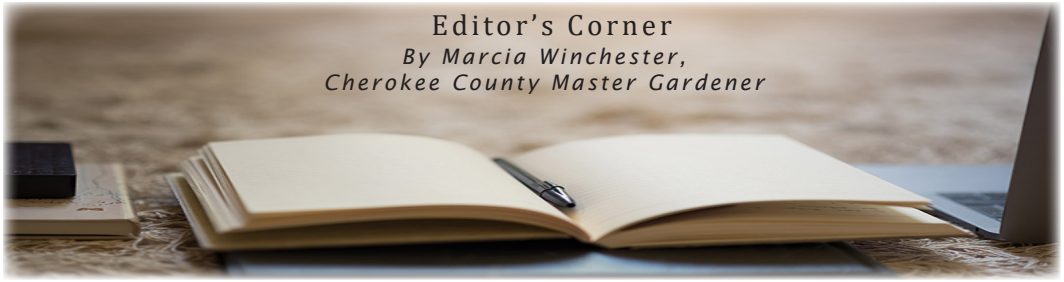
Gardening With The Masters

Growing, Gardening and Gaining Knowledge
December 2022/January 2023

Ilex vomitoria



Editor's Corner

By Marcia Winchester,
Cherokee County Master Gardener

This fall something occurred that in the 25 years I've lived in Cherokee County had never happened before. I had no acorns falling from any of my oak trees. Not one! Even the three hickory trees produced not a single nut. While this seems great not to have to rake the acorns from my lawn and toss them in my woods for the wildlife, this is actually a problem. Do you know how many of our wildlife depend on those nuts? The list is long, starting with deer, turkey of course, squirrels, and chipmunks. Even birds like bluejays survive off nuts during the long winter months.

Not having acorns for winter food will create ripples. Animals will have to expand the territory on which they forage for food. An area that in the past would support four squirrels might only feed one this winter. As animals search for food, they might starve or be killed crossing roads or by predators.

The next ripple will be fewer young next spring. Animals that prey on squirrels, such as owls, hawks, and coyotes, will suffer from lack of this food source. All of this can occur just because oak trees didn't form acorns. I hope this anomaly happened in a small area and that the rest of the county has an abundance of food for our wildlife.

Marcia

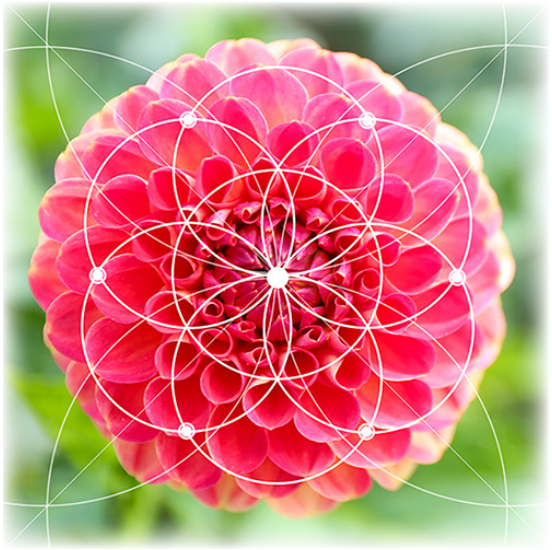
Photo various nuts and acorns courtesy Mary Tucker

Christmas gift bags filled with wish list donations for the seniors are collected and given to the Senior Services Center on Univeter Road in Canton. The Cherokee County Master Gardeners donate to this cause every December. Photo courtesy Jennifer Ruscilli

IN THIS ISSUE

Mathematics in the World of Plants

By Stephanie Howard, Cherokee County Master Gardener



Fibonacci pattern of spiral arrangement in nature
AdobeStock #111257994

One of my favorite childhood toys was a kaleidoscope—a cylinder containing colorful glass crystals and a set of lenses. As I turned the ocular, the lenses would refract, or bend, the light. The crystals would form patterns that repeated themselves in an unlimited number of variations. This demonstrated "Math in Action," and I soon learned that these mathematical applications exist in nature.

Mathematics is the language in which Science and Nature is expressed. Arithmetic, Algebra, Geometry, Calculus, and Physics are not just boring math classes. They represent concepts and models, which help us better understand the natural world through the patterns that emerge as we study them more deeply. Observing the elliptical orbits of planets leads to an ability to predict distances between them. Mathematical concepts form the basis of ocean currents, earthquakes, sound, and electromagnetic waves. The branching of blood vessels and the ratio of bones to body parts demonstrate fractal patterns and the Fibonacci Sequence, respectively. The formation of seashells, crystals, and honeycombs are all natural mathematical patterns. The natural rhythm of our circadian sleep cycle, the cyclic return of cicadas, tidal motion, and the tempo of our heartbeat are all based on harmonic math functions.

