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The Organic Perennial Garden

by Nancy DuBrule

Back Issue
July/August 1995

The term "organic gardening" conjures up an image of rows of raised beds bursting with oversized, delicious vegetables. The desire to grow food organically, without the use of toxic chemicals, is easy to understand—why would anyone purposely add poison to their own food? But when I mention organic perennial gardening, many people simply ask "Why does it matter, you aren't going to eat these plants." To this I reply:
1. You just might want to eat the flowers. Edible flowers are the latest rage and there are quite a few excellent books published on the subject.

2. As your design skills develop, you may decide to incorporate herbs and vegetables into your perennial borders.
3. It is very possible that someday you (or the next owner of your house) may convert your flower garden into a vegetable garden, and it is unwise to leave a legacy of toxic residues.
4. Poisons applied to any type of garden or lawn may contaminate well water and leach into the ground water.
5. Chemical fertilizers burn up organic material and kill soil microorganisms.
6. The most compelling reason to grow an organic perennial garden is that these methods work! The gardens that I tend are lush, oversized, abundant, and healthy. People always comment "What are you feeding these plants?"

Preparing the new perennial bed
The guiding principle in organic gardening is that the gardener feeds the soil, not the plants. Rich, healthy soil, alive and teeming with soil microorganisms, is the key to a healthy garden.

A soil that is fed organically is teeming with life and can sustain plant growth for a long time if left alone. Chemical fertilizers are not used. Chemical fertilizers are water soluble and leach out of the soil with every rain or watering. Therefore, you must continuously add them, week after week, to keep the plants growing. Your plants become "hooked" on chemicals and if you stop fertilizing, the plants decline quickly, as the soil has become "dead" and has no inherent source of natural fertility.

To properly prepare your soil, start with a soil test. A soil test will specify the pH of the soil and identify deficient nutrients. Improve your soil by adding limestone, compost, rock phosphate and greensand.

Soil Test: Aim for a pH of 6.5-7.0 in your perennial bed; if your pH is low, the specific amount of lime you should add to raise the pH will be listed in the soil test results. Use calcitic lime (calcium carbonate) unless your soil needs extra magnesium and calcium, then you may want to use dolomite limestone (calcium-magnesium carbonate). A rule of thumb for slightly acidic soils is to apply 5 lbs. of lime per 100 square feet to raise pH by one point. In general, clay soils will need more lime than sandy soils to change pH.

Compost: Initial soil preparation includes the addition of large amounts of compost. If you do not have your own compost pile, you can buy it at a garden center. Connecticut has at least four large commercial composting operations and bagged compost is generally sold as "composted manure." If you need a lot of compost, start by calling your town's public works department. Many Connecticut towns operate composting facilities and offer free compost to town residents.

I generally use compost as a substitute for peat moss because peat moss is inert and contains no soil life. It is acidic (and our Connecticut soils usually are already too acidic as it is). It is also hard to wet, absorbing many times its weight in water if allowed to dry out. I use peat moss when planting acid loving (ericaceous) plants such as rhododendrons and azaleas.

The reason that compost is so important is that the billions of soil microorganisms that live in compost break down organic matter and release it to the plants slowly. This is how the soil feeds the plants. When you feed the soil by adding compost, organic mulch, rock phosphate, greensand, bone meal, blood meal, and other mixed, blended organic fertilizers, you are actually feeding these microorganisms. This is the same process that takes place in nature. No one feeds the plants in the woods and meadows, yet they grow with great vigor. Organic material is deposited on the ground in the form of fallen leaves, matted down meadow grasses, etc. These create a layer of organic matter that is decomposed slowly, releasing nutrients back to the plants.

Rock phosphate: This is a mineral source of phosphorus and breaks down very slowly in the soil. It contains phosphorus as well as calcium and 18 other essential trace minerals. I always add this deep into the soil when preparing a garden bed. It does not move rapidly in the soil so it is useful to dig it in deeply when you have the chance. The phosphorus is released very slowly, over many years. It really helps plants to have bigger, more abundant flowers and stronger stems. Consult the phosphorus level listed in your soil test (L, M, H) and add the needed amount of rock phosphate according to the amounts listed on the bag.

Greensand: This is a naturally occurring iron-potassium silicate. It also takes a long time to break down. It has the consistency of sand but is a dark green color. Besides being a long lasting mineral source of potassium, it also contains iron, magnesium, calcium small amounts of phosphorus, and up to 30 other trace minerals. It loosens clay soils and helps in the release of nutrients that are bound up in the soil structure. It works miracles! Potassium helps plants develop a strong, deep root system as well, which may account for the tremendous vigor of the plants growing in soil amended with greensand.

Spring care
In the spring, I side-dress the plants with compost and a mixed blended organic fertilizer (usually a 5-3-4). To side-dress means to apply alongside the plants. Scratch the fertilizer into the soil surface. In late May, once the soil has warmed up and the self-

sown seedlings of perennials and annuals have made their appearance (I'm a cottage gardener and I welcome them), I mulch the garden with shredded bark, buckwheat hulls, cocoa bean hulls, or other organic material. At that point, my gardens are all set and the bulk of the work is done!

Summer care

In the summer, I do supplemental feeding only to those plants that are heavy feeders or that I expect to rebloom or continuously bloom. I scratch in a second round of compost and organic mixed blended fertilizer (this time, usually a 2-3-3, higher in phosphorus, the middle number, to promote late summer and fall blooming) in mid-July to roses, buddleias, delphiniums, annuals, and rebloomers such as veronicas, perennial salvias, nepetas, coreopsis, centranthus, etc. The rest of the plants, as long as they look healthy and lush, as they usually do, are left alone.

The only other supplemental feeding that I do is liquid feeding of plants that are stressed by the high heat and humidity of the summer. For example, I usually foliar feed roses in late July and August with liquid seaweed, also known as kelp, every two weeks. This helps them to withstand the summer conditions. You've probably noticed that roses do best in May, June, September and October and languish in the hot months. This is perfectly natural.

Foliar feeding is applying a dilute fertilizer solution to the leaves. This gives you fast results because the nutrients are absorbed directly into the plant through the foliage and do not have to be translocated from the soil and up the stems and out to the leaves. Liquid seaweed is an amazing fertilizer source. It provides plants with trace elements and natural growth hormones, improving their general health and vigor and increasing their resistance to insects and diseases.

I also water the garden with fish emulsion once or twice in the peak of summer. Some years, if I am really busy, I am only able to spot feed the plants that seem to need it the most. Other years, especially if the summer is quite brutal, with high heat, drought, or extremely long periods of high humidity, I try to liquid feed the entire garden. I use a proportioner, a device which attaches to the faucet and sucks up a dilute solution of fish emulsion or liquid seaweed into the hose. This makes it a quick and easy process, giving the stressed out plants a "pick-me-up" and providing them with valuable trace nutrients.

After a few years of this kind of care, my gardens maintain a high level of fertility. When you plunge your hand beneath the mulch into the soil in my perennial beds, you will find a soil that is rich, dark, teaming with microorganisms and earthworms. Nothing makes me happier than to witness the transformation of a poor, lifeless soil into one so fertile and rich. An organic gardener knows that a healthy soil is the only way to assure a healthy garden!

Nancy DuBrule is the owner of Natureworks, an organic garden center specializing in perennials in Northford. She is is the current president of NOFA/CT, and the co-author, with Marny Smith of Rowayton, of the book A Country Garden for your Backyard published by Rodale Press (1993).

Resources

The Northeast Organic Farming Association of Connecticut (NOFA/CT) is an independent, non-profit organization dedicated to strengthening the practice of ecologically sound farming, gardening and yard care, and to helping consumers have increased access to safe, healthy food. For more information, contact

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Controlling White Grubs

by Pamela Weil

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To rephrase Ben Franklin's famous quote: In this world, nothing is certain but death, taxes, and grubs in the lawn. We all have 'em — plump little white grubs dining on grass roots. These grubs are the larval (immature) stage of four beetle species: Japanese beetle, oriental beetle, European chafer and Asiatic garden beetle.

Connecticut's beetle population has changed over the years. The June beetle, a native species, used to be the most common. These night flying brown beetles were replaced by Japanese beetles. Now, in many parts of the state, Japanese beetle populations have dwindled and oriental beetle populations have increased.

Richard Cowles, an associate researcher at the Connecticut Agricultural Experiment Station in Windsor, has studied the beetle population in Connecticut for 5 years. Cowles has observed a naturally occurring fungal disease (Entoderma) that infects Japanese beetle larvae. "The levels can build up in the soil and cause high infection rates," he says. "It's a plausible explanation for why the Japanese beetle has virtually disappeared in some areas in Connecticut." Unfortunately, Entoderma does not infect oriental, European chafer or Asiastic garden beetles.

Killing the grubs is complicated by the fact that all four common grub species have slightly different life cycles and respond differently to chemicals. Before buying a product that will kill them, you should identify the grubs that are living in your lawn. Cut 5 or 6 one-foot squares where the turf is dead or damaged. Bring the larvae in to the Connecticut Agricultural Experiment Station to identify them, or, with a little effort, you can identify them yourself. Look with a hand lens at the pattern of larger bristles on the grub's underside, near the posterior end. For complete grub identification information, go to www.umass.edu/umext/turf.

How many grubs are too many grubs? If you dig up healthy turf and find grubs, that's okay. A healthy lawn can handle more grubs than a lawn of poor quality.

There are only two reasons to kill grubs: either your lawn is already damaged, or your otherwise healthy lawn is being torn apart by animals looking for the large soft-bodied grubs to eat.

Common Grubs in Connecticut

Japanese Beetle

One-half-inch-long adults are a coppery green with wing covers the color of a copper penny. Mature grubs overwinter deep in the soil and begin to feed on grass roots and move upward in the spring. The adult emerges about July 4 and causes great damage in the garden by eating leaves and flowers. Eggs are laid in late summer; the newly hatched larvae feed on grass roots and move deeper into the soil as the weather cools.

The good news about Japanese beetle grubs is that they are more susceptible to most insecticides than other species. The bad news is that they are no longer the most common white grub in Connecticut.

Oriental Beetle

The colors of this beetle are highly variable — from a light tan with darker brown patches to nearly black over the entire body. An easy indication of adult flight activity is their arrival in swimming pools, where they drown and are caught in skimmer filters. This species is mostly found in southern Connecticut and along the Connecticut River Valley within 5 miles of the river.

Asiatic Garden Beetle

Asiastic garden beetles are less than one-half inch long and cinnamon in color; they have an iridescent sheen in the sunlight. They are attracted to porch lights on summer nights and feed at night, chewing irregular holes in many different plants. During the day, they rest in the soil.

European Chafer

The adult is a dull yellow-brown in color and flies at night, aggregating on hot, humid evenings around tall objects (trees and chmneys) to mate. Fully grown European chafter larvae are more cold-tolerant than the other beetle species, allowing them to begin feeding earlier in the spring (April into June) and continue to feed later into the fall, perhaps even into December. "They feed closer to the soil surface, which is more damaging to the turf," says Cowles. "And they feed earlier and later in the year, when the turf cannot repair itself and grow back readily."

European chafer larvae are the largest and most destructive; they also used to be the most difficult to kill with conventional insecticides. This situation has changed with the introduction of new chemistries, however.

Cultural Controls

What can we do to make our lawns and gardens as unattractive to these beetles as possible?

The type of grass you plant doesn't seem to make a difference. "I have three different types of grass in my research plots — hard fescues, Kentucky bluegrass and tall fescues — and there are no differences," says Cowles.

Studies have shown that grub populations are usually found clustered in localized 'hot spots' in lawns. Grubs like sun, but soil moisture is the key factor. Adult females prefer to lay eggs in moist soils, eggs need moisture to hatch, and young larvae need moisture to develop. It is often suggested that withholding irrigation when the female is laying eggs will reduce grub population levels. "I don't agree with this," says Cowles. "Water would have to be withheld for so long that the lack of water would damage the turf more than allowing the beetles to lay eggs."

Maintaining a healthy lawn and mowing the grass high (3 to 3-1/2 inches) are helpful cultural practices. "This is likely to cause quite a difference in the amount of egg laying," says Cowles. "I've done some studies with turf blocks. When the grass is very vigorous, we end up with fewer oriental beetles. A lawn of poor quality attracts them."

Take care not to kill the naturally occurring beneficials in the turf environment — such as bigeyed bugs, ground beetles, predaceous mites, spiders, tachinid flies and parasitic wasps. They can be effective allies in your battle against grubs. For example, the winsome fly (lstochaeta aldrichi), a tachinid fly, is a natural parasite of Japanese beetles. If you find a Japanese beetle with small white specks on its shiny green shoulder region, do not kill it; those specks are the eggs of the winsome fly.

