the many faces

Our Association Growing Strong!
Since our Summer Meeting I’ve been thinking a lot about Tom Wessel’s keynote speech “The Myth of Progress”. Several times during my life I have studied the concepts of ecological interactions, competition, mutualisms and community, but Tom had a refreshingly clear view of the role of humans in the larger web (I particularly liked the description of humans as 2-yr olds in a library.) He illustrated through an explanation of the “Law of Limits to Growth” that human consumption is extracting more natural resources than can be replenished by ecosystems around the world, and that in order to survive we will need to become more efficient, more inter-related, specialized, and most profoundly, learn to co-exist without competition. In essence, we will have to mimic the behavior of other species that have evolved into stable and self-organized teams. At first glance his message seems pretty radical, and in direct conflict with the common interpretation of “American Dream” whose economy is based on individual competition, and the production and consumption of goods. Yet there appears to be tons of science to back up Wessel’s theories (just look up “ecology” and “biodiversity crisis” on Wikipedia), so the question remains, how can humans learn to co-exist within a group, express altruistic behaviors to one another, be a regenerative part of the ecosystem and reap the benefits of that mutualism? And more to the point, how do we apply that lofty goal to our current daily life and the operation of our businesses?

I think one solution is to build “social capital” (the sense of connectedness and formation of social networks) and use it to build “natural capital” (the stock of materials or information stored in biodiversity that generates services that can enhance the welfare of communities), and inherently it isn’t something that can be done alone. Sure, any individual can look up the answer to a question on the internet, but only within a collaborative group can we discover the answer, the next question, and personal support for our success and failures. This is the core reason for being a member of Green Works. Membership allows each of us to benefit from the collective value of a group of individuals and companies, who together hold a wealth of knowledge that when shared between them is more powerful than the sum of its parts.

One way we build social capital within Green Works is to recognize individuals who excel in our profession through the three awards the Association gives out each year: the Horticultural Achievement Award; the Environmental Awareness Award, and the NENA Young Nursery Professional of the Year Award. We also encourage all of our members to submit the projects in the Industry Awards Program, which recognizes excellence in landscape design and environmental improvement. Another way we build social capital is through the Vermont Flower Show. It truly is a unique collaboration among peers, and is an opportunity to work together to produce a display and educational program that is much more impressive than anything an individual company could possibly achieve on its own. The sense of connectedness between volunteers and participants that occurs during the planning, construction and coordination of the Show has incredible value and I believe that it is the main reason why the Vermont Flower Show continues to grow and succeed while many other Flower Shows are in decline. So please, contact Kristina and sign up to volunteer for the Flower Show today!

As you can see, I believe deeply in this community of ours - it’s a community that works together to advance the health of the green industry, which can simultaneously make the world more beautiful and help restore the ecosystems that we are all dependent upon. As always, feel free to contact me or any board member or the office with your questions and concerns.

Rebecca Lindenmeyr, Green Works/VNLA President
Are you and your employees certified?

Now is a great time to order VCH manuals for yourself and/or your employees as the season gets underway. Prove your level of professionalism and commitment to excellence to your clients. Order a VCH manual and take the test this Winter to become a Vermont Certified Horticulturist. Contact Kristina MacKulin or Claybrook Griffith for ordering and test information.

For information on Advertising in The Dirt contact Kristina MacKulin at the Green Works Office - 888.518.6484
New Green Works Members

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802-584-3029
greenreaper@myfairpoint.net
Category:  Landscape Design Build, Landscape Install/Maintenance, Organic Farm, Wholesale Perennials, Retail Nursery
Active Member

Green Mountain Treescape
Nathan Deslandes
PO Box 243
Troy, VT  05868
802-673-8717
nated@surfglobal.net
Landscape Install Maintenance
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Vermont Organics Reclamation
Timothy Camisa
PO Box 1089
Williston, VT  05495
802-881-0012
reclaimvermont@earthlink.net
www.vtor.org
Category:  Wholesale Greenhouse, Wholesale Perennials
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New Vermont Certified Horticulturist

Ann Whitman
Gardener’s Supply Co.
128 Intervale Road
Burlington, VT  05401
802-660-3505
annw@gardeners.com

our sympathies . . .

The horticultural world and Vermont has lost a true icon with the passing of Wayne Winterrowd of North Hill Gardens, Readsboro, VT on September 17, 2010. Our sympathies are with Joe Eck, his spouse. Wayne and Joe were both keynote speakers at the 2009 Vermont Flower Show.

Participate in the 2010 Industry Awards Program

Enter your project today!

Entry forms are due
November 29, 2010

Don’t forget - all winning projects will be on display at the 2011 Vermont Flower Show viewed by 10,000+ visitors.

announcement . . .

After 36 years in the gardening business long time member and previous board member Dave Hamlen of Hamlen’s Garden Center, has decided to retire. His new adventures are still unwritten. Dave wishes to thank all of the customers and suppliers that have helped keep him in such a successful business.

Everyone at Green Works/VNLA wishes Dave the very best in his new endeavors and he will be greatly missed!
Summer Meeting

Now that summer is almost a distant memory I would like to fill everyone in on Green Works events that took place in August and September when the sun was higher in the sky and warm breezes were still blowing.

