Greenleaves

Newsletter of the Bruce Grey Woodlands Association

WINTER 2021

www.bgwa.ca

Upcoming Board Meetings:

(virtual/teleconference until further notice)

All dates 5:30PM start

April 13
May 11
June 15
Aug 10
Oct 12
Dec 14
Jan 11 (2022)

Members always welcome. Contact secretary@bgwa.ca for virtual meeting invite.

President's Message

Jim White

Today's warm sunshine is a welcome sign that winter is losing it grip and spring is on its way.

I would like to welcome all members to our new year with the Bruce Grey Woodlands Association. 2021 promises to be an exciting year as we emerge from our year-long hibernation from the pandemic, get vaccinated and develop new norms as a society.

I would like to thank Alison Stewart for her leadership the past two years as President. She provided leadership and guidance as we grew our events in scope and events in 2019 and then helped navigate the chaos of 2020s pandemic. With a little improvisation we were still able to hold well attended face to face events when public health regulations allowed and began offering virtual events to help members that had cabin fever. With her leadership our team of directors increased with new volunteers to help share the work of the association. Best wishes to Alison as she enjoys her travels.

Our Board of Directors has one new face joining us, Valentine Makhouleen. Valentine and family live near Kinghurst Forest.

After 6 plus years Neil Baldwin has decided to take a well-deserved break from board responsibilities. Neil has tirelessly led us in the Communications Committee since the amalgamation of the Bruce and Grey Woodlot Associations. You will recognize Neil's frequent web posts over the years and the evolution of *Greenleaves* our association newsletter. Thankfully, Neil has offered to continue his work producing the newsletter in collaboration with Malcolm Silver as editor. Neil continues to create our newsletter almost entirely based on local contributors to *Greenleaves*.

(Continued on page 2)

Would you like to host a member tour of your woodland property??

Contact Jim Coles:
jcoles@gbtel.ca
519-934-0020

THANK YOU
THANK YOU
THANK YOU

Wow, 14 packed pages, all thanks to BGWA members contributing!

Will you help us fill out the next edition???

newsletter@bgwa.ca

GREENLEAVES

is published by Bruce Grey Woodlands Association (BGWA) and distributed to members to provide information, guidance, instruction, ideas and opinions related to trees, woodland ecosystems, forest management, and recreation in forest settings in or relevant to Bruce and Grey counties.

Content of articles is the sole responsibility of the authors and does not necessarily represent the views of BGWA. Images accompanying articles are provided by the author unless indicated otherwise.

BGWA's vision:

Promoting healthy forests and ecosystems in Bruce and Grey Counties through education, recreation and sustainable management practices.

bgwa.ca **info@bgwa.ca**

Mailing address:

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My sincere thank you to Sandy Bunker for his knowledge and skill in leading us through the election process for the Executive positions – all virtual…

In addition to myself, your BGWA executive for 2021 is:

Vice President – Chris Vander Hout
Past President - Alison Stewart
Secretary - Kevin Predon
Treasurer - Larry Cluchey

Chairs for our Committees:

Events - Jim Coles
Communications – Jim White
Membership – Chris Vander Hout

For those of you not able to join us for the AGM invited speaker presentation, Director, Susan McGowan led a discussion about Gypsy moths. Many of us have seen the larvae and moths last summer and now lots of egg masses on trees when in the woods. The presentation included material prepared by David Dutkiewicz and Dr. Taylor Scarr. David works with the Invasive Species Centre and Taylor works for the Natural Resources Canada, Canadian Forestry Centre. You can find the link on our website for viewing at a time convenient to you! Thanks to both Donna Lacey and Alison Stewart for Zoom and techie assistance during the AGM.

Marshall Byle won the draw prize for contribution of articles to *Greenleaves* during 2020.

Here is a brief update from our first 2021 Board meeting on March 9th:

- Reviewed the Treasurer's reports for 2020 and approved a balanced budget for 2021 activities.
- Voted on Executive positions
- Set up committees for Events, Membership, Communications and committee members (details in the table on the last page)
- Initiated discussion on: list of potential events both face to face and virtual; tactics to grow our membership; top level direction for communications planning.
- Selected Board meeting dates. Location and timing will be selected based on public health direction for Bruce Grey counties

I cross-country skied several times at Glenelg Ski Club on awesome trails this winter. If you haven't skied, hiked or cycled the trails they are extremely picturesque. Last week I snow-shoed some of our forest property checking for wind damage on trees from winter storms and signs of wildlife. Wild turkeys have been active. With warmer days and sunshine one of my beehives has sufficient solar heat to encourage the 'girls' out for a cleansing flight. It will take more warmth before the snow melts enough to allow access to the hive entrances for the rest of the hives.

(Continued on page 3)

I am sure those of you with a maple syrup evaporator have tapped and hung pails or strung pipelines. Sunny days and frosty nights should make this spring ritual successful.

I have a bit of firewood to cut and move before the hepaticas, trilliums and leeks usher in spring.

I read an editorial this morning in Country Guide magazine. The Editor was encouraging readers to take time this spring to plant a few trees. Trees planted this spring will commemorate the fresh start in 2021 following the worst pandemic in 100 years. Many of the trees in our forests could tell stories of the 1918 pandemic. Plant a tree this spring and we can image what Canada and Grey and Bruce Counties will be like in 2121!

You are always welcome to contribute to our newsletter, engage in committee activities and participate in events organized by BGWA. We need your participation! Our committee members work hard putting together initiatives; the focus is on Grey and Bruce counties.

