Spring 2012 issue of stunt future growth. Either way, the plant can no longer contribute to the creation of photosynthetic oxygen. The latter is part of the process by which breathable oxygen is released by plants into Earth's lower atmosphere. During photosynthesis the plant utilizes the energy of light to split a water molecule into its protons and electrons for photosynthesis. Free oxygen is generated as a by-product of this reaction and is released into the atmosphere to be useful for living, breathing organisms.

The Color Green

As pointed out earlier, hostas like other green plants, get their growth energy through photosynthesis. Using this process, huge numbers of chlorophyll molecules actually harvest sunlight and convert it to a form that can be used by the plant. The light absorbent properties of the chlorophyll molecule came into play during eons of evolution, when the absorbance of chlorophyll was adjusted to the actual color of the sunlight that reached the leaves. Chlorophyll absorbs both the highest energy of light in the Sun's visible light spectrum (blue) and also the lowest (red). The pigment reflects the other colors of light, so the leaves appear green and greenish yellow to humans. This explains why the parts of the plant containing chlorophyll appear mostly green or various greenish colors that we associate with hostas and with green plants in general. Hostas and other green plants have their green color starting in spring and retain it as long as the plants require photosynthesis to manufacture sugars as food and to ascertain reappearance the following spring. Obviously, during the winter dormant period hostas and other plants do not actively make food.

Colorful Autumn

While Hosta species and many cultivars have an exiting mixture of all manner of green colors during their growing season, one of the most colorful periods in the hosta garden occurs at the onset of dormancy. As dormancy progresses, the beautiful mixture of green colors changes into a celebration of yellow and orange leaf colors all over the garden. Just like chlorophyll is responsible for green during the growing season, several other pigments are at work during the onset of autumn. Two of the pigments are present in the hostas all summer long and take part in photosynthesis the same way chlorophyll does. These are xanthophylls for yellow color and carotinoid for orange color. The human eye has trouble seeing

Blooming *H. montana* in an alpine meadow on Mount Nyugasa, Nagano Prefecture.

these colors during the growing season, because the dominant strong green color of chlorophyll overpowers the soft yellow and orange colors. In autumn, chlorophyll is the first pigment to break down, and then yellow and orange become visible. For a short time, the hosta garden is briefly "painted" with a glorious mix of orange and yellow colors. Rarely, red color appears on hosta leaves during the fall. It is caused by the red pigment anthocyanin, which can develop in leaves after the hostas cease production of

mean many different levels of light. Some gardeners consider as being shady those deep, dark corners of a garden, where almost nothing will grow. Others consider overhead foliage with lots of sunshine coming through as partial shade. Actually shade exists in both these situations and comes in many different shade intensities, from very light to very dark. In their natural habitat, *Hosta* species rarely grow in very dense shade. They frequently colonize at the margins of deciduous forests

in the sun (literally). Shade can

Know your hosta's heritage: Offspring of grassland hostas can take considerable amounts of light in spring. Forest dwelling hostas prefer a shadier environment.

chlorophyll. However, anthocyanin red dotting can also appear on natural and cultivated plants, covering petioles, scapes, bracts, as well as parts of the leaves during the entire active growing season.

Light Levels: Sun or Shade

A majority of *Hosta* literature and many gardeners consider hostas to be shade plants. A few even think that they must be grown in the shade. But the right place for hostas may not be a place in the shade but a place and around and in forest canopy openings. In mountainous areas hostas grow on rock outcrops usually along sunny banks and on waterfalls in open river valleys, and even out in open, sunny, usually swampy or moist grass lands where in spring they emerge early and get a lot of full sun until the leaf crowns are shaded out in early summer by tall grasses, weeds and sub-shrubs. A majority of *Hosta* species in the wild grow in full sun, in competition with grasses, sub-shrubs and other companion

H. 'Holly's Velvet Piecrust' 24 hours after an overhead tree limb was removed: acute leaf damage from excessive sunlight.

H. 'Holly's Velvet Piecrust' six weeks later: most leaves survived in part and normal new leaves emerged at the center.

plants. Many have developed tall scapes, which display their modest flowers above most competing plants to attract visits from the pollinators. Using natural habitat as a guide, it becomes clear that hostas are not the true shade plants most horticultural authorities make them out to be. This idea may have started because they do grow quite well in shady gardens, better than many other plants. The blue-green cultivars actually succeed in shady, cool places, keeping their blue-grey pruinosity much longer in shade than they would in sunshine. Hostas with green, chartreuse and yellow leaf-colors can stand quite a lot of direct sun as long as their root systems have plenty of moisture available at all times. Too much sun, especially in more southern regions, will bleach the lighter green and yellow colors. In cases of high light exposure, burning can occur, and thin leaves are more prone to burning than leaves of heavy substance. Conversely, too much shade can also adversely affect hosta growth rates and prevent flowering altogether. Hostas will not thrive in dark corners where nothing else will grow. They may exist and persist, but flourish they will not. Some cultural failures with hostas are probably due to the plants not getting enough sun to photosynthesize. Gardeners should be circumspect when planting hostas in very dense shade. Relative exposure, length of day, light intensity

and average cloud cover all have something to do with correct and optimum hosta placement. The right place for hosta varieties is usually one that closely approximates the natural conditions under which their erstwhile parents dwell in the wild. The species and associated varieties coming from southern China, southern Korea, and southern and central Japan usually require a good amount of sunshine and longer seasons for flowering. Those from northern Japan and Hokkaido have much shorter seasons, some as short as five months. This means grassland hostas and their offspring can take considerable amounts of sun in spring but require some cover during the hot summer months.

Forest-dwelling hostas prefer a shadier environment, but this does not mean dense shade. They do best in filtered shade, with occasional direct sun, preferably morning sun, on their leaves. It is important for gardeners to research the parental background of a given cultivar. The online AHS Hosta *Registry* (www.hostaregistrar.org) or one of the several books covering the genus Hosta give information on parentage. Some gardeners may want to determine the right place by experimenting with different locations. It is difficult to make specific recommendations on planting location because the number of possible different microclimates is incalculable. When placing hostas in the garden, it is important to remember they will thrive in some shade but will also need a fair amount of sun or high light levels for maximum increase and flowering. That is why many commercial growers often raise their hostas in sun-drenched field rows with lots of watering.

Sun and Water, Water, WATER!

Since 1999, severe drought periods experienced by the author in Georgia (U.S.) and by many others in other locations can and will nullify everything stated in the above observations. The simple fact is that hostas must have plenty of irrigation water together with sun exposure in order to follow their natural growth patterns. In their native habitat they receive a minimum of 55 inches of annual rainfall and can have as much as an *additional* 50–70 annual inches in the monsoon regions, which cover most of Japan, with the exception of Hokkaido. Obviously there are local differences in rainfall in the various geographic locations around Japan, but the above values are a good average and are much above average rainfall

Hosta survival instinct: a badly burned hosta is quick to develop scapes and flowers for future growth.

in Western Hosta cultivation areas. More importantly, the fall monsoon rains in August and September coincide with the need of irrigation water to support the autumn photosynthesis that stores sugars in the rhizome for next season's growth. Unfortunately, in most regions of Hosta cultivation, dry autumn months cause this process to be curtailed and as a consequence insufficient sugar storage will cause the plants to emerge smaller the following spring. Unless nature or gardeners can provide sufficient water during fall, the plants' growth cycle is disturbed and a reduction of plant size in spring is the usual result. As pointed out, early autumn rainfall is absolutely essential. In addition to plenty of water, tender loving care and maximized sun exposure will produce magnificent hostas growing

in gardens. (Please read "It's All About the Water" in the Spring 2012 issue of The Hosta Journal (Vol. 43, No. 1, p. 15).

Don't Give Up!

Bob Olson, our Journal Editor, contributed a few photographs, which show how bad leaf burn can be. These pictures indicate you should not give up on burned hostas. Hostas are tough plants that will recover sooner or later. If the burns are minor, the plants will recover quite well as the photos on page 53 illustrate. Even with lots of burning, as shown in the photo above, hostas can develop scapes and seed pods in what might be called "survival instinct." Burned leaves should not be removed from the plant. Damaged leaves partially shade and protect leaves growing beneath them. Lightly burned leaf tissue will also try to restore itself.

The Problem with Excessive Sunlight

ostas, like other plants, are well adapted to maintain maximum photosynthesis efficiency under the changing amounts of sunlight in their natural environment. This adaptation, called photostasis, is driven by the gradual lengthening of daylight from spring to the summer solstice, the brightening of sunlight during this period, and the increasing shade from new leaves in the tree canopy or the growth of companion plants such as native grasses.

Available moisture throughout the growing season and average temperatures also affect photostasis, although systematic studies have never been done. Adequate hydration of the tissues permits the most efficient photosynthesis. Higher temperatures speed up the various molecular processes, though not always at the same rate.

Hybridization of hosta species from very different native environments has made the adaptation to sunlight, moisture and temperature vary widely from cultivar to cultivar. The result is that some experimentation in the garden may be necessary to find optimal growing conditions for a particular cultivar.

Leaf burn rarely occurs on hostas in their native environment, except during the driest or hottest fluctuations of the climate. Photostasis usually keeps photosynthesis and the resulting growth of leaves, flowers and crowns functioning smoothly. In the garden, various combinations of too much sunlight, too little water and too high temperatures occur much more commonly because they exceed the range of conditions to which the hosta has adapted.

What actually causes leaf burn? Chloroplasts absorb and utilize the energy from both red and blue light. The molecular photosynthesis center for red light (Type I) produces byproducts that are chemically reducing. By contrast, the center for blue light (Type II) produces byproducts that are chemically oxidizing, including free oxygen that is released into the air. The process of photostasis balances the Type I and Type II molecular processes for maximum efficiency in photosynthesis. Unfortunately, while the size of the Type I antenna can be increased or decreased, the Type II antenna can only be increased. If the sunlight conditions for a particular plant exceed its range of adaptability by being too long and too bright, more oxygen is produced by Type II centers than can be balanced out by Type I centers or transported for release into the air. Then oxidative damage to the plant tissues occurs, which we see as leaf burn. Dry conditions cause this make/break point to be reached earlier in the season. High temperatures hasten the production of oxygen by Type II centers more than they speed up oxygen transport so that more leaf burn occurs.

How these various factors interact largely remains to be studied under controlled conditions. Generally in North America, we can benefit from photostasis for only part of the growing season.

Suggested Reading

Chamberlain, S. C. (2003) Photostasis: Implications for Growing Hostas. *The Hosta Journal*, Vol. 34, No. 1: pp. 72-73.

> —Steven C. Chamberlain Scientific Editor

March 26, 2012

Dormancy ends and a few hosta "pips" are emerging.

May 19, 2012 The weeds didn't stand a chance!

April 23, 2012 Hostas already are growing rapaciously and soon will be "shoulder-toshoulder."

Weed-Free Garden

by Patrick Coleman Minneapolis, Minnesota

weed-free garden—that's every gardener's hope. But, perfection is what heaven is about. We live here on Earth. And earth, that is, dirt, is the subject of this article. When sunlight hits dirt and moisture is present, weeds will grow. There is never a guarantee that your plants will grow, but weeds are guaranteed.

In my parents' garden, as a youth, I used to hate both weeding and gardening. Now I love gardening, but still hate weeding with such a passion that I've made attempts at a weed-free garden.