On August 18, 2011 Green Works Summer Meeting and Trade Show was held at Cobble Creek Nursery in Bristol, VT. There were 160 people in attendance that beautiful summer day. John and Patti Padua, and all of their staff were amazing hosts and as usual the nursery was beautiful to behold.

The days events included a keynote presentation by Tom Wessels entitled the “Myth of Progress” which left us all with a great deal to think about. If you missed this talk you can always pick up his book at your local book store or on Amazon - “The Myth of Progress Toward A Sustainable Future”. Other books Tom has written you may find interesting are: Reading the Forested Landscape: A Natural History of New England and Forest Forensics: A Field Guide to Reading the Forested Landscape.

John Padua led a tour discussing his nursery business and shared his knowledge of plants, propagation and irrigation. Other tours given that day were a field production tour led by Sally Dunkleman and a container production tour led by Shannon Lee and Jason Koicuba.

Lunch was catered by Almost Home in Bristol and was incredibly delicious! After lunch the live auction was held and raised $1,345 for student merit awards. Thanks to all of you who participated and bid on the many items donated by members and exhibitors!

In the afternoon there were more tours given as well as an extremely well attended digging demonstration comparing hand digging vs. a skid steer mounted tree spade run by Nate Deslandes of Green Mountain Treescape.

We appreciate so many people joining us that day!

Summer Twilight Meetings

We held three Summer Twilight Meetings this Summer with the first one on July 28 at Basin Harbor Club in Ferrisburgh, Vermont. There were 25 people in attendance. Rebecca Lindenmeyr led a tour of the annual gardens and Kerry Mendez gave a tour of the perennial gardens. The annuals used were grown by Green Works member Claussen’s. Other members who grew plants for the gardens were Sundance Gardens, Cobble Creek Nursery, Sunny Border Nursery, and Gardener’s Supply Co.

On August 25, 2010 Don and Lela Avery of Cady’s Falls Nursery led 30 people on a tour of their nursery and Don demonstrated their system for taking soft wood plant cuttings. Don talked about the potting mixes and hormones used as well as their system for storing cuttings.
At a time when flower shows across the country have been closing down that has not been our story here in Vermont. In 2009, the Vermont Flower Show attracted some 10,000 visitors to the Champlain Valley Expo. This was a 20% increase over the previous show and came at a time when dire financial predictions were everywhere. Why, you ask yourself? I have also asked myself that question wondering what the magic formula was exactly? Plain and simple I believe it is because our Flower Show is unique unto itself with no other show like it in the country.

The Vermont Flower Show, in one form or another, has been going since the inception of the Association 46 years ago. It was born out of a collaborative effort and commitment to promote our professional members plants and services as well as offer an educational venue for the public. Eventually the show made its way to the Sheraton Hotel and Conference Center and finally to our home at the Champlain Valley Exposition.

What sets our Flower Show apart from all the others is how our show is put together. Other flower shows rely on individual exhibitors to create landscaped displays. In Vermont, our members and associates come together to donate plants, materials, time and labor to create and build a 10,000 square foot landscape indoors in the middle of Winter. This “showcase” is created on behalf of all our members to promote the world of horticulture - in all it’s aspects and glory here in Vermont. We have a show that pulls hundreds of volunteers together for a few short days in March. We build a masterpiece and greet some 10,000 plus visitors to talk with, to educate, to remind us all the green world will be emerging forth soon.

This year’s theme is “Sweet Dreams” and is sure to engage the dreams of all who meander the paths of the central display. You enter through a window frame, curtains blowing in the breeze into a bedroom made completely from flowers and plants. Along the way be prepared to catch glimpses of a giant bird’s nest, ancient stone houses, crazy paths where trees are growing upside down, a tropical paradise where a soft rain is falling leading to a dreamscape kingdom complete with a castle. This is a taste of what is to come in the Sweet Dreams Central Display.

There are many other aspects that contribute to the success of the Flower Show and cash and in-kind sponsorships are at the top of the list. We are pleased to have returning Presenting Sponsors The Essex Resort, Trowel Trades Supply Co., Unilock, and Price Chopper. Their generous donations help ensure the success of the show. We have also received Supporting Sponsorships of $100 each from Deborah Page and Davis Seed Co.

We are actively seeking cash sponsorship so if you have a personal contact you think might be interested in sponsoring the show please contact Kristina in the office. Cash sponsorship helps ensure the financial success of the show. On that note, there would be no way we could produce this show without the many in-kind donations we receive. These donations consist of time, labor, plants, and materials. A final list of all cash and monetary donors will be printed in the final program and included on the Green Works website.

There are 100 exhibitor booths available at the show. Delaney Meeting and Event Management coordinates this for us and we are half-way there with booth sales. If you are interested in having a booth don’t delay too long because we are expecting to sell out this year!

Leonard Perry has been working on the educational lineup of the show and we will again be offering over 40 seminars and workshops to the public. Julie Moir Messervy of Julie Moir Messervy Design Studio will be our keynote speaker on Saturday. Kerry Mendez of Perennially Yours will also be a featured speaker. The final line-up of speakers will be available in early January. If you are interested in giving a seminar or doing a demonstration workshop please contact Kristina in the office. Cooking demonstrations, which were highly successful in 2009 and well attended, will be returning with the help of David Loeysen of Shaw Hill Nursery, who is organizing the lineup of chefs. The plans for the Children’s Room entertainment is being finalized as well as the hands-on projects available to all the children who attend the show.