In Botany, the study of plants, we especially appreciate these patterns.

Fractals, Spirals, and Tessellations

Fractals, typically studied in Geometry, are patterns that repeat in different scales and sizes. Think of the branching of a tree. Large branches grow from the trunk. Smaller limbs branch from them. Still smaller, but similar, branches grow from these limbs. The pattern continues to diverge as long as the tree is growing. The root system exhibits the same pattern of growth and branching. Our blood vessels are comprised of a network of arteries and veins, which form similar patterns as they innervate the body. As they change in size and direction, these vessels become Arteries — Capillaries — Arterioles — Venules — Veins.

Aloe plant leaf pattern
AdobeStock #74002679

The vascular system of green plants consists of a similar fractal network of xylem and phloem. We also see fractals in the spiral leaves of aloes and agave. The natural design helps to guide rainwater to the center of the plant.

Spiral patterns on female and male pinecones
AdobeStock # 107638702

The designs of cones also display fractals. The bracts become smaller as they spiral towards the top. The female pinecone consists of a pattern of wood bracts that protect the seeds. When the conditions are favorable, the bract opens to release the seeds. The spiral is best seen in the tightly woven male cone, whose bracts protect the pollen sacs.

Fern frond courtesy Mary Tucker

Ferns are perfect examples of fractals. Each pinna, or leaflet, of a fern frond is nearly identical in pattern. However, it becomes increasingly smaller in scale as it grows outward. In addition, each pinnule (the little leaflet division of a pinna, which is found in some ferns) is a miniature version of the pinna. In a classic fern shape, the whole frond is built of the same shape repeated over and over just at different sizes.

Tessellations are repeated patterns formed by one or more geometric shape that fill a space. The size is generally consistent throughout. A honeycomb is an obvious example of a tessellation in nature. The pattern of scales on a snake is another. However, there are great examples in the world of plants. The hexagonal scales on a pineapple, the tight spirals of the aloe, and raspberry druplets are tessellations.

Photo druplet spiral pattern on black raspberry berry (*Rubus occidentalis*) courtesy Karen Hine CC BY-SA 3.0

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Concentric Formations

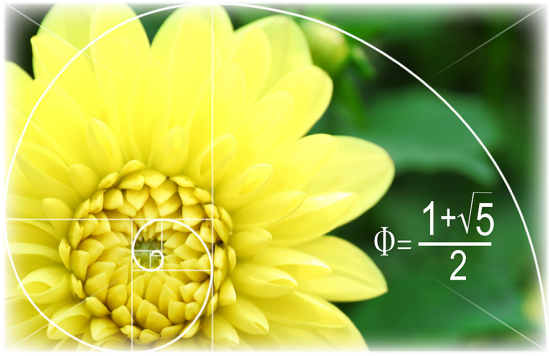
Photo concentric tree rings courtesy
https://scied.ucar.edu

Concentric formations share an axis, or center, but the radius of each formation differs. The most common example of a concentric formation is the growth pattern of tree rings. Although the rings denote the age of the tree, they also indicate environmental conditions during the year in which each ring was formed. Most often referred to as concentric circles, these formations may be found in various shapes.

Perhaps the most stunning example is found in some varieties of daylily (*Hemerocallis* spp.), where this feature is found in the coloration of the bloom. The formations may appear as triangular, square, or irregular. Cut a red onion in cross-section to demonstrate the pattern of concentric circles.

Concentric formation in (*Hemerocallis* spp.) courtesy Stephanie Howard

Fibonacci Sequence and the Golden Ratio



Golden Ratio in nature AdobeStock # 107638702

Then there is the Fibonacci Sequence of numbers, which is closely related to the Golden Ratio. The Fibonacci Sequence is a series of numbers derived from the sum of the two numbers before it.
For example:
0 + 1 = 1 1 + 1 = 2 1 + 2 = 3 2 + 3 = 5 3 + 5 = 8 5 + 8 = 13