Sincerely,

Jimi White

The Formation, Structure and Function of Wood

By Jim Coles - BGWA Director

A Seed Germinates - and a Tree Grows

When a tree seed germinates, it sends a shoot up, and a root down. Both form a layer of wood around a soft central core or pith. From this point on, as long as the tree lives, it will extend its crown and its root system longitudinally and increase the diameter of its stem, branches and roots by the addition of new layers of wood and bark.

Wood has evolved over millions of years to serve three main functions in trees - conduction of water and mineral nutrients from the roots to the leaves; mechanical support of the tree body; and the storage of biochemicals produced through photosynthesis in the crown. To accomplish these tasks, wood must have cells that are designed, and interconnected, in ways which allow performance of these functions.

When you cut down a tree and look at the stump, some features become evident. (Fig 1) The **outer bark (ob)** provides mechanical protection and helps limit evaporative water loss; the **inner bark (ib)** is the area where cells transport the photosynthate produced in the crown to the living portion of the tree including the roots; the **vascular cambium (vc)** is a very thin layer of cells (difficult to distinguish) which, through cell division, produces the inner bark to the outside and wood to the inside; the **sapwood** is the layer of wood which conducts water and nutrients from the roots to the crown for use in the photosynthetic process; the **heartwood** with it's dead cells is non-conductive and usually darker coloured in most species; and the **pith** at the centre of the trunk.

Sapwood and Heartwood

The cells of sapwood are responsible for more than just the transport of water and nutrients. They are also responsible for the long term storage of photosynthate. The energy required to form a new flush of leaves or needles in the spring is stored in the sapwood (think sweet maple sap) over winter and transported to the growing points in the spring.

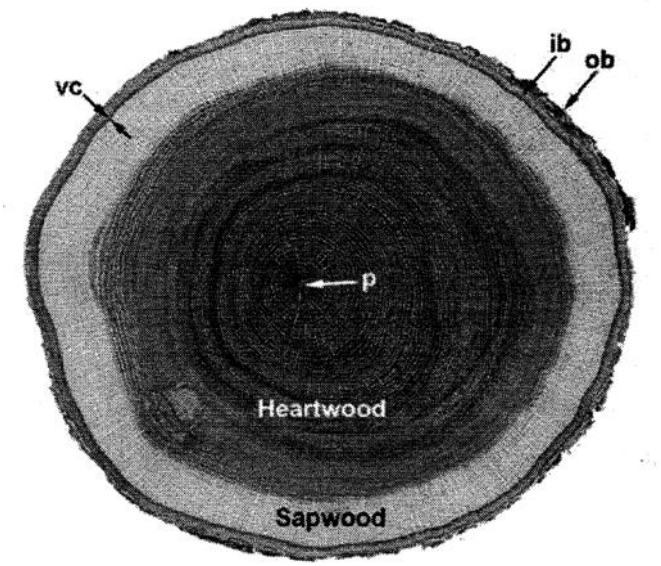


FIG 1: transverse view of oak

(Continued on page 4)

(Formation, Structure & Function of Wood, from page 3)

The cells of the sapwood are also the agents for heartwood formation. Cells at the border between heartwood and sapwood are responsible for the formation and deposition of heartwood chemicals. These chemicals are collectively known as extractives. The extractives are formed at the heartwood/sapwood boundary, transported into the dying cells of the heartwood, which then become occluded and often coloured.

Extractives are responsible for imparting several characteristics to the wood—providing natural durability or resistance to fungal decay being the principle one. In the case of many species like black cherry, walnut and tropical hardwoods like mahogany, it is only this beautifully coloured heartwood which provides value.

Longitudinal and Radial Transportation Systems

The distinction between sapwood and heartwood is important but a more detailed look into the structure of wood shows that wood is composed of individual cells interconnected to form an integrated system from root to twig and pith to bark. The cells of wood are typically many times longer than wide and are specifically oriented in two separate but interconnected systems - the longitudinal system and the radial system. Cells of the longitudinal system have their long axis running up and down the trunk while the radial system cells are oriented from pith to bark like the spokes on a bike wheel. The longitudinal system provides the water and photosynthate transport up and down the tree and the bulk of the mechanical strength of the tree. The radial system (called "rays", Fig.2) provides lateral transport of the photosynthate and performs a large fraction of the storage function.

Trees grow longitudinally by cell division at growing points (apical meristems), located at the tips of all twigs and roots. Through this division and elongation of the newly formed cells during the growing season, the tree extends its height and the length of its branches and roots.

Stems, branches and roots also grow in diameter and the interconnected arrangement of cells in the two systems is accomplished through cell division in a layer called the vascular cambium.