The Federated Garden Clubs of Vermont will be returning to hold another National Garden Standard Flower Show. This judged competition is open to all garden club members in certain categories as well as the public and kids in specific categories. If you would like to contribute an entry into the competition please contact Kristina in the office.

In closing a great deal of work has already been undertaken, as you can see from above. My hat goes off to the the Central Display Committee and Flower Show Committee members who have already contributed countless hours to the planning process. We are excited to have new members on both committees. We always welcome more members if you find you have time to participate. Please contact Kristina in the office if you are interested in joining either committee.

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The final GreenWorks twilight meeting for 2010 was held on Tuesday, September 14 at Full Circle Gardens in Essex. Andy Boutin of Pellergy, a company that designs and installs wood pellet heating systems for commercial applications, presented to GreenWorks attendees information on the benefits and advantages of wood pellet heating systems over other fuel types, especially for cutting the cost of winter greenhouse heating.

Attendees saw a slide show on how these systems work. We learned that these systems are very eco-friendly. Andy demonstrated the pellet system Pellergy installed in the Full Circle Gardens’ pre-owned greenhouse. He showed us how he had retro-fit the fuel oil furnace used to heat the 3000 square foot greenhouse in winter. The system works by a thermostat controlled pellet auto-feed from a small silo and keeps the area just as warm as any other fuel type but for a fraction of the cost! After twilight turned to a cool night, we were gladly warmed by the greenhouse pellet system!

Montreal Botanic Garden Bus Tour

On September 13, 2010 Leonard Perry led a tour of 53 people to the Montreal Botanic Garden. This tour was in collaboration with UVM Extension and Kings Garden at Fort Ticonderoga. While the day began with rain by the time the bus reached Montreal the weather began to clear. This tour coincided with the Chinese Lantern Display at the gardens. We will be planning another tour to the gardens next year.

Return of the American Elm Workshop

This workshop was hosted by Green Works, the VT Urban and Community Forestry Department, and Marsh Billings Rockefeller National Historic Park on September 24, 2010 at Marsh Billings. There were 50 eager attendees there to learn more about the return of the American Elm as well as to learn about the next generation of elms to cultivate.

A Day and Evening with Adrian Bloom

We were very excited to host world renowned Adrian Bloom on September 29, 2010 for a day presentation at UVM Davis Center and evening tour and cocktail event hosted by Green Works at Rocky Dale Gardens. There were close to 100 people in attendance for the day event and 40 people for the evening garden tour. This event was open to Green Works members and the public at large.

Adrian’s presentation was inspiring as he shared his ideas on particular plants, design, and culture. Adrian’s presentations were inspired by his new book “Bloom’s Best Perennials and Grasses: Expert Plant Choices and Dramatic Combinations for Year Round Gardens”. The rain held off just long enough for a spectacular garden tour at Rocky Dale led by Adrian Bloom, Ed Burke and Amy Rose-White.

Joe Kunkel, Barbara Emerson, Leonard Perry, Adrian and Rosemary Bloom, and Rebecca Lindenmeyr

Green Works at Rocky Dale Gardens.

Summer Twilight Meeting at Full Circle Gardens

Evening Reception at Rocky Dale Gardens
As the time draws nearer to actually building the central display we will be calling on all members to volunteer a few hours to help. Set-up will begin on Tuesday, March 1 through March 3. We will also be asking for help staffing the show during the hours the show is open to the public and for many hands to help with clean up on Monday, March 7.

I have been involved with the Flower Show, in varying aspects over the last 15 years. I have served, at the pleasure of the membership, as Chairperson, for four shows. What keeps me drawn to this event is the truly amazing collaboration and work ethic so many contribute to this event. There are so many involved with the show that return year after year to offer their time and talent. There also continues to be new people that join the effort to produce show. All these people combined are really what contributes to the momentum of the Show moving forward. This is truly where the magic of the show and the Association lie.

The three days of watching the faces of all that come visit the show make every second of effort everyone contributes worth it! This truly is a unique show and a trade organization like no other - thanks to all of you.
New England Grows, the premier conference and trade exposition for green industry professionals in the Northeast, will be held in Boston, Massachusetts on Wednesday, February 2 – Friday, February 4, 2011.

In addition to a three-day line up of 30 business-building seminars, New England Grows will launch Garden Center Success! on Wednesday, February 2 from 8:30 a.m. – 3:30 p.m. This new one-day intensive seminar is tailored specifically to the needs of garden center professionals.

Garden Center Success! will feature retail expert and trend spotter Anne Obarski of Merchandise Concepts in Dublin, Ohio; garden center guru Jonn “J-Dog” Karsseboom of The Garden Corner in Tualatin, Oregon; retail wizard Ken Lain of Watters Garden Center in Prescott, Arizona; and master facilitator Jon Hockman of The d3 Group in Washington, D.C. Participants will gain an understanding of real world retail trends, interact with peers who are getting it done in their independent garden centers; and develop action plans to increase sales, optimize their merchandising, and keep their people in peak performance mode.

“Expect a high impact, result-driven learning experience,” said Rich Clark of Clark Farms in Wakefield, Rhode Island and New England Grows’ education co-chairman. “If you’re a key player at an independent garden center, you need to be at Garden Center Success!”

