CROSS POLLINATION

Halton Master Gardeners Monthly Newsletter
FEBRUARY 2023 | VOL. 16 ISSUE 1

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Halton Region Master Gardeners

Pale Purple Coneflower, *Echinacea pallida*

By Hariette Henry, Halton Master Gardener

Pale purple coneflower, *Echinacea pallida* is a native herbaceous perennial that gets the attention of gardeners due to the combination of large coppery-orange central cones and thin, pale pink flower petals that gracefully hang down like tassels. In winter the prominent central domes look like little Santa hats covered in snow.

The plant grows to about three feet tall with a one foot spread and features dark olive-green foliage of long, slender, parallel veined, toothless leaves that appear mostly on the lower tiers of the stems. The flowers bloom from late June to late July, with sporadic continued blooming into autumn. Leaves and stems are usually covered with fine white hairs. There are 12-20 slender, long, drooping petals (in pale violet, rose, or almost white) that surround the domed central disk of florets which contain white pollen.

They prefer well-drained soils (sand, loam, or clay), full sun and a slightly acidic to neutral soil with a pH of 4.5 - 7.5. *Echinacea pallida* has a long chocolate-brown to black taproot with little branching that allows established plants to easily tolerate prolonged droughts.

All images: Hariette Henry

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PALE PURPLE CONEFLOWER / ECHINACEA PALLIDA (CONT'D)

They also adapt to alkaline, infertile, clay, shallow, rocky, or gravelly soils. Every three to four years the plants may become overcrowded and clumps will need to be divided. *Echinacea pallida* can also be propagated by seed. Plants are pest resistant and unpalatable to deer and other herbivores.

Pale purple coneflower is showy and serves as a good cut flower or looks good in dried floral arrangements. The plants are preferred for native gardens, naturalized wildflower gardens or woodlands. They look best if planted in drifts, to gently merge with other prairie-style plants such as *Allium cernuum* (nodding onion), *Asclepias syriaca* (common milkweed), *Rudbeckia hirta* (black-eyed Susan), *Monarda fistulosa*, (wild bergamot), *Liatris spicata* (dense blazing star), *Schizachyrium scoparium* (little bluestem) and *Panicum virgatum* (switchgrass).

Native bees, butterflies, skippers and the occasional hummingbird seek the nectar of *Echinacea pallida.* Caterpillars of the silvery checkerspot butterfly and several moth species feed on the foliage. Eastern goldfinches consume the nutlike seeds.

Echinacea pallida is most beautiful planted in drifts as above.

A striking feature of this plant is the delicate, tassel like petals that sway in the breeze.

Similar in appearance and cultural needs, its cousin, purple coneflower (*Echinacea purpurea)* can be substituted in some situations. Pale purple coneflower blooms two to three weeks earlier; the leaves are longer, narrower and hairier, and lighter in colour.

The photos that appear within this piece were taken at the Rose Garden, Royal Botanical Gardens in Burlington this past year. These pollinator-friendly plants are part of the companion plantings that were added to the re-designed, re-imagined, more sustainable rose garden in 2018. ✽

Take a Closer Look!

- NC State Extension: Plant Toolbox, *Echinacea pallida*
- Missouri Botanical Garden: *Echinacea pallida*
- New Moon Nurseries: *Echinacea pallida*
- Gardenia.net: *Echinacea pallida*

FEBRUARY 'TO-DO' LIST

by Claudette Sims, Halton Master Gardener

- [ ] **Pagoda Dogwood** – Inspect pagoda dogwood for signs of golden dogwood canker. Healthy stems are brown/purple & diseased ones yellow to orange. Prune affected stems to slow the infection. If badly infected, cut the entire shrub to the ground. It will grow back beautifully in spring.

- [ ] **Houseplants –** Consult our December newsletter 'to do list' for detailed information on houseplant care & dealing with pests.

- [ ] **Seed Starting** – Use this Seed Starting Date Calculator to determine when to start your veggie seeds. Enter May 17th as our area frost date.

- [ ] **Buy Seed** from this extensive list of suppliers at Seeds of Diversity.