The triangle of dirt, sunlight and moisture is, in many ways, like the fireman's triangle of fuel, oxygen and combustible material. Take one element away and fire (or weeds) won't happen. This became my operating principle. I couldn't remove moisture (unless I wanted to grow cacti). I couldn't remove dirt since we are talking "garden" here, not hydroponics. So sunlight was what had to be removed, but not so much as to leave me with a mushroom garden. Sunlight cannot be removed from the plants, of course, but from hitting the soil.

For the better part of 20 years, as I expanded my garden and reduced my grass surface, I planted my garden plants (90% hostas) closer together than advised in garden books; so close that leaves of adjacent plants eventually touched, blocking the sunlight from hitting the ground to complete the fatal weed triangle of sun, dirt and moisture. Where other gardeners highlighted individual plants, I relied on the developing texture in my garden—a mass planting of *Hosta* 'August Moon' next to 'Royal Standard' next to 'Hyacinthina'. These mass plantings gave a texture of color and surface when the garden was viewed from a distance; my neighbor's front yard, for instance. I also used 'Lancifolia' as a "primer" layer (like a painter laying down a primer layer on the wall or canvas before starting to paint). I would then plant a focal hosta, say 'Sum and Substance' or 'Blue Angel', within the primer layer to provide esthetic variety.

The concept took years to mature. After about two decades, and a lot of work splitting my primerlayer hostas, there were still weeds. But I began to realize a few years ago that I was only weeding for a short period in May when sunlight was hitting the dirt before the hostas leafed out and touched one another. (This is Minnesota, and May is the month this happens. In April we are so starved for green that we even appreciate weeds—from afar.)

Then came the ultimate test. I had a temporary assignment requiring re-location to Washington, DC, for a year. Would my garden stand the test of virtual abandonment for a year; no fall clean-up, no spring weeding? What would it look like in spring I returned.

I asked Janet Mills, designer of *The Hosta Journal* and photographer (who, conveniently, lives a few doors away) to take photos of my front yard periodically during the 2012 growing season. I would continue regular maintenance in the rest of my garden, but would avoid weeding my front yard to see how well the concept worked.

The triptych photo is of a westfacing and sloping section of my

Daffodils bloom and hostas emerge before most weed seeds germinate.

front yard. The patch in March might seem typical, but this was the halcyon spring of 2012 when we had May in March, lacking the normal snow this photo should have. April brought weather more typical of March, with several freezes to stunt or stop normal leaf formation. May brought 15 inches of rain to break our twoyear drought.

This part of my garden consists of several primer plantings: *H*. 'Lancifolia' on the lower left and 'Royal Standard' on the right. The central 'Hyacinthina' was flanked by several 'August Moon' and a spirea. Even the focal hostas are planted tightly to fully shadow the soil. The photographer had to take extreme close-ups to show the weeds. The weeds only appeared at the interface of hostas with non-hostas — sidewalks or other various bushes.

In summary, I judge the result "no sun, no dirt" and the demonstration a success. I do still have areas under development, thus I battle weeds, but only for a few years after planting. Which of these hostas does the author bet will win the Benedict Garden Performance Medal?

CANDIDATES FOR THE 2013 BENEDICT GARDEN PERFORMANCE MEDAL

H. 'Atlantis' 2012 H. 'Baby Bunting' 2010 H. 'Brother Stefan' 2010 H. 'Cathedral 'Windows' 2011 H. 'Christmas Tree' 2010 H. 'Cracker Crumbs' 2010 H. 'Dream Weaver' 2010 H. 'Earth Angel' 2010 H. 'First Frost' 2010 H. 'Formal Attire' 2010 H. 'Frosted Jade' 2010 H. 'Grand Tiara' 2010 H. 'Hadspen Blue' 2010 H. 'Hanky Panky' 2012 H. 'Journey's End' 2012 H. 'Leading Lady' 2012 H. 'Lemon Lime' 2010 H. 'Manhattan' 2012 H. 'Millennium' 2012 *H.* 'Old Glory' 2010 H. 'Olive Bailey Langdon' 2011 H. 'Robert Frost' 2012 H. 'Satisfaction' 2011 H. 'Silver Bay' 2011 H. 'Tiny Tears' 2012 H. 'Wolverine. 2012

> Which would you choose?

H. 'Brother Stefan'.

H. 'Satisfaction'.

IIM HARTMANN

M MICHELETT

And the Minner is...

by Jim Hartmann Plymouth, Minnesota

f at first you don't succeed, fail, fail again!

Last year *The Hosta Journal* Editor approached me with a proposal: write an article about the Benedict Garden Performance Medal and predict the 2012 winner. There was a catch. Everyone would know the winner before the article was published, making personal humiliation the most likely outcome.

A valiant effort was made. Approaching it like handicapping a horse race, each candidate was scored on multiple factors. Weighted values were assigned. History was examined. Psychology was considered. Tea leaves were swirled. Hunches were played.

It was, of course, a failure. The judges ignored my psychic messages and selected *Hosta* 'Niagara Falls'—a personal favorite but lowered in my ranking by my belief that voters favor variegated hostas.

To continue the equine simile, we all know that when you fall out of the saddle, it is important to climb right back up and give that horse another chance to injure you. So here goes—a sequel!

Picking a winner was hard last year. It's harder this year. A review of the selection process explains why the field gets tougher every year.

There are three levels of voting. Hostas are nominated. Judges select up to 15 each year to receive the Honorable Mention Award and these are placed on the Award of Merit ballot. The hostas that win the Award of Merit in the second level of voting are placed on the ballot for the top honor. One hosta is selected each year for the Benedict Medal. Because hostas can stay on each level for a number of years, the quantity and quality of the candidates has increased each year.

The 2013 Benedict ballot has 26 excellent candidates compared with 17 for 2012, making it difficult to select only one to vote for—and predicting the winner a nightmare.

Last year I used four prediction criteria based on observing the AHS Popularity Poll for many years. In general, people prefer larger hostas over smaller ones, variegated hostas over solids, easy-to-grow over those finicky in nurture and, finally, people lean toward hostas with a high "cuteness" factor.

The judges surprised me by selecting a solid green plant. *H*. 'Niagara Falls' certainly meets the other three criteria: large, easy to grow, and with elegant, distinctive rippled leaves. It always places on the AHS Popularity Poll, but never approaches first place. Perhaps the judges are a bit more "sophisticated" and less likely to be drawn to the showier variegated plants than the broader voting group on the poll? Another factor to consider....

The AHS has established criteria that judges are supposed to use to make their selections. Knowing what an opinionated lot we hosta lovers are, it's hard to know how many actually refer to this list when filling out the ballot. Half of the weighting is supposed to be based equally on Aesthetics (attractiveness) and Distinctiveness (uniqueness). The other half is to be based on Vigor, Multi-seasonal Interest and Environmental Tolerance.

A racetrack tout is always looking for some inside information something to give his guesses an edge over the competition. I contacted Randy Goodwin, the guy who actually counts the votes. He didn't reveal any confidential information, but it does seem there are a lot more judges from the Midwest and Great Lakes regions than other parts of the country. This might give some hostas a slight edge if they do well in the center of the country even if they have difficulty with the humidity of the South and East.

One last factor, hostas stay on the Benedict ballot for three years. Might those about to "age out" have a psychological edge in the voting?

Combining all of these considerations, I revised my handicapping system. There are four primary factors. Familiarity: the more market distribution, the more likely it is to get votes. Attractiveness: of course! Distinctiveness: something special going for it. Vigor: judges aren't likely to vote for a hosta that grows slowly in their gardens.

Secondary factors considered include size, variegation, and that judges tend to come from the center of the country and they may have sophisticated tastes. And, finally, there are the subliminal cultural references—what memories might the hosta names evoke? For example, many of the candidates have "theme songs."

Of course, the real trick is how to weight the various factors. I won't share my system. A handicapper has to keep a few secrets! The results were amazingly close. The candidate list is a very strong field. After working and reworking the numbers, 20 very good hostas were eliminated. Those remaining on the list were:

H. 'Brother Stefan' H. 'Earth Angel' H. 'Hanky Panky' H. 'Journey's End' H. 'Satisfaction' H. 'Wolverine' Each of them has many strengths —and a few weaknesses.

A mature 'Brother Stefan' is a striking specimen, but is it too similar to other hostas, including the very popular 'Paradigm'? H. 'Earth Angel', sport of 'Blue Angel', maintains the excellent characteristics of its parent and has an attractive variable margin-and the best theme song-but it's not a fast grower. H. 'Hanky Panky' is fun and has interesting color changes—and the worst theme song-but its midsummer appearance is often unattractive. H. 'Journey's End' is spectacular, but some have found it to be touchy, sharing with its parent 'Choo Choo Train' and sibling 'American Icon' lower tolerance for frost and fungal infection. H. 'Satisfaction' is an amazing grower, rapidly making a very large specimen with great wide margins—and the second-best theme song—but is it "special" enough? H. 'Wolverine' is an old favorite in many gardens, distinctive in form with its tapered leaves-and has the best movie and sports tie-insbut many note that the plant is more interesting when young and tends to lose its uniqueness when mature.

Statistically, the six were tied. I didn't want my personal prejudices to skew the results, so I cast a few lifelines. I consulted with four friends who live and breathe hostas: Marco Fransen (of Paradise fame), Chris Wilson (of Hallson Gardens), and Gary and Jack (The Naylor Creek Boyz). Their composite choices matched my own closely enough to narrow the field.

My final list had three names left: 'Brother Stefan', 'Earth Angel' and 'Satisfaction'. Though 'Satisfaction' is a personal favorite, it came in third in the final ranking. The remaining two are quite different—and both worthy of the award.

I'd like to hedge and bet on all three to win, place or show. The Editor has been firm: no list of six and no "top three." I've got to pick one.

As I agonized over the final choice, my eye fell on my stack of *Journals* and there it was, on the cover of Vol. 43, No. 1. Even though 'Brother Stefan' actually had a slight edge in my numbers, with the Penguins' *doo-wop* classic bringing back fond memories, I'm going with 'Earth Angel' as the winner.

I'm glad I don't have any money riding on this!

Are You a Benedict Garden Performance Judge?

Why Not? It's easy-and it's fun!

For this process to give the best results, it's important to get lots of votes from a wide geographical range. Unlike the leaf show judges, the Garden Performance judges do not have to complete any special training. All that is needed is an interest in hostas, a willingness to observe them in your own and other gardens and three years of membership in the AHS. Once a year you complete the ballot and mail it in. That's it! It is a simple, easy way to contribute to the hosta community. For information on how to become a judge, go to:

http://www.americanhostasociety.org/PDF/Benedict_Garden_Performace_Awards_Plan.pdf.

—Jim Hartmann

The Bee's Knees Or How I Learned to Love 'Vase-Shaped' Hostas

by Walter Cullerton Pineville, Pennsylvania

A bee's "pollen baskets" are located on the tibiae of its legs—the "bee's knees," so to speak. And when you look at a vase-shaped hosta, you see its legs and knees. That's why I love these hostas. They're "the height of excellence."

Another word for a vase-shaped hosta is "upright," as opposed to mounding. Eventually a vase-shaped hosta will become mounded, but only after years of growth without division. Some maintenance is required, but how often depends on the rate of growth of that specific plant and the conditions in which it is living. Many vase-shaped hostas have leaves that do not mound over but instead are perpendicular to the ground, thereby allowing a world class view of the "bee's knees."