New England Grows will also feature a trade exposition of more than 600 vendors showcasing solution-based products, technologies and services for the green industry.

There is no additional charge to participate in the Garden Center Success! but seating is limited and advance registration is required. New England Grows registration is $39.00 per person before January 15, 2011 and $55.00 thereafter. If you sign up 4 or more people from the same company before January 15, the price per person is just $30.00.

Low registration fees, world-class education, and exclusive deals on the tradeshow floor make New England Grows the best place to do business this winter. To learn more and to register visit www.NewEnglandGrows.org.

Garden Center Success! Is presented in cooperation with Garden Center magazine. New England Grows is an educational partnership between the New England Nursery Association, Massachusetts Arborists Association, Massachusetts Association of Landscape Professionals, Massachusetts Nursery & Landscape Association, and a network that includes more than 30 allied green industry organizations, including Green Works/VNLA.

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All is quiet on the western front (of the state that is) at UVM this fall, which I guess is good after the ride through the economic rapids last year. It seems many state universities are now going through what we went through then, only worse, as most are more heavily funded by their states. The main news from the U is the acceptance this past year of the three "transdisciplinary initiatives" or "spires of excellence" which will serve as a focus for future hires, monies, and research here--complex systems, food systems, and neurosciences. A search is on for a permanent provost, and positions frozen last year have now been opened--over 30 campus wide.

One of these positions is in our Plant and Soil Science Department--Landscape Plant Science and Sustainable Design. This is the position to replace that vacated a year ago by Sarah Lovell, who we had hired a couple years prior and who returned to her former institution the Univ. of Illinois, and area she and family were from. This position is open until Dec 15 or a suitable candidate is found, hopefully by this coming spring to begin in fall 2011, and will be posted on the UVM HR website. If you know of anyone with a PhD and design experience, who has a record or potential to obtain grants and publish research, and can work in the food or complex systems initiatives or perhaps both, do let them know of this or contact me with any questions (as I am chair of this search).

In floriculture research, supported in part by and with thanks to your association, I am continuing field trials with some new perennials, including a few new introductions from Plant Haven as well as just becoming a trial site for the Israel-based Danzinger. In pots I'm conducting trials on a couple new growing media, compared to a couple existing ones, from Vermont Organics Reclamation and developed by their grower/breeder Sinclair Adam (based out of a new wholesale greenhouse facility in St Albans, VT and incorporating the recent acquisition of Dunvegan Nursery formerly of Pennsylvania). Rating results from our annuals at the Burlington Waterfront All-America selections gardens are now online along with some photos (http://perrysperennials.info/aaswp.html).

For hardiness testing, the first of two years of trials with coralbells (Heuchera) were completed this past year, with results online (http://perrysperennials.info/Coralbells10.htm) and thanks to the New Hampshire Horticulture Endowment for support. The main result of this was that the cultivars generally were much hardier than expected, with few losses. A similar study is underway for this coming winter, with 5 new cultivars. Finally, a deacclimation study of two perennials will be conducted again this winter, this year with a foamflower and Becky Shasta Daisy. This past year with Becky and a yarrow showed what I had found before, that perennials often have poor survival if poorly rooted, hence the need to repeat this study this year with better rooted plants.

Thanks go to your association for sponsoring a wonderful day with world-renown horticulturist Adrian Bloom, and for sponsoring with Extension and the Kings Garden at Ft. Ticonderoga an almost full and very successful day tour to the Montreal Botanic Gardens in September. I look forward to working with the planning committee for the flower show on speakers, so if you have any to suggest including yourself, please let me know (leonard.perry@uvm.edu) this fall. Already booked for major speakers are Julie Moir Messervy on Saturday and Kerry Mendez on Sunday.

This past summer I was a judge again for the America in Bloom program. If you're unfamiliar with this program, in a nutshell it looks at 8 criteria that make communities and towns and cities successful, four of these dealing with plants and flowers and landscaping (others such as heritage and environment). Although a benefit in "competing" is the chance to get an award, and to learn from other similar towns, the main benefit is a 30+ page report with suggestions from the judges on ways to make a town even better. Many of our towns in Vermont and New England would do well in and benefit from this program as Williston did a few years ago. This program is heavily funded by the floriculture and nursery industry, as it serves to promote our products. If you'd like to know more, or how you might get your town involved or use this to get your town to increase plantings, check out the website and let's talk! (http://www.americainbloom.org/)

I hope to see many of you at New England Grows Feb. 2-4 in Boston (http://negrows.org).

Submitted by Leonard Perry
When thinking of green roof technology and its advantages, one thinks of reducing storm water runoff, mitigating the heat island effect in the inner city, seeing a small green-growing paradise in the middle of an urban jungle, doing one’s part contributing oxygen and eating up CO2 at the top of a high-rise. Living and landscaping in a mostly rural area, urban being described in terms of villages and small towns, I did not expect to have the opportunity to plan and install a green roof.

The opportunity came my way in 2007 when a client of mine wanted to build a new residence overlooking a gorge beside the Mad River. He had always been interested in ecological and sustainable building techniques and materials, so the challenge of channeling storm water runoff away from the river as well as trialling one of the few residential green roofs in northern Vermont appealed to him. So I was privileged to be able to work with the owners and architects from the planning stage on. The building stage came in 2008 after a winter of reading, searching the internet, and talking with many professionals of many disciplines all over the country (green roof plant nurseries, manufacturers of green roof layers, manufacturers of engineered soil components, to name only a few). The experience was truly awesome. These people were very generous with their time and knowledge – all for the purpose of furthering the success of green roof technology.