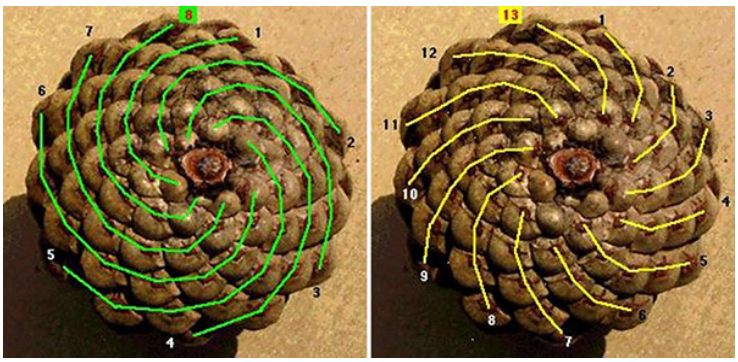
Thus, Fibonacci's Sequence is 1, 2, 3, 5, 8, 13. This sequence can continue forever (infinity). The Golden Ratio is the value between any two consecutive numbers in the sequence.
3 ÷ 2 = 1.6 5 ÷ 3 = 1.6 8 ÷ 5 = 1.6 13 ÷ 8 = 1.6

If you were to graph this relationship, a phenomenon called the Golden Spiral emerges. Ferns exhibit this mathematical pattern as the fern forms a fiddlehead. This spiral forms as the new frond emerges.

Golden Spiral in a fiddlehead
AdobeStock #206196191

Another mathematical pattern called the Golden Angle is also derived from this ratio. Interestingly, in many plants, the angle between florets is about 137.5 degrees, which is, coincidentally, the value of the Golden Angle. This angle is thought to give the petals the most efficient use of space and exposure to sunlight.

Fibonacci's Sequence and the Golden Ratio is found throughout nature. Let's again use the example of a tree. A branch grows from the trunk of a tree and produces two branches (1 + 2 = 3). Each of these produces two more (2 + 3 = 5) and continues to branch according to the sequence. The primary branches spiral around the tree creating a beautiful fractal design.



Fibonacci sequence & Golden Spiral in Pine Cones
https://www.mensaforkids.org/teach/lesson-plans/fabulous-fibonacci/

If we take another look at the pinecone, we notice that there are actually two spirals growing around the core. One rotates clockwise; the other rotates counterclockwise. If you count each spiral, you will find that the relationship between spirals will follow this sequence. For example, one set of bracts will have eight spirals, while its alternate with have 13 spirals. A similar relationship is seen when the bracts are viewed from the top of the cone. (A central core is created by the fusion of two bracts, followed by a set of three bracts, all surrounded by five more bracts.)

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Camellia: A Three-Season Beauty

By Mary Schuster, Cherokee County Master Gardener

Camellia japonica flower courtesy Scott Ackerman CC BY 2.0

In the South, and particularly in Georgia, summertime is not the only season to enjoy flowering plants. In addition to pansies, which flourish in cooler temperatures, the camellia shrub can produce showy pink, red, or white blooms measuring anywhere from 2 to 8 inches in diameter, which will add to curb appeal and make them easily viewable from the street.

Although camellias are native to Asia, they found their way to America via Charleston when they were introduced by the French botanist Andre Michaux, who established the first botanical garden in the South in 1786. Camellias are ideally suited to the Lowcountry climate and began flourishing in small gardens and as well as large estates.

Shrub and flower *Camellia sasanqua 'Green 94-035'* October Magic® Orchid™ courtesy Jennifer Ruscilli

They can be planted stand-alone as specimen plants or grouped together to form an evergreen hedge. Some smaller varieties are even suitable for use in containers. There are several species of camellia that do well in our region of the South, but the two most commonly grown are the Japanese (*Camellia japonica*) and the sasanqua (*C. sasanqua*). The Japanese is the larger plant of the two.

Another main difference between the two types is their bloom time. Japanese camellias may bloom between fall and spring, and sasanquas can begin blooming anytime between summer through winter, generally between September and December. Depending on the cultivar, sasanquas are fragrant, while Japanese camellias are not.

Placement of the plants is best determined by selecting shrubs that will fit the space available. And, speaking of space, select an area in partial shade, preferably under tall pines on the north side of the house or existing structure in your yard. The word on the street is that they are often affectionately known as "the shady ladies."

C. hybrid 'Wendzalea'
https://www.americancamellias.com/

There are thousands of varieties of camellias and more than 200 species of them. They will bloom for three seasons, but only one will actually continue to bloom in the summer. Its name is 'Wendzalea'. This hybrid is a cross of *C. japonica* 'Wendy' and another camellia species, *C. azalea* (which is not a true azalea of course). It was developed in Valdosta, Georgia, in 2009. It blooms in July to November and a second time from February through March.

