



A BIT OF DIRT

Published by the Gwinnett Master Gardeners
January-February 2007 Winter Edition Volume 12 No. 1

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Membership Form

GMG MEETINGS

Date: 3rd Monday of each month

Location: Bethesda Senior Center
225 Bethesda Church Road
Lawrenceville, GA 30044

Time: 6:30 PM - Social
7:00 PM - Speaker
8:00 PM - Business Meeting

PRESIDENT'S MESSAGE

By Glenn Parsons

Hello all my Master Gardener friends and Happy New Year. I am honored to have the opportunity to deliver this message in our quarterly newsletter. The newsletter is something all of us enjoy reading since it keeps us in touch with what Master Gardeners are doing in Gwinnett County. I encourage any Master Gardener who wants to share gardening knowledge or experiences to submit an article for publication in our newsletter.

Today I walked in my garden and found things to be rather desolate on this winter day in Georgia. I did find a *Daphne odora* beginning to flower, a few *Hellebores* buds forming under the cover of fallen oak leaves, and, popping out of the ground, *Cardamine diphylla* (grandma called it "Tooth Wort"). We gardeners can find wonderful things on the bleakest of days.

Do you remember how you felt when you completed your Master Gardener's training? What a sense of accomplishment! I'll bet when you walk in your gardens now you perhaps see, smell, and maybe taste things you never experienced before thanks to knowledge gained in Master Gardener's Program. We must pass on this knowledge to others. With this in mind, my message to all of you for 2007 is to remember the "volunteering" side of the Master Gardener Program. There is a need for Master Gardeners to assist with gardening questions at the Extension Office. Volunteers with all types of expertise, time, and talent are needed. Our January auction is always great fun. The Extension Office's plant sale and our May plant sale are just around the corner. So as you sit back this winter and enjoy all those seed and plant catalogs, do not forget the Master Gardener Program needs your support. Helping others to enjoy gardening by sharing your knowledge and skills can be extremely rewarding. Enjoy the winter season and the newsletter.

GWINNETT MASTER GARDENERS ASSOCIATION

Gwinnett County Cooperative Extension
750 S. Perry Street
Lawrenceville, Georgia 30045

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From left: John Bailey, Sharon Mathews, Renee Beard, Debbie Bush, Jan Bailey, Sue Shaw, Glenn Parsons, Kate Pittman, Lori Prosser, RS Buell (missing from photo: Bobbie Higginbotham and Dan Willis)

PLANT SALE NEWS

By RS Buell, Plant Sale Chair

It is that time of year to begin thinking about our GMG annual spring plant sale coming up in May. Winter might seem like an unusual time to remind you about the spring plant sale but it is one of the best times to pot up plants for the sale.

By potting up plants in the winter, fresh foliage will emerge in the spring and the damaged foliage can be trimmed off and won't matter. Winter potting will also allow the plant to adapt to its new environment in a pot. If you pot your plants in the winter, leave enough room for the roots to grow and use amended soil to ensure good drainage.

There is usually plenty of rain in the winter months in Georgia but keep an eye out and don't let the newly potted plants dry out. Also, ink markers may not last through the rainy winter months so use pencil.

This is our annual fundraiser and the largest profits come from the sale of plants donated by GMG members. So get out there and pot-up some pass-along plants and contribute to the continued growth and welfare of GMG.

We really need your help in making the GMG annual fundraiser a success and thank you in advance for volunteering your time, labor, and plants to ensure the continued viability of our annual spring plant sale.

LOOKING FORWARD TO SPRING EPHEMERALS

By Marlene Gilmann

Once again the spring ephemerals are carpeting the forest and woodland floor only to be quickly admired and sleep again until next year. Spring ephemerals (i fem' ur als) are plants whose glory lasts but a few days but the memory of their haunting beauty will remain with you for months come. You will find yourself looking expectantly for their return the following spring. These native wonders emerge before the trees leaf out as they must acquire enough sunlight to produce seed and store energy before the forest canopy fills in. Then they fade away until next year. Let's walk gingerly along an imaginary path and enjoy the fleeting beauty of spring's earliest wonders.

Hepatica americana, Liverleaf, is one of the earliest harbingers of spring. It bears dainty 1/2" white flowers blushed with pink or deep blue. The flowers are born on stalks which leap into view directly from the plant's center. You will find fine hairs growing along the stalks. The leaf cycle is interesting as before the new leaves unfurl, the blossoms are often bursting into bloom. The leathery leaves will then open to bask in the sunlight. Once established, the Liverleaf will blanket a woodland floor. You will need to look carefully to admire its beauty; however, as this miniature plant never reaches more than 6 inches tall.



Further along our woodland path we find our next attractive ephemeral, the Trout Lily or Dogtooth Violet, *Erythronium americanum*. Trout Lilies are said to acquire their name from the speckled leaves which are reminiscent of the speckled skin of a trout. It generally grows in colonies of dozens to hundreds of plants and will spread prolifically on underground runners. Small yellow to brownish flowers may be hidden beneath the leaf litter on the woods floor or may be too pale to be easily noticed. Once you recognize the leaf pattern, there will be little doubt as to the plant's identity. They are found frequently near streams, rich woods, or on wooded slopes, *Erythronium americanum* will bloom

from March to May on 4 to 10 inch plants that sport the often pale-colored one inch flowers.

The exceptionally flashy Jack-in-the-Pulpit, rising heads above the Trout Lily and the Liverleaf, is terrific and found in moist woodlands. Its coloration varies with deep purple, red, brown or white stripes on its slender green spathe. Also known as *Arisaema triphyllum*, Jack-in-the-Pulpit displays its unusual hooded "pulpit" on tall stems. Standing 1 to 3 feet, it exhibits only two or three leaves with each leaf consisting of three glossy green leaflets, hence the *triphyllum* portion of its name; *tri* meaning three and *phyllum* meaning leaf. This is one woodland native that boldly announces its presence. Clusters of red berries appear under the wilted spathe and provide food for passing wildlife.