We used plugs that were grown for us at a nursery that specializes in green roof plants. The northern New England location presented challenges. Plant survival was a concern not because of the likelihood of hard winters but actually because of the in-between seasons of fall and spring, with uncertain snow cover, freezing and thawing, resulting in uncertain drainage.

The roof I was given as a site had wonderful drainage. River stone (the roof was engineered to carry this amount of weight) was installed per plan in the areas of drainage along the roof’s edge on the way to the down spouts, and it was also placed around the center monitors, both to catch that runoff as well as to provide a place for maintenance activity and equipment. In the summer months, the system worked flawlessly.

In the winter, the river stone heated up in the sun and the resulting snow melt was catastrophic — the client’s worst fear: a leaking roof. The spring of 2009 saw the installation of pipe to drain water away from the monitors and heating wire that keeps downspouts on the north side free of ice.

The installed drainage pipe can be seen in the photo above.

The purpose of the roof was not for the client’s use, for relaxing or planting; it was for its technology and the view from the ground and road. It has become a popular place, however. The stepping stones that were solely for ease of maintenance have turned out to be a very useful – especially for the now frequent formal and informal tours of the roof.

The stepping stone are not really stones; they are actually a feature in themselves – cut-outs of rubber horse stall mats. The weight contribution of everything that goes on the roof must be considered.

continued on page 15
Apples – A saga of scabs, rusting, and unquenchable fires.

Apples (*Malus* sp.), arguably the most useful and important agricultural and ornamental members of the family Rosaceae, have long been a favorite of European and North American horticulturists. These species and their innumerable varieties and cultivars have gained worldwide acceptance throughout the northern and southern temperate regions, and new cultivars are constantly being introduced, bringing better flavored or larger fruit, more spectacular blossoms, or pest resistance. The trees are generally long-lived, tolerant of neglect, respond well to generally simple care and nutrition, and are hardy in our sometimes brutal northeastern climate. There are likely hundreds of decrepit orchards across Vermont where forgotten apple trees struggle in the understory, but with a bit of care and opening up, they quickly begin to grow and thrive again, producing fruit for humans and wildlife alike. In short, they are as much a part of our culture and history as the pie made from the fruit.

However, as most growers know, they are not without problems, and I have had the pleasure of seeing many of these this summer.

Likely the most common diseases of apples include scab (*Venturia inequalis*), cedar-apple rust (*Gymnosporangium juniperi-virginianae*), and fire blight (*Erwinia amylovora*). There are others, of course, but for now I’ll address the signs and symptoms of these three, and the important differences in diagnosis and control.

First off is scab, an annual disease of apple fruit and foliage, and is reportedly the most important disease of apples. The scab pathogen (*V. inequalis*) survives the winter on the previous year’s fruit and leaves, underneath the tree until spring rains and warmer weather triggers production of fruiting bodies on the leaf and fruit litter. The emergent spores are carried by wind and rain splash onto the tender blossoms and leaves, where infection of new tissues occurs. The infection spreads, causing the familiar black lesions which give the disease its lovely common name. The so-called scabs on the fruit are unsightly, causing misshapen fruit and ugly black, crusty blemishes which diminish the value of infected apples as table stock, but pose absolutely no threat to people. In fact, the lesions extend barely beyond the skin; the flesh beneath a lesion is perfectly safe to consume.

As the season progresses into summer and fall, the lesions on fruit and leaves mature and produce asexual spores, which, given appropriate conditions (cool, moist weather and water on host plant surfaces – sound familiar?), will cause entirely new infections throughout the growing season. This asexual infection remains just beneath the cuticle layer, and doesn’t really extend into the tissues to any appreciable depth. The cycle repeats as often as weather conditions allow, until the leaves and unharvested fruit fall to the ground, where the fungus sets up the overwintering stage to wait out the winter. In this stage, the fungal mycelium actually dives fairly deeply into host tissues, well beneath the cuticle and surficial palisade cells, down into the parenchyma, where it lurks until spring.

Control, therefore, should address these two phases of the disease. The first is prevention of the initial infection(s). Cleaning up as much of the leaf and fruit litter as possible, either during the fall cleanup or in early spring before the leaves and fruit buds break will help enormously in preventing many of the initial infections. Application of labeled fungicides during budbreak and expansion will also help limit the number of these initial infections. There are a number of products available to commercial and home apple growers, containing captan, mancozeb, thiophanate-methyl, copper/lime and others. Interestingly, chlorothalonil (daconil) is not labeled for control of apple scab on apples for eating, but it should provide protection for ornamental crabs and fruit trees not in production. The second phase is managing repeating infections of fruit and foliage throughout the growing season. Again, a chemical applied to the trees during periods when infection is likely is the best means of control here, as are mitigation of moisture issues, if possible. Spacing of trees to ensure adequate air movement, and proper pruning to encourage drying of interior leaves are helpful too.

Finally, there are a number of scab-resistant apple varieties available. The University of Vermont maintains a listing of scab-resistant varieties, and is actively involved in researching scab resistant varieties through the Northeast Sustainable Apple Project (http://orchard.uvm.edu/uvmapple/hort/src.html). Obviously, use of resistant varieties is probably the best first step in reducing the use of fungicides, and producing scab-free apples without having to adders scab management annually.