There are many excellent varieties of camellia that grow well in our gardening zone. Some include 'Strawberry Limeade' (*C. sasanqua*), 'Early Autumn' (*C. japonica*), Dragon Fireball (a hybrid), and 'Jim Smelley' (*C. reticulata*). In addition to their beauty, they provide nectar for hummingbirds and honey bees.

C. sasanqua 'Strawberry Limeade'
https://www.americancamellias.com/

C. japonica 'Early Autumn'
https://www.americancamellias.com/

C. hybrid 'Dragon Fireball'
https://www.americancamellias.com/

C. reticulata 'Jim Smelley' https://www.americancamellias.com/

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Christmas Fern

By Mary Tucker, Cherokee County Master Gardener

Collection of Christmas ferns (*Polystichum acrostichoides*) courtesy David J. Stang CC BY-NC-SA 4.0

As you drive by wooded sites or hike in the Georgia woods, you are likely to see one of the most common and lovely of our native ferns, Christmas fern (*Polystichum acrostichoides*). In fact, you may even have this fern in your own yard if you live on a relatively undisturbed site.

Christmas fern's evergreen fronds provide four seasons of interest, gracing woods and shady slopes throughout its range. This fern is native to the eastern half of the United States and can be found in Georgia from the coast to the mountains. It is so widespread partly due to its adaptability, and in the wild it is found in a wide range of soil types and conditions.

Although Christmas fern prefers moist, well-drained soil, it is remarkably drought tolerant, making it one of our most resilient and reliable native ferns. It is most often found in partial to full shade but will tolerate a fair amount of sun if adequate moisture is provided. However, keep in mind that it may suffer from crown rot if the soil is overly wet or poorly drained.

Its adaptability means Christmas fern is also an accommodating and low-maintenance garden plant, where it serves in many capacities. It makes an effective tall ground cover and is also a lovely companion to other shade-loving ferns, perennials, and wildflowers. Christmas fern is also happy in containers, where its evergreen nature is especially useful.

Christmas fern is a valuable plant to employ on steep banks or sites that need erosion control. In fact, in the wild you will often see it growing along stream banks and hillsides, where the rhizomatous root structure clings to the ground and protects the topsoil.

Plants are typically 18 to 30 inches tall and spread by a creeping rhizome to a similar width. Dense clumps are easily divided, preferably in spring or fall. Under the right conditions, Christmas fern will naturalize by spores, gently expanding its presence in the garden.

Photo sori courtesy Doug McGrady CC BY 2.0

When the spores are mature, the sori (spore cases) will have a velvety, golden-brown appearance. In our area, this is usually during the month of May. You can take this opportunity to try your hand at propagating ferns from spores, which is quite a fun and educational experience. I did this several years ago, and it's one of the highlights of my gardening accomplishments. I can't go into detail here, but there is plenty of information available on the internet. I can also recommend William Cullina's book *Native Ferns, Moss, and Grasses*, in which he has a section on fern propagation.

Photo crosiers courtesy Cathy Dewitt CC BY 4.0

Christmas fern's tightly coiled fiddleheads (also called crosiers) emerge silvery green in early spring. As the frond matures, the long, narrow blade (the leafy portion) deepens to a rich and glossy dark green with a leathery texture. The stipe (lower stalk or petiole) of the frond is brown and has scaly hairs at the base. The blade of the frond is lance-shaped and widest at the base. The blade is pinnate, meaning that it is divided into a number of pinnae (leaflets) that are arranged regularly on each side, and the pinnae are attached to the rachis (stalk within the blade) only at each pinna's midrib.

Photo first fronds courtesy CC BY-SA 2.5

On mature plants, the first fronds that emerge in spring are generally fertile and are held stiffly upright. The sori on the back of the pinnae are round and appear on the upper third to half of the fertile frond. They are arranged in rows on each side of the pinna midrib. The name of the genus *Polystichum* reflects this characteristic, for in Greek, poly means "many" and stichos means "row." The fertile fronds are followed by somewhat shorter sterile fronds, which tend to be more loosely arching in form.