While enjoying your stroll down our woodland path, you will most likely be tempted to "bring a little piece of this or that plant home" with you. This is not a good idea. Many of our ephemerals are protected by the Endangered Species Act. Others are sheltered in Georgia by the Georgia Department of Natural Resources. Also, most wild plants do not transplant well. They are growing in conditions that are often difficult to duplicate in the home garden. Native mycorrhizal fungi exist in natural habitats. These fungi are critical to successful growth of many ephemerals and wildflowers. Commercial propagation makes many of these plants available for you to purchase at garden centers or nurseries without damage to them in their native habitat. Be responsible! Purchase your plants from nursery-propagated

stock from reputable, licensed mail order catalogues or at specialized nurseries.

Stay alert on your next outdoor excursion and you will surely find one of these beauties to mystify you. Once you recognize them for what they are, ephemerals will captivate you. Have fun and choose from any number of outstanding native ephemerals that are available commercially.

CREATING CURB APPEAL

Do It Right The First Time!

By Shannon Pable

Is your week hectic like mine? Running from one task to another? Juggling family, career, household, volunteer activities, and more...leaving no time for the landscape? After the day is done and you drive into your neighborhood and approach your driveway, are you squinting your eyes filtering out what uglies lurk in your landscape? As you enter your home, throw your keys and mail on the counter, do you shut the blinds to hide what you don't want to see outside? If you answered, "yes" to any of these questions, you have LAS, Landscape Avoidance Syndrome.....O.K., I just made that up but many of us suffer from it!



How about making a spring and summer resolution? Thou shalt make thy dwelling beautiful! Perhaps, like many, you're inexperienced at this, have no idea where to start, and you're overwhelmed. Hopefully, the following tips will take the fear out of gardening and get you on the right track to creating the beautiful curb appeal you so desire.

QUICK TIPS

Keep a clean edge

Trench around existing pine islands 3" deep and wide. This will help to keep the grass/groundcovers out as well as have a neat appearance. This works much better around pine islands in the lawn than using borders such as pavers or rock. It is much easier to maintain and mow along the edge.

In areas where shade has increased over the years and your lawn is declining, it will be best to expand the bed line and eliminate the declining lawn. When laying out new bed lines, use a hose to create gentle curves. Try to stick to an 'S' curve and keep it to two waves. Once you're satisfied with the shape spray it out with spray paint. Landscape spray paint is available at most hardware stores. If this new bed encompasses lawn, either dig the existing lawn out (I prefer this) or spray with glyphosate (Roundup) prior to planting.

Spruce up the mulch

Keep a good layer of 3" deep mulch on your beds all year. This will help to discourage seed germination, keep roots moist, will break down and amend the soil, and keep soil born diseases from plants. Add your mulch in the winter after leaves have fallen and in mid summer when it starts looking faded. Avoid using gravel as a ground cover in beds. Gravel will act as a heat sink and does not amend the soil. It's also very difficult to re-work the soil or add additional plants to soil that have a layer of gravel on it. If you have a slope, use shredded pine park mulch; it will adhere to the slope better than pine straw.

Maintenance

Pruning can be very time consuming so avoid plants that need lots of pruning; this also falls into the category of choosing the right size shrub/tree for the space. Prune leggy or sparse looking shrubs and remove any dead or diseased branches. More mature shrubs often look better "limbed up" and turned into a topiary tree-like shape. Winter is usually the best time to prune trees and shrubs. If pruning in the summer, don't remove more than 25% of the foliage. If the plant is a spring bloomer (blooms before May), then prune just after it blooms to avoid cutting off bloom buds.

Avoid plants that require lots of watering. Using drought tolerant plants will save you time and money. Remember to water you're newly planted shrubs, trees, etc. until established. Even during the winter, watering is needed. The best means to water is by soaker hose, especially during a drought. This will save at least 50% more water than a traditional sprinkler.

Use native plants. Plants that are native to our area can tolerate are heat and drought conditions better than most non-natives. They are also more disease resistant than most non-natives. So there's usually no need to use harsh chemicals.

Stay ahead of "weeds"

The definition of a weed is a plant out of place...so Bermuda grass can definitely be considered a weed at times. Avoid plants that re-seed all over your garden or have underground runners that invade and smother other plants. Use a pre-emergence in mid September to prevent germination of cool season weeds in winter. Use again in late February or early March to prevent germination of warm season weeds in summer. If you're organically minded, use corn gluten and top with 3" of mulch in garden beds. For existing weeds, use a post-emergence for broadleaf and grassy weeds. Remember to always read the label carefully. If you need help in identifying weeds and diseases, contact your county extension office. Staying ahead of the weed game will definitely lighten the maintenance burden.

DESIGN TIPS



Plant in swaths and groupings

Try to group smaller plants together in odd numbers. For shrubs that are 3' x 3' and smaller, I tend to put in a group of at least 3-5. Place larger shrubs, those at least 4' x 4' and larger, in groups of 3 or treat the shrub as an accent or focal point (if it is very unusual) and plant it by itself. Don't have more than one focal point in the same garden "room". Stay away from planting in rows or perfect circles but plant in "drifts" or triangular shapes.

Repeat plant groupings and balance

Repeat certain groupings for unity and harmony throughout the landscape. Balance your plantings. It can be asymmetrical and still be balanced. Especially balance your evergreens so the landscape looks attractive in the winter.