- [ ] **Winter Sowing –** read Halton MG Bev Wagar's excellent blog posts on winter sowing of seeds.

- [ ] **Plan your 2023 garden** by sourcing plants in nurseries near you. Check out our unique map of nurseries in Ontario. Native plant nurseries are highlighted with green stars!

Buying flowers for a loved one or yourself? Make sure the vase is super clean.

Photo taken at The Watering Can by Claudette Sims

- [ ] **Dormant plants/bulbs indoors** – Check cold stored bulbs or plants for rot or signs of disease. Spray lightly if dry or shriveled.

- [ ] **Pruning** – Winter is ideal for pruning out dead, damaged, diseased wood and to increase circulation by opening the shape of trees & shrubs. Do prune blueberries in late February/early March and grapes before growth starts in March. Fruit trees are usually pruned in late winter to early spring.

- [ ] **Buy** flowers or a plant for someone you love on February 14th!

VERMICULITE: WHEN IS A VERMI NOT A WORM?

by Allyn Walsh, Halton Master Gardener

What is vermiculite?

Vermiculite is a naturally occurring form of silicate mineral which also contains magnesium, iron and aluminum. When heated, the vermiculite flakes expand and develop an expanded worm-like appearance, hence the name “vermiculite”. The term is derived from the Latin “vermiculus” for worm, and “ite” meaning mineral. There are no actual worms in vermiculite! Horticultural vermiculite usually comes in grey-brown flakes, and can be found as fine, medium, and coarse grains.

What does vermiculite do for plants?

Vermiculite absorbs three to four times its weight in water and facilitates the release of plant nutrients, particularly potassium, magnesium, and calcium. This makes it particularly useful for seed starting and for supporting cuttings to develop roots. It also aerates the soil and can be a substitute for perlite or peat but with the added benefit of water and nutrient retention.

A helpful addition to the gardener’s repertoire

These seeds have germinated in vermiculite, demonstrating the growth of roots and shoots. The seedlings can be kept in vermiculite until it is time to transplant them to a container or the garden.

How do gardeners use vermiculite?

Those engaged in hydroponic gardening often use vermiculite in place of water. For other gardeners, vermiculite can be mixed with seed starting mix or used on its own in a seed starting tray. It can be advantageous to use fine grade vermiculite as a top dressing to retain moisture and prevent fungal infection such as damping off. For cold stratification techniques, seeds can be placed in containers with moist vermiculite and stored in a refrigerator, remaining there for the required weeks or months while seldom requiring any additional moisture.

Stem or leaf cuttings can also thrive in vermiculite simply by placing them in dampened vermiculite instead of water, with the advantage of not only adequate hydration, but also the benefit of minerals as mentioned above. Vermiculite can be used as a soil amendment, particularly for container plants which require moist conditions. Less watering is required wherever vermiculite is used!

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VERMICULITE (CON'T)

What about perlite?

Both perlite and vermiculite are used in potting mixes and for root cuttings. Perlite is a type of volcanic glass and looks like small white fluffy balls. It aids soil aeration and drainage and is excellent for plants that require drier conditions. Vermiculite is much more effective at retaining moisture. So, the best choice is the one that suits what you want to grow, as well as how often you are prepared to water.

Adding perlite to your soil aids in aeration and drainage

Are there concerns about using vermiculite?

A quick internet search will pull up cautions warning of vermiculite being contaminated with asbestos. Much of the vermiculite used in North America once came from a mine in Montana which was found to be contaminated with asbestos. This mine has been closed for over 30 years and new testing procedures were put in place. There is no longer any concern; vermiculite is handled in the same way as other soils and soil amendments.

Where can I buy vermiculite?

Most garden centres, nurseries, and home supply stores sell vermiculite. While it can be bought in bulk, most home gardeners purchase it in 9-litre bags which retail from $9.00 to $15.00 as of January 2023.

Cuttings from a *Pelargonium* (common geranium) specimen have been rooted in vermiculite. The root systems are now well established, and the cuttings are thriving three months along.