Some pesticide applications can kill beneficials for six or more months before they can rebound. Spot treatment of pesticides helps maintain beneficial populations; tolerating a low level of pest infestation also attracts and maintains beneficials. "It's very well recognized that the flowering vegetation surrounding lawns has a major impact on how these beneficial insects will perform," says Cowles. "They can be killed by insecticides used in the grass and on flowering plants surrounding the lawns."

If we have followed these approaches and still have serious grub problems, it's time to act. But think before you buy. Several common products found in garden centers can be extremely harmful: Diazinon and Dursban can be toxic to geese and related wild fowl; Sevin and Turcam are extremely toxic to earthworms; all of these products plus trichlorfon (Dylox) will kill beneficial insects. "These materials are inappropriate for homeowners to use to control most pests," says Cowles.

Instead, choose one of following environmentally friendly approaches. All of them must be watered into the thatch and soil following application, partly to move the product downwards, and partly to bring grubs upwards in the soil so that they will interact with the product. Follow label directions and safety precautions.

There's a small window of opportunity when it comes to killing grubs. Grubs are most vulnerable around early August, just after they have hatched from the eggs and are still relatively small. In spring (from April into May) they are large and fat, after overwintering in the soil, and harder to kill.

Imidacloprid

Imidacloprid is approved by the E.P.A. as nontoxic to humans and earthworms and has been sold to the homeowner as GrubEx and to the professional applicator as Merit.

Check the label on the GrubEx bag to verify that its active ingredient is imidicloprid. "Any imidacloprid product with the GrubEx label was manufactured last year," says Cowles. In the future, imadicloprid will be marketed under a different label and newer bags of GrubEx will contain the halofenozide active ingredient.

"Imidacloprid is by far the outstanding white grub material for homeowners," says Cowles. "It is environmentally soft, can be used at a low rate, and is effective against all grubs (although less effective against Asiatic garden beetle)."

Imidacloprid starts working 2 to 3 weeks after application and remains active for 3 months. When to apply it? "Ideally, at the end of July or early August, just as the eggs are hatched," says Cowles. "However, applying the product in May or June also gives excellent results." If you've had grub problems in previous years, go ahead and apply imidacloprid in spring. Otherwise, wait until the larvae have hatched and you can assess their population before applying it.

Lawn services tend to use imidacloprid at unnecessarily high levels. “A grub kill of 100% may not allow our native beneficial nematodes to survive,” says Cowles. The best strategy may be to use a very low rate of imidacloprid that will kill 70%-80% of the white grub population and sicken the remaining grubs. “A sick grub is extremely susceptible to our native beneficial nematodes,” says Cowles. “This gives you the best bang for your buck.”

Halofenozide
Halofenozide, an environmentally soft pesticide known as Mach2 (Molt Accelerating Compound), forces a larva into a molt before its normal time. Currently it is only available to professional applicators.

“Mach2 works extremely well against Japanese beetle, moderately well against oriental beetle, is of limited use against European chafer, and doesn’t work at all against Asiatic garden beetle,” says Cowles. It will be available to homeowners for the first time this year as the “new” GrubEx product.

The two best times to apply Mach2 are in early July, as a preventive treatment, and in early September after the larvae have hatched. Don’t apply it in spring.

Milky Disease
Various strains of this bacterium cause milky disease of Japanese beetle, oriental beetle, and in some locations European chafer (unfortunately, not in Connecticut) The spores are ingested by the grubs, penetrate through the gut, and eventually multiply within the body of the insect to such an extent that the larvae appear to die of starvation.

Because the disease eventually becomes established, further treatment may not be necessary. However, milky disease has not always worked well in Connecticut, perhaps because our summer soil temperatures do not remain warm enough long enough for the organism to be established. The product quality has been unreliable, and milky disease can take 3 or 4 years under conditions of high grub populations to build up to soil levels needed for control.

“The jury is still out on the effectiveness of milky disease,” says Cowles. If you want to try it, the best time is in August or September.

Beneficial Nematodes
Beneficial (entomopathogenic) nematodes are microscopic worms which feed on insect pests. They contain a bacteria within their bodies. The nematode releases the bacteria upon entering the host insect, and the bacteria actually causes the death of the insect. “There are native populations of beneficial nematodes in many locations in Connecticut,” says Cowles.

No single nematode species can control all turfgrass pests. Different nematode species carry different bacteria, use different hunting tactics and have different temperature activity ranges. Against white grubs, the Steinernema group has shown moderate to poor results in field testing. However, the more aggresive Heterorhabditis (Hb) group has shown fairly consistent results of 70-80% control, at rates of 500 million to 1 billion per acre.

Order nematodes a few weeks prior to use; most require refrigeration. Apply them on a rainy day either 2 weeks before or after applying either chemicals or fertilizers. Look for more information on nematodes at www2.oardc.ohio-state.edu/nematodes.

When’s the best time to apply nematodes? “Early to mid May,” says Cowles, “because this assures that there will be nematodes present when the next generation of grubs hatches in August. Also, we’re more likely to have adequate soil moisture in May than in August.”

So look for an imidacloprid product at your garden center or purchase some Hb nematodes. Although it’s certain that grubs are in your lawn, it’s also certain that you can control them with safe, ecologically sound products. If only that were true for death and taxes!

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Those Villainous Voles!

by Pamela Weil

It's been a rough spring for many Connecticut gardeners. Winter lingered with a late, heavy snowfall in April, and several killing frosts damaged plants in May. In addition to setting new weather records, 1996 may also be remembered as The Year of the Worst Vole Damage.

"I have a very large perennial garden, and by spring a third of it was eaten," says Sylvia Teeuwen (Cheshire). "We've always had a few voles," says Sydney Eddison (Newtown), "but there's been a population explosion this year. It's been devastating. Such a huge volume of roots was eaten that the entire bed sunk four or five inches. I've been gardening for 30 years and nothing like this has ever happened."

Why now? Why this year? "It was a good winter for voles," says Ed Marrotte, the Consumer Horticulturist for the University of Connecticut's Cooperative Extension System. "There was a beautiful snow cover and the ground wasn't frozen too deep, so digging was a lot easier for the voles and the snow layer protected them from predators." Voles damage plants by eating the roots of perennials and gnawing the bark of trees, sometimes girdling and killing the trees.

Two kinds of voles damage Connecticut plants: meadow voles (Microtus pennsylvanicus) and pine voles (Microtus pinetorum). Meadow voles are a little larger (3-1/2 to 5 inches) than pine voles (2-4/5 to 4-1/5 inches) and live primarily above ground or in shallow surface tunnels or runways. Pine voles live in a series of shallow, connecting underground tunnels. The entrance holes to their tunnels are about the size of a broomstick, 1 to 2 inches in diameter. "I call it a blind hole," says Marrotte, "because there's no soil on the outside."

So which kind of vole do you have? For positive identification, you'll need to trap one, but it's really not necessary. Control measures are the same for both, but pine voles are harder to control than meadow voles because they're underground most of the time.

Are any plants "vole resistant"? "They didn't touch either the daffodils or hellebores," says Sydney Eddison. "They also left the snowdrops alone." Hellebores were also spared in Judith D. King's (Farmington) garden, so perhaps there are a few vole resistant plant. But "they've had a go at virtually everything else," says Eddison, including roses, rhododendrons, euonymus, ornamental grasses, and all sorts of daisies. "They've eaten about 80% of my hostas and every single bit of Sedum 'Autumn Joy'. The only place I didn't lose all the hosta was in a bed immediately under a huge maple, where the roots are large and the hosta is jammed in the pockets among the roots."

As with deer, finding the best method for your garden requires some experimentation. A method that works for one gardener might not (and usually doesn't) work for another. Here are some suggestions, some "tried and true," others culled from reference books. Let's hope one will work for you.

Control Measures

"A hungry cat is your best line of defense," says Mary Ann McGourty (Norfolk). The three furry felines at Hillside Gardens keep the display gardens vole and mole free.

If you have moles in your garden, your first priority will be to get rid of the moles. Although the moles aren't eating your plant roots (they eat grubs and other soil insects), their tunnels provide the voles with "existing six-lane super highways to your plant roots," says Ed Marrotte. Control the moles by killing their food source, white grubs. Nematodes are a highly effective grub control for gardeners who don't want to use chemicals.

Some experts suggest you remove your garden mulch before winter, because it won't freeze solid (or freezes rather crumbly) which makes it very easy for voles and field mice to dig in for winter protection. However, if you do remove the mulch late in the season, you're also exposing some roots that are very near the surface that may freeze. Ed Marrotte suggests a compromise. He says, "I would leave the mulch there but I would keep it several inches away from the plant. Voles like to girdle at the crown line and this doesn't give them the opportunity."

During the winter, protect your seedlings and young trees from girdling damage with galvanized hardware cloth cylinders. The mesh should be 1/4 inch or less in size. Make a cylinder around the trunk and bury it 6 inches to keep hungry voles from burrowing under.

Repel the Voles

Will making life difficult for the voles send them off in search of pleasanter conditions in someone else's yard?

A product called MoleMed is derived from castor oil. It's diluted and used to water your gardens. King says, "I tried it this spring, but didn't have outstanding success. Although I do know of one nursery that has used it very successfully." There is a version of this product you can make yourself (see Homemade Methods).

The Mole Mover II, available in both a battery or solar power model, is another possibility. This device emits intermittent vibrations that "sound like a badger growling," according to Anita Ballek (East Haddam). "But, I don't even notice it anymore, and it's worked well for me for two years."

Ballek only recommends it for gardens under 75 square feet, and thinks that a key to its success may be the location of your garden. Ballek's garden is surrounded on three sides by driveways and on the fourth side with her house. If your garden is open on all four sides to vole infested grass or woods the Mole Mover II may not be as effective.

Protect the Bulbs

Ballek suggests planting some bulbs deeper (10 to 12 inches) to discourage the voles. "Lilies, large hyacinths and tall tulips will benefit from deep planting. Also, strategically placing sharp pea stone around the fleshy roots will make it harder for the rodents to dig to get at the roots."

A new product called Bulb Insurance claims to protect your tulips, hyacinths and crocuses. It's made of crushed oyster shells that are added to the soil at planting. The Gardener's Supply Company catalogue claims, "The first year (of use), bulb damage was reduced by over 90%."

Mary Jo Bridge Palmer (Greenwich) soaks crocus and tulip bulbs in Ro-Pel before planting them in the fall. She soaks them for at least one hour (you can leave them in the solution overnight), and lets them dry off before planting. "Squirrels will still dig them up but they won't eat or store them. Voles and moles don't bother them at all." She thinks that any product that repels by smell would probably work. If you're using a concentrate, dilute it according to the manufacturer's directions before soaking your bulbs.

Mesh Your Plants

Judith D. King says, "I have never lost a plant protected by quarter-inch hardware cloth. I cut lengths of the stuff into nine-inch strips and use it to encircle the planting holes of choice plants." Currently, King favors aluminum Gutter Guard mesh. It's inexpensive ($3.49 for a roll 6 by 20 inches) and because the edges are finished it's easier to install. "It's not as heavy duty as the hardware cloth. And so far, I haven't lost a plant."

Helen Sykes (Sudbury, MA) doesn't use the hardware cloth much anymore because it's expensive and hard to work with. Instead, she uses a fairly heavy-duty plastic mesh, which she orders by the roll (National Netting, 1-800-233-7896). It costs about $36 including shipping for a 3 by 100 foot roll. "When you order, just ask for the green plastic, 1/4 inch x 1/2 inch netting. I use galvanized nails to pin it together exactly like pinning something prior to sewing it."

Instead of surrounding one plant, Sykes digs a whole chunk, usually about 8 by 8 feet, and lines the bottom and sides with plastic mesh. "Not only is it much more economical and not as hard on my hands, it also makes it easier to move plants around. I usually leave a bit sticking up but even where it's flush with the ground the voles don't seem to cross it."

In three years, the voles have never chewed through the plastic (although they could) and Sykes hasn't lost one plant. The voles bump into it and would rather go around it. She has a very long garden area. "Each time I put a new bed in, the voles quickly dig tunnels all the way around it. In fact, at the edge of the protected beds is a very good place for trapping them."

Trap the Voles

Before setting your traps, identify the active tunnels. Look for a straight, not meandering, ridge just below the soil surface. Mash down part of the ridge with your foot and flag it. If the tunnel is rebuilt in a day or two, you know it's active.