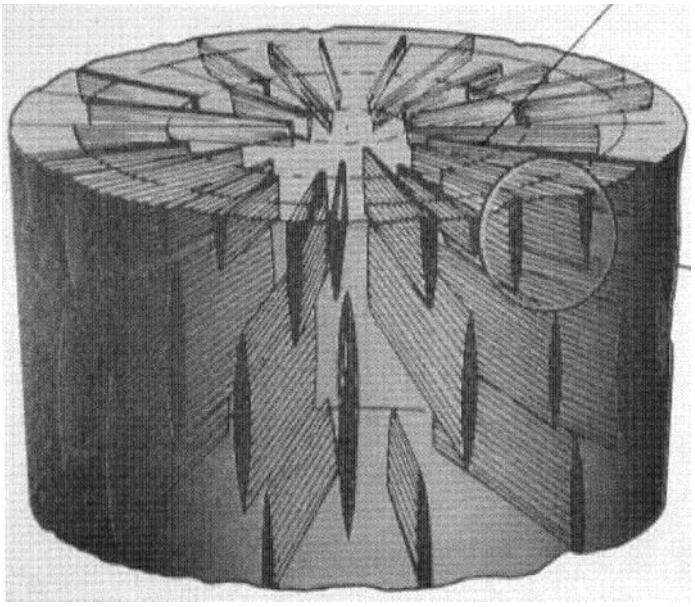


FIG 2: schematic of rays, the radial system of transport

The Vascular Cambium

The vascular cambium envelopes the wood over the entire body of the tree and is progressively extended into the new twig and root growth. It is a very thin layer of living cells located between the inner bark and the wood in both softwoods and hardwoods. It produces, by means of many cell divisions, wood to the inside and bark to the outside. The longitudinal and radial systems of interconnected cells are generated in the vascular cambium by fusiform initials and ray initials. Fusiform initials (long and slender) give rise to the cells of the longitudinal system and ray initials give rise to cells in the radial system. In this way, the conducting cells of both systems remain interconnected from the wood, through the cambium and into the bark.

In our temperate climate, each spring a new round of cell division in the vascular cambium produces early wood (spring wood) and at the end of the growing season produces late wood. This annual growth pattern forms a series of circular or annual rings around the entire tree. These are easily seen in freshly cut, rapidly growing softwoods and most hardwood. The new wood produced from the cambium is called the xylem and the new inner bark is called the phloem.

(Continued on page 5)

(Formation, Structure & Function of Wood, from page 4)

Cells of the Xylem and Phloem

In softwoods, due to their common origin from a fusiform initial in the cambium, wood cells tend to be aligned in radial files from pith to cambium. (Fig 3) The predominant softwood cells produced are called tracheids (fibers) and are like very small tubes with closed, tapered ends. They serve both the conductive and mechanical needs of softwood. The early wood fibers have large cavities and thin cell walls whereas the late wood fibers have small cavities and thicker walls which accounts for the difference in density. Species with a greater proportion of latewood (tamarack) have a higher density than those with little latewood (white pine). The tapered ends of these tracheids overlap with the neighbouring cells and have matching pits between them which allows for the flow of water and biochemicals between the roots and the crown. The tracheids are composed of cellulose and hemicellulose and are all held together with lignin. In our northern softwoods, these cellulose fibers are approximately 3 to 4 mm long and are the base for our extensive pulp and paper industry. In spruce and fir, these fibers make up virtually the whole annual ring while in pines, there are also larger ducts for the transport of resin. Roughly 90% of the cells in softwoods are oriented longitudinally, with the rays being the other 10%. The cells of rays are sort of rectangular brick-shaped and provide the lateral transport and storage of biochemicals. When the rays cells intersect with the tracheids, specialized pits are formed to connect the longitudinal and radial system of flow. Rays are difficult to see but may appear as dark lines.

The cell structure of hardwoods is much more complex. The longitudinal system is composed of fibrous elements, vessel elements and other cells in various patterns and arrangements. Hardwoods also show a greater variety in sizes and shapes of ray cells. The vessels or pores in hardwoods are the specialized water conduction cells. These pores are short tubular cells with perforated plates on the end which fit together longitudinally to form a longer pipe-like structure. Hardwoods are classified into two categories based on the arrangement of the pores in the annual ring. (Fig 4) In "ring-porous" hardwoods, the pores in the early wood are much larger than those in the

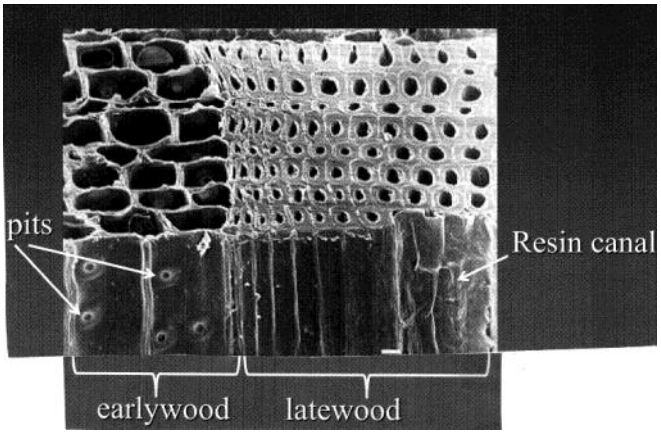


FIG 3: Softwood Earlywood, showing pits & Latewood

late wood and are arranged close together so that annual rings are clearly visible. The "diffuse-porous" hardwoods contain pores of roughly the same size which are distributed uniformly throughout both early and late wood, making it more difficult to see the annual rings. Our ash, elm and oak are examples of ring-porous wood while birch, cherry, maple and poplar are diffuse-porous woods. Like softwoods, when vessels come in contact with each other or with ray cells, matching pits are formed for the transport of material between them.

The vessels are contained in a matrix of various small fibers, much shorter and more narrow than softwood fibers, which function almost exclusively as mechanical supporting cells. The thickness of these fiber cell walls is the major factor governing density and mechanical strength of hardwood species. Species with thin walled fibers such as poplars and basswood have low density and strength while species such as hard maple and black locust have thick walled fibers and high density and strength.

This is probably more than you wanted to know about wood but we still have to get the water and minerals from the ground 75 feet up to the leaves and converted to photosynthate so the tree will continue growing - but that is a story for another day!