My passion for vase-shaped hostas was awakened at the 1997 AHS Convention in Indianapolis. I became focused as the result of a conversation with a new acquaintance, a young chap from across the pond. He and I were seated together on the bus headed to Dorothy Miller's symphonic garden. I explained to my British seatmate that I really didn't like *Hosta* 'Sum and Substance', the chartreuse giant with leaves going every which way. I was so animated in my dislike for

top and above: Walter's winning H. 'Sagae'.

this monster that my friend very quietly suggested I would have a very attractive "vase-shaped" hosta if I kept the plant to three to five crowns. No way, I thought.

When I got home, I proceeded to follow his suggestion and placed the plant in a 7-gallon terracotta planter. Wow! Ever since, I've kept ole S & S in that container, culling out several new crowns every spring, thereby maintaining the three to five crowns and the wonderful vase shape. Cute "knees" in that big pot—and the chartreuse and terracotta are quite compatible. As you can see, convention conversations can be quite enlightening.

Now, let's look at some of my favorites. Hopefully, you'll find a few of yours in this diatribe. First, let me repeat that all vase-shaped hostas, if left alone long enough,

H. 'Frosted Jade'.

H. 'Ani Machi'.

PHOTOS: BOB OLSON

PHOTOS: BOB OLSON

H. 'Praying Hands'.

H. montana 'Aureomarginata' (*front*) and 'Krossa Regal'.

H. 'Sum and Substance' in container.

The leaves are very long and curve downward. Similar looking to 'Jade Cascade' in my garden except a bit shorter at 30 inches or so. The leaves are described as giant dark green with a nice pure white margin. Another *H. montana macrophylla* hybrid described as one of the best and least-known hostas ever introduced—a spectacular clump in the woodland garden!

H. 'Sun Power', that great gold hosta, has a most impressive shape and will vase-up to about 30 inches or so. It has a showy gold leaf of 15 inches or more in length and will try to reach out perpendicular to the ground. And one characteristic most of these vase-shaped plants display is that the leaves are long, have a wavy edge and a twist at the end, all characteristic of an *H. montana*. Not to mention

will grow into large mounds. However, not all hostas are vase-shaped out of the gate, so to speak. My old-time favorites include 'Jade Cascade', 'Frosted Jade', 'Sagae', *H. montana* 'Aureomarginata', 'Sun Power', 'Krossa Regal', 'Regal Splendor', 'Elatior' and *H. nigrescens.* There are many more, but space is limited.

H. 'Jade Cascade' has beautiful long leaves that curve downward and is a beauty if kept in the "bee's knees" format. As noted in the Hosta Library database, it has "huge deeply veined green leaves that arch outward on graceful three-foot stalks." Mature leaves may be as long as 21 inches and as wide as 8 iches. This hosta, which can get to 40 inches tall, is an incredible hybrid of *H. montana macrophylla*.

Equally beautiful as a vaseshaped hosta is 'Frosted Jade', another big *H. montana*.

H. 'Elatior'.

H. 'Regal Splendor'.

H. 'Liberty'.

the (mostly) white flowers in late June, early July. So if I were to hybridize wanting a vase- shaped plant, one of the parents would definitely be an *H. montana*. In my garden, it tolerates a lot of sun extremely well. No, it flourishes with a lot of sun.

Another great upright is *H.* 'Sagae'. The 'Sagae'in my garden (I'm bragging) won "Best Large Clump" at the 2006 AHS Convention in the Philadelphia area. I simply love this plant but, alas, it now has competition with its offspring, *H.* 'Liberty', which has the same leaf shape and upright habit but a lighter frosted blue surface with a very wide yellow margin.

Are there any medium-size hostas with the attention-grabbing vase shape? Yes, indeed, a bunch! Let me just point out a recent find. *The Hosta Journal* (Vol. 42, No. 1) has an article on *H*. 'Proud Sentry'. It's about 16 inches tall with red slacks—oops, I mean red petioles—and its green leaves have yellow margins that turn creamy white. It's meant for my garden.

In a brief look at smaller hostas, the first one that comes to mind is 'Geisha' or, if you prefer, 'Ani Machi'. I have both. I do not see it described as upright or vaseshaped, but for me it is a beauty with its ever-changing color. And how about *H*. 'Livonia'? A beautiful green with an upright shape. I think I see some red in the petioles. Wow! And, finally, the *piece de resistance*, *H*. 'Praying Hands'. It is the one hosta everyone who visits my garden admires and wants a division or two. Easily solved. as I keep several pots on hand, which I acquire from my friend Alan Russell. Remember the great lunch at his nursery at the 2006 AHS Convention? Ah, memories.

Remember, my friends, no matter where you are, vase-shaped hostas are the "bee's knees."

H. 'Tiny Bubbles' at Cochato Nursery photographed by Joanna Kovalcsik (*left*) and Debbie Hurlbert (*right*).

The winning photo is? Photo Contest Correction

When you have two excellent photos of the same scene entered into the same category of *The Hosta Journal*/AHS photo contest, what could possibly go wrong? Just a little miscommunication between the judges and the *Journal* designer could result in the wrong photo being printed as the winner. That's exactly what happened. The photo on the left by Joanna Kovalcsik was selected as the winner of Category 5 by the judges, but the very similar photo on the right by Debbie Hurlbert was accidentally printed. Why did Joanna's win and not Debbie's? The judges thought the background was more uniform and allowed the foliage of *Hosta* 'Tiny Bubbles' to stand out. They also said the rocks behind the bucket in the winning photo suggested movement, and the angle at which the bucket was shown was more unusual. These are subjective judgments, of course. Either photo could have been a winner, but only one could be and it should have been the one we published.

—Andy Marlow, Photo Editor

AHGA's Hosta Clump Size Standard a Defining Moment

by Rob Mortko Olathe, Kansas

B lame it on the "mouse." Remember all the fuss about who and what was a miniature (mini) hosta for the sake of the annual AHS Popularity Poll? In the end, *Hosta* 'Blue Mouse Ears' won the battle, redefining how large a hosta could be and still be considered a mini. A mini hosta leaf size was formally limited to less than 6 square inches as the AHS criteria for leaf show placement. Alas, this was focused solely on *leaf* size.

About the same time, prior AHS size standards (a somewhat awkward combination of Hosta Show leaf size *and* clump height) were dropped from the AHS Web site and the Hosta Library. Last year after the dust had settled a bit, the American Hosta Growers Association (AHGA) received a request from the AHS Nomenclature Committee to consider formulating a clump size standard.

It sounded like a reasonable request that could ultimately address a need. Hosta reference books address clump size, but none of them agree. Open any hosta catalog and you'll find yet more disagreement. A standard is lacking.

An AHGA committee was formed to explore the matter. It was composed of AHGA Board members Sue Andersen, Bob Solberg and Mark Zilis. While simple on the surface, the definition of clump sizes was also deceptively complicated. What was quickly pointed out was that hostas simply grow bigger in the North than in the South. And, while any standard would admittedly be somewhat arbitrary, everyone has his or her own hosta "poster child" that defines the benchmark for a certain size category.

The Hostapedia comes in handy at this point since Mark Zilis has measured more hosta clump sizes than anyone. Mark reports *average* clump dimensions in his book reflecting the collective database of measurements he has made over the years. For example, 'Pandora's Box' would be considered a mini by most and yet it averages 8 inches tall and 19 inches wide according to *The Hostapedia*. H. 'Sum and Substance' would be considered a giant by most and averages 31 inches tall and 70 inches wide according to *The Hostapedia*.

Discussions also included whether to base the standard on clump height or width, and how many size categories to include. And of course the breakpoints between size categories received plenty of debate.

The final consensus was to keep it simple, but also address "head on" the simple fact that hostas do indeed grow larger in the North than in the South. It also seemed like a "teachable moment." As growers, most of us market to customers in *both* the North and the South. A size standard that addresses these regional differences would help us educate and manage our customers' expectations.

As a result, the committee developed a standard that was subjected to a peer review by the entire AHGA membership resulting in a few final tweaks. The final standard is not perfect, but it is simple and it seems to address the needs of the overwhelming majority of our hosta customers as well as most gardeners in general. While this standard is based on clump height, clump width is also addressed.

AHGA HOSTA CLUMP SIZE STANDARD

Hosta Clump Height

Mini	North	South
с. II		
Small	9"–14"	8"-11"
Medium	15"–22"	12"–18"
Large	23"–29"	19"–24"
Giant	30" and above	25" and above

Notes

- The size ranges reflect the fact that any specific hosta cultivar will generally grow a few inches taller in Northern climates as compared to Southern climates. The larger the hosta, the greater the spread between heights in the North and South.
- Sizes are based on average mature clump heights (generally 5+ years).
- Mature hosta width is generally about 2 to 2.5 times the mature height.
- Width-to-height ratios can vary significantly with upright hostas.

If you live in Minneapolis you intuitively know you live in the North. Likewise if you live in Atlanta, you know you live in the South. But the obvious question arises: "What defines North and South?" Bob Solberg came to the rescue with a simple definition (see map below) that I have heard him use during some of his presentations:

I tend to divide the country by the Interstate System. It works pretty well. Above I-80 is the North—the best hosta growing area. Below I-40 is the South. Along I-70 is the Middle Zone. This is based on temperature but mostly length of growing season. In this case height is related to light intensity so latitude works fairly well.

The AHGA did attempt to extend the North/ South definition beyond North America. Global traveler Mike Shadrack, for example, pointed out that hostas in England do not grow as big as in the northern U.S. But when you factor in oceans, coastal effects, mountain ranges, etc, a simple definition for Europe has proven elusive to date.

Purists may have some issues with the AHGA clump size definition. Such is the case when you attempt to generalize for the sake of simplicity. As Bob Olson reminded me, "Criteria are made by man and the plants are made by God." This man-made system is not perfect, but is perfectly simple and should serve its purpose.

Rob Mortko is known to Journal readers for his "Hot Hosta" column. Rob serves the AHS as Vice President, Genus Hosta. He is the current AHGA Executive Secretary.

What's in a Hosta Name? Part LVI

H. 'Jabulani' (M. Zilis - 2010) *H.* 'Vuvuzela' (M. Zilis - 2010) H. 'Uju' (M. Zilis - 2011)

by Warren I. Pollock Glen Mills, Pennsylvania Recluse' (C. Purtyman - 1989), which has yellow leaves. Foliage of 'Jabulani' is variegated, golden yellow with green

In 2010 Mark Zilis of Q&Z Nursery in Rochelle, Illinois, registered Hosta 'Jabulani' and 'Vuvuzela'. In 2011 he registered 'Uju'. These cultivar names are Zulu words. "What's with Zulu names for hostas?" I asked Mark.

"I started using Zulu names for a few hostas after the 2010 [soccer] World Cup," he said. "Jabulani, which means 'rejoice,' was the name of the ball and Vuvuzela was the name of the horn blown by fans during the World Cup.

H. 'Vuvuzela' is a sport of 'Kaleidochrome' (green-margined), and I wanted to use a Zulu name for the reversed sport of it (yellowmargined). So I chose 'Uju', which has a nice melodious sound to it. Uju means 'honey.'"

Uju is a palindrome, a word that reads the same forward and back-

ward. Mark's first choice was another Zulu word with several u vowels in it, but there's some controversy over its English meaning.