Sykes has trapped over a hundred voles using ordinary mouse snap traps baited with peanut butter. She places a trap next to a hole and covers both the hole and the trap with an upturned large flowerpot secured with a large rock. She believes that the key to success is to use a lot of traps in an area where there are many entrance tunnel holes. She says, "We didn't have much luck trapping the voles in areas where there were few surface holes." And you must keep trying. Sykes found that summer was not a good time to trap voles; she was more successful in the spring and fall.

Again, this method doesn't work for everyone. Eddison says that with twelve traps, she caught just one vole this year. She says, "You have to be very fortunate and very vigilant with your traps. Also, it's a little bit hard to know which holes are the working holes. Even when you know where they're active, our voles seem to like the roots better than they like the peanut butter"

Here's a good suggestion from Landscape Problem Solver (Rodale Press, 1989). "The most effective way to reduce mice through trapping is to buy a large number of snap traps and plan a one or two-night massacre. Buying a few traps to catch mice over a long period of time does not work as well. A good technique is to bait the traps for two or three nights without setting them. Then when you finally do set the traps, you'll catch the mice by surprise."

Poison the Voles

If you choose this method, you want to be sure to poison the voles and not your dog, cat or toddler. Unfortunately, there isn't any way to guarantee that this won't happen. There are ways to package the poison bait to discourage curious children and pets, but they are not foolproof.

The directions on the product's box may advise you to drop the poison pellets or poison block directly into the vole hole, but one reader wrote about what happened after she did this: "Within ten minutes, a squirrel had dug one up, and to my horror ran next door! Where they have a dog and two small children."

Instead of dropping it into a hole, you can put the poison bait in a bait station. Bait stations can be purchased from catalogues, garden centers and hardware stores. Ed Marrotte recommends a bait station that you can make yourself for chunk bait (not pellet bait) from an 18 inch long piece of 1-1/2 to 2 inch diameter PVC plastic pipe. Lay the pipe flat on the ground and put the chunk bait inside. "The voles will go inside and eat it," says Marrotte, "and where I've recommended it to people there was a definite decrease in the population."

Connecticut gardeners have been successful with several poisonous rat and mouse baits including castor beans and commercial poisons. Castor beans look like beetles and are extremely toxic to moles, shrews and voles (and cats, dogs and humans). Marrotte says, "I don't recommend castor beans, because they are very ornamental and little kids might pick them up and want to eat them."

A vitamin D bait, offered by several companies, is toxic to rodents. The vitamin D causes a calcium imbalance in the vole's blood. The vole stops feeding after eating the bait and dies in two to four days. See the Homemade Methods for a version of this product that you can make yourself.

John Marchacos (Berlin) uses a combination of Enforcer Rat Kill for bait and mouse glue traps for bait situations. He fills the middle of the glue board with the bait (which resembles cat food), put sit next to a hole, and covers it with a big black flowerpot secured with a rock on top. "It seems to be working. I've been doing it awhile and usually the food is gone in three days. Then I refill the tray. But the last time I put it out they didn't touch it."

The glue board is supposed to trap the animal, but the voles are so dirty that they don't stick to the glue on the traps. Marchacos thinks that you could probably use something else to hold the bait pellets. But he hasn't used anything else. "For some reason the voles are attracted to the mouse glue traps. Sometimes they even eat part of it."

Remember to wear gloves whenever you're working with traps and bait. Voles are sensitive to human scent. And good luck with your efforts! Let us know what works well for you. We'll publish any tips from our readers.

Pamela Weil, the editor and publisher of Connecticut Gardener, is a Master Gardener certified by UConn's Cooperative Extension System.

Homemade Methods

1 tablespoon castor oil
2 tablespoons liquid detergent
One gallon warm water
Whisk or blend the castor oil and liquid detergent together until foamy, then add to the warm water. Soak the active tunnels when the ground is wet. According to the author, "The animals will find the smell offensive and will abandon your yard."
Source: No-Fail Flower Garden (Rodale Press, Inc., 1994).

1/2 cup peanut butter
3 crushed vitamin D tablets
Roll in oats, place inside a 2 inch cardboard tube and bury in a tunnel or where damage is occurring. This creates a calcium deficiency and so our unfavorable rodents perish!
Source: NOFA/CT NEWS (Summer 1996)

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Deer in Connecticut
• The deer herd in Connecticut has increased from 23 at the turn of the century, to 20,000 in the late 1970s, and is now estimated to be over 76,000.
• Deer browse an average of 5-15 pounds of vegetation per day. Their normal diet consists of leaves, twigs, forbs, acorns, lichens and fruit.
• Suburban deer prefer to browse on ornamental species rather than native plants.
• Forests with deer densities exceeding 20 deer/square mile will have little, if any, natural regeneration. At higher densities, a browse line may develop where all palatable plant parts within six feet of the ground are eaten. Under starvation conditions deer begin to strip bark off small trees and branches.
• Forest understories have become dominated by browse resistant species such as hophornbeam, blue beech and striped maple along with exotic invasives such as Japanese barberry, ailanthus, oriental bittersweet and winged euonymus. Unfortunately, these browse resistant species often have lower economic, aesthetic and wildlife values than the species they displace.
• The damage cause by browsing is not limited to trees. At least 98 threatened or endangered plants are browsed by white-tailed deer.

Limiting Deer Browse Damage to Landscape Plants

by Pamela Weil

Jeffrey S. Ward, a research scientist at the Connecticut Agricultural Experiment Station in New Haven, has done us gardeners a big favor! He recently published "Limiting Deer Browse Damage to Landscape Plants," the results of a two year study involving 269 Connecticut gardeners in 63 towns. The study is of interest to deer-challenged gardeners who will are looking for some general guidelines about how to have both a garden and deer at the same time.

Gardeners in the study listed the plants on their property that were eaten by deer. Based on the degree and severity of this deer browse damage, Ward assigned an index value to each plant. The lower the index value (less than 50), the better the plant will survive in a deer browsed garden. "Plants with low index values above 100 will likely suffer heavy-to-severe browse damage," Ward writes.

Tulips top the deer-delicious list at 368, followed by yew (320), hosta (3214) and daylily (298). This is no surprise to any of us. But there are plants on the low-browse list that I hadn't considered for my garden. Beautybush, for example. I'm going to grow it! And I'm grateful to see the no-so-good rating for lupines as I was planning to buy quite a lot of them this spring! Now I'll invest my plant dollars in something not so delicious to deer.
Our property is foraged by 3 to 6 deer daily. And my experience with deer resistant plants pretty much agrees with Ward's study. I successfully grow monkshood, foxglove, globe thistle, Russian sage, Lamb's-ears and others on his low-browse list. However, I'm surprised to marigolds listed as a low-browse. They're eaten by my deer!

Which brings up a most important fact: There is no such thing as a completely deer-proof plant. Marigolds are eaten in my garden but maybe not in yours (did you plant a smellier variety?). Even daffodils, which are highly resistant to deer browse, were reported lightly browsed by 15 percent of gardeners in the survey.

You can expand your plant palette by exploring each category of low-browse plants. Consider spireas, for example. There are spireas with golden yellow foliage (e.g., 'Gold Flame', 'Gold Mound'), others with interesting crinkled leaves (e.g., 'Crispa') and some with foliage that changes color. Deer don't touch spireas in my garden, so I've learned to plant more of them.

I've also learned to protect shrubs and trees while they are young and especially vulnerable to deer damage. many plants will outgrow the deer, who seem, at least in my garden, to nibble on leaves that are easily reached — neither too low nor too high. A round cage fashioned of wire mesh serves the purpose admirably.

Ward's survey doesn't include every single plant; after all, there are thousands. And some that didn't make his list are garden gems. For example, deer will ignore two excellent evergreens, Siberian carpet (Microbiota decussate and plum yew (Cephalotaxus). And although rhododendron ranks as highly desirable to deer, there are some that will survive quite well. Ask around before planting. And if in doubt, think prickly, highly aromatic (as in herbs), or silver leafed. Plants with these characteristics are usually not browsed.

Pamela Weil, the editor and publisher of Connecticut Gardener, is a Master Gardener certified by UConn's Cooperative Extension System.

List of Plants
Of course, the report includes more information than we can publish here. To order a free copy of the complete list, Limiting Deer Browse Damage to Landscape Plants, write to:
Publications
The Connecticut Agricultural Experiment Station
PO Box 1106
New Haven, CT 06504-1106
email: paul.gough@po.state.cut.us

<u>Annuals and perennials grown as annuals</u>
Unlikely to be damaged
Dusty Miller (Senecio) 22
Alyssum (Lobularia) 30
Vinca (Catharanthus) 38
Forget-me-not (Myosotis) 45
Marigold (Tagetes) 47
Heavy-to-severe browse damage
Impatiens 223
Sunflower (Helianthus) 181
English daisy (Bellis) 180
Dahlia 159
Begonia 151-155
Caladium 145
Zinnia 138
Aster (Callistephus) 131
Gladiolus 126
Geranium (Pelargonium) 119
Flowering Kale (Brassica) 118
Coleus 118
Petunia 105
Cosmos 100
Canna 100

<u>Bulbs and corms</u>
Unlikely to be damaged
Daffodil (Narcissus) 23
Ornamental chives (Allium) 27
Snowdrop (Galanthus) 29
Star of Bethlehem 45
Snowflake (Leucojum) 47
Heavy-to-severe browse damage
Tulip 368
Daylily (Hemerocallis) 298
Lilies 277
Spring-flowering crocus 142
<u>Wood hyacinth</u> (Endymion) 104
Hyacinth 100

<u>Herbaceous perennials</u>
Unlikely to be damaged
Thyme 7
Catmint (Nepeta) 8
Trillium 13
Mint (Mentha) 14
Lemon Balm (Melissia) 16
Oregano 18
Tansy (Tanacetum) 23
Goldenrod (Solidago) 24
Poppy (Papaver) 25
Rubarb (Rheum) 26
Mayapple (Podophyllum) 29
Lavender 30
Lily of the valley (Convallaria) 30
Lamb's-ears (Stachys) 33
Rue (Ruta) 33
Russian sage (Perovskia) 35
Lady's mantle (Alchemilla) 37
Silvermound (Artemesia) 37
Ragged Robin (Lychnis) 39
Yarrow (Achillea) 40
Globe Thistle (Echinops) 41
Foxglove (Digitalis) 42
Monkshood (Aconitum) 44
Tickseed (Coreopsis) 49
Lenten Rose (Helleborus) 50
Heavy-to-severe browse damage
Hosta 314
Golden sunflower (Heliopsis) 275
Garden phlox (P. paniculata) 243
Turtlehead (Chelone) 214
Sunflower (Helianthus) 182
Candytuft (Iberis) 161
Hollyhock (Alcea) 158

Herbaceous perennials – cont. Daisy (Chrysanthemum) 158 Black-eyed Susan (Rudbeckia) 154 Shasta daisy (Leucanthemum) 152 Coneflower (Echinacea) 147 Stonecrop (Aethionema) 146 Hisbiscus (Hibiscus) 144 Cardinal flower (Lobelia) 144 Bolton's Aster (Boltonia) 144 Rose mallow (Malva) 143 Stoke's Aster (Stokesia) 139 Aster 133 Joe Pye Weed (Eupatorium) 130 Lupine 130 Balloonflower (Platycodon) 129 Solomon's Seal (Polygonatum) 129 Stonecrop (Sedum) 111 Blanketflower (Gaillardia) 111 Larkspur (Delphinium) 110 Creeping Phlox 108 Bellflower (Campanula) 106 Pasqueflower (Anemone) 106 Blazing Star (Liatris) 100 Gentian 100 Shrubs and Trees Unlikely to be damaged Kerria 18 Andromeda (Pieris) 21 Goldenbells (Forsythia) 25 Beauty Bush (Kolkwitzia) 27	Shrubs and Trees – cont. Barberry (Berberis) 28 Bluebeard (Caryopteris) 29 Heather (Calluna) 33 Honeysuckle (Lonicera) 37 Broom (Cytisus) 38 Spirea 39 Boxwood (Buxus) 39 Cinquefoil (Potentilla) 41 Shadbush (Amelanchier) 43 Cotoneaster 47 Spruce (Picea) 48 Heavy-to-severe browse damage Yew (Taxus) 320 Euonymus (Euonymus) 252 Arborvitae (Thuja) 250 Rhododendron 202-239 Rose (Rosa) 201 Hydrangea (Hydrangea) 176 Holly (Ilex) 157-171 Yucca 151 Eastern red cedar (Juniperus) 151 Mountain laurel (Kalmia) 149 Juniper (Juniperus) 149 Hemlock (Tsuga) 144 Willow (Salix) 130 Rose of Sharon (Hibiscus) 120 Crabapple (Malus) 109 Burning Bush (Euonymus) 108 Daphne 104

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May/June 2001

Planting Container Gardens

by Mary Jo Bridge Palmer

One of the many joys of spring is deciding what to plant in all those pots, window boxes and hanging baskets on your patio and in your garden. It's not hard to create winning combinations. Just keep a few basics in mind and let your imagination soar.