Further Reading

- BBC Gardeners World Magazine. Vermiculite: main uses
- Trees.com. What is vermiculite?
- Savvy Gardening. Do-it-yourself potting soil
- Epic Gardening. Perlite vs. Vermiculite
- Ottawa Field Naturalists Club. Growing Native Plants from Seed

KEEPING A GARDEN JOURNAL

By Patty King, Halton Master Gardener

When I moved into the house I live in now, the property had a few obvious garden beds but the majority had been neglected for many years. I realized I needed time to watch and learn what plants existed here and take a general inventory of the trees and shrubs. So I bought a fancy lined journal and wrote the year and the name of the garden in the frontispiece. It was the year 2000! *I am now on my fourth journal!*

Image: *Bullet point garden journal*

Twenty years ago I did not know as much about plants and come spring time, when I wanted to go out and spend all my money on new plants, I would stand in the garden nursery trying to remember which peonies I had, what colour they were, and did they bloom in June or July?

Image: *Get creative!*

Keeping a garden journal has been a wonderful way to remember past plants and garden beds, the choices I have made, what has done well and what has failed. It is my to-do list for the following month or year. It reminds me that the walnut trees are on the bottom of the fruit cycle and that this year has been rife with rabbits eating plants willy-nilly.

Every gardener should consider keeping some kind of record of their garden. It is just a matter of figuring out what it is you want to keep track of and understanding that this will change over time.

I decided to create an excel spreadsheet with a column for each month of the year. Each one listed the plants that bloomed in that month or were still in bloom the following month. This worked well for me and eventually I created another spreadsheet to list the plants in each garden bed. This was my master list which I still keep. It is a memorial too, as I can see all the plants killed over the years (by me, the rabbits, and the weather). It is a horrifying thought at times, especially the one time I tallied up the lost cost in dollars. The latter is perhaps not for the faint of heart!

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KEEPING A GARDEN JOURNAL (CONT'D)

Today I don't feel the need to keep detailed records of the plants I grow, as I am on other horticultural journeys. Like many, I am growing vegetables and learning to propagate native plants by seed and cuttings. A few years ago I started a binder in which to enter my experiences growing vegetables. I have begun tracking germination and propagation techniques of the vegetables and native flowers I grow. Another section of the binder is for play where I use it to sketch out planting ideas.

My sister likes to keep her plant tags because the photo and growing information of the plant are right there in one place. She uses photo albums with the sticky coated paper and the clear plastic over top that holds it all in place. I have seen similar setups online using pockets instead.

Image: *Create a gardening binder*

Image: *Keep it simple*

The process of writing in my fancy journal is one I enjoy very much. It slows me down to think about what I have just seen in the garden, and what I felt was worth recording. This act seems to help me keep in tune with the garden on a different level. In addition, actually writing with pen in hand is satisfying. I enjoy rereading my garden's history, the good and the bad. It reminds me of my early ideas and original concept for the garden I've tended for 22 years. ✽

Image: *Save your tags!!*

WHAT'S SO BAD ABOUT FOUNDATION PLANTINGS?

Liza Drozdov, Halton Master Gardener

Once popular "foundation plantings" can have negative connotations today. Sniffily disparaged by modern garden designers, original foundation plantings are often jumbles of old, overgrown, and badly maintained junipers and euonymus. Or monotonous and uninspired repeats of the same shrubs and random annuals—likely planted by the developer—in front of each house in a survey. The result can be an eyesore or, worse, a potential cause of damage to your home.

Foundation shrubs can quickly overgrow the space if mature size is not considered. Image: Janet Mackey

Can they can really damage my home?

Although fears about roots penetrating house foundations and allowing water into your basement are unfounded (see *Roots Are Opportunistic,* below), there are many other ways that plants can put foundations, roofs, and walls at risk of damage.