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Mathematics in the World of Plants

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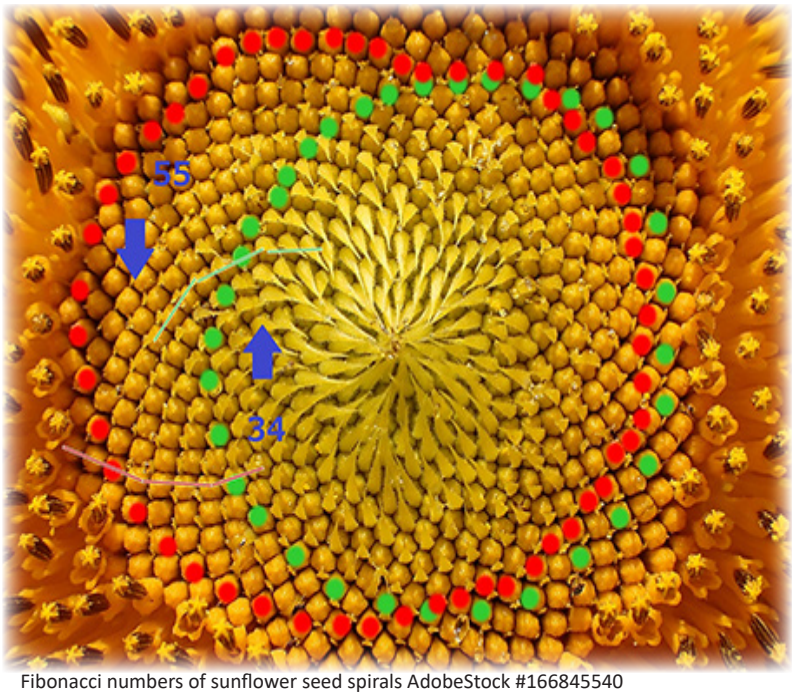

Fibonacci numbers of sunflower seed spirals AdobeStock #166845540

Perhaps the most common example of this sequence is found in the sunflower. The center of the sunflower, which stores its seeds, forms two perfectly symmetrical spirals. Similar to the pinecone, one set of spirals grows clockwise and the other counterclockwise. The number of spirals in each direction are consecutive numbers on the Sequence, most often 35 and 55.

The Fibonacci Sequence can also be found in the number of petals in other flowers: iris (three), buttercup (five), delphinium (eight), and rudbeckia (13). There are countless examples of the Fibonacci Sequence, the Golden Ratio, the Golden Angle, and the Golden Spiral throughout all facets of nature.

Photo symmetry in autumn fern frond courtesy Stephanie Howard

The perfectly circular spore sacs, or sori, on the underside of a fertile fern frond demonstrate yet another natural pattern: symmetry. The common theme of symmetry permeates through each of these mathematical patterns. Symmetrical forms are aesthetically pleasing to us, appealing to our sense of beauty and harmony. Observing the natural world through the mathematics of fractals, the Fibonacci Sequence, and other patterns gives us the keys that help us fully appreciate its beauty.

Christmas Fern

.....continued from page 5

With its evergreen nature, this fern provides winter cover for songbirds and other small woodland creatures, so it is useful in the wildlife habitat garden. I have also read that birds may use the hairs at the base of the fronds when building nests. Gardeners will also be delighted to know that Christmas fern does not usually suffer from severe browsing by deer.

Photo fronds courtesy Cranbrook Science CC BY 2.0

Photo pinnae courtesy Mary Tucker

Opinions differ regarding the origin of Christmas fern's common name. Some believe that it comes from the fact that the fern is evergreen at Christmas and was used by early settlers as holiday decoration. Others think it is because the pinnae, especially the larger ones, are shaped like a Christmas stocking or like Santa's sleigh or boot. Whatever you choose to believe about its name, this native fern is a welcome inhabitant of our natural woodlands and our cultivated gardens.

Check out some **Fern Terminology** on page 7.

If you'd like to add this useful and beautiful fern to your garden, you can find it (and other ferns) at sales hosted by the Cherokee County Master Gardeners. Other sources include nurseries that specialize in native plants, as well as plant sales hosted by the Georgia Native Plant Society or by local nature centers.

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Camellia: A Three-Season Beauty ...continued from page 4

Requirements for healthy plants include fertilizer containing 10 to 16 percent nitrogen applied in doses in March, May, and July and proper watering. Since they have a shallow root system they are susceptible to drought damage.

If you just happen to be a fan of trivia, here are some fun facts about camellias that might come in handy as you regale your guests while showing off your lovely garden.

C. sinensis Doug McAbee CC BY-NC 2.0

American History: A camellia species *Camellia sinensis* used to make tea got thrown overboard during the Boston Tea Party.

Romance: Camellias signify love and devotion.