Choose Your Container

You can plant in anything. Just remember that any container used outside must have a drainage hole. I like to plant in my sons' outgrown shoes. Those holes they wore out in the toes are perfect for drainage, and they look wonderful grouped by the back door. In keeping with the shoe theme, I've even seen a collection of women's shoes (mostly high heels) planted with brightly colored annuals and foliage plants. Your children's outgrown snow boots would be perfect.

If you have a jumble of old baskets, use them! Line them with a layer of plastic and cut a few drainage holes in the bottom. These baskets won't last forever, but they will be very attractive and effective containers for one season outdoors.

Prepare Your Container

Any commercial potting soil is fine to use, right out of the package. However, if I'm using a very light mix, such as ProMix which has a lot of peat moss, I like to add topsoil: about one-third topsoil to two-thirds ProMix. This makes the mix heavier and easier to wet after drying out.

Always add a slow release granular fertilizer, such as Osmocote 14-14-14, to the potting mix: about one or two handfuls depending on the size of the pot. A whiskey barrel will need about four or five handfuls. Every time you water, the Osmocote granules will release a little fertilizer into the soil for the plant roots to pick up.

You usually don't need to put anything in the bottom of the pot for drainage. In shallow planters, it's better to have the soil available for plant roots; use a bit of window screen rather than pot shards to cover the hole in the bottom of the pot. But if you're planting a whiskey barrel you can fill the bottom with bark chips up to about one-third. This will save you from having to fill the whole container with potting soil.

Color Combinations

Some folks tell me that they can't choose the plants themselves because the combinations might not look "perfect." You'd be surprised how well you can do. For the most part, plants have a happy way of always combining well together. An easy color combination is the three primary colors: red, yellow and blue.

If in doubt, start by choosing plants that bloom in one color that you particularly like, then add an accent color. For example, if you're a red person, all shades of red will go together but the combination needs an accent, such as blue or white, to give it some zing. Blue and purple flowers need an orange or red accent. Adding white to any combination will always be effective.

You will need to pay attention if you're combining orange and red blooms. These can be quite unpleasant. But if you add blue your red and orange combo can be very pretty.

Your color combinations may not turn out exactly as you had imagined. They may be better! If you don't like them, just cut off the offending flowers and enjoy the foliage.

Pick Your Plants

Varied shapes in a container are more pleasing to the eye than a mass of one shape. Consider the plant's shape: Is it big, skinny, bushy or soft and trailing? An attractive container will combine a variety of flower colors and plant shapes. Foliage is important, too. If one or two of your plants have variegated or interesting foliage, so much the better.

Contrary to popular belief, you don't need a vertical accent right in the middle. Sure, go ahead and plant that dracaena, but position it to the side instead of dead center. Your container will look more interesting.

We all know to choose plants that are compatible: Don't try to mix sun lovers with shade lovers. Still, it's sometimes hard to remember this basic rule at the garden center when you've fallen in love with plants that really shouldn't share a pot. When in doubt, ask.

Many garden centers carry Proven Winners™. This group of annuals has been developed over the past five years to provide the consumer with an outstanding garden performance including weather tolerance, a long lasting blooming period and desirable growing habits. For example, Bacopa 'Snow Storm' is a Proven Winner™ that will bloom nonstop in our hot, humid Connecticut summers. New varieties are introduced every year. For dependable performance, pick a Proven Winner™.

Container plants don't have to be all annuals. House plants can make great container plants, and there's nothing that says you can't plant perennials in pots. Some long blooming perennials include salvia 'May Knight', scabiosa 'Butterfly Blue', baptisia, coreopsis 'Moonbeam' and campanula. Anything that looks interesting can be used. Even shrubs. Try planting potentilla in sunny containers; spirea can take some shade.

Plants with good foliage color and texture will add interest to your flowering plants. These include licorice plant (Helichrysum petiolare) with whitish felt-like rounded leaves and the exotic looking dark purple or lime green foliage of sweet potato vine (Ipomoea batata). Other common choices are English ivies, periwinkles (Vinca spp.) and Swedish Ivies (Plectranthus spp.).
Growing containers in shade is always challenging. Some good shady plant combinations are:

- Caladium, dracaena, impatiens and ivy.
- Coleus, non-stop begonia* and ivy.

Care and Maintenance

Do not water a little bit every day. This is the worst thing you can do to your plants. Instead, observe how fast each container dries out — this will vary over the summer. When the soil surface is dry, water thoroughly, or until water runs out of the bottom of the pot. Don't water during the heat of the day. Instead, water in early morning or late afternoon, no later than 6 pm so the foliage will be dry during the night. Wet leaves invite fungus and other diseases.

Most people do not water frequently enough. Plants in sunny or windy locations may need water one or more times each day.

Baskets and containers must be fed on a regular basis, every two weeks with a liquid plant food. Look for these numbers on the label: 20-20-20, 15-30-15, or 10-52-10 (a blossom booster). Apply according to the directions on the label.

Ceramic pot feet are usually more decorative than necessary. Most pots will drain just fine without them. However, they would be good under pots in a northern exposure because pots in shady locations drain more slowly.

It's important to deadhead (cut off the spent blooms) regularly and while you're deadheading, inspect your plants for signs of insect or disease damage. Insects are attracted to stressed plants, especially plants that receive too much sun and too little water. Diseases are more prevalent in plants that are given too much shade and too much water. Be observant and pick off that insect or that diseased leaf before the disease has a chance to spread to the rest of the plant.

A hard spray of cold water in the afternoon will knock off aphids.

Summer Care

Your container plants will benefit from some extra attention during those dog days of July and August: Give them a "haircut" and mulch the soil surface.

Begin cutting them back about July 4. They will put energy into growing new leaves and this will help them to survive the summer. Also, plants given a haircut will flower better later. The amount to cut back depends on the plant: one to two inches for New Guinea impatiens, four to six inches for heliotrope. Impatiens grown in the shade get very leggy and should be cut back by half.

Plants growing in large containers can be mulched with a one or two inch layer of shredded cedar. This will help to hold moisture in the soil. Be careful not to cover the plant crowns.

So now, after reading this article, I hope you're all fired up and have complete confidence in yourself to plant something spectacular! Creating your own combinations is always a fun, satisfying and exciting experience.

Mary Jo Bridge Palmer is the second generation at Sam Bridge Nursery & Greenhouses in Greenwich. Mary Jo grew up with a trowel in her hand and delights in teaching others the joys of gardening.

* Non-stop begonias are a cross between the tuberous and fibrous types of begonias. Non-stops are labeled as such at your garden center; it's a common name that stuck because, like tuberous and fibrous begonias, they flower all summer long. They are large-flowered. All begonias are shade-lovers. However, fibrous begonias, if given enough water, will grow in the sun.

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Connecticut's Historical Gardens

by Barbara Bradbury Pape

Landscape historians call the period of the 1890s to the 1940s the Golden Age of American Gardens, when hundreds of significant estate gardens were planted across the country. During this time, it became popular to plant a so-called "Grandma's garden," which was a re-creation of the imagined gardens of times past with old-fashioned favorites like lobelia, hollyhock, phlox and foxglove.

For the middle class, recreating "Grandma's" garden was a kind of fashion statement of American values, as having a garden created by Fletcher Steele was for the wealthy. As historian Mac Griswold writes in her book, The Golden Age of American Gardens (Abrams, 1991), "A beautiful garden had the same social utility as a good house, a box at the opera, or magnificent dinner parties."

Landscape architects like Steele, Warren Manning, Beatrix Jones Farrand, Ellen Biddle Shipman, and the famous British designer, Gertrude Jekyll, were in enormous demand. The relationship between the country's wealthiest, many with homes in Connecticut, and this generation of garden designers has left the state with a rich legacy of gardening.

Unfortunately, many of these landscapes have not survived. The grand examples of the 1920s often became locations for tennis courts or swimming pools in the 1950s. One of Beatrix Ferrand's formal gardens, for instance, was replaced with sod in order to make an outdoor seating area. Others, like the one belonging to Fairfield's Standard Oil heiress, Annie Burr Jennings, ended up as a subdivision. Others literally went to seed after years of neglect as the expense of these labor-intensive outdoor rooms became too great.

However, in Connecticut a surprising number of historic gardens remain so that we can experience them first-hand, along with the houses they frame. The following historic gardens are among those open to the public:

The Bowen House: "Roseland Cottage"
556 Route 169, Woodstock
860-928-4074
Owned by the Society for the Preservation of New England Antiquities.
Summer Hours: Wednesday through Sunday, 11 am-5 pm until October 15.
Guided tour of the house: $4 adults. There are tours every hour on the hour; the last tour begins at 4 pm.

The Bowen House, located on the Common in Woodstock, is known as "Roseland Cottage" for the many climbing roses that Henry and Lucy Bowen loved. This Gothic Revival summer home was designed by Joseph C. Wells, and the design of the entire property is based on the work of Andrew Jackson Downing.

The quintessential characteristic of Downing's garden design can be seen in the shape and placement of 21 flower beds, outlined by formal hedges of boxwood (66 yards of it), as installed in the parterre garden of 1850. The design shows the popularity of Victorian carpet bedding where each little area contains specimens of one color (purple heliotrope, for example) or different plants arranged in colorful ribbon patterns (such as red, white and salmon geraniums). Restored in 1978, the property continues in the tradition of labor-intensive gardening with the current staff and volunteers planting nearly 4,500 annuals per year.

The Glebe House Museum & Gertrude Jekyll Garden
49 Hollow Road, Woodbury 06798
203-263-2855
Summer hours: Wed, Thurs, Fri, Sun 1-4 pm until October 31; Saturdays during June, July & August, 10 am-4 pm. Guided tour of the museum: $5 adults. Tours are continual.

The Gertrude Jekyll Garden was designed in 1926 at the height of the American Colonial Revival. It was not installed, however, until the mid 1980s after the plans were rediscovered in Berkeley, California, by garden history student Susan Schnare. The original plans were commissioned by Annie Burr Jennings on behalf of the Seabury Society for the Preservation of the Glebe House.

Jennings traveled to England to have tea with Jekyll and to convince her to design an old-fashioned "cottage garden" for the mid 18th century Glebe House, where the Episcopal Church in America got its start. Though Jekyll herself had never seen the house or even been to America, she finally agreed.

Jekyll today is recognized as the originator of the herbaceous border, a type of garden that revolutionized landscape design here and abroad. Unlike the formal beds of the Bowen garden at Woodstock, Jekyll's plans for the Woodbury garden call for the coordination of perennials in a naturalistic, relaxed framework.

Jekyll designed three gardens in the United States, and today the only existing one is at the Glebe House. Still considered very young, it has sweeps of colors: the "hot" border with its reds, yellows and oranges, and the "cool" border with its pinks, whites, and blues.

The Hill-Stead Museum & Garden
35 Mountain Road, Farmington
860-677-9064
Summer Hours: Tuesday through Sunday, 10 am-5 pm. Guided tour of the museum and garden: $7 adults. There are tours every hour on the hour; the last tour is 4 pm.

The Hill-Stead Museum is the combined effort of a number of people who are of first importance in American design history. Theodate Pope Riddle, who designed the 1896 house for her parents with the help of McKim, Mead & White, was among the first female architects in America. (She also designed a number of schools in Connecticut, including Westover in Middlebury, Avon Oldfarms in Avon, and Kingswood-Oxford in West Hartford.) Hill-Stead is a grand Colonial Revival, overlooking old fields and meadows that are carefully landscaped in a naturalistic manner.

Riddle may have worked with landscape architect Warren Manning, an associate, in planning the estate's landscape, which takes advantage of the bucolic setting and views of the hills to the northwest. After her father's death in 1913, Riddle turned to another friend, landscape architect Beatrix Jones Farrand, for the design of a flower garden. (Farrand was the only woman founder of the American Society for Landscape Architects.)

Farrand's garden at Hill-Stead is based on her client's favorite colors combined in a sunken garden of roses, peonies, irises, delphiniums, phlox and columbines — many of the same flowers found in "Grandma's garden." Today the garden, reconstructed in 1986, is home to the summertime Sunken Garden Poetry Festival. The house with its great collection of Impressionist paintings and other family artifacts is open most of the year.