Selecting the plants

For starters, challenge yourself to stick with seven different species (NOT seven plants total). Mix sizes, shapes, colors, and textures for interest...but remember that simple is sometimes best. You

don't have to have a plant in every space. Sometimes a piece of sculpture works well to break up, add interest, or just give your eyes a rest.

Remember finer small foliage gives the appearance of being further away; larger foliage (especially glossy leaves) looks closer. So in an area you want to give the appearance of being larger, use finer foliage. In an area you want to look smaller (cozier), use larger, glossy foliage.

Dark colors and shades of blue look further away and cooler. Bright and light colors jump forward. Red, yellows, oranges add warmth. Stick with 1 to 2 main colors and have 1 or 2 accent colors. Try to stick with a total of 3...sometimes 4 will work if you stay in the same or similar hues.

Remember the size relationship between plants. Know the size and shape before planting. Watch for power lines, water pipes, rooflines, walkways, etc. Also know the plants desired growing condition. Does it prefer sun, shade, moisture, dry, etc? Keep in mind that plants that prefer part to full shade can handle early morning sun (eastern exposure) but need protection from afternoon sun.

Plant your largest trees first. These might be a combination of deciduous and evergreen. Then place your large and medium evergreen shrubs so that they are balanced throughout the landscape. If you're not sure what's evergreen, plant in the winter to be sure. Then place your deciduous shrubs. Then fill in with perennials and groundcovers.



Do not plant aggressive ground covers (like ivy or vinca) in beds with perennials or low growing shrubs; it will smother them. It's actually easier to care for a bed in a wooded area with no ground cover than with. In the winter, blow or rake your leaves into the beds (with no ground cover) and top with a thin layer of pine straw for a neater appearance.

A good place to grow a low growing groundcover (such as lamium, creeping jenny, mondo grass, which are less than a few inches tall) is in a walkway or perhaps around stepping-stones. But keep in mind; eliminating weeds is easier to tackle when there is no ground cover to pick through.

If you are one of those impulse buyers (must have that cool new plant, like me), designate 'nursing beds'. These are planting beds that can temporarily house some of those new buys.

Last but not least, it's important to have a landscape design plan so you know what the big picture is. This way it won't look like a hodgepodge of plants. You might want to contact a landscape designer to draw up a design (to scale) for your landscape. Once you have a plan in place, then you can concentrate on a particular area and do it at a pace that is comfortable for you.

Important numbers to remember

Call before you dig to get utilities marked! Call **1-800-282-7411** (usually within 2 weeks of installation). Get a soil test to determine nutrient deficiencies. This information and much more is available through your county extension office. To find the contact information for your County Extension office, call **1-800-ASK-UGA1**.

Great Websites

Publication Soil Preparation and Planting Procedures for Ornamental Plants in the Landscape:

<http://pubs.caes.uga.edu/caespubs/pubcd/B932-w.htm>

Publication Lawns of Georgia: <http://pubs.caes.uga.edu/caespubs/pubcd/b773-w.html>

Walter Reeve's website: www.walterreeves.com

Georgia Native Plant Society: www.gnps.org

AZALEAS FOR THE SOUTHERN GARDEN

By Tim Daly
Agricultural and Natural Resources Agent

There are over 900 species of azaleas (*Rhododendron spp.*) and over 8000 recognized hybrids. Azaleas belong to the Ericaceae family (the heath family which includes blueberries and mountain laurels) and are used extensively by gardeners. These plants freely hybridize and there are new cultivars introduced every year. Gardeners should seek out the new cultivars to add excitement to the spring garden.

The azalea is found all over the world but most notable horticultural species are indigenous to Japan, China, and the United States. In the US, native azaleas are found in the Pacific Northwest and the Southeastern US. Most azaleas grown by home gardeners are the Asian evergreen varieties, although the native deciduous Piedmont Azalea is still prized by many. The plant's beautiful blooms and stout character has earned it a place in most American gardens. The azalea is a favorite of gardeners and is grown by the millions in southeastern nurseries.



The azalea is a tough plant when properly planted in an adequate site. Azaleas prefer cool, partially shaded sites. Although some varieties tolerate sun better than others, they all prefer an area that is not exposed to long periods of hot full sun and drying winds. Flowers last longer when plants are partially shaded. Azaleas exposed to full sun are more susceptible to lace bugs.

Proper cultural practices are the first line of defense against insects and diseases. Cultural factors to consider when choosing a site for an azalea include the soil type and drainage (azaleas require good drainage), the amount of sun (azaleas are primarily a shade species), pH of soil (azaleas require low/acid pH), and temperature (azaleas are killed by frost in zones lower than 5). Iron is essential for healthy azaleas. Iron is available for uptake by azaleas when the soil pH is low (acidic). When soil pH is too high (alkaline), iron becomes unavailable and chlorosis, or yellowing of the youngest leaves, may occur. A sign of iron chlorosis is the area between the veins turning yellow or light green, and the veins are darker green. Application of iron as a foliage spray will usually give quick, temporary results when applied during the growing season.

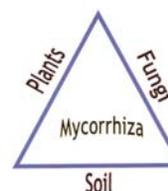
Poor drainage is the main cultural factor that predisposes azaleas to attacks by pests. Azaleas are shallow rooted, have very fine roots, and will wilt rapidly. They must be kept adequately irrigated at all times to prevent stress. Plant azaleas in shallow holes with several inches of the root ball above the soil surface and mulch deeply with decomposed mulch. Prune in the spring after flowering. Pruning after July will remove the blooms that have been set for the following year. Fertilize with an "acid loving" plant fertilizer and water as needed. When planted and maintained correctly, the azalea will resist pests and bring beauty to the garden like few other plants can.