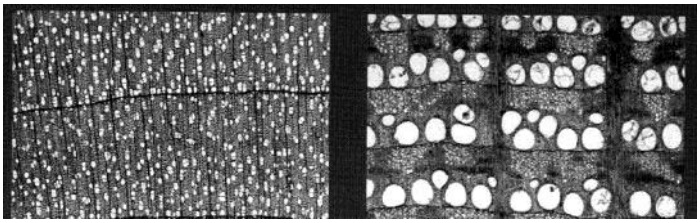


FIG 4: Hardwood Xylem: "diffuse porous" (left) & "ring porous" (right)

Observations: Bird nesting boxes

By Marshall Byle - BGWA Member

I recently attended a webinar put on by the Kemptville Winter Woodlot Conference about "Wildlife Trees in Your Woodlot". The guest speaker was Jodi Hall R.P.F. a Forest Management Guides Forester with the Ministry of Natural Recourses and Forestry. The object of the seminar was to maintain habitat and biodiversity in your woodlot. This would involve practicing good silviculture, protecting critical and sensitive habitats and maintaining special features (eg. Wildlife Trees) .

This is all pretty well-known info amongst our members, so here is a summary of what was recommended or what to aim for.

- 10 cavity trees/ha
- 10 mast trees/ha
- 10 scattered conifers/ha
- 1 super canopy tree/ha

I'm pretty sure that many woodlots are lacking this ideal, especially my own since I have a pine plantation. Many of us build and put-up bird houses to help and encourage cavity nesting birds and in some cases mammals. Here are a few points that you may not know about.

Nowadays it's pretty easy to google birdhouse designs for just about any species, and within a few clicks you can download pretty nice plans to take to the workshop. Be careful, because many of these so-called trusted plans are not the best for our region. A perfect example is the Peterson bluebird box. I do realize that Eastern Bluebirds are not a species that will reside in a woodlot, but many of our members have areas of open land or there is open pasture land adjacent to your woodlot. The Peterson design calls for lots of ventilation. This may be good for the Southern U.S. but not where we live.

In 2020 we had warmer than normal temperatures through March and April and then in May we had a few days of blizzard like conditions. According to data from the Ontario Bluebird Society (OBS), 22% of the nest boxes contained birds that died from the cold last May. Apart from that, there still was reasonable nesting success last summer. Blue birds here seem to

Photo by Bruce Edmunds

thrive during hot weather, so the OBS recommends sealing the boxes as tight as possible, no ventilation. Their years of data show that the survival rate for successful breeding is greatly increased by building well sealed houses and, of course, predator guards.

Bluebird trails with boxes fastened to fence posts can have a negative effect on bluebird populations. Racoons, after finding food in a box (a female bluebird or young), will visit other boxes in a trail and predate those as well. Since natural cavities are located in a random fashion, only that one nest would be lost. Nest boxes mounted on T-bars or metal posts with an application of grease is very effective in keeping racoons from climbing them. Sections of stove pipe or cones can also work.

While we're on Bluebirds, it's standard practice to always put up 2 boxes about 10-15 ft apart. This way if Tree Swallows nest in one box, they will not allow another pair of Tree Swallows to occupy the box nearby, but won't be bothered by Bluebirds.

Just about all cavity nesters are attracted to a hole, but they are not able to differentiate which ones will be best from a survival perspective. If you have ponds or a water feature, a large box designed for Wood Ducks may be a great idea. These boxes also almost always call for drain holes into the bottom and ventilation at the top. I can assure you that Pileated Woodpeckers do not put such features into their nest

(Continued on page 7)

(Bird Box Observations, from page 6)

cavities. Since woodpeckers excavate a new cavity each year, the old cavity will be used by other species in subsequent years.

Of course, ducks can handle the cold with no issue, but other species often use these boxes as well. Eastern Screech owls commonly use them throughout the winter and will roost in a box during the day. The tighter design helps this species survive during cold windy weather. I'm actually experimenting with adding a layer of foam to the bottom of my boxes.

This winter we have had a resident Eastern Screech owl (pictured above) that is roosting in 3 different boxes. Its choice of which one to roost in is sometimes based on wind direction, which box is sheltered the most, or the direction it is facing based on the wind. Some days it likes to stick its head out of the hole to feel the sun. It's not too bothered by people walking by. This Screech Owl is known as a gray morph which is the most common in our area. There are also red morphs here and they are not separate species.

My Project

By Rosemary Crick - BGWA Member

Hello Bruce Grey Woodlands Association! I am happy to join your membership and look forward to meeting you all. I'm writing to let you know about a project I have on the go here at Crickhollow and how you can get involved.

When neighbour friends of mine were moving to the east coast they gave me their "air pruning beds" as they were too big to move so far. Air pruning beds are like raised garden beds only they sit about a foot above the ground. The bottom is made of wire mesh. The beds are filled with hay, garden soil, topped with a layer of mulch and inoculated with forest microbes. Their purpose is to raise tree seedling that can be transplanted easily as their roots have been naturally air pruned. Transplanting seedlings with long tap roots can be a challenge if you have started them in a regular bed.

You can plant nuts and seeds very close together in the spring and by fall the seedlings are ready to plant out. I have two air pruning beds and each can hold 800 or more seedlings!

Another neighbour, Donald, also recently joined BGWA and received nuts from a member last fall. Donald heard that I had the air pruning beds and asked about using them to plant the nuts. In the next few weeks we will fill the beds and plant them up.

I have just read "To Speak for the Trees" by Diana Beresford-Kroeger. In this most inspiring book she describes how she collects seeds and cuttings to plant in her arboretum outside Ottawa.