The Bellamy-Ferriday House & Ferriday Garden
9 Main Street North, Bethlehem
203-266-7596
Maintained by The Antiquarian and Landmarks Society.
Summer Hours: Wed, Fri, Sat and Sun; 11 am-4 pm until October 31.
Suided tour of the house: $5 adults
Guided tour of the gardens: $3 adults

Not all 1920s estate gardens in Connecticut were designed by premier landscape architects. The Ferriday Garden was created by Mrs. Henry McKeen Ferriday shortly after she and her husband purchased the property in 1912. The Ferriday's only child, Caroline Woolsey Ferriday, claimed that her mother, in a kind of fit of spontaneity, based the garden's design on the drawing room's Aubusson carpet.

Unlike the other gardens in this article, the Ferriday garden has remained intact throughout the century. Also unusual is that mother and daughter were personally involved in the garden's tending. It contains a wonderful collection of original roses, lilacs, and peonies and creates an outdoor room pleasing to all senses.

In its design the Ferriday Garden is a kind of cross between the formal designs at Roseland Cottage and the free-spirited borders made popular by Jekyll. There is a circa 1915 formal parterre garden, but it is planted in a naturalistic manner. Finding a wandering columbine or dianthus along a garden path is not surprising, here.

Barbara Bradbury Pape is the site administrator of The Bellamy-Ferriday House & Ferriday Garden in Bethlehem.

May/June 1997

Checklist for a Healthy Lawn

by Pamela Weil, edited by Dana J. Karpowich

The manicured green of a Kentucky bluegrass lawn is an American tradition. However, many of us are questioning the amounts of fertilizer, water and maintenance that vision requires. We're discovering that we can care for our lawns in a way that's environmentally responsible and still have a beautiful lawn. We don't need to apply fertilizer as often as the lawn care companies would have us believe is necessary, and we can plant other grass cultivars that are not as demanding as Kentucky bluegrass.

Follow these easy steps for a healthy and beautiful Connecticut lawn.

Take a soil test
A soil test will provide you with information about the soil pH and nutrient requirements of your lawn. Maintain a soil pH of 6.0-6.5 for turfgrass. Turfgrass can obtain soil nutrients best when the pH is between 6.0-6.5. If the pH is lower or higher, the roots may not be able to absorb the nutrients your fertilizer is providing.

Use a slow release fertilizer
How many times a year you should fertilize depends on the kinds of grasses growing in your lawn.

If your lawn is comprised primarily of fine fescue, fertilize once annually in September (Labor Day) with one pound of nitrogen per 1,000 square feet of lawn. Or apply 1/2 pound on Memorial Day and the remaining 1/2 pound on Labor Day. Do not overfertilize a fine leaf fescue lawn — this will cause excessive thatch buildup.

If your lawn is a mixture of fine and tall fescues and a few other grass species, fertilize twice annually (Memorial Day and Labor Day) with one to two pounds of nitrogen per 1,000 square feet of lawn.

If your lawn is primarily Kentucky bluegrass and perennial ryegrass, fertilize three times a year (Easter, Memorial Day, Labor Day) with up to three pounds of nitrogen per 1,000 square feet of lawn. If you water your lawn in the summer, apply a fourth (Summer) application of fertilizer.

Natural organic fertilizers are a good source of slow release nitrogen with other benefits. Research has demonstrated the ability of some natural organic fertilizers (i.e., Sustane®) to suppress some lawn diseases. Natural organic fertilizers are slow release fertilizers that release nutrients over a longer period of time and are less prone to leaching. Good choices include: Ringer products, Sustane®, Espoma products, and Milorganite®.

Quick-release fertilizers are cheaper and can be applied earlier in the year, but they do have drawbacks. They must applied more often and in higher amounts, and with the quick-release fertilizers there is greater potential for burning the grass and nitrogen leaching out into the groundwater.

Watch the amounts of nitrogen you apply. Too much can encourage the development of lawn diseases such as leaf spot and brown patch. A shady lawn will require less fertilizer than a sunny lawn.

Core aerify your lawn
Core aerify your lawn annually (twice a year if the thatch is more than 1/2 inch thick). Core aerification helps to decrease thatch and helps to alleviate soil compaction. Aerification is a good way to incorporate organic material into the lawn. To do this, topdress with 3/8 inch of organic matter (composted manure, leaf mulch, top soil) in the fall before aerifying the lawn. Select a hollow tine aerator that pulls cores of soil out of the lawn. Wire tine aerators only compact soil.

Aerify anytime of the year as long as the soil is not dry; the soil should be moist but not saturated.

Adjust the mower height throughout the year
Mow at 2 inches in spring and fall and at 3 inches in summer. A higher 3 inch cut during the summer helps to discourage germinating weeds, including crabgrass, because the grass canopy will shade the soil and keep it cool. In late summer (Labor Day) begin gradually lowering the cut height to 2 inches throughout the fall. The final cut of the year should be 1-1/2 inches. Leave the grass clippings on the lawn to recycle nutrients.

Water in the early morning before 9 am
Lawns can either be watered or allowed to become dormant during the summer months. Monitor your dormant lawn frequently for pest activity because the brownish dormant conditions may conceal pest damage.

If you water, water deeply once a week in the early morning before 9 am. Night watering is not recommended on hot humid evenings because it can increase the incidence of disease.

Reseed in late summer (Labor Day) with low maintenance species
Many homeowners may prefer Kentucky bluegrass because it makes an attractive lawn, but it does require high maintenance. Instead of Kentucky bluegrass, consider planting other species, such as fine leaf fescue and tall fescue, which are also attractive but easier to care for. Fine leaf fescue is an excellent grass species for Connecticut lawns. It grows well in sun and dense shade, and is extremely drought tolerant. And it requires less fertilizer. Fine leaf fescues include chewings, hard, and creeping red fescue.

Late summer (Labor Day) is the best time to reseed lawns. The warm soil temperatures maximize turfgrass seed germination, and there is less competition from weeds.

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Growing Heaths and Heathers

by Judy Doyle

It was love at first sight. Shoppers at a crowded flower show were carrying out fat bunches of rich purple flowers nestled in paper. I tracked down the vendor and purchased my first heather. So pretty!

Later that spring, in a garden center, I came across small pots of heather with those same rich purple flower beads. The idea of growing my own was irresistible. The nurseryman took the time to caution me that the plant had been greenhouse grown and would need shelter from the wind. I was a novice gardener at the time, and wind protection was one of several concepts that had never occurred to me.

Many times, visitors to my perennial nursery have remarked, while admiring my heather, Oh, they're so beautiful, but I killed mine. Well, my first heather planting died, too. In gardening, the rallying cry is try, try again! By taking a bit of care with planting, success came, and I added a few new varieties each year. Only one or two have succumbed. (The cause of death: moles. The creatures tunneled under the plant, leaving the roots suspended in an underground cave, where of course they withered and died. The voles and mice which use the tunnels could also have delivered the coup de grace.) Many of my heathers are 10 years old, and specimens of 80 years exist on the Cape and elsewhere.

The term heather is used, even by the North American Heather Society, as inclusive of both heath (Erica) and heather (Calluna). There are more similarities than differences in the two species, but most gardeners are content to divide them into two camps: the winter bloomers are mostly heaths (Erica) and the spring through fall bloomers are heather (Calluna).

Here in Connecticut, it is possible to have heather in flower every month of the year, even under snow. Erica darleyensis 'Furzey' has dark green foliage with pink tips; when fully grown it is about 15 x 24 inches, and the rosy pink flowers bloom

from November through May. You would do well to plant this one near your main entry, where it would be easy to remove deep snow and passersby can marvel at the sight of (real, not plastic) flowers in the dead of winter. Sprigs of 'Furzey' are also charming indoors, in a little mug near your sink or wrapped with a bit of ribbon and used as a curtain tieback. Year round, I use branches of heather to make wreaths and fill baskets. Heather blossoms have a subtle fragrance and can be used in potpourris and scented pillows.

Where to Plant

Heathers are perfect for my front yard. The soil there is so poor it hardly supports a dandelion. The lawn is a joke. The last tongue of the glacier reached here on a very hot day. Dig a planting hole one hour after it has rained, and you get a fine, silty powder and rocks. What do heathers like? Good drainage is essential. Check. Acid soil. Check. The whole country sends their acid rain here. A lean diet. Check. A sunny spot. How lucky to have all these conditions right here!

I have planted heathers in the perennial borders. 'Springwood White' forms the corner of one bed, its branches extending gracefully across the stone edging, with blue Jacob's-ladder behind it. Two gardens slope down to the lawn; there I've built rough stone terraces where the heathers can securely descend the slope, showing themselves off while their matting roots secure the soil beneath them. On one slope I have interplanted German iris and white coneflowers, daylilies and Centaurea macrocephala. Tulips provide a spiky contrast in the spring. This slope is in direct view of a downstairs bedroom and has a nice appearance year round.

There are now about 70 varieties growing in our zone 5-6 northeast Connecticut garden, flowering in that plush purple, but also in pink, white, mauve and crimson.

My heather plantings have been so successful that I am encouraged to expand beyond the pampered perennial beds, and finally establish an attractive landscape between the house and the road. There will be a curve of heather and heath along the drive, blending tufts, mounds, carpets and shrubs in a soft tapestry of grey, gold, green, orange, red, purple and chocolate brown. Accents of ornamental grasses and dwarf conifers will give contrasting texture and form. A fully grown bed of several varieties of Calluna and Erica gives the beautiful effect of a watercolor quilt or an antique oriental rug, with soft browns, greys, smudges of rust, greens, and beiges. Who could ever again be content with a landscape of just juniper and yews?

When & How to Plant

I plant my heathers in spring and fall, but I prefer September for several reasons. Connecticut's early fall weather is usually soft and comfortable. The new little plants can get their roots established before the warmth leaves the soil, and I can find time to fuss a little about the babies, getting them off to a healthy start. Recent research at the University of Maine has indicated that fall plantings of heather actually rate highest in hardiness. Heather adapts well to austere conditions, such as the moors of Scotland and our sometimes hellish Connecticut winters, but as with children, give them the very best start possible.

I dig a $20 hole for a $10 plant, and work into it a fair amount of moistened, aged compost, or rotted oak leaves, pine needles, peat moss, or a combination of these amendments. The oak and pine grow on our property and provide the acid that heather likes. I give new plantings a drink of fish emulsion fertilizer, which acts as a shock absorber. Sometimes I work in a small handful of Epsom salts, which is a booster I use for all perennials and shrubs. It is supposed to make the soil nutrients more readily available to the plant.

If the heather's soil ball is dry and massed with roots, slice it vertically and take a little off the bottom, gently teasing the roots apart. This will spur the roots into new growth. When the heather is settled into the hole, and the soil is firmed down, shape a little moat around it, where water will be directed right down to those roots. Heather roots are very fine and will die if allowed to dry out at all during the first season of growth.

The novice heather grower should be aware that heather's tolerance of drought and need for good drainage does not preclude the importance of keeping the newly planted roots moist at all times. Until they are established, the cause of plant loss is almost aways a drying out of the root mass. As a source of warmth I like to position a rock on the windward side of the new plant.

Care After Planting

Perennials die back to their roots in winter, but heather remains evergreen and drying winter winds can severely injure or kill young growth.

Your heathers will need some winter protection. Reliable snow cover throughout the winter is the best protection. But this hasn't happened for several years, so you must provide it. Our oak trees strew plenty of leaves in among the plants; straw and pine needles are also good insulators. These light and airy materials protect the plants from the wind and cold while allowing air to circulate throughout the foliage, deterring rot and fungus disease.

Late in the year, when gathering pine boughs and hemlock branches for holiday decorating, I cut extra for the heathers. I arrange the branches on the west side of the planting to shield them from the wind, poking the cut ends into the soil and further securing them with stones.

Whatever you have used for wind cover should be removed from the tops and sides of the plants starting around mid March. Do this gradually so that the plants can adjust to the unsettled weather.

Mid March is also the time to prune off the old blossoms and any winter-injured branches. I have gotten carried away and pruned so hard that I thought the plant had been killed. It was one of my oldest heathers and a real beauty (cv. 'Barnett Anley'). I felt sick about it until, thankfully, it flushed out with more healthy flowers than ever.

As for fertilizing, the most I have done for my heathers is to give them one or two generous drinks of diluted fish emulsion at planting time, and another drink in the first spring after planting. This has been enough; their color is healthy and vibrant.

The Northeast Heather Society's newsletter is packed with growing suggestions from members. As a group, they seem to do very little fertilization. However, some growers do recommend light applications of a granular azalea-rhodie type fertilizer (i.e., acid) in early spring.

Established plantings are drought resistant and get along just fine without coddling.