Cedar-apple rust is a really cool disease if you are a plant pathologist or elementary school student, but a serious headache if you grow apples for a living. As a heteroecious, macrocyclic rust (a classic two-host, multi-spore stage fungus), this pathogen requires two hosts for a complete life cycle. The primary hosts, apples, crabapples, and hawthorns, is preventable.
This green roof installation experience has been of tremendous value professionally. It was a huge multi-year project that helped my business grow in new directions. The recognized areas of growth: learning how to work in a sub-contracting situation; cooperating with many skilled tradespeople on a project together; hiring and employing more than two people; incorporating SAFETY into my every work day; building confidence to take on other large and challenging landscaping opportunities, design as well as installation. The roof continues to be a very exciting project, and I continue to learn. This year gave us a bumper crop of snails, and rising to this challenge gave me pause. This summer is the only time that I have brought a case of cheap beer to a work site...the snails aren't picky. And I never knew that diatomaceous earth came in 50# bags!

Sarah Holland is owner of River’s Bend Garden Design in Moretown, Vermont and is a long-time Green Works/VNLA member.
obvious. The second hosts are true junipers, those plants in the genus *Juniperus*. As such, white cedars/ *Thuja*, cannot serve as the secondary host, and are appropriate for planting in or near apples and orchards. The most common juniper hosts I see in Vermont are eastern red-cedars (*J. virginiana*) or rocky mountain juniper (*J. scopulorum*), which is very popular in ornamental plantings. Infections on these plants are easy to diagnose. Most of the year, the pathogen survives in a hard, dark brown gall on the young twigs, generally between a pea and a golf ball in size, with odd circular spots or depressions on the surface. In the spring, around Memorial Day in Vermont, when it rains, bright orange tendils emerge from those round spots, making the gall look like some kind of bizarre landlocked sea anemone. Heavily infected junipers start to look like crazy or alien Christmas trees, making identification of infected hosts easy. I have never seen galls form on the low-growing and ubiquitous common juniper (*J. communis*) in Vermont, and am unaware if there is any record of that having occurred.

It is from those ‘anemones’ (or, more properly, telial galls) that the infective spores emerge to attack apple trees in the vicinity. The primary period of infection occurs when apple leaves are less than two weeks old, and the fruit are most susceptible in the period immediately before petal fall. The spores alight on leaves of susceptible apples, and given sufficient surface moisture, will germinate, and create a lesion characterized by an orange or yellow ring with numerous small black dots within. Asexual spores are produced from these black dots (pycnia), and if two mating types of pycniospores, or spermagonia meet, than the final infective stage is produced, the aecial stage. This final apple stage is characterized by the appearance of white or cream colored hairy growths on the underside of apple leaves in fall. The spores produced in these organs are released to infect junipers, which will produce the galls the second spring following infection. The galls of this rust species are annual, unlike many others in *Gymnosporangium* genus, and will die after this only fructing event. Thus, an apple host is required in order to see fresh horns on the juniper galls every year.

So, as with scab, control of cedar apple rust is two-fold. First, try to eliminate the secondary host(s) in the vicinity of your apples. In fact, in an effort to accomplish this very end, there have historically been prohibitions on cultivation of eastern red cedar proximal to producing apples. As far as I know, there are no such prohibitions in Vermont, probably due to the relative scarcity of red cedar in most of the state. There are a lot of junipers in the Champlain Islands, and along the shores of Lake Champlain and the Connecticut River, but very few in the Green Mountains and eastern uplands.

Anyway, get rid of your cedars, and the problem goes away, right? Ideally, but the complete removal of all red cedar is generally impractical, so the second phase of control is usually necessary for complete control. Fungicides like ferbam, thiram, and maneb are known to work on cedar apple rust, and as with scab, there are a number of resistant apple varieties.

Fire blight is caused by a bacterium, unlike the previous two pests, which are fungal. The causal organism, *Erwinia amylovora*, is closely related to the cause of blackleg in potatoes and bacterial ooze/wetwood on elms (*E. carotovora*), and more distantly related to salmonella, *E. coli*, and *Yersina pestis*, the bacteria that causes bubonic plague. Cool, huh? Yeah, sure... anyway, this bacterium is the reason you have always heard to sterilize your pruning shears between cuts and to do you pruning during the winter. It is very easy to spread this pest on your shears or saws, as the bacteria will remain alive within sap for several minutes (hours?), and, just like with a human bacterial pathogen, it will move into a new host easily with only a few seconds of exposure. The bacteria also move on insects, and within water droplets.

Symptomatically, affected tissues will typically blacken and shrivel, and leaves and blossoms will curl and wilt, which gives the affected area a scorched appearance, hence the common name. Infected blossoms shrivel and blacken, like the leaves, but will frequently remain on the plant well into winter, rather than falling off in a more timely fashion. Cankers form on stems and branches where collapse of underlying vascular tissues results in a depressed and darkened area on the bark. Infected succulent shoots tend to form a shepherd’s crook, where the tip bends over in an inverted hook shape. A milky to yellowish-clear exudate is also commonly observed on infected fruit, twigs and branches, which dies with a hard, glassy appearance. Finally, the xylem becomes stained and darkens where the bacteria are established. Although fire blight doesn’t generally kill the host, it has been known to in situations where the infection in vascular tissues is widespread, or there are other factors weakening the host.