MYCORRHIZAS

By Dan Willis

FUNGUS

Fungi are neither plant nor animals but a very different type of organism. They do not contain chlorophyll or the molecule used in photosynthesis to produce sugars with the help of sunlight. They do not have a root system like that found in trees, shrubs, flowers, and grasses. As a result, they cannot manufacture their own food, but, do feed themselves by digesting organic matter.



Mushroom hunters are familiar with many of the mycorrhizal fungi characteristics of the north temperate forests; especially basidiomycetes such as gilled mushrooms, chanterelles, boletes, corals, puffballs, and jelly fungi. Mycorrhizas in these forests have a small percentage of ascomycetes such as morels, truffles, cup fungi, and elfin saddles. Lesser known of the more common mycorrhizal fungi are the zygomycetes, relatives of black bread mold.

Fungi can be divided into three basic categories based on their relationship to their environment:

- Parasitic fungi that live off of living plants and animal tissue.
- Saprophytic fungi that live on dead wood, dead tissue of living trees, or dung.
- Mycorrhizal fungi that have a symbiotic or mutually beneficial relationship with the rootlets of other plants and are not limited to trees.

MYCORRHIZAL FUNGI

In 1885, A. B. Frank coined the word mycorrhiza by combining the classic Greek word for fungus (=mykes) root (=rhiza). Mycorrhizas are ancient. Fossil records show that roots evolved alongside fungal partners about 350 to 500 million years ago. It is believed that this “mutualistic association” was crucial in assisting plants evolve and colonize the land millions of years ago.

While many species of fungus do not form a symbiotic relationship, the vast majority of land plants, between 80% and 90%, have mycorrhizas.

In this symbiotic relationship, plants photosynthesize providing carbon and other vital substances to the fungi. In return, the fungi provide the plant with mineral nutrients, such as phosphorus, nitrogen, and extra water that they take up from the soil.

Plants, being capable of producing their own food can potential survive without the fungus. Fungi, however, are often completely dependent on the live plant for sustenance and, thus, it could be considered a parasite of the plant.

For example, orchids are very dependent on mycorrhizas for all or part of their life cycle. They cannot germinate fully without being infected by a fungus. These plants have thousands of tiny seeds that contain no food reserves for growth (unlike nuts). They therefore depend on help from fungi in order to obtain enough food to survive. The fungi perish in the course of the orchid’s development and are absorbed by the orchids. If this host-specific action does not take place, the fungus spreads and becomes parasitic. This is why only a small percentage of seedlings develop in many orchid species.



Dwarf Rattlesnake Plantain Orchid (*Goodyera repens*) is dependent on mycorrhizas (*Rhizoctonia lanuginosa*) that live within the plant’s roots and are given protection by the plant. Before the orchid has begun to photosynthesize, the fungus provides it with carbon. When the plant is mature, the mycorrhiza will mainly provide the nutrients.



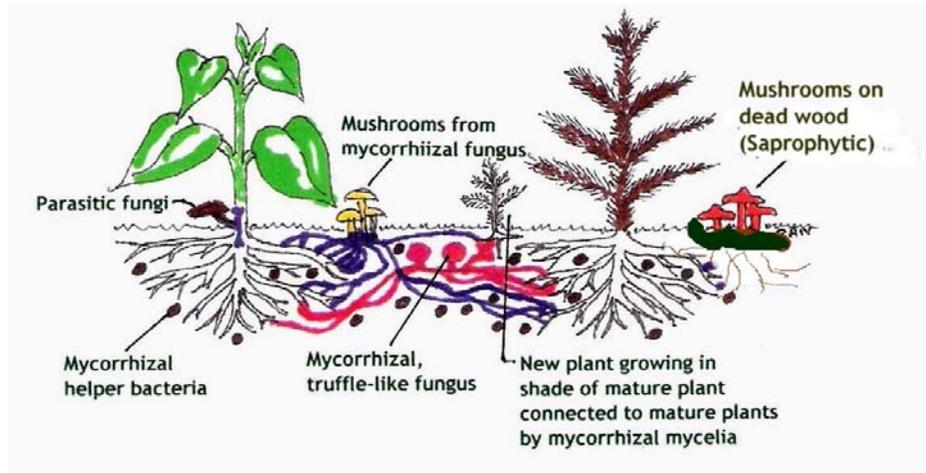
There are over 400 species of plants that lack chlorophyll. These achlorophyllous plants are found in many families and the majority relies on fungal associates for the carbohydrates that these plants would produce through photosynthesis. In some cases an entire plant family is achlorophyllous like the Indian Pipe (*Monotropaceae spp.*) while in others (*Orchidaceae spp.*) only certain genera lack chlorophyll.

MUTUAL BENEFITS OF MYCORRHIZAL FUNGI AND PLANTS

If you have ever admired the beauty of an orchid, eaten some freshly picked blueberries, or sat in the shade of a magnificent oak tree, you have benefited from the underground world of mycorrhizal fungi.

Many botanists and ecologists are coming to the realization that lowly fungi play a major role in the ecosystem. Fungi are the cornerstones of a woodland ecosystem and yet their impact is often overlooked.

The sketch reveals something of the world beneath the surface of the forest floor.



There are parasitic fungi that have their hyphae penetrating the roots of the plant resulting in some mushrooms at the base of the trunk of a small tree.

The mushrooms from the mycorrhizal fungus are shown linking several plants. The buried fruiting bodies of a mycorrhizal, truffle-like fungus also can connect several plants.

The mycelium of yet another mycorrhizal fungus can form fruiting bodies on dead wood (saprophytic mushrooms).