Vuvuzela is a plastic horn, about two feet long, which produces a loud ear-splitting, monotone note. It has become a symbol of South African football (in America called soccer), used by spectators with considerable embellishment throughout matches. Vuvuzela became world famous at the 2010 World Cup hosted by South Africa when the continuous deafening noise drowned out commentators' voices. It was also thought to affect some players' performances. Spain won the highly esteemed Cup, beating the Netherlands in extra time.

I asked Mark if he's a soccer enthusiast. "Yes. My family has been involved with soccer for over 20 years. All four of my children played soccer from kindergarten through high school, and I coached soccer for 13 years, including four as our high school head coach. Needless to say, we watched the World Cup tournament on TV."

H. 'Jabulani' is a sport of 'Rich Uncle' (A. Malloy - 2002), a greenish-yellow-leaved sport of 'Abiqua

margins, measuring about 9 inches long by 7 inches wide. Center coloring is chartreuse in spring.

Both 'Vuvuzela' and 'Uju' are sports found in tissue-culture propagation of 'Kaleidochrome'. Mark

> obtained 'Kaleidochrome' in Japan as "Iwa Seedling" (H. longipes); no originator or other information was supplied. The original plant was a single division, fairly small and unusually streaked and mottled, yet in a stable configuration. Mark describes the foliage as green with large sectors of white and golden yellow. Leaves of a three-year-old plant are 5 inches long and 3 inches wide. Mound height is 10 inches with a diameter of 22 inches.

> H. 'Vuvuzela' is a stable, goldenyellow-centered, green-margined sport. H. 'Uju' is a stable, darkgreen-centered, yellow-margined

sport. These hostas are further examples of streaked hostas stabilizing to margined-leaved variegations. Streaked hostas often also settle out to solid-colored leaves.

The name Zulu has an interesting origin. Originally it was the name of one man. His descendants made up the Zulu clan or tribe, now a nation.

My initial, considerably skewed introduction to the Zulus was the historical movie Zulu starring a young Michael Caine in his first leading role. It depicted a battle between the British army and the Zulus in 1879 during the Anglo-Zulu War. The movie was critically acclaimed and a box-office success.

Zulu is the most widely spoken indigenous language in South Africa with about 10 million speakers. Over half the South African population understands it.

KwaZulu-Natal is the home of the Zulu nation. It is one of the nine provinces of the Republic of South Africa. Durban, on the Indian Ocean, is the largest city, the third largest in South Africa. Natal means "Christmas" in Portuguese; it was named by Vasco de Gama in the 15th century.

H. 'Jabulani'.

H. 'Uju'.

H. 'Vuvuzela'.

Additionally, there is a hosta registered with *Zulu* in its name: 'Foxfire Zulu'. It is a green sport of 'Cascades', a white-centered, green-margined seedling by the late William and Eleanor Lachman, registered in 1993. Steven Schulte of Foxfire Gardens in Marshfield, Wisconsin, registered it in 2003. His nursery is now shuttered.

Zulu is the letter z in the international radiotelephony spelling alphabet, in which a is Alpha, b is Bravo, c is Charlie, etc. Zulu in the cultivar's name, I'm told, represents z, the last letter in the Roman alphabet. It's intended to mean this hosta was Steve Schulte's last registration. Nevertheless six years later Schulte registered two more hostas prefixed with Foxfire. And in 2009, Bill Silvers of Silvers-Elbert Nursery in Georgia registered four other hostas with Schulte as originator, namer and introducer. Bill acquired them from Foxfire Gardens.

A piece of 'Foxfire Zulu' was donated to the 2012 AHS Online Auction and sold for \$72.00. I was surprised the bidding even went that high because, as one prominent collector commented: "It's just another plain green hosta, but shows how a particular odd cultivar name attracts buyers."

æ

H. 'Fragrant Queen'^{PP19,508} is Tetraploid Sport of 'Fragrant Bouquet' Introduced by Jan van den Top. Is it Different from Hans Hansen's 'Sweet Innocence', also a Tetraploid Sport of 'Fragrant Bouquet'?

Recently Tony Avent added *H*. 'Fragrant Queen', a 2008 registration of Jan van den Top in the Netherlands, to his Plant Delights Nursery's offerings. Impressed with the hosta's somewhat circuitous creation, Tony gave considerable attention to explaining it—well, trying to explain it—in the catalog's description. I agree with him: this sport's evolution indeed is skewed. So you'll need to pay close attention to follow it.

Tony wrote:

Hosta 'Fragrant Queen' is the best of the wide creamy-edged sports from *Hosta* 'Fragrant Bouquet' (an improved *Hosta* 'Sweet Innocence'), although it actually sported from *Hosta* 'Fragrant King', which is a sport of *Hosta* 'Fried Green Tomatoes, which is a sport of *Hosta* 'Guacamole', which is a sport of *Hosta* 'Fragrant Bouquet'.

To which Tony quipped, "Sounds incestuous, don't you think?"

It seems to me that van den Top wanted to develop a tetraploid sport of 'Fragrant Bouquet', registered by Paul Aden in 1982. Van den Top, I'm told, especially likes hostas with fragrant flowers. So why didn't he

H. 'Sweet Innocence'.

H. 'Fragrant Queen'.

chemically-induce tetraploidy of 'Fragrant Bouquet', instead of inducing tetraploidy of 'Fragrant King', a several-generations-later sport of 'Fragrant Bouquet'?

My answer is this: There already was a chemically induced tetraploid sport of 'Fragrant Bouquet' in the trade, namely *H*. 'Sweet Innocence' (H. Hansen - NR). By using 'Fragrant King', perhaps a tetraploid with somewhat different leaf characteristic might result.

Furthermore, 'Fragrant King' *is* Jan van den Top's own introduction. It's *his* patented hosta; a U.S. patent was granted in 2008. And hosta introducers like to breed with their own introductions.

I suspect van den Top was having 'Fragrant King' tissue-culture propagated by a lab in the Netherlands. So he had the lab intentionally induce chromosome doubling with a chemical, probably oryzalin, the preemergent herbicide in Preen[®]. Van den Top named the tetraploid sport 'Fragrant Queen', giving him a proprietary regal pair—king and queen hostas that are both fragrant.

Interestingly, Tony mentions 'Sweet Innocence' in his description of 'Fragrant Queen', yet this hosta is not in the parentage of 'Fragrant Queen'. This, I suspect, probably is because both 'Sweet Innocence' and 'Fragrant' Queen' are tetraploid sports of 'Fragrant Bouquet'. Tony threw in 'Sweet Innocence' in his description because logically the comparison would seem to be between 'Fragrant Queen' and 'Sweet Innocence', not 'Fragrant Queen' and 'Fragrant Bouquet'.

That said, I'll start with 'Sweet Innocence', move on to 'Fragrant Bouquet' and 'Fragrant King', and finally to 'Fragrant Queen'.

HANS HANSEN

You won't find 'Sweet Innocence' in the Hosta Registry because it's not registered. A sport of 'Fragrant Bouquet', 'Sweet Innocence' was reported to be a tetraploid, whether partially (L1-L2-L3 = 4-2-2) or fully (4-4-4) tetraploid has not been determined. *H.* 'Sweet Innocence' resulted from Hans Hansen's work, when he was at Shady Oaks Nursery in Waseca, Minnesota, intentionally inducing polyploidy of 'Fragrant Bouquet' with oryzalin. I asked Hans for the year, and he said 1996, maybe 1997.

Hans Hansen now is employed at Walters Gardens, Inc. in Zeeland, Michigan, so I doubt he has much incentive to register 'Sweet Innocence'. Shady Oaks Nursery, a large tissue-culture lab selling liners, should register it since this cultivar continues to be popular. *Hosta Finder* 2012 (Sudbury, Massachusetts: Steven H. Greene) lists 24 retail nurseries offering 'Sweet Innocence', with prices from \$12.00 to \$20.00.

Plant Delights Nursery offered 'Sweet Innocence' in 2005 stating it differs from 'Fragrant Bouquet' in having much wider margins that change from creamy yellow to white during the growing season. Shady Oaks Nursery describes 'Sweet Innocence' as:

having heart-shaped apple-green leaves with a wider leaf margin than 'Fragrant Bouquet'. On mature plants, leaves are dome-shaped rather than flat like 'Fragrant Bouquet'. The large fragrant, near-white flowers open in mid to late summer.

H. 'Fragrant Bouquet' forms a handsome large clump. Leaves are apple green (in some locations even chartreuse) with a creamy white, somewhat narrow margin. The American Hosta Growers Association

(AHGA) chose it as its Hosta of the Year in 1998. The large, near-white fragrant flowers are the reason for the cultivar's name.

The registration description has 'Fragrant Bouquet' as a light-green streaked hosta resulting from *H*. 'Fascination' \times *H*. 'Summer Fragrance'. *This description is incorrect*. Leaves are not streaked. Also, *H. plantaginea* definitely is in the parentage.

Likely 'Fragrant Bouquet' is from a streaked cultivar. But the streaking stabilized to marginal variegation. Paul Aden introduced the margined form as 'Fragrant Bouquet' in the trade, never altering the registration.

There are two streaked versions of 'Fragrant Bouquet' in the trade. Mark Zilis's Q&Z Nursery found one in tissue culturing 'Fragrant Bouquet'. It is 'Color Parade' and was registered in 2003.

Tom Schmid's Schmid Nursery in Jackson, Michigan, found a streaked sport of 'Fragrant Bouquet' in 2007 and offered it as 'Fragrant Bouquet Streaked'. It is not registered.

Now onto 'Fragrant King': Its lineage goes back to the hugely popular 'Guacamole' (R. Solberg - 1994), a sport of 'Fragrant Bouquet'. *H*. 'Guacamole' has yellow-centered foliage with a green margin. It was selected the AHGA Hosta of the Year in 2002. *H*. 'Fried Green Tomatoes' (R. Solberg - 1995) is a sport of 'Guacamole' with plain, medium-green foliage. And *H*. 'Fragrant King' (J. van den Top -NR), introduced in 2003, is a sport of 'Fried Green Tomatoes', having dark-green leaves with wide creamy-white borders.

Finally 'Fragrant Queen' (J. van den Top - 2008): It is a sport of 'Fragrant King' with leaves having thicker substance and wider cream-white margins.

Lineages of 'Sweet Innocence' and 'Fragrant Queen' can be written as:

> (diploid) 'Fragrant Bouquet' ↓ (tetraploid) 'Sweet Innocence'

and

(diploid) 'Fragrant Bouquet' ↓ (diploid) 'Guacamole' ↓ (diploid) 'Fried Green Tomatoes' ↓ (diploid) 'Fragrant King'

(uipioiu) magranii King

(tetraploid) 'Fragrant Queen'.

I asked Jan van den Top what the difference is between 'Fragrant Queen' and 'Sweet Innocence'. "The difference is large," he said. "The center of 'Fragrant Queen' is much darker green. *H*. 'Fragrant Queen' loves to grow the whole day in the sun." He added that he tried it [in Barneveld, the Netherlands] in a sunny year a couple of years ago and it did fine. As expected, the dark-green parts changed to a softer green.

I also asked Tony Avent the same question. "*H*. 'Fragrant Queen'," he said, "seems much more vigorous. So far, 'Sweet Innocence' hasn't shown the vigor we had hoped for. Though margins often look similar, it is possible that 'Sweet Innocence' has a wider margin, which could account for less vigor."