The best control for fire blight is prevention. Where the pest is not established, countries have established quarantines against material originating from areas where it is widespread, and research into resistant cultivars is ongoing. Where fire blight is established, removal of branch and stem cankers by dormant season pruning is recommended. Pruning cuts should be made about eight inches below the outer margin of the canker, and the affected tissues burned or destroyed. As mentioned above, sterilizing tools between cuts, even on the same tree, is the primary means of controlling spread. Use a dilute bleach solution or an alcohol dip when you are making pruning cuts, but be sure to apply a coating of oil at the end of the day to those tools.

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exposed to beach, as chlorine will rapidly rust steel and corrode other metal parts. Reducing the numbers of pest insects, which move the bacterium and provide infection sites through their feeding activities will help limit the amount of fire blight that occurs during the growing season. Occasionally, antibiotics are recommended for control of existing fire blight infections, and there is evidence these antibacterial applications will help when timed properly. Streptomycin is the antibiotic most frequently cited, but oxytetracycline, flumequine, and copper-based antibacterials are also suggested. Finally, horticultural practices (spacing of plants, adequate drainage, avoiding practices that encourage excessive vegetative growth) will also help.

So there are a few of my favorite apple diseases. There are many more than these, of course, and a host of viral, insect, and nematode pests of apples. Hopefully this quick overview will give you a start in identifying and differentiating between these three diseases, and some idea how to begin managing them.

**Other News**

By now, most of you have undoubtedly heard that beginning in 2011, there will be a fee associated with nursery dealer licensing. Until now, the inspection and licensing program has been unfunded, paid for through other programs, and it is the intention of the legislature to provide a means to fund the inspection and technical assistance aspects of the program should those other sources of money disappear.

The fee schedule is two-tiered. For nurseries of greater than ½ acre, or greenhouse operations of greater than 25,000 square feet, or for those retailers with more than 25,000 square feet of retail space (total, not just limited to nursery retail), the fee is 50 dollars. These factors are not cumulative (e.g an operation with 15,000 square feet of retail and 15,000 square feet of greenhouse space is not a 50 dollar operation, as neither section of the operation exceeds the 25,000 square foot threshold). For all those operations not meeting any one of these size criteria, the fee is 20 dollars. At the lower end, if a company or individual sells less than 1,000 dollars of nursery stock in a year, there is no fee. Dealers engaged in distributing nursery stock without having a nursery or greenhouse for production purposes will be assessed the 20 dollar fee. This category includes many landscapers engaged in procuring and installing nursery stock for their clients.

Hopefully this fee will not prove too onerous for Vermont growers and dealers. Details of the new law are available online at the legislative webpage (http:// orchard.uvm.edu/ uvmapple/hort/src.html), and I would be happy to answer any questions anyone may have about how the Agency will be implementing the fees.
The concept of a garden is rising to new heights, literally, as we look up rather than down for new gardening opportunities. Referred to by many different names — vertical gardens, living walls, or green walls — this relatively new form of gardening is taking root in many locations across the globe.

The concept was first demonstrated more than 15 years ago at a garden festival in France, by Patrick Blanc, a French landscape designer who had studied plant aerial growth habits in the tropics. Blanc’s hydroponically-grown plant mosaics soon appeared on prominent buildings world-wide.

Less than a decade later, living wall “systems” were being manufactured by many companies and have become readily available in the past few years. The initial interest in vertical gardens was focused on urban gardening, where traditional garden space is limited. But the beauty and versatility of vertical gardens is now drawing interest from gardeners beyond urban centers. In addition to the aesthetics, some of the benefits of vertical gardens include: lowering the temperature of buildings; air filtration; shielding building materials such as brick and concrete from heat extremes; reducing noise; creating wildlife habitat; providing edible gardening opportunities; water management when used in conjunction with storm-water and grey-water systems; and offering a more visually appealing living environment.

Originally, vertical wall systems were designed for hydroponically-grown plants, but the new systems are made up of modular planted panels that use combinations of growing medium. Individual growing cells are angled to ensure planting medium is stable while allowing maximum light exposure for plant material. Many systems provide 4” deep cells, while other systems offer deeper cells to accommodate wider plant material options. Plant options for vertical gardens include everything from grasses and groundcovers to shrubs and strawberries.

When and how plant material is irrigated is a primary concern in vertical wall installations. Systems are typically designed for efficient water use and the growing medium has been formulated to allow good drainage and aeration while retaining enough moisture to minimize irrigation cycle times. But careful attention must be paid to this area of vertical wall design, to avoid over-watering one section of the planting while under-watering another section. Most vertical wall systems are irrigated with a drip line, but some are hand-watered. It is important to check to ensure that there is enough water going through the system to irrigate all panels and to carefully regulate the irrigation by setting up the daily watering on timers. Most frames have drip pans and catch basins for indoor applications, while outdoor applications are free-draining. Another consideration when designing vertical wall gardens is the full saturation weight of the installation.