Here in Brooklyn, Connecticut I don't have a problem with deer. But if you do, protect your newly planted heathers by bending some chicken wire over them to keep the deer from nibbling and pulling the plants out of the ground. Once the heather plants are established, the nibbling may not be that harmful.

Buying Heathers
Beware of the tempting offerings of supermarkets and megastores from time to time. Most likely these are the very tender South African heathers, although they may be mislabeled Scotch heather. Enjoy them as a potted plant and bring them in for the winter.

Buy your outdoor heather plants from a reliable nursery or garden center. Thanks to print features, the public's awareness is increasing and more plants are becoming available in Connecticut nurseries. Beginning heather enthusiasts will find a wealth of information in the NEHS newsletter.

It was the purple flowers of heather that first drew my admiration. But even if this subshrub never flowered, its colorful foliage keeps it at the top of my list of must-have plantings. I grow and sell hundreds of varieties of perennials in my little garden nursery, but we have come to regard heather as the most versatile, dependable, and everlastingly beautiful plantings on the property. When the delphiniums fall over, the achillea browns, and the hosta becomes mush, my heathers shimmer and glow.

Judy Doyle is the incoming president of the Northeast Heather Society and the owner of My Neighbor's Garden Perennial and Herb Nursery in Brooklyn, CT. She has been growing heathers for 10 years.

Heath and Heather Favorites
In the early 90s, Joyce Descloux, a garden writer, polled the membership of the Northeast Heather Society, asking for their favorites. The resulting list of 20 includes both Erica and Calluna, and, as long as basic culture practices are followed, all are easy to grow and hardy, even up to zones 3 and 4.
Some of the top 20 you may find locally are:
Calluna 'H.E. Beale', 30 x 24 inches, double shell pink flowers August-October, foliage is silvery green, upright.
Calluna 'Robert Chapman', 10 x 30 inches, mauve flowers July-September, foliage is gold to reddish and spreading.
Calluna 'Cuprea', 12 x16 inches, lilac flowers August-September, foliage is chartreuse to coppery, upright.
Erica carnea 'Springwood Pink', 8 x 20 inches, pink flowers January-May, foliage has bronze tips in spring.
Erica vagans 'Mrs. D.F. Maxwell', 18 x 20 inches, cherry blossoms July-September, foliage dark green and bushy.
Erica tetralix 'Alba Mollis', 8 x 12 inches, white flowers June-September, foliage is grey-green and bushy upright.

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Plantings for an Historic Church

by Gordon W. Kenneson

A few years back I found myself on the Prudential Board of the second oldest orthodox Congregational Church in the world — First Church in Windsor, Connecticut. The congregation's present structure stands on a hill astride the Farmington River. On the southern side of the foundation there is a cornerstone dated 1757. This ancient stone is, however, from the previous structure located on the other side of the river. Today's venerable building is a whole generation newer, having been erected in 1794.

The Prudential Board is charged with, among other duties, the maintenance of the church buildings and grounds. As a horticulturist I was assigned grounds duty — seeing to everything from snow removal to tree pruning for the entire church campus of five buildings and many acres, including the riverbank.

With an interest in history as well as horticulture, I started to prowl the grounds looking for hints of the church's past plantings. Although some of the trees, including a giant eastern sycamore, were well over a hundred years old they were much younger than the building which was celebrating its 200th year. Then I consulted visual records of the sanctuary. First photographs and then engravings and paintings depicting the property down through the centuries gave me an inkling of the historic plantings.

I had been interested in antique and period plantings for some time and decided to do what I could to restore the original church gardens. I could not bring back the old elms around the meetinghouse that were shown in some early photographs, but I could establish an area as a period garden containing plants that would have been around in 1794.

Members of the Prudential Board and other church members really liked the idea. Now, all I had to decide was where to put it, what should go into it and how to pay for it. These are the age-old questions of gardeners everywhere.

The first question, where to put it, seemed to have an obvious answer. There was a berm which measured 180 feet by 30 feet by 3 feet, which was created to block the view of our parking lot expansion. Very little had been done to landscape this elongated bump, so it begged for attention. The next question, the one that really intrigued me, was what to plant.

The sanctuary was constructed in 1794, which placed our historic garden within what has since been referred to as the Golden Age of Botany. Amateur and professional plant explorers roamed the world in search of new and exciting species to grace the gardens of the European aristocracy. During the 25 year period from 1789 to 1814 the English royal family added upwards of 7,000 new plants to its Kew garden collection.

Historical Sources

Over the years I have collected a small library of gardening books — and quite a few about historical horticulture. These volumes were a terrific base for my research. My personal collection includes Garden Shrubs and Their Histories by plant historian Alice Coats; Culpepper's 1653 The Complete Herbal and English Physician and Paradisi in Sole, Paradisus Terrestris by former royal botanist John Parkinson. Ann Leighton's book American Gardens in the Eighteenth Century offers lists as well as an extensive historical background of the people involved in the plant world of the day. Rudy Favretti, professor Emeritus of Landscape Architecture at the University of Connecticut, and his wife Joy have written several excellent books on period gardens including Landscapes and Gardens for Historic Buildings. Each book and article led me to another volume until I had a veritable mountain of information.

I also had the good fortune to visit several historical properties to get a first-hand look at their historical plantings and collect information from their libraries and bookstores. These included Mount Vernon, George Washington's home; Thomas Jefferson's Virginia estate, Monticello; the renowned garden library at Dunbarton Oaks in Washington D.C. The Knox Foundation library at Elizabeth Park in West Hartford was an excellent and nearby resource.

Many 18th century plant lists are readily available. For example, there are detailed plant records for Mount Vernon. Though Washington was seldom home during this period he conducted extensive garden planning by correspondence with his staff at Mount Vernon and plantsmen around the country. He was also an avid record keeper. His favorite plants were flowering trees and shrubs. He disdained flowers. Luckily his wife and gardener did not and lists exist here, too. These lists were invaluable to my plans.

The writings, logs and business records of plantsmen John Bartram (1699-1777) were also excellent sources of information. Bartram owned a nursery in Pennsylvania and kept careful records of plants he shipped to customers. He was a Quaker who learned to read and write Latin in three months so he could study botany. He even got himself appointed to the post of King's Botanist, a job that allowed him to explore as far as Georgia for new species of plants.

Bartram's greatest success may well have been the discovery of the beautiful Franklinia altamaha with its gardenia-like flowers. The tree only exists today because Bartram brought specimens back to his nursery in Pennsylvania. It no longer survives in the wild.

After Bartram's death his nursery carried on and in 1792 (notice how close we are to the meeting house construction date) President George Washington ordered 106 plants from this establishment.

Plant lists also came from other botanists, including Thomas Jefferson, colonial immigrants and present day scholars. Finally the research was completed and it was time to begin the selection process.

Choosing the Plants
The criteria for plant selection included size, ease of planting and maintenance, historical significance, attractiveness, availability, relative lack of plant poisons (public place), compatibility with conditions, and overall landscape quality.

I chose trees that were smaller growing specimens such as flowering dogwood and sourwood tree. Both trees have great flowers and reach a mature height of only about 20 feet. The berm is long yet its size does not allow for a great number of plants, especially since I also hoped people would walk about freely and look, sniff or clip a cutting here or there.

At this point I must add that I was just developing a list to be distributed to members of the church who expressed an interest in the garden. Of the 123 plants on my list, 32 were shrubs. The rest were annuals for color, perennials for consistency and herbs for people to harvest.

Now I began to raise money for the project. Some people came forward with offers of donations. Others wanted a shrub or tree planted as a memorial for a loved one.

I purchased numerous shrubs. The first one I put in was bayberry, an 8 foot shrub with dull green foliage that is very fragrant when crushed. Its gray waxy berries are used to produce lovely scented candles. Then came inkberry holly which forms a luscious green mound 8 feet across. Both these plants tolerate poor soil very well. The berm was made by scraping up an old road and portions of an old tavern that lay beneath when the current parking lot was built, not exactly a planting medium from the gods.

Additional shrubs included one of my personal favorites, summersweet. Super-fragrant white flowers in the summer and clear green foliage make this a very worthwhile shrub. It does like a bit of shade and the berm has just that under an old red maple. Yellow flowered Japanese rose was placed in several spots. This double flowered form of kerria was a favorite of George Washington. For more scent and for its unusual reddish-brown flower color I added Carolina allspice, which was introduced in 1726 by renowned plant explorer Mark Catesby.

Some of the money was used trying to control the interminable weeds that appeared as soon as the ground was disturbed. Many of these weeds had a legitimate claim on the ground, as they had been around as long as the building or much longer. One weed stands out in its longevity. Horsetail (Equisetum hyemale), known as pewterwort, has been around since prehistoric times. Its tissue consists mostly of sand and was used to polish dinnerware. It is also very difficult to control.

As with many garden projects time changes the initial plan. As the maintenance became more and more demanding and money more scarce (about this time the church building needed to be completely overhauled) the overall project was scaled back. Still, good things kept happening. A team of dedicated volunteers established a lawn that now keeps the weeds at bay.

The berm is now a mix of historic and modern plants. Recently added was a tartarian honeysuckle (Lonicera tartarica) that is a scion of one that grew at Walden Pond in Massachusetts when Henry David Thoreau lived on the edge of the pond and wrote his renowned book. It was purchased from American Forests Famous and Historic Trees, 1-800-320-8733. Another donation to be added is a Franklinia alatamaha that grew at the Bartram Nursery. So the project goes on.

Gordon Kenneson has earned degrees in political science, history and horticulture. He teaches, lectures and writes and is the owner of On the Grow, a horticultural consulting business in Windsor.

Gordon Kenneson's Plant List for the 1794 Garden, First Church in Windsor

Annuals and Biennials
Alyssum, Sweet Lobularia maritima
Basil, Sweet Ocimum basilicum
Borage Borage officinalis
China Aster Callistephus chinensis
Cornflower Centaurea cyanus
Foxglove Digitalis purpurea
Garden Balsam Impatiens balsamina
Globe Amaranth Gomphrena globosa
Honesty/Money Plant Lunaria annua
Johnny Jump Up Viola tricolor
Joseph's Coat Amaranthus tricolor
Larkspur Delphinium ajacis (Consolida)
Love-In-A-Mist Nigella damascena
Love-Lies-Bleeding Amaranthus caudatus
Marigold, African Tagetes erecta
Marigold, French Tagetes patula
Marigold, Pot Calendula officinalis
Nasturtium Tropaeolum majus
Parsley Petroselinum crispum
Spider Flower, Giant Cleome gigantea
Stock Matthiola incana

Perennials, Bulbs and Herbs
Basket of Gold Alyssum saxatile
Bearberry Arctostaphylos uva-ursi
Beebalm Monarda didyma
Bellflower, Great Flowered Campanula persicifolia grandiflora
Bellflower, Peach Leaved Campanula persicifolia
Betony Stachys officinalis
Bugleweed Ajuga reptans
Candytuft Iberis sempervirens
Canterbury Bells Campanula medium
Catmint, Long Tubed Nepeta mussinii
Chives Allium schoenoprasum
Columbine Aquilegia vulgaris
Columbine, Canadian Aquilegia canadensis
Costmary Chrysanthemum balsamita
Cupid's Dart Catananche caerulea
Daisy, English Bellis perennis
Daisy, Oxeye Chrysanthemum Leucanthemum
Dandelion Taraxacum officinale
Daylily, Tawny Hemerocallis fulva
Elecampne Inula helenium
Feverfew Chrysanthemum Parthenium
Flax Linum perenne, L. usitatissimum
Garlic Allium sativum
Germander Teucrium chamaedrys
Globe Thistle Echinops ritro
Grape Hyacinth Muscari botryoides
Hollyhock Alcea rosea
Jacob's Ladder Polemonium caeruleum
Lamb's-ears Stachys byzantina
Lavender Lavendula vera
Lemon Balm Melissa officinalis
Lily-of-the-Valley Convallaria majalis
Loosestrife Lysimachia punctata
Madonna Lily Lilium candidum
Maltese Cross Lychnis chalcedonica
May Apple Podophylum peltatum
Meadow Rue Thalictrum aquilegiifolium
Moneywort Lysimachia nummularia
Mother of Thyme Thymus serpyllum
Narcissus, Polyanthus Narcissus tazetta
Narcissus, Pheasant's-Eye Narcissus poeticus
Oregano Origanum vulgare
Oriental Poppy Papaver orientale
Pennyroyal Mentha pulegium
Peony Paeonia officinalis
Pink Dianthus plumarius
Poppy anemone Anemone coronaria
Primrose Primula x polyantha
Rhubarb Rheum Rhaponticum
Sage Salvia officinalis
Siberian Iris Iris sibirica
Siberian Squill Scilla siberica
Sneezewort Achillea ptarmica
Snow-in-Summer Cerastium tomentosum
Soapwort Saponaria officinalis
Spearmint Mentha spicata
Speedwell Veronica officinalis
Star of Bethlehem Ornithogalum umbellatum
Sweet Marjoram Origanum majorana
Sweet Rocket Hesperis matronalis
Sweet Violet Viola odorata
Tansy Tanacetum vulgare
Throatwort Trachelium caeruleum
Thyme, Common Thymus vulgaris
Winter Aconite Eranthis hyemalis
Yarrow Achillea millefolium