Hugo Philips in Belgium was asked, too. He replied: "I talked with Danny Van Eechaute [who also lives in Belgium] as I don't grow 'Sweet Innocence'. Danny says the difference is clear. *H*. 'Sweet Innocence' coming from 'Fragrant Bouquet' has inherited the apple green from its parent. In its group, 'Fragrant Bouquet' is one of the worst growers probably because of its light green color. *H*. 'Fragrant Queen' going back to 'Fried Green Tomatoes' has the darker green and hence is the better grower and grows larger."

Danny further added: "*H*. 'Fragrant Queen' has thicker leaves and a wider creamy-white border than 'Fragrant King' and is a super 'doer.' We are very impressed with the appearance and performance of this plant. It holds up well all season and still looks great in the summer when it is topped with pale lavender fragrant flowers." (Note: Often hosta flowers that are white in the States are pale lavender in Europe.)

æ

H. 'Mandelbrot Set', Frank Nyikos's Weird Math-Based Cultivar Name

I've been fascinated with *Hosta* cultivar names for some three decades. Over the years I've noted thousands of names, selecting a several dozens with interesting stories for "What's in a Hosta Name?" columns. Only a few, I would generalize, have "weird" names. Well, now I've found one that certainly must be the weirdest.

It's *H.* 'Mandelbrot Set', registered by Frank Nyikos of Walnut Grove Nursery in Unionville, Indiana, in 2011.

When I first examined the 2011 registration list and saw *Mandelbrot* in a cultivar's name, something clicked in my gray cells. Mandelbrot is not a common surname; somewhere I had seen it before. Several
pondering weeks later I recalled where.

In 1987 James Gleick wrote a hugely popular book intended for the non-scientist: *Chaos: Making a New Science.* Translated into 25 languages, it introduced the principles and early development of chaos theory to the public. I was one of the millions who read it with fascination.

Chaos theory deals with the seemingly random patterns that characterize many natural phenomena. Just a small change in the initial conditions can drastically change the long-term behavior of a system. It may best be known as the butterfly effect: Does the flap of a butterfly's wings in China or Brazil set off a tornado in Texas?

Gleick did a masterful job in explaining to the general public the chaotic and dynamic non-linear systems of chaos theory. An important aspect of this book is his focus on both the scientists studying chaos and on the theory itself. One was Benoît B. Mandelbrot, along with the Mandelbrot set.

Dr. Mandelbrot, born in 1924, was a French-American mathematician who developed the field of fractal geometry and applied it to physics, biology, finance and many other subjects. He spent most of his career at IBM's prestigious Watson Research Center, later becoming a professor of mathematical sciences at Yale University. He died in October 2010 at 85.

Dr. Mandelbrot coined the term *fractal* to refer to a new class of mathematical shapes that display "self-similarity," uneven contours that mimic the irregularities found in nature. Using fractal geometry, he argued, the complex outlines of clouds and coastlines, once considered not measurable, could now "be approached in rigorous and vigorous quantitative fashion."

He also emphasized the use of fractals as realistic and useful models of many "rough" phenomena in the real world. Natural fractals include the shapes of mountains, coastlines and river basins; the structures of plants, blood vessels and lungs; the clustering of galaxies; and Brownian motion.

The Mandelbrot set, according to Wikipedia, is a particular mathematical set of points whose boundary is a distinctive and easily recognizable two-dimensional fractal shape.

Curious about Frank Nyikos's connection to Mandelbrot's fractals, I e-mailed him inquiring. "I do part-time teaching of elementary level algebra at a community college," he replied. "After receiving a bachelor's degree, I began my higher level education as an honors math major. Between my undergraduate work and then as a grad student I have over 50 hours in



the discipline, but I never earned an advanced degree.

"My own experience began like your interest with Gleick's book. Also, in 1989 there was a PBS *NOVA* television program, 'The Strange New Science of Chaos,' that got a lot of public attention.

"My first graduate symposium at Indiana University was about Dr. Mandelbrot's work. There was considerable skepticism but a general begrudging acknowledgement of his ideas. Early on some mathematicians even discounted the field as a viable field of study."

Frank went on: "I'll give you an example of the work I find extremely interesting: studies to determine the carbon density of forests. They found not only how a tree grows and produces branches is a fractal process, but how trees grow into a forest and form the canopy is also fractal. So these scientists are able to get a very accurate estimate of the amount of carbon contained in a forest, in particular a tropical forest."

Why the name 'Mandelbrot Set' for a hosta? I asked him.

"The name fit the hosta," he said. "As the leaf is emerging in the spring the edge is finely serrated. So with the overlapping leaves and the serration, a pattern emerged that reminded me of a graph from Mandelbrot's studies. By this I mean the curve of the leaf along with several leaves overlapping gave me the sense of some graceful curves from a Mandelbrot iteration set."

Leaves of *Hosta* 'Mandelbrot Set' measure 12 inches long and 8 inches wide. They are light to medium green that deepens as the season progresses. They have heavily rippled margins that Frank describes as "rapidly emerging, rapidly undulating edges with pronounced serrations." A 10-year-old clump can measure 30 inches high and 36 inches across. *H*. 'Mandelbrot Set' is a seedling from (*H.* 'Katrina Joe' × *H.* 'Galaxy') × *H.* 'Azure Snow'.

PBS aired a *NOVA* program titled "Fractals: Hunting the Hidden Dimension." Available on DVD, it has been very popular with parents viewing it with children, ages 7 to 12, who find the concepts captivating.

On October 30, 2012, Pantheon Books published Dr. Mandelbrot's autobiography, *The Fractionalist: Memoir of a Scientific Maverick*.

æ

H. 'Bill Meyer' (F. Freeman - 2011)

Who is the Bill Meyer being honored with the cultivar name *Hosta* 'Bill Meyer' that F. Freeman registered last year?

Well, it isn't the William (Bill) Meyer of Woodbury, Connecticut, formerly of Willingboro, New Jersey. He and partner Carol Brasher established, and are primary administrators of, AHS Region One's highly regarded annual First Look event. Its 13th year is 2013. Bill and Carol are former team members of the *Online Hosta Journal* launched in 2010. You'll find this AHS publication on the AHS Web site (www.hosta.org); both current and previous issues are posted.

Woodbury, Connecticut's Bill Meyer is the originator of the popular *H*. 'Blue Ivory', registered in 2009, and *H*. 'Wheee!'^{PPAF}, unregistered at this writing. In the Hosta Registry this Bill Meyer is listed as "W. Meyer."

Meyer is not an uncommon surname and William, of course, is a common given name. Therefore, many people would be expected to have the name William (Bill) Meyer.

Franc Freeman lives in Davenport, Iowa, an active hosta area. He has a nursery, Franc's Hostas.



AHS Conventions MILWAUKEE, WISCONSIN June 13–15, 2013 www.2013ahsconvention.com

> CEDAR RAPIDS, IOWA June 11–14, 2014

I'm told Franc Freeman's Bill Meyer is his fatherin-law, whose name happens also to be William Meyer.

The International Code of Nomenclature for Cultivated Plants states:

A cultivar name whose epithet is or contains the name of a living person should not be published unless the person has given permission for their name to be used.

Franc Freeman did not need the permission of Connecticut's Bill Meyer because *H*. 'Bill Meyer' was named for *his* father-in-law. *H*. 'Bill Meyer' has bluegreen leaves with a rippled margin. They measure about 10 inches long and 7 inches wide. Mound is upright, about 22 inches high. Parentage is unknown.

This is another example of first come, first served concerning registering cultivar names. There was no foreseeable reason for Bill Meyer of Connecticut to have reserved the cultivar name *H*. 'Bill Meyer' for himself, unless of course he wanted to name a hosta for himself in the future—which he didn't.

Rarely do introducers name hostas for themselves. On the other hand, hostas are sometimes named for hosta personalities by other people. For example, the late Ralph "Herb" Benedict named a hosta for the current editor of *The Hosta Journal:* 'Bob Olson' (1995). Commonly, introducers name hostas for family members. Paul Aden named a hosta for his wife, 'Estelle Aden' (1978), and his daughters, 'Amy Aden' (1980) and 'Vicki Aden' (1980). Another example: Mark Zilis named 'Katie Q' (2003) for his wife, Katie Quiller-Zilis.

Over the years I was asked four times to have my name as a cultivar name: Paul Aden once, Herb Benedict once and Mildred Seaver twice. I kindly thanked them and politely said "no." Of course, the hostas were given other names and introduced.

I need also mention there is another Meyer who is registering hostas. She is Roxanne Meyer of Oxford Center, Iowa. In 2011 Naylor Creek Nursery in Washington introduced her 'Prom Queen' (2006) having leaves with three distinct colors and bluegreen border. To differentiate Roxanne Meyer from William (Bill) Meyer of Woodbury, Connecticut, she should be listed as R. Meyer, not just Meyer.

And in 2011, Terri Meyer and Jeff Miller of Land of the Giants Hosta Farm in Milton, Wisconsin, have their names as Originator and Nominant on two registered seedlings of 'Blue Mouse Ears': 'Giantland Sunny Mouse Ears' and 'Giantland Mouse Cheese'. Terri Meyer should be identified as T. Meyer, not simply Meyer.

Further, Billmyer is a surname, but currently no one with this family name has registered a hosta.



The American Hosta Society's Hosta Adventure: A Grower's Guide

awaits your order...

COMMENTS FROM REVIEWS: "I couldn't put it down." "Great!" "Everything you need to know." "Stunning!" "It blew me away." "Absolutely beautiful. AHS must be proud."

Extensively revised by many of the hosta world's leading experts, this second edition of the classic 32-page publication is packed with up-to-date information and dozens of dazzling new pictures. It now includes tips on landscaping and how to grow minis.

PLACE YOUR ORDER WITH:

Paula A. Lehtola Hosta Adventure P.O. Box 712 Bridgewater MA 02324

The new Hosta Adventure is \$4.00 + \$2.50 postage for AHS members or \$5.50 + \$2.50 postage for nonmembers. For local societies and nurseries, the best price per copy is in bulk: 6-99 books, \$4.00 each; 100-499 books, \$2.50 each; 500-999 books, \$2.25 each; 1000+ books, \$2.00 each; + \$15.00 postage on bulk orders. Make checks to "American Hosta Society" and include a shipping address.

H. 'Doubled Up' is Correct Name for Bob Solberg's Tetraploid Form of H. plantaginea. In 2011 Registrations It's Incorrectly Listed as 'Double Up'.

It's rare, but it occurs on occasion: doubling of chromosomes in tissue-culture (TC) propagation, apparently with no intentional alteration in the TC lab's recipe. It's believed caused by the cytokinin hormone that generates shoots, usually benzylaminopurine (BAP). Likely the probability of chromosome doubling occurring differs with different hostas and also with various subtle factors in the tissue-culturing procedure.

I have no idea how many *H. plantaginea* plants have been TCed by labs over the years. Certainly it's in the tens of thousands. I asked a well-known hosta specialty nurseryman and, after a bit of thought, he thought it might be a hundred thousand.

Several years ago Bob Solberg of Green Hill Farm, now in Franklinton, North Carolina, discovered an odd-appearing plantlet in a TCed batch of *H. plantaginea*, had it TC propagated and introduced it.