Fashion: The famous designer Coco Channel used images of camellias in her product line. One reason she liked them is that they usually lack fragrance, so they wouldn't compete with her Channel #5 perfume!

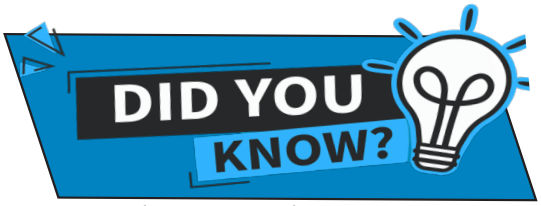
Pest Resistance: Camellias are not usually deer's favorite snacks, so for this reason they are a good choice for planting in our area where we know, all too well, deer are known to graze.

Sports: The 10th hole at Augusta National Golf Club, home of the Masters Tournament, is called "Camellia" where one can identify several species of the evergreen shrub. The course is the former site of a nursery where camellias imported from Japan thrived.

Literature: Camellias played a role in Harper Lee's 1960 Novel, *To Kill a Mockingbird*. A subplot of the novel involves Jem Finch (Atticus's son and Scout's brother) and Mrs. Henry Lafayette Dubose, who fussed over her camellia flowers.

Georgia: The headquarters of the American Camellia Society is located at Massee Lane Gardens in Fort Valley, Georgia, where you will find one of the world's finest collections of camellias.

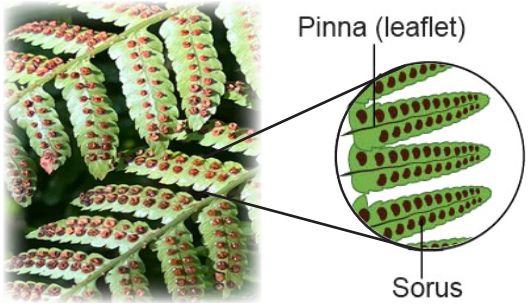
https://esploro.libs.uga.edu > esploro > outputs > report — see Bulletin 813, "Camellia Culture for Home Gardeners"
https://pitt.ces.ncsu.edu/2015/11/how-to-grow-camellias/
https://www.southernliving.com/garden/flowers/camellia-plant-facts



By Mary Tucker, Master Gardener

Fern Terminology

Frond – the whole leaf of the fern (blade and stipe)
Blade – the leafy part of the frond
Stipe – the non-leafy stalk below the blade
Rachis – the stalk within the blade; a continuation of the stipe
Crosier – the emerging, uncurling frond; also called a fiddlehead
Pinna – a leaflet arranged along the blade; plural pinnae
Pinnule – a division of the pinna; seen in some ferns
Rhizome – the underground stem
Sorus – a spore case; usually grouped into clusters called sori



Parts of a Fern

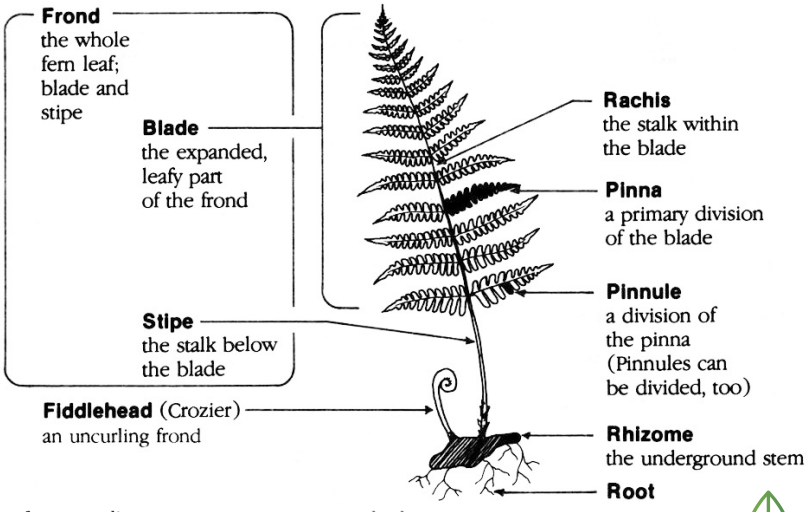


Photo fern parts diagram courtesy www.geo.sunysb.edu

Photo courtesy https://ugaurbanag.com/growing-pansies/

DECEMBER GARDENING TIPS

ORNAMENTALS

- December is a good month to replace overgrown shrubs - don't fertilize until early spring.
- Fertilize pansies and other winter annuals with a fertilizer containing nitrate nitrogen. The higher the ratio of nitrate nitrogen the better the fertilizer. **To know more about pansies click HERE**.
- Finish winter clean-up by pruning deciduous perennials 3-4 inches from the ground. Leaving part of the stem helps mark the location and size of the plant. **For more pruning info, click HERE**.
- When it is too cold to work in the yard, work on putting your landscape on paper; mark existing plants, site conditions (wet, dry, sunny, shade) then make a list of what you want to add. **For more info on landscape planning, click HERE**.