Shrubs and Trees
Bayberry Myrica pensylvanica
Bottle Brush Buckeye Aesculus parviflora
Burning Bush Euonymus atropurpureus
Carolina Allspice Calycanthus floridus
Coast Leucothoe Leucothoe axillaris
Currant Ribes spp.
Dogwood, Common Cornus florida
Dogwood, Tartarian Cornus alba
English Yew Taxus baccata
Firethorn Pyrancantha coccinea
Guelder Rose Viburnum opulus
Inkberry Holly Ilex glabra
Hydrangea, Oak Leaved Hydrangea quercifolia
Hydrangea, Wild Hydrangea arborescens
Japanese Rose Kerria japonica 'Pleniflora'
Juniper, Common Juniperus communis
Lavender Cotton Santolina chamaecyparissus
Lilac, Common Syringa vulgaris
Mock Orange Philadephus coronarius
Mountain Laurel Kalmia latifolia
Rosa Mundi Rosa gallica versicolor

Shrubs and Trees – cont.	Shrubs and Trees – cont.
Rose-of-Sharon Hibiscus syriacus	Rose, Austrian Yellow Rosa foetida 'Persiana'
Rose, Burgundy Rosa x centifolia var. parvifolia	Shadbush Amelanchier canadensis
Rose, Cabbage Rosa x centifolia	Sheepberry Viburnum lentago
Rose, Damask Rosa damescena	Smoke Bush Cotinus coggygria
Rose, Moss Rosa x centifolia var. muscosa	Sourwood Tree Oxydendrum arboreum
Rose, Musk Rosa moschata	Summer-Sweet Clethra alnifolia
Rose, Scotch Rosa spinosissima	Sweet Brier Rosa rubiginosa
Rose, White Rosa x alba	

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Easier Care Roses

by Donna J. Fuss

Notice the title — “Easier Care” Roses — not “Care-Free” Roses. “Care-free roses” is an oxymoron. There is no such thing as a care-free rose. However, there are roses that require less care than others.

A rose must have at least one of the following characteristics for me to classify it as an easier-care rose: It must be either winter hardy, self-cleaning or disease-resistant. Note the term again, “disease-resistant,” not “disease-free.” At the moment, there are no disease-free roses.

Let me clarify what I mean by “self-cleaning.” With most roses, one has to remove the spent blooms to encourage new growth. But you don’t have to do this with self-cleaning roses, because the petals of the old blooms neatly fall off. This means that self-cleaning roses bloom almost continuously.

Recommended Buck Roses
‘Earth Song’
‘Serendipity’
‘Prairie Harvest’
‘Golden Unicorn’

Dr. Griffith Buck was a professor of horticulture at Iowa State university who spent much of his research time developing roses that don’t require winter protection. He developed many lovely roses with attractive foliage and growth that are not affected by cold and he was even able to breed some yellow tones into his program.

My all-time favorite Buck rose is ‘Earth Song’. It’s a deep pink grandiflora, with lovely form, and a very vigorous grower with a fairly fast repeat bloom. There are many lovely Buck roses on the market, but ‘Earth Song’ is still my favorite.

Recommended Rugosa Roses
R. rugosa
R. rugosa alba
R. rugosa rubra
‘Blanc Double de Coubert’
‘Fru Dagmar Hastrup’
‘Hansa’
‘F.J. Grootendorst’
‘Fimbriata’

Rugosas are the “beach roses” and their hybrids, a large group of roses that is still increasing in number. This group of roses came to the United States from Japan, but they have naturalized so well here that we claim them for our own.

The three species of rugosas are R. rugosa, R. rugosa alba and R. rugosa rubra. More roses have been bred from these three species than from any other group of roses. Many rugosa hybrids are just as easy to grow as their species ancestors. I personally enjoy the Grootendorst series.

What is so special about rugosas? Put quite simply, they are tough. The species rugosas are winter hardy, disease-resistant, vigorous, repeat blooming, fragrant, large shrubs. I should clarify disease-resistant here. My experience is that they still get disease, but disease doesn’t kill them and they continue to bloom. Actually, they don’t like being fussed over once they are established. Don’t spray them because their foliage will turn brown. When someone asks me to recommend a rose to them that they can pretty much ignore I always tell them to try a rugosa. Their only downside is that they get to be large shrubs (6 to 8 feet tall) and are not appropriate for a small garden.

Recommended Shrub Roses
‘Carefree Wonder’
‘Cape Cod’
‘Martha’s Vineyard’
‘Augusta’
‘Carefree Delight’
‘The Fairy’
‘Lady of the Dawn’

When it comes to disease-resistance, you can’t beat many of the new shrub roses. Most, but not all, are also fairly winter hardy. They still need to be sprayed, just not as often. Some folks claim that they never spray them and that these shrub roses do not get disease. I don’t think that I really believe them; however, I have seen some very clean foliage on some pretty neglected plants. Most of these shrubs have pretty, shiny foliage, repeat bloom and are self-cleaning.

‘Carefree Delight’ is a 1996 All America Rose Selection. Wow! What a rose! It is the most disease-resistant and carefree rose that I have ever seen, and it blooms almost continually. It is a pink single, that is, it has five petals, with a white eye and pretty yellow stamens. I have worked with this rose in Elizabeth Park for the past four years and it has grown beautifully for me. My only caution is that one plant isn’t very impressive. I tell everyone who asks about it to plant a minimum of three together. It needs to be in a mass planting to look good.

You may be disappointed in your shrub rose after its first year in your garden. Just wait! From my experience both at home and at Elizabeth Park you need to give most of these shrubs three years in the garden before you judge them because they can take three years to establish themselves.

Recommended Meidiland Shrubs
‘Bonica’
‘Pink Meidiland’
‘Alba Meidiland’
‘Scarlet Meidiland’

This is a group of shrub roses from France called Meidiland Shrubs. I find these, as a group, to be quite satisfying. ‘Pink Meidiland’ is short and sweet. It forms a dense low shrub. ‘Alba Meidiland’ is very vigorous. It will climb once it is established. One problem with this one is keeping it in bounds.

My favorite is ‘Scarlet Meidiland’. It looks like a vigorous scarlet version of ‘The Fairy’. It is a fairly large shrub but not as rampant as ‘Alba’. Other Meidiland shrubs are lovely also, but these three are my personal favorites.

Recommended Miniature Roses
‘Minnie Pearl’
‘Jean Kennelly’
‘Hot Tamale’
‘Rainbow’s End’
‘Black Jade’
‘Magic Carousel’

‘Winsome’
‘Snow Bride’

No discussion on easier-care roses would be complete without a note about miniature roses. They are some of the easiest, most versatile roses that you can grow. Because most of them are grown on their own roots they are quite winter hardy. They are one of the first to bloom and one of the last to be affected by the frost.

I grow about 70 different mini varieties in my own garden and in pots. Miniature roses grow beautifully in pots and are perfect for terraces, porches, and other small areas.

Agriculture Canada Roses
These roses have been hybridized by the Canadian government through the Agriculture Canada program. Most Canadian roses are winter hardy and fairly disease-resistant (especially the ‘Explorer’ series.)

Shade Tolerant Roses
Most roses require a minimum of five hours of full sun. However, these easier-care roses will tolerate less sun (but need at least four hours). Miniatures as a group are shade-tolerant and will grow under a high tree canopy and filtered sun at the edge of woods, for example.

Buck Roses: ‘Summer Wind’
Rugosa Roses: Rosa rugosa, ‘Thérese Bugnet’, ‘Delicata’, ‘Magnifica’, ‘Robusta’
Shrub Roses: ‘Scarlet Meidiland’, ‘The Fairy’

The following easier-care old garden and climbing roses are shade tolerant:
Alba Roses: ‘Celestial’, ‘Maiden’s Blush’
Bourbon Roses: ‘Louise Odier’
Climbing Roses: ‘New Dawn’, ‘William Baffin’, ‘Zéphirine Drouhin’
Gallica Roses: Rosa gallica officinalis, ‘Alain Blanchard’
Species Roses: Rosa eglanteria, Rosa moyesii, Rosa rubrifolia, Rosa spinosissima, Rosa virginiana, Rosa woodsii

Donna J. Fuss is the co-founder of the Connecticut Rose Society, the consultant to the Rose Garden in Elizabeth Park for Friends of Elizabeth Park and a test garden judge for the All American Rose Selections, Inc.

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March/April 2000

Spring Pots and Windowboxes

by Anita Ballek

This is the first of a three-part series on container plantings: How to have lovely pots and windowboxes for ten months of the year. This first article, “Spring Pots & Windowboxes,” explains how to plant for continuous bloom from March through June.

In June your summer pots and windowboxes (which you planted around May 1) are ready for display and will remain showy until killed by frost. Then your winter containers (which you planted in mid August) will dazzle until January.

It’s important to start with several sets of pots and/or windowboxes in order to have continuous bloom because you’ll need to plant the next display before the first display has finished.

Complete instructions for these three-season pots and windowboxes will be in future issues of The Connecticut Gardener.

There are many plants that will flower in window boxes as early as March. My boxes face north and west. To fill them, I choose plants that are suitable for all locations but that last longer in the cool of the bright north.

Every year I plant my spring window boxes around the first of March. I tuck small bedding plants into a bagged (weed-free) peat/compost soil, adding 2 cups of slow-release fertilizer (Osmacote, for example) for each 9 inch by 3.5 foot windowbox (adjust the amount of fertilizer accordingly for your containers). I supplement the time release with a constant dilute feeding of 20-20-20 (1 scant teaspoon per gallon).

I grow them on in a cool sheltered sunny location. An unheated entryway or sunporch facing southeast, south or southwest is perfect. Night temperatures should be around 35 degrees.

My goal is to set the windowboxes out in my garden by March 25. At this time the pansies, violas, primroses and English daisies are in full bloom and the rest are just beginning. The lovely rosettes of lettuce fill out later but are already the focal points of the show.

By the end of April the alyssum and lobelia are twinkling through the skirt of linaria and the stock is poking up wafting their fragrance. By mid May the linaria is getting stronger, and by the end of May I am removing the outside leaves of the lettuce every day for lunch (I am a lettuce fanatic) to make room for the crowding bevy of blossoms. The linaria generally takes over the show and gets more and more voluptuous.

The plants all kind of push and shove each other and give a different effect every year. They weave themselves together and always look pretty!

How long the show will last (until the end of June last year) depends on the weather. A week of extremely hot weather spells the end of these cool-season plants but by this time my summer boxes, planted in early May, are voluptuous and ready to go.

Anita Ballek is the owner of Ballek’s Garden Center in East Haddam.

Anita Ballek's Favorite Choices for Spring Pots and Windowboxes
Alyssum
English Daisies (Bellis perennis)
Lettuce
Linaria
Lobelia
Pansies or Violas
Parsley
Primroses
Stock - I vary the varieties from one year to the next. Either I plant 'Dwarf Midget' that grows to about 12 inches or Virginia stock (Matthiola virginiana). Virginia stock has fine little blossoms and weeps over much like linaria but blooms a month earlier. At the shore, in a cool northwest or northeast location, it can bloom into October.

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Reducing Deer Ticks Around the Home

by Pamela Weil

You can reduce the number of deer ticks (Ixodes scapularis) near your home. Studies show that tick numbers can be cut by 50 percent or more by making simple landscaping changes.

Deer ticks live in the woods, sustained by the higher humidity levels of the forest. Ticks do not fly, jump or drop from above. The tiny nymphal deer tick, believed to be responsible for up to 90 percent of the transmission of Lyme disease to humans, makes its home in the leaf litter that accumulates on the forest floor, around stone walls and under groundcovers.

Nearly 70 percent of ticks on residential lawns are found within 9 feet of the forest's edge. Ticks dry up in the sun, and are usually not found in sunny areas on the lawn.

Establish a 'Tick Safe Zone"
Let the sun shine in and reduce tick habitat. Establish a "tick safe zone" around your home that is composed of lawn, is as sunny as possible and begins nine feet or more from the edge of the woods. It should also encompass the areas of your yard that you and your family regularly use. This includes walkways, sheds, picnic tables, recreational areas, children's swing sets and play areas.