"I set up criteria for identifying top-quality trees… I keyed in on qualities related to the tree's size and health … I wanted trees that were as close as possible to virgin forest because their genome is the healthiest, though unfortunately only the runts have been left behind in many forests. These trees, from forests that in Canada have a track record of thousands of years, are the best of the best I could find: the species most perfectly suited to the climate and best equipped to fight disease."

She quarantined new trees to make sure they were not carrying diseases and set up trials with them. "The species that performed best, I then planted permanently on the property, developing a collection of the best of the best rare and native species. This was my arboretum of Canadian trees."

In the book Beresford-Kroeger recounts some wonderful stories of collecting these trees. Also, when she speaks of her arboretum in interviews she sparkles with joy knowing the true value of what she has created. I hope that collectively we woodland enthusiasts can do the same. If we can all collect these seeds over the growing season Donald will make sure they are stratified properly over the winter and next spring we can grow-out hundreds of trees.

Oaks, hickory, maples, evergreens, shrubs, fruit trees … keep an eye out on your travels and own properties for healthy specimens and we can grow them together.

The next part of the project that takes lots of hands is finding good homes for all the seedlings. It is my goal that each seedling that we grow finds a home where it will be planted and tended so that it can grow to its full potential. Closer to fall we will know how many trees we have and what varieties they are and you are all invited to help them find homes.

House Centipedes

By Malcolm Silver - BGWA Member + Newsletter Editor

Our home, like most, houses many nonhuman critters. Fortunately, fingers crossed, we are not affected by white ants or bedbugs and the dog is treated regularly to prevent fleas. Some invaders are tolerated; some are stomped on while others, like ants, are eradicated. I don't like spiders but only one species of arthropod gives me the horrors; the household centipede (*Scutigera coleoptrata*).

This multi-legged creature moves like greased lightning so is difficult to stomp on. However, occasionally it stops suddenly, remains absolutely motionless and is then vulnerable. In fact, my reactions to them are both unreasonable and unwarranted because these are beneficial killers of many other household insects and arthropods.

This is one of several species of the house centipede. It originated in the Mediterranean region and is now found in most part of the world. Typically it is yellowish-grey, has three dark dorsal stripes running along its length and adults have up to 15 pairs of long legs banded light and dark that are attached to a rigid body. The legs enable it to reach speeds of up to 0.4 m/per second, running across floors, up walls and along ceilings. Together with its antennae these centipedes are 75-100 mm long. *S. coleoptrata* has developed automimicry in that its hind legs look like antennae; thus, when at rest, it is not easy to tell its front from its rear.

House centipedes and their close relatives have well-developed faceted eyes sensitive to both daylight and ultraviolet light. How the latter sensitivity fits with its nocturnal lifestyle and underground natural habitat is still under study. They do not instantly change direction when light is suddenly shone at them, but retreat to a darker hiding spot.

Female house centipedes lay their eggs in spring. The larvae look like miniature versions of the adult, albeit with fewer legs. Young centipedes have four pairs when hatched and gain a new pair with the first molting, and two pairs with each of their five subsequent moltings. Adults retain 15 pairs of legs through three more molting stages. They live anywhere from 3 to 7years, depending on the environment. And can start

Adult centipede

breeding in their third year. The male deposits his sperm on the ground and the female then uses it to fertilize her eggs.

House centipedes administer venom through modified legs (forcipules). These are not part of their mandibles, so strictly speaking they sting rather than bite. *S. coleoptrata* is generally considered harmless to humans. Stings are extremely uncommon, because the forcipules of most house centipedes are not strong enough to penetrate human skin. If stung the venom causes redness and mild to severe swelling.

Close up of the head showing eyes and modified legs

They are mostly nocturnal hunters. Despite their developed eyes, they seem to rely mostly on their antennae when hunting. These are sensitive to both smells and tactile information. When the centipede is in danger of becoming prey itself, it can detach any legs that are trapped.

(Continued on page 9)

(House Centipedes, from page 8)

Most house centipedes live outside, primarily under large rocks, piles of wood, and especially in compost piles preferring cool, damp places. Centipede respiratory systems do not have a mechanism for shutting their spiracles, therefore they need an environment that protects them from dehydration and excessive cold. Within a home, they occur in almost any part of the house but most commonly are seen in basements, bathrooms and lavatories, which tend to be humid, The greatest likelihood of encountering them is in spring, when they come out because the weather gets warmer, and in autumn/fall, when cooling weather forces them to find shelter in human habitats.

Nonviolent techniques for eliminating these centipedes include drying-up areas where they thrive and sealing cracks in walls. If they are seen frequently, it indicates that some prey arthropod is abundant, and may signify a greater problem than their presence.

References

Scutigera coleoptrata - Wikipedia, the free encyclopedia

House Centipedes — Entomology — Penn State University ento.psu.edu › Entomology › House centipedes Fact Sheet

A Personal History

By Bill Moses - BGWA Member

When the request came out for articles for the *Greenleaves* newsletter I thought maybe I might be able to come up with a question. Some history was in order to properly formulate it (in my mind). That led me to revisit the past, which I try not to that much.

At home (Strathroy) we had 50 acres with a hardwood bush and abandoned farm fields and a few animals. We used wood for heating. Back in those days we had a two-man McCulloch chainsaw. My Dad spent a lot of time getting it started. When my Dad heard someone had a one man saw, we walked back to where the man was working to have a look at it.

When I was about 12 my Dad had me help cut down a fairly big tree. (He must have been using me in a pinch. I know that at age 15 I was only 5 feet tall and weighed 100 pounds due to a physical for cadet camp at Ipperwash. I remember a line of nude boys going from station to station.) Another time I was standing back while another tree was being cut down. I got to thinking that I better stand back a little further. I was right!