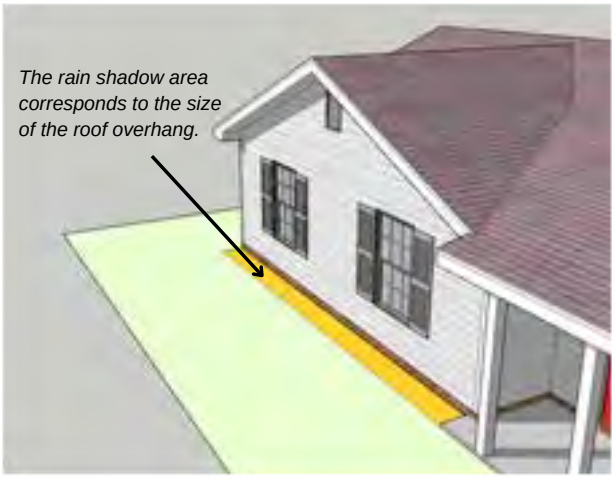
But before looking at plants, look at the foundation itself. Does it have weeping tiles and a waterproof membrane? Required by Ontario's building code (for new homes) since 1984, these effectively keep water away from your home's foundation. But older houses, usually lacking this technology, may have cracked or damaged foundations. Foundation issues must be fixed before anything—even just turf—gets planted.

Speaking practically, foundation plantings need to be far enough out from the walls of your house to allow access for maintenance and seasonal tasks such as window washing.

Gardens planted close to the house foundation often fail to thrive for several reasons: rain shadow, soil quality, reflected heat, and inadequate air circulation.

Rain shadow

Rain shadow, the umbrella-like effect caused by roof overhangs and eaves, prevents precipitation from reaching the ground. Home landscapes are graded to slope away from structures and towards swales or drains. Gutters and downspouts also carry rain away from the roof edge. Gardens planted directly under a house's eaves will be extremely dry. People who forget to water the rain-shadowed areas may wonder why their plants shrivel and die. Yes, irrigation is an option. But it's better to garden sustainably and take advantage of natural precipitation. If you want to plant next to your house's foundation, bring the garden out at least as far as the edge of the rain shadow to ensure it's not entirely dependent on you for water.



Graphic: Bev Wagar CC BY-NC

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FOUNDATION PLANTINGS (CONT'D)

Soil quality
The soil directly around the house foundation is typically subsoil, backfilled by the builder after laying weeping tile or completing foundation work. It's often mixed with rubble and even buried garbage. It's also extremely compacted by the heavy equipment used to stabilize soil and minimize settlement.

Not only will the soil be hard and lack plant nutrients, it may be affected by buried brick and concrete. These can leach calcium and lime, raise soil pH, and affect what sorts of plants will survive there. Do a soil test before you even think about choosing plants. Soil quality will improve with the addition of compost and organic material.

Reflected Heat
The walls of a house, especially ones of stone or brick, are high in thermal mass which, along with dark-coloured walls, absorb heat from the sun. Walls exposed to full sun for even an hour on a summer's day are often several degrees warmer than the surrounding air. Reflecting off the wall and onto your garden, that heat radiates long after the sun goes down. Plants can roast, especially if there are no mature trees nearby to provide shade. Even sun-loving plants will suffer from heat stress during the summer months, especially along southern or western exposures.

Reflected heat, like a rain-shadow, dries out the soil. Hot air and dry soil cause foundation plants to suffer. To reduce heat stress, consider building an arbour or planting taller deciduous trees along the southern and western boundaries.

A house shaded by trees along the property line CC0

Mother Nature is an excellent structural engineer. She has ensured trees have as much mass (of roots) below ground as there is above (branches and leaves) in order to keep the tree upright, to anchor it in the soil and secure it against strong winds. Large structural roots make up most of the mass of the root system, but in some cases don't always tend to extend very far laterally.

However, the smaller roots that branch off them—sometimes called "feeder roots"—spread far and wide in search of moisture, air, and nutrients and are generally found in the top 18 inches of soil. These surface roots can rob the soil of moisture making it impossible to grow plants under the tree.

Many trees are notorious for having especially aggressive roots: maple, poplar, and willow are prime examples. They all have dense, shallow root systems that spread relentlessly, taking what they need at the expense of plants in their path.

Trees add great beauty to a garden, but are better planted away from your house.