I have used both the panel vertical wall systems as well as the “Woolly Pocket” systems. I find that most commercial soil mixes tend to be light and drain very quickly by design, but by adding biochar to the soil mix, you don’t need as much fertilizer. You will find that there is a lot of variation in the bagged soil mixes for these systems. The modular panels can be interconnected and provide great flexibility of installation, allowing the designer to create an unlimited variety of sizes and shapes. These systems are designed for use in both interior and exterior applications. Panels are constructed of various materials, including new and recycled polypropylene as well as natural materials such as coconut fibers. Some systems are exclusively designed for mounting directly on a vertical surface while others are mounted on a stand-alone frame. Most can be easily removed and re-installed for maintenance.

There are many new residential applications for vertical walls. They can be used in place of potted plants. “Picture walls” are vertical walls used as art such as this example that I designed and installed at a private residence in Mission Hill, MA. Some culinary enthusiasts are installing vertical gardens in their kitchens for year-round herb

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gardening. I have also created another innovative indoor design by constructing a wall-mounted panel to be used as a headboard. Outdoors, vertical wall systems can be used ornamentally when mounted on walls or fences, or, free-standing installations can be planted with perennials or annuals and serve as portable urban or suburban screening on balconies, decks, or patios.

Vertical garden systems are designed to be used year after year, but special consideration will have to be made in colder climates where panels will need to be taken down or will have to be insulated to avoid winter damage. For example, in the Northeast where I practice, a wall of thyme and strawberries will either have to be brought indoors for winter or will need to be wrapped and allowed to go dormant. Plant material will have to be carefully selected in these cold climates, especially for large outdoor installations.

In addition to these ornamental installations, I envision very practical vertical gardening applications as well.

What if we take a vacant urban lot and fill it with free-standing panels, or create A-frames for use as a community garden? It doesn’t matter what the lot was before, with these systems you can control the soil and water. If the lot is sold, you can just break down the panels and move them to another location.

A living wall is more like container gardening than a perennial bed, when it comes to managing water and nutrients. But it gets planted like a perennial bed and, like a perennial bed, the wall will be different in subsequent seasons. Just like any perennial bed, it is not a ‘set it and forget it’ landscape element. It is going to need to be tended to – things will die and need to be replaced.

Success with living walls requires thought and maintenance. You are going to have to find the rhythm in your wall.

Reprinted w/permission by Trevor Smith

Trevor Smith is the owner of Land Escapes, a full service ecological landscaping company in the Boston area that specializes in Garden Design, Eco-Rain Recovery, Water Features, and Living Wall Installations. Trevor is also the Vice President of the Ecological Landscaping Association. You can reach Trevor through his website: www.everydaygetaway.com.
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Helping evergreen trees and shrubs prepare for winter, wrapping trunks of young trees, and getting tools ready for winter are some of the gardening activities for this month.

Evergreens continue to respire (that is, lose moisture albeit slowly) during the winter, so make sure they have a good deep watering before the ground freezes. It’s best to water them well for several weeks, if there aren’t deep and long rains. Protect young plants from wind damage during winter by wrapping them in burlap or with wooden protectors on the windward side.

Wrap the trunks with tree wrap or use white plastic protectors to prevent sunscald and frost cracking on young, thin-barked trees, such as maples. These materials will reflect the warming rays of the sun so the tree bark doesn’t heat up on winter days, only to be suddenly cooled when the sun sets and the temperatures plummet. The plastic protectors also prevent rodents from gnawing on the trunks. Or, you can wrap the trunks with wire mesh.

Take some time this fall to get your mower and other power equipment ready for storage. Wipe off any dirt and debris, especially loose wet grass that may have accumulated on the deck or caked underneath it. This can rust the deck over winter, shortening the life of the mower body. If reaching under the deck, make sure to disconnect the spark plug first so the engine has no chance of starting. Then you can store with the fuel tank empty or full. If storing with fuel, add a stabilizer, then run the machine for about 10 minutes. Store mowers in a dry location, or if outdoors, wrap in a waterproof tarp.

After their dry summer rest period, watch for signs of shoot growth on amaryllis. That signals it’s time to pot them up, or if already potted to resume watering. Use a pot only slightly larger than the bulb diameter. Set a bulb into moistened potting mix so one-half to one-third of the bulb protrudes above the soil. Place the pot in a warm well-lit spot, and don’t water it again until the first leaf or flower shoot starts to grow.

Protect the soil of your empty vegetable bed and keep out wayward weed seeds by covering the beds with leaves or straw. Avoid weedy hay as this only introduces millions of weed seeds. This surface organic matter also can encourage beneficial earthworm activity.

There’s a window of opportunity for mulching because you want to wait until the ground freezes so you don’t give rodents a hiding place too soon, but if you don’t mulch before the snow accumulates, it won’t get done. If we could rely on constant snow cover, mulching would be less necessary, but in the absence of that protection, we need to provide a winter blanket. Some plants such as coral bells, delphiniums, oriental poppies, iris, violas, and sedum are better off without any mulch, especially in winter, when it can compact and encourage crown rot.

Before snow flies and the ground freezes, November is your last chance to plant garlic bulbs, to dig gladiolus to store indoors over winter, and to plant fall bulbs. If you don’t get your spring-blooming bulbs planted, pot them, then store indoors in a cool place (40 degrees is ideal, as in a spare refrigerator or cold root cellar), just don’t let them freeze. Then, anytime after 12 weeks you can bring into warmth indoors to force into bloom.

Charlie Nardozzi and Leonard Perry

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