My Dad also "bought bushes" and partnered with another person to harvest them. (That didn't work out.) He would look for bush lots with big trees and tell the farmer that it was a crop and needed to be harvested. I am pretty sure the trees would not have been marked.

Fast forward to 1974 when Cecilie and I bought the 40 acres where we currently reside. There weren't many trees on the property. I planted a lot in the 70s- maybe early 80s. (10 cents a tree, pickup in Barrie - as best as I can recall). I did not bother with thinning but just let them do their own thing. Of course, from a crop or a diversity point of view the forest hasn't been managed well. I often wonder whether there are any good short-term value to this unmanaging while counting that in the long term it will all sort itself out. I did plant an area of Scotch pine with the idea of getting into the Christmas tree business which I never pursued.

Scotch pine is letting in more sunlight (maybe planted farther apart). Hardwoods are starting to get established with seed blown in from fence row.

(Continued on page 10)

(A Personal History, from page 9)

Later I got more interested in propagating woody plants, native or not, and had my own little arboretum at home. Still later I started volunteering at the Inglis Falls Arboretum transferring my efforts there. I guess I was looking for a legacy that would outdo my home one, one that more people would see and learn from.

One idea (that I have to take credit for) was showcasing examples of the 175 woody plants native to Grey Bruce. The initial idea was to have a path showcasing the native trees of Grey and Bruce. My argument was that a woody plant was a woody plant and we should not discriminate on the basis of size. "They" could not argue with that and could not (rationally) stop me from proceeding. My search of the internet could not discover a similar goal worldwide although a few sites professed to be so. Of course, the argument still is that the current path does not have all the requirements to support all of the species. This could be overcome by creating artificial environments on the path or else have outlying areas (for example, Hibou Conservation Area) that would support them. I even fiddled around with QR codes on posts that could provide information about the plant as well as directions to "sub-arboretums", even videos if they couldn't be bothered to go see the real thing.

Another Inglis Falls Arboretum project was to inventory and fill-in with new species the Trees of the World section. I (and others) have been responsible for new species being planted in the Arboretum. I personally have collected (both locally and in my travels) and propagated seeds whose progeny now reside there. We had Saturday morning tree sales (still happening) for over 10 years with sales by donation.

Pin cherry doesn't produce much seed because it spreads underground.

I believe the spruce trees are not able to tolerate the black walnut.

We had a pretty free hand following a plan set out in 2008 but new management decided that plan no longer applied and planting trees in the new area was halted while waiting for a new plan, one that (I believe is more gitterdone focussed and which can be added to the list of admin accomplishments). I always saw things as a work in progress while others saw it as unfinished.

A few years ago I again went back to setting-up my own propagation area at home. This allows me to set my own goals (somewhat diminished as I approach my 80th birthday). I also now have three public areas I am working with to help maintain and improve.

I have to mention that these days (as well) I am also into controlling invasive plants (especially Dog Strangling Vine and Phragmites), making solitary bee houses, land stewardship duties and so on.

Example of trees planted in the 70's that have not been thinned.

A New Metric for Forest Management and Conservation?

By Gary Kenny - BGWA Director

There's something about forests. A certain quality, a particular feeling, maybe even an aura at times, that can touch the woodland wanderer deeply, perhaps even at a cellular level.

What BGWA member hasn't felt it? Who hasn't been moved in some way by:

…the becalming sight of a verdant sea of leaf sizes and shapes and soft hues of green.

…a cathedral-like high-canopy forest illuminated by sunlight streaming downward.

…the spicy, aromatic fragrance of a pine wood, and the rich, earthy smell of a deciduous forest in spring.

…the tactile experience of running one's hand over the scaly bark of a black cherry tree or the smooth, velvety bark of an American beech.

…fallen autumn leaves that make the ground glow, setting the forest floor on fire.

…the sub-zero squeak of snow underfoot that breaks the frozen, meditative quiet.

As members of BGWA, we all spend time in forests and likely experience this kind of woodland awe. How do we understand that sense of wonder? Is it merely an unexamined feeling, something commonplace and unexceptional, temporary and fleeting? Or does it awaken and stir within us something much more profound?

Might these moments of awe have been spiritual in nature? Some of us might shrink from that thought, thinking that the spiritual is something religious or new age-like and with which we're not comfortable.

Forest enthusiast and author Cecil C. Konijnendijk writes, "A spiritual experience is an intuitive and emotional kind of experience in which a person feels caught up and carried along…inspired…by a feeling, an idea, an image or a creative impulse."

> *Could it be that, whether in a forest or some other natural setting, we have spiritual moments often, but don't recognize them as such?*

Forests have long held profound and spiritual meaning for humans. Ancient peoples enjoyed a harmonious relationship with trees and forests. Trees were venerated as symbols of fertility, wisdom, power, and renewal. In some countries, Ethiopia and India among them, entire forests were (and still are) considered sacred and valued predominantly for that reason.

At the core of the mythologies of many ancient civilizations was a Cosmic Tree, or Tree of Life, the stories of which were told to explain and give meaning to human existence.

Since the industrial revolution, however, humans have valued forests less as hallowed and more for

(Continued on page 12)

(A New Metric, from page 11)

utilitarian purposes – as a means to accumulate personal and corporate wealth and satisfy material needs. Timber, food, medicines, spices, shade, and shelter have defined the global forest market enterprise.