"Trees make terrible foundation plantings"

Air Circulation
Many plants grown on, or very close to, house walls fail to thrive even if watered well and grown in improved soil. Powdery mildew, black spot and other fungal diseases often affect plants grown in this situation because of inadequate airflow. Air movement is important because it promotes water evaporation, thus reducing condensation on leaf surfaces and inhibiting the growth of fungal infections and bacterial growth.

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FOUNDATION PLANTINGS (CONT'D)

Diseases, viruses, and bacteria may be present in the garden—in soil, on plants, and in the air. But, like humans and the common cold, most plants don't necessarily succumb. However, a susceptible plant in the presence of a pathogen and environmental factors such as poor air circulation or drought may result in disease taking hold.

Healthy, unstressed plants have a natural resistance to both disease and insects—they have built-in defenses. Planting further out from the wall will ensure sufficient air movement behind plants.

Roots are opportunistic

Feeder roots are continually growing outwards looking for resources but when they come up against your basement wall or sewer pipe, they'll turn and grow along it or under it since they aren't able to break through; they simply aren't strong enough to do so.

But if there's a weakness in the barrier—such as a crack in the foundation or a drainage pipe, they'll enter through that, drawn by the moisture or oxygen or nutrients within—and that's where problems can begin. The roots will grow inside the weeping tile and clog it or even break it apart. And they can even widen existing foundation cracks to the point of undermining the house.

There are many reasons for cracks in sewer pipes or your basement walls. Soil is in constant motion, shifting, swelling, and shrinking with the seasons. You never know what's going on beneath the surface, so it's not just a bad idea to plant a tree next to a house's foundation, it's an invitation to disaster.

Wind

Trees can also cause damage to your home above the soil level, from something as simple as leaves clogging gutters or falling branches damaging the roof or eaves.

A much bigger issue is caused by structural stress on a tree from wind, especially when the trees are fully in leaf. High velocity winds, especially gusting winds, can put an enormous amount of pressure on leafed-out trees.

Nature has designed trees to tolerate a certain amount of wind load. But in extreme storms trees, especially ones that are poorly maintained or subject to environmental stress, can shear, uproot, or even lose large limbs. The taller the tree, the greater the risk of windthrow (tearing out of the ground) and windsnap (snapping in half at the trunk). If that tree is planted right next to the house it can put pressure on the roof or walls—even without a sudden impact—to the point of causing structural damage.

Choose Foundation Plants Wisely

Make your foundation planting great by choosing plants that suit your soil and moisture conditions. Consider adding native shrubs instead of invasive and overused plants like euonymus. Research your plants, especially the mature size of trees and shrubs. Include them in foundation plantings only if the size is suited to the situation. Trees sequester carbon, clean our air, provide habitat for wildlife and pollinators, cool our homes, and lift our spirits. So please *do* plant trees! Plant lots of trees—just not next to your house. ✽

Shrubs and trees given insufficient space Image: Penn Live

Q&A

By Hariette Henry, Halton Master Gardener

> *I have collected some seeds this fall and I believe some will require stratification. I'm finding conflicting information from various sources on how the process should work. What does the choice of stratification method depend on? I have never done this before and would appreciate some advice.*

If this is your first time collecting seeds as well as germinating them, there may be a few things you will want to consider. First, if you are collecting seeds from a native wild population, no more than 10% of the seeds should be taken. If you are collecting from a garden, it is ok to take what you need, but leaving some for birds and other wildlife is always a good thing to do.

Seeds should be collected only when they are fully ripe (stems and seed heads should be dry and brown). Always keep track of the species, location and year that you have collected them, and record this information on the container you store them in. When you are ready to collect seed, shake the seed heads inside a bucket or paper bag so they will be released.

Cleaning them may be needed. You can do this manually or use a kitchen sieve to remove the bits of debris. Storing seeds is best done in a paper bag or envelope as paper breathes and allows air to flow (your seeds will be less likely to rot). Most seeds will stay viable for three years or more. The best way to maintain a high viability is to keep them cool and dry, away from sunlight and any other obvious heat sources.

All plant seeds are dormant embryos that require water, oxygen and warmth to germinate. They will sprout one or two tiny leaves and the beginning of a root. If the right conditions persist, these seedlings start to take moisture and nutrients from the soil and energy from the sun, and grow into mature plants.