A sample was included in the flow cytometry studies that B.J.M. Zonneveld and I recently carried out and published in a scientific paper in *Plant Biology* journal last year. *H. plantaginea* is diploid (L1-L2-L3 = 2-2-2), but Bob's special sport measured fully tetraploid (4-4-4).

In 2011 Bob submitted the cultivar name *H*. 'Doubled Up' for registration, but somehow it was thought to be 'Double Up'. Apparently 'Double Up' for this tetraploid seemed a more apt name than 'Doubled Up'. As a result, 'Double Up' incorrectly appears in the 2011 Registrations issue of *The Hosta Journal*. Nonetheless, Bob extensively markets it with the correct name, 'Doubled Up'. The error is corrected in the 2012 Registrations issue.

So it is 'Doubled Up', which is a baseball term. This is what Wikipedia says:

When a runner becomes the second out in a double play, he may be said to have been doubled up. This could be a batter who has hit into a double play or a runner who is caught off base when a fielder catches a ball and throws behind the runner to a fielder who touches the base to complete a double play.

I asked Bob Solberg about the unusual cultivar name. "I do not know why I pick one name over another," he said. "*H.* 'Doubled Up' just sounded right *to me*." "How did you find 'Doubled Up'," I further queried. "The trick," Bob replied, "is to be observant. I found the new plant in the nursery in a group of several hundred. I am sure 'Doubled Up' is not the only tetraploid *H. plantaginea* in the world."

The registration cites light-green leaves that are shiny on top and underneath. Foliage of a threeyear-old plant is 8 inches long and 6 inches wide, somewhat smaller than species *H. plantaginea*. Leaves also have more substance. Mound height is 20 inches and width, 24 inches. *H.* 'Doubled Up' is smaller and more compact than the species.

Also, flower scapes are shorter than the species. Most significant is flowers are pure white like the species. They also are very fragrant like the species, but the fragrance is a bit different.

Bob Solberg reports that flowers of 'Doubled Up' are wider but a bit shorter in length than flowers of *H. plantaginea:*

> tetraploid flower width = $4\frac{1}{2}$ inches diploid flower width = 4 inches tetraploid flower length = $5\frac{1}{4}$ inches diploid flower length = $5\frac{1}{2}$ inches

However, keep in mind, Bob emphasizes, that flower size is somewhat different depending on flower position on the scape: lower flowers are always larger than upper flowers. Flower width depends on ambient temperature, too.

I suspect that tetraploid 'Doubled Up' requires more time to develop fully than diploid *H. plantaginea*.

Furthermore, like the species no doubt, 'Doubled Up' needs plenty of sun, heat and water to bloom satisfactorily. Don't skimp on the amount of sunlight it gets. And keep the soil moist. You might want to grow it in containers and keep the pots sitting in saucers with water. Also, expect 'Doubled Up' to do better in southern geographic regions: *H. plantaginea* is native to China and likes hot summers.

I mentioned 'Doubled Up' to Tim Saville, who holds the Plant Heritage (National British) Collection of Tetraploid Hostas. He lives in Wrexham, Wales, near Chester, England. Tim didn't think it was warm enough there for 'Doubled Up' to bloom. In the U.K., usually *H. plantaginea* and its sports need to be growing in a glasshouse to flower satisfactorily, except in the warmest southern regions.

What might be anticipated in the future? How about *margined sports* of 'Doubled Up'? There is a fair possibility that a margined sport will occur in TCing 'Doubled Up'. And being tetraploid, the margin could be fairly wide. So the potential exists



Comparative flower sizes of diploid *H. plantaginea* (*left*) and tetraploid 'Doubled Up' (*right*).

H. 'Doubled Up' in bloom.

for a white, yellowish-white or chartreuse, widemargined tetraploid *H. plantaginea* with large pure white, fragrant flowers. Exciting!

The possibility also exists for a white-, yellowishwhite- or chartreuse-centered sport occurring in TCing 'Doubled Up', but it might not be as strong a grower as a margined sport.

How about hybrids of 'Doubled Up'? Being fully

tetraploid, 'Doubled Up' should pass on its tetraploidy to seedlings. "In the past I set selfed pods on 'Doubled Up'," Bob told me, "but none of the seed was viable. However this year [2012] I do have a few large selfed pods and hope these seeds will germinate. The pods look normal."

Tetraploid *H*. plantaginea in the Wild?

Finding a tetraploid *H. plantaginea* in a tissuecultured batch of species *H. plantaginea* (see above item) raises the interesting question: Does tetraploid *H. plantaginea* occur in the wild? And, do tetraploids of other diploid species also occur in the wild?

Likely they do as rare chance occurrences, *but do not survive*.

Although these tetraploid species probably would grow in the wild, diploid species are the likely natural selection because of faster and perhaps stronger growth. Bob Solberg suggests that a tetraploid plant in the wild might have reproductive problems and not be able to produce offspring. The very large pollen may not be fertile, for example.

es.

Incorrect Name *H.* 'Faux Chihuly' was Registered in 2011: It Should Have Been *H.* 'Forgery' (F. Nyikos - 2011). You'll Find Correction in 2012 Hosta Registry.

Frank Nyikos, Unionville, Indiana, wanted to register the cultivar name *H*. 'Faux Chihuly' in 2011. Difficulties occurred, so he changed the name to 'Forgery'. Still, 'Faux Chihuly' was registered. That's the name in the 2011 Registrations issue of *The Hosta Journal*. The error is corrected in the 2012 Registrations issue as well as online in the AHS Hosta Registry.

"I had originally come up with the name 'Faux Chihuly'," Frank Nyikos wrote me, "because the leaves on this hosta would twist around in a small breeze. They often held these distorted positions even after the wind became still. The contrast between the deep-blue surface and the powdery blue on the backs of these contorted leaves reminded me of the flowing twisted and contorted shapes that Dale Chihuly glass art is known for. In my mind the hosta was trying to mimic the glass art."

He then explained: "When I presented the name 'Faux Chihuly' to Chihuly's staff [in the Puget Sound area of Washington], they objected to the *Faux* part of the name. Then they wanted me to get a plant patent so they could control the distribution of the hosta. It is a nice hosta but certainly not a great hosta that would need a patent. Plus, I really liked the name I had come up with; I wanted to keep *Faux* in the name.

"I could not accept Chihuly's staff's concerns and since they did not approve of my name, I told them I would change the name. I chose *H.* 'Forgery'." Frank added, "Dale Chihuly himself has no idea I was planning to use this name because his assistants prevented the communication."

Leaves of 'Forgery' are leathery blue with a floppy habit, 9 inches long and 5½ inches wide, having rippled edges. Mound height is 15 inches and width 24 inches. *H.* 'Forgery' is a seedling of *H.* 'Salute' × *H. hypoleuca*.

Dale Chihuly is a world-famous artist known for his freeblown glass works. He has created many architectural pieces for exhibitions at botanical gardens, museums and other prominent sites. "Chihuly Garden and Glass," an exhibition in a large glass enclosure at Seattle Center in Washington, opened in spring 2012. CBS's *The Early Show* 2011 TV presentation on Dale Chihuly and the creation of his art pieces at the time of this writing can be viewed at http://www.chihuly.com/cbs-early-show.aspx.

æ

More on *H*. 'Surprised by Joy'

Several years ago I wrote an item on 'Surprised by Joy', a popular little hosta registered in 1998. Recently I received this e-mail from Judith David of Racine, Wisconsin:

I suspect many hosta collectors purchase plants solely because they are fascinated by an unusual name. I purchased Alex Malloy's H. 'Surprised by Joy' while reading author C. S. Lewis's autobiography by the same name. He tells how he always wanted joy. The problem was he was seeking joy that only made him happy for a moment.

In the end, Lewis explains that true joy is a matter of loving in a way that one's own joy matters not a whit, but the joy of making another person happy is all. Lewis describes this as wandering in a forest and suddenly coming upon a signpost that points you home. It would be absurd to be so happy with this sign that you hugged it and stayed there.

Every joy in life points beyond itself to that great joy of loving, our true home, where our joy is in loving others for their own sake.

When I walk past my 'Surprised by Joy', I think of Lewis's book and his explanation of joy."

æ

More from readers, please

Your comments, anecdotes, quips and whatever about hostas and hosta names are always welcome. My e-mail address is giboshiwip@aol.com.

www.hosta.org

ne American Hosta Society



The American Hosta Society is an international not-for-profit organization founded in 1968 to foster and promote interest in the genus Hosta, the introduction of hostas into cultivation, the use of proper nomenclature and the development of new and improved varieties, and to sponsor the International Cultivar Registration Authority for the Genus Hosta. Services provided to the members include The Hosta Journal issued three times annually (two print editions and one online); an annual convention with garden tours, a scientific forum and a hosta show; and a Web site. In addition, there are regional group activities throughout the year.

2 yr.

3 yr.

l ife

JOIN THE AMERICAN HOSTA SOCIETY

Membership type

CONTACT REGARDING MEMBERSHIP:

Sandie Markland **AHS Membership Secretary** P.O. Box 7539 Kill Devil Hills NC 27948

AHSMembershipSecretary@Charter.net

MOVING? Send us your change of address.

AHS Memberships make great gifts!

USA Individual \$900 \$30 \$57 \$80 Family \$34 \$62 \$90 Canada Individual \$39 \$74 \$107 \$1,170 \$79 Family \$43 \$117 Individual \$51 \$99 \$142 \$1,530 Europe \$55 \$104 \$152 Family Pacific Individual \$59 \$114 \$165 \$1,770 Rim* \$62 \$120 \$175 Family *Japan, Australia, New Zealand

1 yr.

CONTRIBUTE TO *The Hosta Journal*

INSTRUCTIONS FOR AUTHORS:

Please submit your manuscript via email as an attachment. If you do not have e-mail, you may mail articles on disk (indicate the software and version used); a written manuscript may be sent for reference but is not necessary. Please feel free to call or e-mail the Editor.

SEND MANUSCRIPTS TO: **Bob Olson**

2840 Glenhurst St. Louis Park MN 55416 (952) 920-8327 thehostajournal@hotmail.com

INFORMATION FOR PHOTOGRAPHERS:

We need high-quality photographs for The Hosta Journal, particularly ones showing new and/or interesting cultivars. Prints, slides and high-resolution digital photographs are welcome. To submit digital images, please contact the Photo Editor for specifications. Photos that illustrate a proposed article should be submitted with the article to the Editor (Bob Olson). All other photos should go to Andy Marlow. Photographs will be returned.

SEND PHOTOGRAPHS TO: Andv Marlow 10700 Minnetonka Boulevard

Hopkins MN 55305-4404 (952) 933-5759 ajmarlow@comcast.net

ADVERTISE IN The Hosta Journal

INFORMATION FOR ADVERTISERS:

Ad artwork should be mailed with payment to the Ad manager. Changes to ad artwork may be handled and will be assessed an additional fee. Ads created electronically may be submitted as such with accompanying printout; please contact the Ad Manager for specifications.

CONTACT REGARDING ADVERTISING:

Marlys Anderson 104 Bluegill Ct Pella IA 50219 (641) 780-6487

marlys1950@hotmail.com

4-COLOR ADS: Full page 1/2 page 1/4 page 1/6 page	\$840 \$510 \$260 \$175 \$135	WIDTH×HEIGHT 6½" x 9½" 6½" x 4½" 3½" x 4½" 3½" x 4½" 3½" x 2"
Fill page Full page 1/2 page 1/4 page 1/8 page	\$100 \$300 \$155 \$115 \$80	6½" × 9½" 6½" × 4½" 3½" × 4½" 3½" × 2"

Membership year is January 1 through December 31.