This way of regarding forests has its origins in a particularly Western worldview in which humans situate themselves over against and as superior to nature. Historically, both religion and philosophy provided convenient justifications for that cleavage.

For early Christians, the sacred was found throughout nature of which humans were understood as an integral part. As Christianity developed, humans were dis-integrated from and re-positioned outside nature and given licence to "subdue" and have "dominion" over "every living thing that moveth upon the earth." (Genesis 1:28).

In the secular realm, the work of 17th century French philosopher, René Descartes, was enormously influential in shaping modern ideas of science and how Western society views human and non-human identities. He framed the world as essentially split between the realm of mind and that of inert matter. As the only rational beings, humans were viewed as altogether separate from and hierarchically superior to everything in the natural world.

Values such as these laid the foundations of modern anthropocentrism, a system of beliefs that elevates humans above non-human.

Contemporary philosopher Val Plumwood was among the first to suggest this disintegrated values system underlies the world's environmental crises. The very term "natural resources" implies that the earth's fabric holds no value apart from what it provides us with, or what we can extract from it, Plumwood says.

For those of us who relish the realm of the sylvan, is this the predominant ethic that underlies the way we value and relate to trees and forests today? To what extent might we ourselves still be captives of modern anthropocentrism?

Some forest professionals and researchers have started paying more attention to less tangible forest values, including spiritual, believing they may play a vital role in forest stewardship. In his article, "Clarifying the spiritual values of forests and their role in sustainable forest management," William A. Clark writes that sustainable forest management efforts could greatly benefit from an awareness of the spiritual attributes of forests and more clarity about their intrinsic power to enliven the human spirit.

Not many woodland associations in Canada, it seems, list spiritual values among their inventories of forest attributes or integrate them into their strategic plans. Perhaps the chief reason, Clark speculates, is that spiritual values are more difficult to measure with the usual economic metrics of dollars and/or consumer products.

Perhaps also, forest enthusiasts don't sufficiently recognize themselves as being at one with forests, and with nature generally, as their pre-anthropocentric ancestors apparently were.

Science writer Meg Lowman believes that a serious effort to create metrics for the spiritual value of forests, in addition to existing economic values, would enhance conservation success. She encourages forest professionals to work with, and learn from, those in developing countries, including Ethiopia and India, where spiritual values largely govern people's relationship with the woodlands in their midst.

"For Western scientists conducting research in developing countries, it can be difficult to break from our typical assessments for sustainability," Lohman says. "But in order to champion conservation, we need to work within the value framework of the people closest to these forests."

We could, perhaps, also learn from Indigenous peoples who, for countless generations, have had unique, respectful, and sacred ties to the land that sustained them. They do not claim ownership of the Earth, and do not primarily view it as an exploitable resource. They articulate a sense of stewardship towards the land. They understand that everything on, in, and of the land is intimately inter-connected – a worldview captured beautifully in their oft-spoken phrase, All My Relations.

Any BGWA members who'd welcome a discussion about the spiritual attributes of forests and how they might contribute to forest conservation can contact Gary Kenny at rivercroft16@hotmail.ca

Gypsy Moth Update

By Susan McGowan - BGWA Director

Our first virtual Bruce Grey Woodlands Association Annual General Meeting took place on Saturday, February 27th. For the "guest" portion of our meeting, we watched a pre recorded video on gypsy moth as the insect has been surging over the past several years in southern Ontario.

The presentation "Forests Under Attack: The History, Dispersal and Management of Gypsy Moth" was presented by David Dutkiewicz, Entomology Technician with the Invasive Species Centre and Dr. Taylor Scarr, Director of Integrated Pest Management at Natural Resources Canada, both in Sault Ste. Marie. You can watch this video by visiting

https://www.invasivespeciescentre.ca/learn/webinar-series/

Gypsy moth was intentionally introduced in Massachusetts in 1868. By 1969 the first detection in Ontario was documented and in 1981 a serious outbreak occurred in the Kemptville district. Cyclical outbreaks in southern Ontario and in Sudbury areas have continued periodically. In 2019, 43,000 hectares were defoliated in southern Ontario. In 2020 almost 600,000 hectares were affected. See Figure 1.

The Biology:

- Egg stage: late August to late April, size 2x4 cm.
- Larval stage: late April mid June.
- Pupal stage: mid June mid July10 to 20 days.
- Adult moth stage: July to August note, female does not fly.
- Egg masses 2x4 cm in size.

What triggers these outbreaks?

The abundance of host, mainly oak and poplar; a hot dry spring and summer; warm winters with deep snow that allow eggs to survive (temperatures warmer than minus 20 degrees Celsius). When a population has collapsed in prior years, bio-controls also collapse allowing a resurgence of the pest.

What cause collapses?

Cool wet weather; cold winter temperatures of more than minus 25 degrees Celsius; starvation in large infestations where all the host material is depleted; stressed tree response of leaves with more fibre, higher tannins and less nitrogen; bio-controls such as Entomophaga maimaiga, nuclear polyhedrosis virus, (NPV); egg parasitoids; ground beetles; larval parasitoids.

How long will this last?

Outbreaks usually last 2 to 3 years. Most hardwoods can tolerate 3 years of defoliation as trees store starch to re-flush leaves. Mortality could occur in pine trees after one year of complete defoliation, as starch is stored in their needles.

What to watch for in 2021?

How large are the egg masses? A toonie-sized mass might hold 1000 eggs. A dime-sized mass will hold a hundred. Was it cold enough to kill eggs? Was the snow deep enough to protect the eggs from the cold? Will the spring be hot and dry or cool and wet?