Mycorrhizal associations can be fairly complex, with more than one fungal species and more than one type of mycorrhiza, simultaneously attached to the roots of one plant. Conversely, a given mycelium may be attached to more than one plant, perhaps even to plants of different species.

This latter plant-mycelium-plant connection allows the carbohydrates produced by one plant to move through the attached mycelium to another plant. As shown in the sketch, a seedling growing in heavy shade benefits from the photosynthesizing activities of another plant growing under more favorable conditions.

The formation of the mycelium-root connection is not just a simple matter of fungus meets plant and fungus hooks onto plant. There are soil bacteria, known as mycorrhizal helper bacteria, which promote the formation of mycorrhizas.

Plants allow and most require mycorrhizal fungi to colonize their roots. In this mutually beneficial relationship, the hyphae of the fungus greatly increases the surface area that is open to nutrient and water absorption, maximizing the plants access to these essential compounds and elements. In return the plant supplies the fungus with carbohydrates for use as energy. The fungi also can help the plants contend with summer droughts and protect them from pathogens, like nematodes, that attack their roots.

Phosphorus is a relatively immobile element in the soil. Mycorrhizas are able to absorb large amounts of phosphorus by decomposing its organic sources. The mycorrhiza hyphae also maximize the surface area available to access phosphorus. Research indicates that mycorrhizas increase the phosphorus concentration in host plants by up to 40% compared to non-mycorrhizal plants.

DIFFERENT TYPES OF MYCORRHIZAS

There are a number of different kinds of mycorrhizas but those that most mushroom hunters are interested in are the Ectomycorrhizas (mushrooms and truffles).

Ectomycorrhizas: Ectomycorrhizas (“ecto” = outside) is the fungus growing on the surface of the feeder roots of plants and can usually be distinguished with the naked eye. Their name comes from a well-developed furry growth called the fungal hyphae (= mantle or sheath) that covers the outside of the fine root tips (periradical phase). Many hyphae emanate from the mantle into the soil to form the extraradical (radical = root) phase. Sporocarps develop from the extraradical mycelium. Sporocarps are the fruiting body of a fungus that produces and releases the reproductive spores. Large sporocarps found above the ground are called mushrooms and those below the ground are called truffles.



The fruiting bodies of truffles, being completely submerged beneath the soil, do not forcibly discharge their spores and rely upon underground vectors and mammals, such as squirrels, chipmunks, and voles, for spore dispersal. These genera are often found living with the roots of oak, hazel, sweet chestnut, pecan, and a few other trees.

Ectomycorrhizas are composed of at least 65 fungal genera; most are in the phylum Basidiomycota, although some are Ascomycota. Well known genera in the Basidiomycota include *Amanita* and in the Ascomycota, *Tuber* (truffle) and *Morchella* (morels).

Ectomycorrhizas colonize about 3% of all seed plants (Angiosperms and Gymnosperms) or about 140 genera including but not limited to *Pinus* (pine), *Picea* (spruce), *Eucalyptus*, *Fagus* (beech), *Betula* (birch), and *Quercus* (oak).

The ectomycorrhizas display varying degrees of host specificity. Some fungal species colonize many plant species and some fungal species colonize the same individual plant. There is some evidence that non-native ectomycorrhizal fungi are “invasive” and are becoming associated with plants with which they have never had an association with in the past.

Ectendomycorrhizas: This is a subgroup of the Ectomycorrhizas. These exist with or without a mantle, with a Hartig net, and cellular penetration by hyphal coils. They are restricted mostly to the plant families *Pinus* (pine). Most place these fungi in the phylum Ascomycota.

Endomycorrhizas: Endomycorrhizas (“endo” = inside) do not form a mantle around the fine tips and thus do not have a periradical phase. They often have a well-developed extraradical phase as a mycelial network throughout the soil. These do not form complex sporocarps (mushrooms and truffles) and instead reproduce by means of large spores (10 to 50 times greater than mushroom spores) that remain in and move with the soil.

The Endomycorrhizal group has been essentially dismantled and specific types are now recognized. These are:

- Vesicular-arbuscular mycorrhizas (VAM)
- Arbuscular mycorrhizas (AM) since they lack vesicles
- Orchid mycorrhizas
- Ericales: Ericoid, Arbutoid, Monotropoid.

The mycorrhizas associated with order Ericales are:

Ericoid Mycorrhizas:

Ericoid mycorrhizas are somewhat similar VAM, in that the fungus invades the host cells, but affect only plants in the family Ericaceae (heather, rhododendron, and blueberry family).

Arbutoid mycorrhizas: These have a mantle, Hartig net, and cellular penetrations by hyphal coils are mostly found in the Theaceae family (*Camellia spp*). The fungi of Arbutoid mycorrhizas are in the Basidiomycota phylum.

Monotropoid mycorrhizas: These may have a mantle, Hartig net and cellular penetration. They are found in *Monotropa* species (Indian pipe).

MYCORRHIZAL FUNGI AND HOST PLANTS

Of the roughly 70,000 fungi species and 300,000 plant species, only a very small percentage plants can or must enter into mycorrhizal relationships. There are about 5,000 types of ectomycorrhizal species but only about 150 endomycorrhizal species.

It appears that mycorrhizal fungi have evolved different strategies to out compete other mycorrhizas in the ecological environment. Ectomycorrhizal fungi species tend to form associations with specific host plant species or a restricted number of them. Endomycorrhizal fungal species are “generalists” and can associate with hundreds of different host plant species.

For example, research indicates that Ectomycorrhizas and Ericoid mycorrhizas can process organic nitrogen most efficiently for their host plants whereas Endomycorrhizas can process inorganic nitrogen most efficiently for their host plant. Ectomycorrhizal plants can exist, therefore, in soils that are poor in inorganic nitrogen but very high in organic nitrogen.