Make checks payable to The American Hosta Society. For international orders: payment in U.S. currency, check drawn on a U.S. bank or postal money order payable in U.S. currency.

COPIES OF The Hosta Journal

The Hosta Journal 1982-2011:

Partial sets available. Get 36 or more different Journals per set for \$75.00. Free shipping in the United States. All other countries please contact Barbara Schroeder at barbschro1@gmail.com for the shipping charge.

SEND ORDERS TO:

Barbara Schroeder 1819 Coventry Dr. Champaign IL 61822 barbschro1@gmail.com

COPIES OF The Hosta Adventure

The Hosta Adventure—A Grower's Guide: 1 copy (AHS members).....\$6.50 ppd 1 copy (non-members)\$8.00 ppd

BULK (prices for sending to	one address)
6-99 copies	\$4.00 ea
100-499 copies	\$2.50 ea
500-999 copies	\$2.25 ea
1000+ copies	\$2.00 ea
Add \$15 for postage on b	ulk orders in
the U.S.	

SEND ORDERS TO:

Paula A. Lehtola "Hosta Adventure" P.O. Box 712 Bridgewater MA 02324

Make checks payable to The American Hosta Society and include a shipping address.

For international orders, additional shipping charges apply. Orders payable in U.S. dollars.

The American Hosta Society Board of Directors

EXECUTIVE COMMITTEE

President Executive Vice President/Conventions Immediate Past President Treasurer	Doug Beilstein Cindy Tomashek Tom Micheletti Kim Larsen	419-526-2966 507-250-5311 847-540-8051 651-457-6208	dbeilsteindds@neo.rr.com prestonplants@aol.com tom@hostapatch.com kimlarsen356@comcast net	2011 1st Term 2011 1st Term
Membership Secretary	Sandie Markland	252-441-1947	AHSMembershipSecretary@Char	ter.net
Recording Secretary	Kathy Shadrack	716-941-6167	irisborer@aol.com	
Vice President Judaina/Exhibitions	Chuck Zdeb	770-593-0895	sczdeb@Bellsouth.net	2011 1st Term
Vice President Genus <i>Hosta</i>	Rob Mortko	913-829-0760	rob@hostaquv.com	2012 2nd Term
Vice President Member Services	Marv Ann Metz	217-352-1540	hevblondie@earthlink.net	2012 1st Term
Vice President Publications	Barbara Schroeder	217-359-2868	barbschro1@qmail.com	2012 1st Term
Vice President Awards and Honors	Michael Shadrack	716-941-6167	H8staman@aol.com	2011 1st Term
Editor - The Hosta Journal	Robert C. Olson	952-920-8327	thehostaiournal@hotmail.com	
Editor - Online Hosta Journal	Don Dean	763-421-2475	dedean@g.com	
Web Editor-in-Chief	Joshua Spece	319-327-0927	josh@inthecountrygardenandg	ifts.com
Strategic Planning	TBA		, ,, ,,	
CHAIRS				
Audit and Finance	TRΔ			
Bylaws and Standing Byles	Oscar Cross	417-672-2259	info@hillton-gardens.com	
Historian	W George Schmid	770-407-2257	hostahillwas@comcast.net	
Memorials Ways and Means	Harold McDonell	770-461-8882	HaroldMcDonell@aol.com	
Protocol Ways and Means				
Indring and Exhibitions				
	Claudia Walkar	770 442 2257	awalkar190@aal.aam	
Rosta Silows	Claudia Walker Pondoll Goodwin	770-442-3237		
	Indudu Burno		iwhurne?@ballcouth not	
Judges' Training	Juuy Durns TDA	404-030-1119	Jwburnsz@bensoutn.net	
Classification List	Iudy Purpo	101 626 1110	iwhurne?@ballcouth not	
	Juuy Buills	404-030-1115		
Genus <i>Hosta</i>		770 407 0057	h	
Nomenclature Co-chair	VV. George Schmid	//U-40/-225/	nostaniliwgs@comcast.net	
Nomenciature Co-chair	Vvarren I. Pollock	b1U-558-6886	gibosniwip@aoi.com	
Int I. Registrar, Genus Hosta	Kevin P. vvalek	/03-/98-5501	AHSRegistrar@aol.com	
	I DA Dah Salharr	010 200 0040	haatahah@amailaam	
Member Services		540.004.0044		
Club Liaison	Betty Davis	513-984-9841	hostas@tuse.net	
Display Gardens	IBA	040,000,0000		
Newsletter Coordinator	Mary A. Bardens	219-696-2832	bardensmary@sbcglobal.net	
Public Relations Coordinator	Jeff Miller	608-580-0190	mrhosta@charter.net	
Conventions				
Auction Chair and Clerking	TBA			
Online Auction	Don Dean	763-421-2475	dedean@q.com	
Vending	TBA			
Publications				
Advertising - The Hosta Journal	Marlys Anderson	641-780-6487	marlys1950@hotmail.com	
Sales - The Hosta Adventure	Paula A. Lehtola	508-279-0060	paulalehtola@comcast.net	
Sales - The Hosta Journal	Barbara Schroeder	217-359-2868	barbschro1@gmail.com	
Web site				
Web Site Photo Editor	Bick Schroeder	217-359-2868	rickschro1@amail.com	
Web Site Advertising	Marlys Anderson	641-780-6487	marlys1950@hotmail.com	
REGIONAL DIRECTORS				
1 Northeast Regional	Carol Brashear	203-266-4268	cbctplant@sbcglobal.net	
3 DIXIE KEGIONAL	Judy Feitman	205-699-9826	judyteitman@alitel.net	
4 Great Lakes Region	I BA	F00 0F0 4770		
5 Midwest Kegional	Sally Stewart	563-359-4752	Jstewart32/@mchsi.com	
b Northwest Regional	I BA		Charter @Dat	
/ East Canadian Kegion			unoster@kogers.com	
o vvest Canadian Region	I DA			