Not all seeds are ready to sprout as soon as they are planted in the soil. Some require a temperature change to trigger the end of dormancy, called stratification. Stratification occurs naturally when seeds are sown outdoors through the cold winter months. It is a survival mechanism so the seed does not germinate prematurely. Many of our native plants require cold temperatures to break their dormancy cycle.

Winter sowing, the easy method of germinating seeds
Photo: Hariette Henry

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Q & A *(CONT'D)*

There are various methods that can be used to mimic stratification. You can soak your seeds in water overnight then add the seeds to a plastic bag filled with moistened seed starting mix. Tiny seeds that might get lost in soil can be placed in damp (never wet) paper towel instead. Labelled bags then would go into the refrigerator. It is important to be aware of the length of cold period your seeds will require for germination; 30, 60, or 90 days are quite common for many Ontario native plants. The Ontario Rock Garden & Hardy Plant Society provides a handy germination guide.

Another method that works well if you don't have a lot of room and don't want to be bothered with the hardening off process is called winter sowing. In this method you start your seeds in empty, cleaned milk jugs. The jugs should be cut in half horizontally and holes poked in the top and bottom of the jug. Place your seed starting mix in the base of the jug and spread the seeds on the surface, pat gently to barely cover the seeds. Label the container with the seed type, tape the bottle shut and leave the cap off. Set the jug out on the porch in Jan/Feb in morning sun, dappled shade, or shade. Check the seeds occasionally and water if dry. Watch for seedlings in mid-April. Plant in the final garden destination in May or early June.

You should check on your seeds periodically as some species may begin to sprout in the bag. The final step would be to plant your seedlings into small pots and leave them in a sunny window until they can be hardened off and planted outside.

Good Luck! ✽

Worthwhile winter sowing results in spring
Photo: Hariette Henry

Take a Closer Look!

PennState Extension:
Starting Seeds in Winter

University of Illinois:
Seed Stratification: What Seeds Require Cold Treatment

Prairie Nursery:
Seed Stratification Guide

West Coast Seeds: Gardening Basics

Winter Sowing: Articles on RBG Blog

GARDEN INSPIRATION

Blooming Boulevards…

…is the inspiration of Jeanne McRight. Begun in Mississauga in 2019 with a three-year plan to *promote a resilient, biodiverse ecosystem by creating sustainable boulevard garden networks that add vibrant character to neighbourhoods and foster a spirit of community pride*. Find out more about the amazing accomplishments of this group of volunteers. Perhaps you can create your own *blooming boulevard*.

What's Growing On ?

Royal Botanical Gardens

Winter Exhibit

Winter Hiking

Seed Library

We're here to answer your gardening questions!

Send us an email. It's what we do best!

- Do you have a passion for gardening and sharing your knowledge? Learn more about joining us.
- Interested in attending a meeting? Contact us at: Halton Master Gardeners
- Follow us on Facebook

Green Venture Events, Programs & Services
Learn more here

Check our calendar for events

What's Growing On ?

Giant Hogweed

Himalayan Balsam

CIPR

Learn about invasive species from the
Canadian Coalition for Invasive Plant Regulation

Buckthorn

Purple Loosestrife

Invasive Species Centre Save a FREE virtual seat for the 2023 Invasive Species Forum here!

Halton Garden Week 2023
February 23 to 25

Free Virtual Presentation and Workshops

Learn more here

Seeds of Diversity

People Saving Seeds and Pollinators

Learn more here about Seedy Saturdays

What's Growing On ?

Learn more about Mountsberg outdoor fun here

Read fact sheets and articles here

About Our Newsletter

Cross Pollination is published monthly from February to December and is written and prepared by our dedicated volunteers. Halton Master Gardeners are experienced gardeners who have studied horticulture extensively and continue to upgrade their skills through technical training. We strive to provide science-based, sustainable gardening information to the general public. The information in our newsletter has been verified by our volunteers to the best of our abilities, but given the scope of horticulture and science some concepts may not reflect current knowledge.

Your donations support our work!