A summary of the various plants and their predominant mycorrhizas are given at the end of the newsletter.

IN THE SPIRIT OF YESTERDAY

By Florence Packman

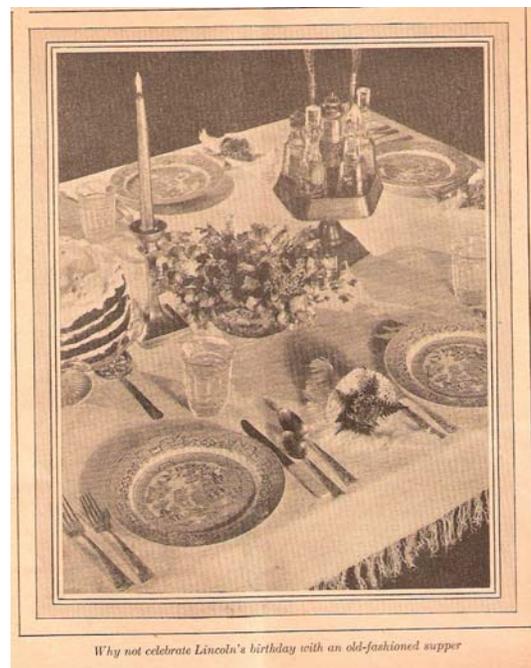
(Ed. Note: Taken from “Successful Farming” magazine, February 1929. Some of the spelling is rather quaint and not a typo!)

The last joyous notes of the Yuletide season have scarcely died away when the whirl of Cupid’s arrow announces the arrival of true lover’s day, February 14th. Saint Valentine’s Day and the birthday anniversaries of two of our most illustrious Americans, center around the month of February as a season of novel hospitality.

February 14th has been celebrated as lover’s day for many centuries. Customs grow up, live for a time, gradually die out, and finally become lost in legend and obscurity. But not so with the ancient festival of February 14th.

Thruout England it has long been the custom for children to march thru the streets joyfully singing Valentine songs under cottage windows. Who can tell the origin of these haunting melodies and quaint old verses, which belonged so inseparably to the English Valentine day of long ago! Listen to the small carolers as they sing their oddly catching jingles:

“Good morrow, Valentine!
I be thine, and thou be’est mine.
So please give me a Valentine.”



Why not celebrate Lincoln's birthday with an old-fashioned supper

If their singing pleases your fancy, as it surely must, you will throw them lover's knots of flowers and fresh green wreaths with which the children bedeck themselves in true holiday fashion. For such was the pretty custom in olden days. Or, remembering the tempting rows of sugarplums and lollipops in the confectioner's window next door, you may toss down shining jingling coppers. But if your little songsters come not before noon, you will sternly refrain from even noticing them, for such was the time-honored custom.

Saint Valentine's day offers an inviting range of seasonal dishes and unusual entertainment. Luncheons are especially popular on this day since they are such a delightful way in which to entertain your small circle of intimate friends. Let the menu for your Valentine luncheon be suggestive of true lover's day, both in the names given to the dishes served and in the color and kind of food selected. An attractive favor might be a red heart-shaped folder with the menu written inside.

In the following menu for a Valentine luncheon the color note is red, of course. Each dish has been selected as especially appropriate for true-lover's day on which it is to be served:

- Love Apple Bisque
- Hearts of Toast
- Love Birds
- Queen-of-Hearts Potatoes
- Buttered Peas
- Saint Valentine Buns
- (Traditional sweet plum buns)
- Flaming Heart Salad
- Romeo and Juliet Sherbet
- (Red raspberry sherbet)
- Cupid's Darts
- Coffee
- Heart's Ease
- (Salted nuts)



Love apple, as you remember, was the old name for tomato. Its deep rich red makes a beautifully colored soup for a Valentine luncheon.

Love Apple Bisque

- 2 cupfuls of canned tomatoes
- 2 slices of onion
- 2 cloves
- 2 peppercorns
- Bit of bay leaf

- 1 tsp. of sugar
- 2 tablespoonful of butter
- 2 tablespoonfuls of flour
- ½ teaspoonful of salt
- Pinch of soda
- 2 cupfuls of milk, scalded

Simmer tomatoes, onion, spices, and sugar 20 minutes. Strain and add soda. Melt butter, add flour and salt, and stir to smooth paste. Add milk gradually and cook until slightly thickened. Add hot tomato juice. Serve immediately. Each serving may be topped with 1 teaspoonful of whipped cream, if desired.

To make Hearts of Toast, cut bread in very thin slices, then cut with heart-shaped cook cutter, spread with softened butter, and toast in hot oven until delicately browned.

Love Birds

- 2 thin veal cutlets (2 pounds)
- 1 cupful of soft bread crumbs
- ¼ teaspoonful of celery seed

- 2 teaspoonfuls of salt
- ¼ teaspoonful of pepper
- 1 tablespoonful of onion, finely chopped
- Hot stock or melted butter

Cut veal in strips 3 inches long and 2 inches wide. Put trimmings from veal thru food chopper and mix with breadcrumbs and seasonings. Moisten with hot stock or melted butter. Spread each veal strip with mixture, roll, and fasten with toothpicks to resemble wings and legs of birds. Dredge with flour and brown in frying pan. Add 1 cupful of cream or stock, cover, and braise about 40 minutes, or until tender. Remove birds and make a brown sauce to serve with birds.