FRUITS AND VEGETABLES

- Top dress unused areas of veggie beds with 2-4 inches of composted manure or shredded leaves.
- Fruit trees can be pruned at any time during the winter provided the temperature is above 45°, **For more info on home orchard pruning click HERE**.
- Get asparagus beds ready to plant when weather and soil conditions permit. The planting site should be in areas that will not interfere with cultivation of other crops. Bed preparation should include heavy applications of compost or aged animal manure plus 25 lbs of 6-12-12 per 1000 ft^2 applied broadcast. Till deeply and smooth soil surface. Set asparagus crowns any time in late December or early January when soil is not frozen.
- December is a good month to construct raised vegetable beds. Any length is fine but it's good to build them no wider than 30-40 inches for easy access and to minimize compacting soil. **For more raised bed info, click HERE**.
- Pick mummied fruit off trees and rake up leaves under fruit trees to remove insects and diseases.
- To protect winter veggies from extreme cold, apply a thin layer of mulch or cover with a row cover. **For mulching info click HERE**.

DECEMBER MISCELLANEOUS

- Keep all indoor plants away from drafts and direct heat sources - inexpensive plastic draft hoods help redirect heat away from plants. For more info on houseplants and winter care, click **HERE**.
- Keep checking house plants for insect infestation. Isolate and treat infected plants immediately.
- Winterize your lawnmower, tiller and weed-eater. Drain out gas and replace the oil with fresh oil. Remove the oil filter and either clean or replace it. Check all nuts and bolts to be sure they haven't vibrated loose. Mower blades and tiller tines can be sharpened. Inspect wheels, belts and other moving parts.
- To keep your shears and loppers in good shape for next year, clean them with mineral spirits or Lysol bathroom tile cleaner. Adjust the tension screw and give them a good sharpening. Be sure to use a broad file while sharpening. Tools sharpened by a power grinder will overheat and lose their tempering, making the metal likely to chip or break.
- Clean garden hand tools with liquid detergent and bleach, drying thoroughly. Then oil to prevent rust.
- Blades of shovels and hoes can be sharpened with a file. Apply a light coat of household oil. Treat all wood handles with a coat of linseed oil.
- Drain garden hoses and sprinklers checking for leaks. Replace any old washers. Do not store hoses in direct sunlight or freezing temperatures as both will shorten the life of your hose.
- Clean all pressure sprayers and dusters before putting them away for the winter. Make sure they are functioning properly prior to storage.
- Clean and sanitize all stakes and trellises before putting them up for the winter. Use either rubbing alcohol or 1 part liquid bleach to 9 parts water.

Photo raised bed at Encompass Ministries courtesy Gerald Phillips, Master Gardener

JANUARY GARDENING TIPS

ORNAMENTALS

- Watch for camellia buds that have brown spots on the edges and then spread to the entire flower. This is petal blight. Remove and destroy any buds showing symptoms. Don't confuse it with cold damage. It's a good practice to remove spent flowers from the ground. **For more info on camellia care click HERE.**
- January is a good month to plant trees. Do not add fertilizer to planting hole - it could burn the roots. **For soil preparation and planting info click HERE**.
- Fertilize annuals in colder months with a fertilizer high in nitrate nitrogen.
- Keep pansies and violas dead headed.
- If squirrels are digging bulbs, cover the bulbs with 1-inch wire mesh so foliage can grow through. Then place mulch over wire.
- Pull up winter weeds now before they form seeds.
- If a few, consecutive warm days have caused your bulbs to nose out from under protective mulch, plan to thicken the mulch layer as soon as cold weather returns to prevent freezing by exposure.
- Analyze last year's planting, fertilizing and spraying records. Make notations to reorder successful varieties.