What can we do?

We can carry out egg mass surveys; remove egg masses and deposit them into buckets of soapy water; wrap tree trunks in burlap to collect larvae; talk to a specialist if considering a larger scale management effort like using Bacillus thuringiensis, kurstaki, (BTK) in an aerial spray application.

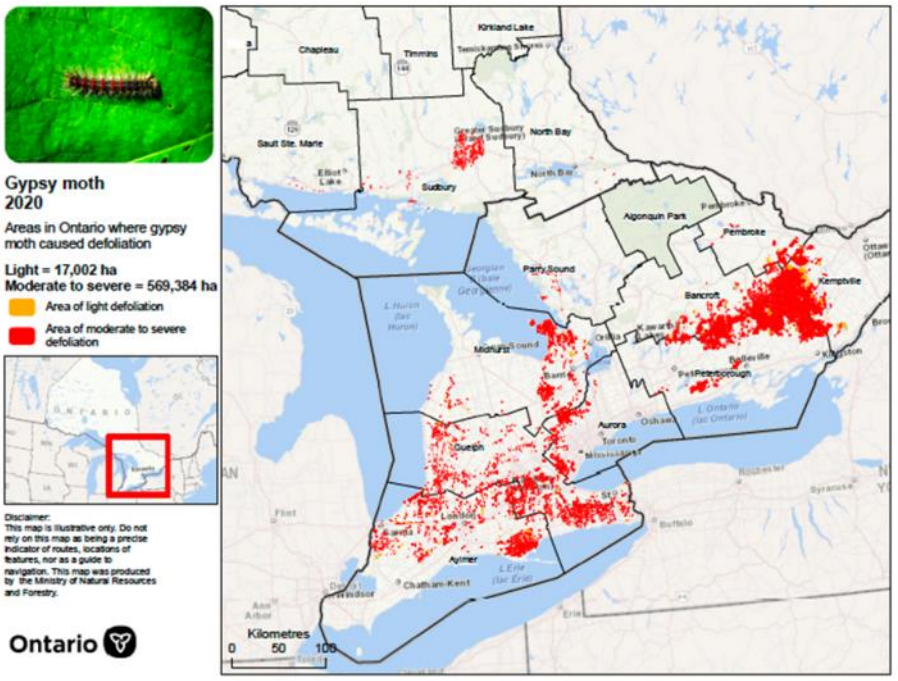
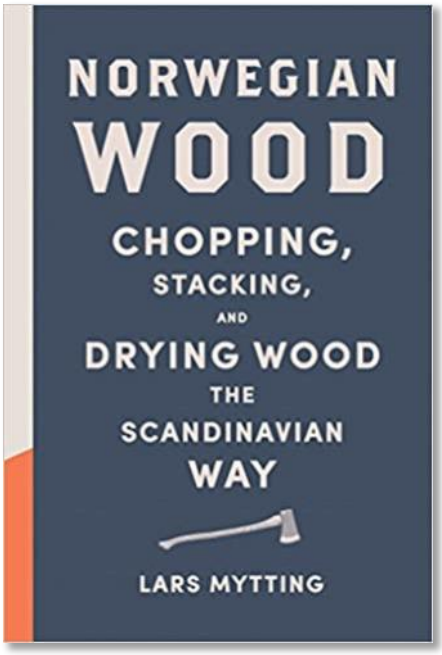


Figure 1. 2020 Forest Health Monitoring survey results. This map and additional information can be accessed by pasting this link into your browser. https://www.ontario.ca/page/gypsy-noth?fbclid=IwAR36T4geTydfEIc1w88AuTGgJ6tkRn9MmsOcfpE5QeMvB_pEgi0JKDiDOO4

The Last Word

By Neil Baldwin - BGWA Member + Newsletter Producer



A fun thing about putting the newsletter together is, when layout is done and there's a snippet of space left over, I can fill it with a random musing...

So, a warning: this book, which I recommended at the AGM, is not strictly an instructional guide to chopping, stacking and drying wood. In fact, some readers might say it is yet another in a recent spate of Scandiphilia books exploring concepts like Danish *hygge* (essence of coziness), Swedish *lagom* (not too much, not too little) and Finnish *sisu* (courage and stoicism) that keep the our Nordic neighbours so happy and healthy. I guess for Norwegians, it's firewood that rings their bell.

Don't get me wrong, even the most seasoned among us will gain useful knowledge and skills from *Norwegian Wood* (I'll try building one of those round wood stacks this year). However, what this book is really about is the woodsy souls who don't just *do* the chopping, stacking and drying of their firewood but who do it as an expression of who they are.

Scandinavian design is world famous for its balance of form with function. And perhaps they approach firewood the same way. It is no mere chore. What becomes clear is that there is both a method and an art at work, and that it is work which connects to the soul. To split some, even if not all, wood by hand invites a sensory experience of *hearing* the crack and *feeling* the rupturing of fibers that does not come from firing up a motor and pressing a button. To pick up a newly split log and *notice* the grain, *smell* the wood, connects the person with the action and the product. And to painstakingly arrange a wood pile, rather than dump it in a heap or have it fly off a conveyor, is perhaps to allow the work to be an expression of the soul.

In weighing the merits of form and function, to be all about the aesthetic with little practicality is fanciful and wasteful. But I wonder if being too far on the side of pragmatic and utilitarian precludes experiencing the joy in it. In Norwegian there is actually a word, *utepils* (used as both noun or verb), for the concept of enjoying beer outdoors on the land. I'll conjure that up as I build my round wood stack on a sunny afternoon ☺