Queen of Hearts Potatoes

2 egg yolks, well beaten
1 quart of seasoned mashed potatoes
2 egg whites, stiffly beaten

Add egg yolks to mashed potatoes and beat until light and fluffy. Drop from tablespoon on greased baking sheet, top with egg whites, sprinkle with paprika and top with tiny pimento heart. Bake in hot oven - 400 degrees F. - until delicately browned.

Saint Valentine Buns

(Traditional for Valentine's Day)

1 cupful of sugar
2 teaspoonfuls of salt
¾ cupful of shortening
4 cupfuls of light bread, sponge
2 eggs, well beaten
½ cupful of raisins or currants, floured

Combine all ingredients with bread sponge and mix well. Cover and let rise in warm place until double in bulk. Knead down and let rise again until double in bulk. Cut with sharp knife into small pieces and shape into balls about ½- inch in diameter. Let rise until light. Bake in hot oven - 400 degrees F. - about 20 minutes. When removed from oven, brush them immediately with a glaze made by moistening sugar with water. Or, ice with thin confectioners' icing.

Flaming Heart Salad

Shave cabbage very fine, crisp in ice water, drain thoroly, and marinate with well-seasoned French dressing. Pile lightly in lettuce cups on salad plates. Arrange tiny hearts cut from marinated beet slices over cabbage. Place a teaspoonful of cream mayonnaise combined with a small amount of grated cheese at one side.

Cupid's Darts

2/3 cupful of butter
3 cupfuls of sifted cake flour
2 cupfuls of sugar

Cream butter thoroly, add sugar gradually, and cream until light and fluffy. Sift flour with baking powder three times. Add to creamed mixture alternately with milk, a small amount at a time, beating well after each addition. Add vanilla; fold in egg whites. Bake in sheet pan, in moderate oven - 375 degrees F. to 400 degrees F. - 30 to 45 minutes. Let stand in pan 3 minutes, then cut with heart-shaped cookie cutter before removal from pan. Frost with white boiled frosting. Cut thin arrows from strips of angelica and stick into frosting to simulate a pierced heart.

OUR MAST HEAD LOGO

The GMG Newsletter "A Bit of Dirt" started in 1994 and that is when the hand with a plant and a "bit of dirt" first appeared on the mailing labels. I put the double ring with GMG around the "bit of dirt" this year. It is rather interesting to note that the Georgia Master Gardeners Association is now using a very similar logo. This is more kudos to the originality of the 1994 Gwinnett Master Gardeners.



2006

GEORGIA GOLD MEDAL WINNERS

1. Cuphea Species and Selections (*Cuphea spp.*)
 - a. Firecracker Plant (*Cuhea ignea*) - Annual, Full Sun
 - b. Mickey Mouse Plant (*Cuphea llavea*) - Annual, Full Sun
 - c. Tall Cigar Plant (*Cuphea micropetala*) - Annual, Full Sun
 - d. Perennial Plumbago (*Ceratostigma plumbaginoides*) - Herbaceous Perennial, Full Sun/Partial Shade
2. Amethyst Falls Wisteria (*Wisteria frutescens 'Amethyst Falls'*) - Vine, Herbaceous Perennial, Full Sun/Partial Shade
3. Chinese Snowball Viburnum (*Viburnum macrocephalum 'Sterile'*) - Deciduous Shrub, Sun/Partial Shade
4. Overcup Oak (*Quercus lyrata*) - Deciduous Tree, Full Sun

Go to the Extension Service website at www.caes.uga.edu for more information on the Georgia Gold Medal Winners.

EDITORIAL COPY DEADLINES

If you are interesting in contributing an article for inclusion in "A Bit of Dirt," please submit it to Dan Willis at willis31@bellsouth.net in accord with the following copy deadlines:

- Winter Issue (Dec.-Jan.-Feb.) __November 1
- Spring Issue (Mar.-Apr.-May) ___February 1
- Summer Issue (Jun.-July-Aug.) _____May 1
- Fall Issue (Sep.-Oct.-Nov.) _____August 1

RENEW YOUR MEMBERSHIP

If your GMG renewal reminder got lost in the Christmas and New Year's festivities, why not renew now. It is easy to do. Use the form at the end of the newsletter.

**WINNETT MASTER GARDENERS ASSOCIATION
Year 2006 Summary**

Statement of Income and Disbursements

Bank Bal. 16 November 2005 **\$6,826.43**

INCOME:

Membership Dues	1,480.00
Programs	
Auction	656.50
Garden Tour	710.00
Intern Program	556.00
GMG Sales	
Plant Sale	5,017.66
MG Pins	5.00
Other	20.00
Total Income:	<u>\$8,445.16</u>
Total Cash Available:	<u>\$15,271.59</u>

DISBURSEMENTS:

Administration:	
Meetings	438.71
Bank Charges	33.84
Region Mtg.	1,090.32
Holiday Mtg.	275.13
Other	385.02
Project Funding Grants:	2,888.51
Committees:	
Plant Sale	791.12
Historian	94.67
Garden Tour	1,327.34
Field Trips	192.25
Intern Program:	
Breakfast	246.81
Notebooks	197.54
Graduation Book	225.06
Equipment:	
Laptop & Proj.	1,040.56
2005 Winter Conference:	196.14
Plant Sale:	
Plants	205.54
Other	265.48
Speakers:	1,100.00
Total Disbursements:	<u>\$10,994.04</u>
Bank Bal. 16 November 2006:	<u>\$4,277.55</u>

LIST OF MYCORRHIZAS AND ASSOCIATED PLANTS AND TREES (CON'T)

Plants with Predominantly Endomycorrhizas:

All nut trees except Pecan and Macadamia.
 All fruit trees, grapevines, grasses, and many vegetables
 All berries except blueberry, cranberry, and loganberry
 All shrubs except Laurel, Rhododendron, and Azaleas