Index Hosta Photographs

Page . Cultivar	Author or Originator	Garden or Location
Cover H. 'White Line Fever'	R. Goodenough - 2013	Cochato Nursery
IFC H. 'Designer Genes'	A. Wrede - 2005	Sandie Markland
8 <i>H.</i> 'Gold Standard'	P. Banyai - 1976	Pauline Banyai
9 <i>H.</i> 'Something Different'	P. Banyai - 1990	John Baker and June Colley
10 <i>H.</i> 'El Niño'	P.Th. Warmerdam - 2003	Eve and Per Thyrum
20 <i>H.</i> 'Kinbotan'	Japan - 2002	
H. venusta	F. Maekawa (1935)	Mason Hollow Nursery
21 <i>H.</i> 'Patricia'	G. Heemskerk - 2005	John Baker and June Colley
22H. pulchella	N. Fujita (1976)	Mary Maynard
22 <i>H.</i> 'One Man's Treasure'	R. Benedict - 1999	Roger and Kak Koopmans
23 <i>H.</i> 'Crystal Moon'	A. Tower - 2002	John Baker and June Colley
24 <i>H.</i> 'Gosan Mina'	W.G. Schmid - 2009	John Baker and June Colley
25 <i>H.</i> 'Grand Marquee'	M. Laviana - 2001	John Baker and June Colley
26 <i>H.</i> 'Opipara'	(F. Maekawa) W.G. Schmid (1991)	
H. 'Abiqua Drinking Gourd'	Walden West - 1989	
H. 'On Stage'	Japan - 1986	
H. 'Hadspen Blue'	E. Smith - 1976	Bob and Karen Olson
27 <i>H.</i> 'Sagae'	Japan - 1996	Sandie Markland
27 H 'Blue Mouse Fars'	F and I Dockort - 2000	Sandia Markland
ZTTI. Dide Wouse Lais	L. allu J. Deckell - 2000	
27 <i>H.</i> 'Lakeside Elfin Fire' sport	Unknown	Sandie Markland
 27 H. 'Lakeside Elfin Fire' sport 29 H. 'Kiwi Jordan' 	Unknown B. Sligh - 2000	Sandie Markland
27 H. 'Lakeside Elfin Fire' sport 29 H. 'Kiwi Jordan' H. 'Surfer Girl'	Unknown B. Sligh - 2000 C. Wasitis - 2000	. Sandie Markland
 27 H. 'Lakeside Elfin Fire' sport 29 H. 'Kiwi Jordan' H. 'Surfer Girl' H. 'Little Wonder' 	Unknown B. Sligh - 2000 C. Wasitis - 2000 Hatfield Gardens -1989	. Sandie Markland
 27 H. 'Lakeside Elfin Fire' sport 29 H. 'Kiwi Jordan' H. 'Surfer Girl' H. 'Little Wonder' H. 'Rebel Rouser' 	Unknown B. Sligh - 2000 C. Wasitis - 2000 Hatfield Gardens -1989 Bridgewood Gardens - 2007	. Sandie Markland Larry and Shari Tucker
 27 H. 'Lakeside Elfin Fire' sport 29 H. 'Kiwi Jordan' H. 'Surfer Girl' H. 'Little Wonder' H. 'Rebel Rouser' 30 H. 'Dream Queen' 	Unknown B. Sligh - 2000 C. Wasitis - 2000 Hatfield Gardens -1989 Bridgewood Gardens - 2007	Sandie Markland Larry and Shari Tucker Larry and Shari Tucker
 27 H. 'Lakeside Elfin Fire' sport 29 H. 'Kiwi Jordan' H. 'Surfer Girl' H. 'Little Wonder' H. 'Rebel Rouser' 30 H. 'Dream Queen' 31 H. 'Pizzazz' 	Unknown B. Sligh - 2000 C. Wasitis - 2000 Hatfield Gardens -1989 Bridgewood Gardens - 2007 J. van den Top - 2004	Sandie Markland Larry and Shari Tucker Larry and Shari Tucker Larry and Shari Tucker
 27 H. 'Lakeside Elfin Fire' sport 29 H. 'Kiwi Jordan' H. 'Surfer Girl' H. 'Little Wonder' H. 'Rebel Rouser' 30 H. 'Dream Queen' 31 H. 'Pizzazz' 32 H. 'Maraschino Cherry' 	Unknown B. Sligh - 2000 C. Wasitis - 2000 Hatfield Gardens -1989 Bridgewood Gardens - 2007 J. van den Top - 2004 Unknown	Sandie Markland Larry and Shari Tucker Larry and Shari Tucker Larry and Shari Tucker
 27 H. 'Lakeside Elfin Fire' sport 29 H. 'Kiwi Jordan' H. 'Surfer Girl' H. 'Little Wonder' H. 'Rebel Rouser' 30 H. 'Dream Queen' 31 H. 'Pizzazz' 32 H. 'Maraschino Cherry' H. 'Lacy Belle' 	Unknown B. Sligh - 2000 C. Wasitis - 2000 Hatfield Gardens -1989 Bridgewood Gardens - 2007 J. van den Top - 2004 Unknown Unknown M. Zilis - 1999 W. and E. Lachman - 1992	Sandie Markland Larry and Shari Tucker Larry and Shari Tucker Larry and Shari Tucker
 27 H. 'Lakeside Elfin Fire' sport 29 H. 'Kiwi Jordan' H. 'Surfer Girl' H. 'Little Wonder' M. 'Rebel Rouser' 30 H. 'Dream Queen' 31 H. 'Pizzazz' 32 H. 'Maraschino Cherry' H. 'Lacy Belle' H. 'Lusan' 	Unknown B. Sligh - 2000 C. Wasitis - 2000 Hatfield Gardens -1989 Bridgewood Gardens - 2007 J. van den Top - 2004 Unknown M. Zilis - 1999 W. and E. Lachman - 1992 Unknown	Sandie Markland Larry and Shari Tucker Larry and Shari Tucker Larry and Shari Tucker
 27 H. 'Lakeside Elfin Fire' sport 29 H. 'Kiwi Jordan' H. 'Surfer Girl' H. 'Little Wonder' M. 'Rebel Rouser' 30 H. 'Dream Queen' 31 H. 'Pizzazz' 32 H. 'Maraschino Cherry' H. 'Lacy Belle' H. 'Lusan' 32 H. 'Formal Attire' 	Unknown B. Sligh - 2000 C. Wasitis - 2000 Hatfield Gardens - 1989 Bridgewood Gardens - 2007 J. van den Top - 2004 Unknown M. Zilis - 1999 W. and E. Lachman - 1992 Unknown	Sandie Markland Larry and Shari Tucker Larry and Shari Tucker Larry and Shari Tucker Larry and Shari Tucker Larry and Shari Tucker
 27 H. 'Lakeside Elfin Fire' sport 29 H. 'Kiwi Jordan' H. 'Surfer Girl' H. 'Little Wonder' M. 'Rebel Rouser' 30 H. 'Pizzazz' 31 H. 'Pizzazz' 32 H. 'Maraschino Cherry' H. 'Lusan' 32 H. 'Formal Attire' 33 H. 'Aphrodite' 	Unknown B. Sligh - 2000 C. Wasitis - 2000 Hatfield Gardens -1989 Bridgewood Gardens - 2007 J. van den Top - 2004 J. van den Top - 2004 M. Zilis - 1999 M. Zilis - 1999 W. and E. Lachman - 1992 Unknown K. Vaughn - 1988	Sandie Markland Larry and Shari Tucker Larry and Shari Tucker Larry and Shari Tucker Larry and Shari Tucker Larry and Shari Tucker
 27 H. 'Lakeside Elfin Fire' sport 29 H. 'Kiwi Jordan' H. 'Surfer Girl' H. 'Little Wonder' 30 H. 'Dream Queen' 31 H. 'Pizzazz' 32 H. 'Maraschino Cherry' H. 'Lacy Belle' H. 'Lusan' 32 H. 'Formal Attire' 33 H. 'Aphrodite' 	Unknown B. Sligh - 2000 C. Wasitis - 2000 Hatfield Gardens -1989 Bridgewood Gardens - 2007 J. van den Top - 2004 J. van den Top - 2004 M. Zilis - 1999 W. and E. Lachman - 1992 W. and E. Lachman - 1992 Unknown K. Vaughn - 1988 K. Vaughn - 1988	Sandie Markland Sandie Markland Larry and Shari Tucker Larry and Shari Tucker Larry and Shari Tucker Larry and Shari Tucker
 27 H. 'Lakeside Elfin Fire' sport 29 H. 'Kiwi Jordan' H. 'Surfer Girl' H. 'Little Wonder' M. 'Rebel Rouser' 30 H. 'Dream Queen' 31 H. 'Pizzazz' 32 H. 'Maraschino Cherry' H. 'Lusan' 33 H. 'Aphrodite' 34 H. 'Victory' 	Unknown B. Sligh - 2000 C. Wasitis - 2000 Hatfield Gardens -1989 Bridgewood Gardens - 2007 J. van den Top - 2004 Unknown M. Zilis - 1999 W. and E. Lachman - 1992 Unknown K. Vaughn - 1988 (F. Maekawa) W.G. Schmid (1991) M. Fransen - 2005	Sandie Markland Sandie Markland Larry and Shari Tucker Larry and Shari Tucker
 27 H. 'Lakeside Elfin Fire' sport 29 H. 'Kiwi Jordan' H. 'Surfer Girl' H. 'Little Wonder' 30 H. 'Rebel Rouser' 30 H. 'Dream Queen' 31 H. 'Pizzazz' 32 H. 'Maraschino Cherry' H. 'Lusan' 32 H. 'Formal Attire' 33 H. 'Aphrodite' 34 H. 'Nictory' 36 H. 'Blue Mouse Ears' 	Unknown B. Sligh - 2000 C. Wasitis - 2000 Hatfield Gardens - 1989 Bridgewood Gardens - 2007 J. van den Top - 2004 J. van den Top - 2004 M. Zilis - 1999 W. and E. Lachman - 1992 Unknown K. Vaughn - 1988 K. Vaughn - 1988 K. Vaughn - 1988 K. Vaughn - 1988 M. Fransen - 2005 M. Zilis - 2003	Sandie Markland Sandie Markland Larry and Shari Tucker Larry and Shari Tucker
 27 H. 'Lakeside Elfin Fire' sport 29 H. 'Kiwi Jordan' H. 'Surfer Girl' H. 'Surfer Girl' H. 'Little Wonder' 30 H. 'Dream Queen' 31 H. 'Pizzazz' 32 H. 'Maraschino Cherry' H. 'Lacy Belle' H. 'Lusan' 32 H. 'Formal Attire' 33 H. 'Paradise Island' 34 H. 'Nictory' 36 H. 'Blue Mouse Ears' 42 H. 'Mango Salsa' 	Unknown Unknown	Sandie Markland Sandie Markland Larry and Shari Tucker Larry and Becki Micheletti Inta Krombolz Green Hill Farm
 27 H. 'Lakeside Elfin Fire' sport 29 H. 'Kiwi Jordan' H. 'Surfer Girl' H. 'Little Wonder' H. 'Rebel Rouser' 30 H. 'Dream Queen' 31 H. 'Pizzazz' 32 H. 'Maraschino Cherry' H. 'Lusan' 32 H. 'Formal Attire' 33 H. 'Aphrodite' 34 H. 'Victory' 36 H. 'Blue Mouse Ears' 42 H. 'Mango Salsa' 	Unknown B. Sligh - 2000 C. Wasitis - 2000 R. Vasitis - 2000 Hatfield Gardens - 1989 Bridgewood Gardens - 2007 J. van den Top - 2004 J. van den Top - 2004 M. Zilis - 1999 W. and E. Lachman - 1992 Unknown K. Vaughn - 1988 (F. Maekawa) W.G. Schmid (1991) M. Fransen - 2005 M. Zilis - 2003 E. and J. Deckert - 2000 R. Solberg - 2011	Sandie Markland Sandie Markland Larry and Shari Tucker Larry and Shari Tucker

NOTE...

Cultivar originators rather than registrants are listed.

.

Index Hosta Photographs

Page Cultivar	Author or Originator	. Garden or Location
46 <i>H.</i> 'June'	Neo Plants Ltd - 1991	Madelon Gilligan
47 <i>H.</i> 'Blue Maddren'	Unknown	
H. 'Gene's Joy'	Unknown	Madelon Gilligan
50 <i>H. hypoleuca</i>	G. Murata (1962)	Mount Chichi Iwa, Japan
52 <i>H. montana</i>	F. Maekawa (1940)	Mount Nyugasa, Japan
58 <i>H.</i> 'Satisfaction'	C. Wasitis - 2000	Jim Hartmann
58 <i>H.</i> 'Earth Angel'	H. Hansen - 2002	Jim Hartmann
58 H. 'Brother Stefan'	O. Petryszyn - 1998	Unknown
61 <i>H</i> . 'Sagae'	Japan 1996	Walter and Emilie Cullerton
62 <i>H.</i> 'Frosted Jade'	L. Maroushek - 1978	Inta Krombolz
62 <i>H.</i> 'Ani Machi'	Japan	Bob and Karen Olson
62 H. nigrescens	F. Maekawa (1940)	Bob and Karen Olson
63 <i>H.</i> 'Jade Cascade'	D. Heims - 2009	Malcolm Romine
63 <i>H.</i> 'Krossa Regal'	G. and A. Krossa - 1980	
<i>H. montana</i> 'Aureomarginata	ı' (F. Maekawa) W.G. Schmid (19	991) Quilted Gardens
63 <i>H.</i> 'Praying Hands'	G. Williams - 1996	Eve and Per Thyrum
64 <i>H.</i> 'Sum and Substance'	Unknown	Harvey Filister and Ted Bair
64 <i>H.</i> 'Elatior'	(F. Maekawa) W.G. Schmid (19	991) Bob and Karen Olson
65 <i>H.</i> 'Regal Splendor'	Walters Gardens, Inc 1987	Hideko Gowen
65 <i>H.</i> 'Liberty'	J. Machen - 2000	Hideko Gowen
66 <i>H.</i> 'Tiny Bubbles'	R. Solberg - 2008	Cochato Nursery
70 <i>H.</i> 'Jabulani'	M. Zilis - 2010	Q&Z Nursery
70 <i>H.</i> 'Uju'	M. Zilis - 2011	Q&Z Nursery
70 <i>H. '</i> Vuvuzela'	M. Zilis - 2010	Q&Z Nursery
71 <i>H.</i> 'Sweet Innocence'	H. Hansen - NR	Shady Oaks Nursery
71 <i>H.</i> 'Fragrant Queen'	J. van den Top - 2008	Jan van den Top
77 H. plantaginea	P. Ascherson (1838)	Green Hill Farm
77 <i>H</i> . 'Doubled Up'	R. Solberg - 2011	Green Hill Farm
IBC H. 'Fragrant Queen'	J. van den Top - 2008	Jan van den Top
IBC H. 'Fragrant Bouquet'	Unknown	Patrick Coleman
IBC H. 'Sweet Innocence'	H. Hansen - NR	Shady Oaks Nursery
IBC <i>H.</i> 'El Niño'	P.Th. Warmerdam - 2003	Eve and Per Thyrum
IBC <i>H.</i> 'Jabulani'	M. Zilis - 2010	
IBC <i>H.</i> 'Vuvuzela'	M. Zilis - 2010	
IBC <i>H.</i> 'Uju'	M. Zilis - 2011	
BC H. 'Gilt by Association'	K. Walek - 2000	
H. 'Fragrant Bouquet'	Unknown	Sandie Markland

The Hosta Journal Advertisers

AAA Quality Engravers 12
Contrary Mary's Plants & Designs15
Hornbaker Gardens 18
Hosta Adventure: A Grower's Guide75
In The Country Garden & Gifts17
Kincaid Gardens35
Made in the Shade Gardens13
Mason Hollow Nursery 14
Midwest Regional Hosta Society Convention73
Sebright Gardens 35
Venero Gardens 18

AHS Ad Manager Marlys Anderson

CONTACT NOW TO GET YOUR AD INCLUDED: (641) 780-6487

 $\star \star \star \star \star$

marlys1950@hotmail.com

What's in a Hosta Name? See page 69.



H. 'Fragrant Queen'.



H. 'Fragrant Bouquet'.



H. 'Sweet Innocence'.



H. 'El Niño'.



H. 'Jabulani'.



H. 'Vuvuzela'.



*H. '*Uju'.



The AHS online at www.hosta.org



above: H. 'Gilt by Association' hovers over 'Fragrant Bouquet'.

left: A Markland seedling emerges. See "Q&A" on growing hostas in containers (page 16).