FRUITS AND VEGETABLES

- Plant B & B, bare-root and container-grown fruit.
- Water newly planted fruit trees thoroughly, even if the ground is wet, so the soil around the roots will settle.
- Prune grapes in January or February. If this job is left too late in the season, bleeding from cut ends will occur. Train them onto a one or two wire fence. **For dormant grape pruning click HERE.**
- Don't plant strawberries or figs until February or March. **For home gardening with strawberries click HERE. For home gardening with figs click HERE.**
- Some mail order seed companies offer pelleted seed of lettuce, carrot, and a few other small-seeded crops. Pelleted seed has a special coating to make them larger. This is especially valuable for children and gardeners with arthritic hands, weak eyesight, or poor coordination. Wide spacing of seed helps eliminate thinning.
- When using pelleted seed, plant in moist soil and keep it moist because the coating has to dissolve before the seed can germinate.
- Organize your seeds for inside planting. Take each seed packet and count back from the last frost (April 14) taking into consideration the number of days for germination.
- Remove brown raspberry and blackberry canes that bore fruit last year; tie up green canes for this year's fruit. **For more info click HERE.**
- Spray dormant oil on fruit trees, per label instructions.

Camellia flower blight rapidly turns flowers brown.
Clemson University – USDA Cooperative Extension Slide Series, Bugwood.org

- Prune apple and pear trees. Remove dead limbs first, then the pencil-sized, vertical "water sprouts". **For a pruning and training factsheet click HERE.**
- Sterilize tools, pots, and anything you use around your plants. Use one part household bleach to nine parts water. Soak for about 15 minutes, rinse well and let dry.

JANUARY MISCELLANEOUS

- Protect liquid insecticides from cold weather to preserve their effectiveness. If any product is stored below the manufacturer's suggested minimum storage temperature, it loses its potency. The most important factor in determining if the product is usable is the complete absence of crystals. If crystals remain after the product returns to room temperature, do not use it. Dispose of it according to the directions on the label.
- Chop unwanted kudzu, English ivy, and bamboo to the ground. Follow with herbicide on the new leaves in April.
- Clean indoor plant leaves with a damp rag. Sandwich the leaf between folds of cloth and wipe gently. Change the cloth for each plant to avoid transferring insects or diseases.
- Make sure houseplants are misted and not touching windows. Cut back on fertilizer except for plants you are trying to force to bloom. **For care on holiday and gift plants click HERE.**

RAINFALL COMPARISONS

	Cherokee County			State Wide		
	Sept 2022	Oct 2022	YTD 2022	Sept 2022	Oct 2022	YTD 2022
Actual	1.9	2.2	41.6	2.1	1.4	38.0
Normal	4.1	3.7	44.4	3.7	3.0	40.1
Deviation	-2.2	-1.5	-2.8	-1.6	-1.6	-2.1

Recipes

Cranberry Bread
From Maurya Jones

This was my mother's recipe, so it's very special to me. It makes a wonderful hostess gift, and it also freezes very well. The recipe yields one loaf.

Ingredients
2 cups flour
2 Tbsp. shortening, plus enough boiling water to make 3/4 cup
1 cup sugar
1-1/2 tsp. baking powder
1 egg beaten
1/2 tsp. baking soda
1/2 tsp. salt
1 cup chopped nuts
Rind of 1 orange
Juice of 1 orange (fresh)
1 cup cranberries, cut in half

Instructions:
1. Mix and sift dry ingredients.
2. Combine orange rind, orange juice, shortening and boiling water.
3. Add egg to liquids, and then mix with dry ingredients, stirring only until flour is moistened.
4. Mix in nuts and cranberries.
5. Pour into 9" x 5" x 2-1/2" greased bread pan, spreading rather shallow in center.
6. Bake at 350 degrees for 60 minutes.

Sausage Bread
From Maurya Jones

This makes a lovely presentation and is perfect for a holiday brunch served with eggs and fruit salad. The recipe makes six servings.

Ingredients
2 Pillsbury pie crusts
1 lb. breakfast sausage, hot or mild
2 cups shredded cheddar cheese
1/2 onion, chopped
1/2 bell pepper, red or green, chopped
1 Tbsp. butter

Instructions:
1. Sauté onion and pepper in butter.
2. Brown sausage and drain grease.
3. Add sausage to onion and peppers.
4. Unroll pie crusts onto a large stone or cookie sheet.
5. Put half of the sausage mixture on half of one of the pie crusts, and repeat on other crust.
6. Add 1 cup of cheese to top of each sausage mixture.
7. Fold empty half of dough over sausage mixture; pinch edges to seal.
8. Bake at 375 degrees for 25 minutes.
9. Cut each piece into thirds to serve.

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UGA Cooperative Extension—Cherokee County
1130 Bluffs Pkwy, Suite G49
Canton, GA 30114

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