Acacia	Camellia	Euonymus	Lily	Paw Paw	Sourgum
Agapanthus	Carrot	Fern	Locust	Pea	Sourwood
Ailanthus	Casuarinas	Fescue	London Plane Tree	Peach	Soybean
Alder	Cassava	Fig	Magnolia	Peanut	Squash
Alfalfa	Catalpa	Forsythia	Mahogany	Pear	Strawberry
Almond	Ceanothus	Fountain Grass	Mahonia	Pepper	Sudan Grass
Apple	Cedar	Fuchsia	Mango	Pistachio	Sugar Cane
Apricot	Celery	Gardenia	Maples (all)	Persimmon	Sumac
Arborvitae	Cherry	Garlic	Marigold	Pittosporum	Sunflower
Artichoke	Chinaberry	Geranium	Melons (all)	Plum	Sweet Gum
Ash	Chokeberry	Gingko	Mesquite	Poinsettia	Sweet Potato
Asparagus	Chrysanthemum	Grapes (all)	Millet	Potato	Sycamore
Aspen	Citrus (all)	Grass (all)	Mimosa	Poplar	Tea
Avocado	Clover	Gum	Morning	Rain Tree	Tobacco
Bamboo	Coconut	Hackberry	Glory	Raphiolepis	Tomato
Basil	Coffeetree	Hawthorn	Mulberry	Raspberry	Tree-of-Heaven
Barberry	Coral Tree	Hibiscus	Monkey Grass	Redbud	Tupelo
Bean	Corn	Holly	Pod	Redwood	Viburnum
Begonia	Cotton	Hop Hornbeam	Nasturtium	Rice	Walnut
Black Locust	Cottonwood	Hornbeam	Okra	Rose	Wheat
Blackberry	Crabapple	Horse chestnut	Olive	Rush (Ltd)	Willow
Box Elder	Cryptomaria	Impatiens	Onion	Russian Olive	Yam
Boxwood	Cucumber Tree	Jojoba	Pacific Yew	Ryegrass	Yellow Poplar
Buckeye	Currant	Juniper	Palms (all)	Sassafras	Yew
Bulbs	Cypress	Kiwi	Palmetto		Yucca
Burning Bush	Dogwood	Leek	Pampas Grass	Sagebrush	
Butternut	Eggplant	Lettuce	Sage (Ltd)	Serviceberry	
Cacao	Elm	Leyland Cypress	Passion Fruit	Sequoia	
Cactus	Eucalyptus	Ligustrum	Paulownia	Silver Bell	

Plants with Predominantly Ectomycorrhizas:

Alder	Birch	Elm	Larch	Poplar
Ash	Chestnut	Fir (True)	Linden	Spruce
Aspen	Chinquapin	Hemlock	Oak	Tamarack
Basswood	Cottonwood	Hazelnut	Pecan	
Beech	Eucalyptus	Hickory	Pine	

Plants with both Endomycorrhizas and Ectomycorrhizas:

Alder	Aspen	Elm	Poplar	Yellow Poplar
Ash	Cottonwood	Eucalyptus	Willow	

Plants with predominantly Ericoid Mycorrhizas:

Azalea	Carnation	Heather		
Blueberry	Cranberry	Rhododendron		

Plants without predominantly Endomycorrhizas, Ectomycorrhizas, or Ericoid Mycorrhizas:

Amaranth	Brussels Sprouts	Cleome		
Broccoli	Cabbage	Ipomoea		

Not all landscapes are dominated by a single plant species and non-ectomycorrhizal fungi colonize most land plants. Complex landscapes, such as forests and grasslands with hundreds of plant species can exist because different types of mycorrhizal fungi utilize different forms of nitrogen and phosphorus (organic and inorganic). A single plant can also be colonized by several species of fungi, thus broadening its potential nutrient base. In this way, plants are able to compete yet coexist with each other.

GWINNETT MASTER GARDENERS ASSOCIATION
A P P L I C A T I O N F O R M E M B E R S H I P O R R E N E W A L
Applications are effective for one calendar year, beginning January 1st

Check membership level: ___ GMG Member (\$15) ___ Friends of GMG (\$15)
___ GMG 10 Yr. Lifetime (\$10) ___ GMG Member Couples (\$25)

TOTAL ENCLOSED: \$_____ cash Check #_____

(Please Print)

Today's Date _____ Circle one: New or Renewal MG Class of _____

Name _____

Street _____

City _____ Zip Code _____

Home Phone (____) _____ Alternate Phone_ (____) _____

Email _____

Liability and Release Form

I (we) realize that when engaged in Master Gardener activities, that serious physical injury and personal property damage may accidentally occur. I (we) further realize that there is always the possibility of having an allergic reaction to or being poisoned by handling or ingesting plants and that adverse reactions may result in mild or fatal illness.

Knowing the risks, I (we) agree to assume the risks and agree to release, hold harmless, and to indemnify the Gwinnett Master Gardeners Association, and any officer or member thereof, from any and all legal responsibility for injuries or accidents incurred by myself or my family during or as a result of any and all Gwinnett Master Gardener activity, field trip, excursion, meeting or dining, sponsored by the association.

Member's Name (please print clearly) _____

Signature _____ Date: _____

Additional Member's Name (print clearly) _____

Signature _____ Date: _____

Release Form is required for participation in GMG fieldtrips and activities. Please return completed, signed, and dated form with check payable to "Gwinnett Master Gardeners".

Address mail to: **Gwinnett Master Gardeners, Attn: Kate Pittman, Treasurer, Gwinnett County Cooperative Extension, 750 So. Perry Street, Lawrenceville, Georgia 30045.**