In your "tick safe zone," avoid planting groundcovers such as pachysandra. Use dry woodchips or gravel to mulch foundation plantings. Keep the grass cut as short as possible. Avoid landscape plants that deer like to eat.

Most ticks on lawns are found in the transition area where the lawn meets the woods. A dry barrier made of woodchips, mulch or gravel between the lawn and the woods will reduce ticks on your lawn. Your barrier should be at least 3 feet wide.

How about deer fencing? Studies show that deer fencing does not significantly reduce tick numbers unless the deer are fenced out of an area of 15 to 18 acres or more. Ticks travel through the fence on small animals, like mice and birds. Don't rely on deer fencing alone to control ticks in your safe zone.

Using Pesticides
Research shows that pesticides are a reliable and effective way to reduce ticks, particularly when combined with tick safe zone principles. A single application of a low-toxicity pesticide around the edge of your tick safe zone in mid-May or early June can reduce nymphal tick numbers by 80 to 90 percent. If necessary, a fall application can be used to reduce adult ticks. One exception: Some organic pesticides break down quickly and may require multiple applications.

If you choose to use pesticides, select the least toxic product. Consider an organic or synthetic product in the chemical class called pyrethrums. A few pyrethrum products can be purchased at garden centers, but most of them must be used by commercial applicators.

For additional information regarding pesticide applications to control ticks, call The Connecticut Agricultural Experiment Station at 1-877-855-2237.

This article was excerpted from materials published by the Westport Weston Health District. "Target Lyme Disease" is an educational project aimed at teaching Westport and Weston residents about ways to reduce deer ticks and protect themselves against Lyme disease. The project is funded by the Centers for Disease Control and Prevention, and is the only one of its kind in the nation.
For a packet of four brochures, send your name and address and $1 for postage and handling to Westport Weston Health District, 180 Bayberry Lane, Westport, CT 06880.

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Lessons from a Cottage Garden

by Nancy DuBrule

I came to gardening via a rather circuitous route. I grew up in Hartford and never had a garden until I went away to school at the University of Connecticut. After much soul-searching, I surprised my family and friends by going into horticulture. When I graduated from the agricultural school, I really thought I knew what gardening was all about.

In school, I was taught a very conventional style of gardening. Plants were to be properly spaced, planted according to certain rules, staked, trimmed, pruned and propped up. Beds were to be edged neatly. Weeds were to be eradicated. And this is essentially what I saw in gardens until I met Lucie Carlin. Lucie taught me about the cottage gardening style — lessons that cannot be learned from books or in the classroom.

You don't have to garden by the books

I vividly remember the first time I visited Lucie's garden. It was unlike anything I had ever seen. Chaos reigned. Plants were crowded together and nothing was spaced according to the rules I had learned in school. Weeds grew between the poppies and irises. Roses and vines climbed over the house. I had never encountered a garden like hers — it touched a place deep down in my soul.

As I hung around in her garden, sharing coffee and conversation, I began to realize that the neighbors walking by were also deeply touched by this garden. People would stop to chat. It was a magnet. It had an irresistible lure. Thus, I learned my first lesson: you don't have to garden by the books. Rules are meant to be broken, and the results can be charming. A garden is a very personal thing. You do not have to have a lot of book knowledge, and certainly not a fancy degree, to have a beautiful garden.

A weed is a plant growing in the wrong place

When I became Lucie's gardener, I began to pull out weeds and define the edges. Lucie immediately came running over and started yelling at me to stop! "First of all," she said, "don't edge the beds and make them look like a city garden. Leave it be." But her second statement blew my mind. "Don't pull out the weeds unless you know what they are. How do you know that they wonít have a pretty flower?" And so I learned my next lesson: a weed is simply a plant growing in the wrong place. What is a weed to me is not necessarily a weed to someone else! Learn to think differently. Leave some plants in your cottage garden that you would normally remove.

Lucie made me leave the dandelions in the garden when I had been taught various toxic ways to eradicate this most unwanted of weeds. Queen-Anne's-lace was her favorite flower, beating out the hundreds of cultivated "fancy plants" that filled her yard. Celandine poppies were called "butterfly weed" by Lucie and were encouraged to seed and grow everywhere bringing a cheerful yellow color to the early spring garden.

"Weeds," if allowed in the garden, must be ruthlessly thinned.

Most people think that nothing could be easier than growing weeds, but the opposite is true. Managing "weeds" can be tricky. You cannot turn your back and expect them to grow naturally because they will become the garden, overtaking the cultivated plants. They self-sow rampantly, insuring their spread and survival in the wild. I found it necessary to quickly deadhead these plants as soon as they finished blooming, leaving only a limited amount to set seed for the following year.

The celandine poppies were yanked out of the garden as soon as they were done blooming, as they would turn yellow and look unsightly as the weather warmed. Because they are related to impatiens, they shoot out abundant seeds before they are removed, thus assuring continued generations of "butterfly weed" for years to come.

Once I got the hang of it, finding the "weeds" and weaving them into the garden tapestry became fun. Kiss-me-over-the-garden-gate sprang up at the base of the Sedum 'Autumn Joy'. Its long rosy colored thin spikes bloomed at the same time as the flat topped flowers of the sedum and they were exactly the same color.

After hurricane Gloria, a tree fell down and topsoil was brought in to fill the huge hole left by the upended roots. This soil contained the seeds of Silene dioica, a lovely pink wildflower that started springing up all over the place. It took me a few years to figure out its real name, but meanwhile, it became a welcome addition to the garden. If I had followed the "rules" and weeded it out because it was foreign, I never would have discovered it. Now I purposely plant it in other cottage gardens.

I learned to recognize wild aster seedlings. By careful selection, the fall garden was soon filled with white, lavender and blue asters, thousands of tiny starflowers softening the bolder effects of the mums and sedums.

Two categories of plants work best: fast growing plants ... and invasive plants
In a cottage garden the plants face very stiff competition. Because regular spacing is thrown out the window and plants are crowded together, plants must be tough to survive. Two categories of plants work best: fast growing, robust plants that can elbow their way through their competition and invasive plants that either spread quickly or self sow abundantly. Many of these plants would be considered much too greedy to plant in the average garden, but their aggressive tendencies fit in perfectly with the cottage garden style.

Dare to try invasive perennials that you probably wouldn't use in a normal garden (such as circle flower, lady bells, mallow). In some cases, placing them in crowded gardens slows their growth down to manageable levels.

However, invasive plants that continue to grow aggressively must be managed aggressively: you must manage them like they are "weeds" and be ruthless about taming them. You can't just plant them and walk away, thinking they will fight it out and coexist. The strongest plant will win, and you will lose the diversity and succession of bloom in that bed.

Never pull out any plant if you dont know what it is
Self-sown plants are free gifts from nature that form the backbone of the cottage gardening style. They add serendipity to the cottage garden because they don't always come up where you expect them to. Once you get into the swing of cottage gardening you allow these plants to come up and create combinations that you would never think of.

There are two problems with self-sown plants. The first is to be able to recognize the young seedlings immediately when they spring up, and then make the judgement whether to move them if they are in the wrong place. Never pull out any plant if you don't know what it is. If you are not sure, wait and observe the plant for one growing season.

The second problem with self-sown plants is that if your garden is really crowded, the young seedlings won't mature due to lack of light. In this case, be sure to find the babies and pull away some of the leaves of the surrounding plants so that light can get to them. Lucie used to call this "making windows."

A cottage garden is never too full
Lucie's garden contained over 50 rosebushes, 90 percent of which were 'Simplicity' roses, a single pink shrub rose with an all season bloom period. How she latched onto this variety, I will never know. (Although it probably had something to do with the letters that "Mr. Perkins" sent to her each winter, with unbelievable offers that she could not refuse.) But 'Simplicity' was the rose of choice, and every spring at least a dozen new plants would arrive bare root.

Lucie would never believe me when I told her that she already had over 50 roses in her garden and didn't need anymore. Which leads me to the next vital lesson of the cottage garden: it is never too full to add more plants. Battles raged each year as I would walk around and point out the dormant rose bushes, complaining all the while that there simply wasn't one spot left to plant them. But, as you can probably guess, plant them I did, and they became the signature plant of her magnificent June display.

The final lesson is this: Dare to garden in the way that YOU want to
Read books and magazines, watch the gardening television shows, observe every beautiful garden that you can lay your eyes on, ask questions of more experience gardeners everywhere you go. And then, do whatever you want to do. Create your own private patch of paradise. And do it your way. It will probably be a masterpiece, because it will spring from your soul, and touch others as Lucie's garden did for so many years.

Lucie Carlin died in the winter of 1998 at the age of 89. As I write this, spring is coming to Connecticut, and I am facing my first gardening season in 15 years without her garden to work in. Will the new owners of her house continue her garden? It is unlikely. A vision like hers, and the strong will to carry it out over a lifetime, is a rare gift.

Nancy DuBrule is the owner of Natureworks and a past president of NOFA/CT. She is the co-author, with Marny Smith of Rowayton, of the book A Country Garden for Your Backyard (Rodale Press, 1993).

What is a Cottage Garden?
Today, cottage gardening has come to represent a certain style, with abundant flowers overflowing crowded beds, roses and vines clambering over houses and arbors — soft, graceful gardens that defy the uninspired formality and rigid lines found in most American suburbs. Designing a cottage garden on paper is an impossibility. The bones of the garden can be defined:

fences, arbors, roses, flowering shrubs, peonies, irises, and such — but the plants that really make the garden wild and free flowing have to be added over time, according to the whims and fancies of the gardener.

Lucie Carlin's garden was already 50 years old when I met her. Set on less than an acre of land by the sea, it contained the "bones" planted by her aunts many years before. The boundaries of the property were thick with hedges of forsythia, lilac and bridal wreath spirea. Throughout her yard, forming backdrops for the garden beds, were old fashioned flowering shrubs such as beautybush (Kolkwitzia amabilis) and weigelia. The flower beds themselves were overgrown tangles of invasive, familiar plants such as poppies, irises, daffodils, violets, rudbeckias, helianthus, and Dame's-rocket (Hesperis matronalis).

"Weeds" in the Garden
Yarrow Achillea millefolium
Kiss-me-over-the-garden-gate Polygonum orientale
Queen-Anne's-lace Daucus Carota
Celandine Poppy Stylophorum diphyllum
Red campion Silene dioca

Invasive Perennials
Japanese Anemone Anemone japonica
Oriental Poppies Papaver orientale
Circle Flower Lysimachia punctata
Daylilies Hemerocallis spp.
Perennial Sunflower Helianthus spp.
Black Eyed Susan Redbeckia fulgida 'Goldsturm'
Redbeckia triloba
Hardy Marguerite Anthemis tinctoria
Lamb's-ears Stachys byzantina
Rose Mallow Malva moschata
Malva alcea 'Fastigiata'

Self-Seeding Biennials
Dame's-rocket Hesperis matronalis
Foxglove Digitalis purpurea
Forget-me-not Myosotis palustris
Hollyhocks Alcea
Money Plant Lunaria annua

Self-Seeding Perennials
Ladybells Adenophora liliifolia, A. confusa
Dwarf Bleeding Heart Dicentra eximia

Self-Seeding Perennials – cont.
Perennial Foxglove Digitalis lutea, D. ambigua
Yellow Bleeding Heart Corydalis lutea
Red Valerian Centranthus ruber
Bachelor's-button Centaurea montana
Columbine Aquilegia
Balloon Flower Platycodon grandiflorus
Cranesbill Geranium Geranium sanguineum
Linaria Linaria purpurea
Aster Aster spp.
Pink Evening Primrose Oenothera speciosa 'Rosea'
Mealycup Sage Salvia haematodes
Oxeye Daisy Chrysanthemum 'May Queen'
Purple Coneflower Echinacea
Rose Campion Lychnis Coronaria

Self-Seeding and other Wonderful Annuals
Sunflowers Helianthus
Tobacco Flower Nicotiana grandiflora
N. sylvestris
Cosmos Cosmos
Spider Flower Cleome Hasslerana
Pot Marigold Calendula officinalis
Breadseed Poppy Papaver somniferum
Mexican Fire Bush Kochia scoparia
Verbena varieties Verbena 'Homestead Purple' and
'Tapien Pink', V. bonariensis
Tender Perennial Salvias Salvia uliginosa, S. leucantha
Mexican Fire Bush Kochia
Larkspur Delphinium Ajacis

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Tomato Troubles

by John J. Leto

By this time in the growing season, strange things begin to happen in the tomato patch. Those perfect little tomato seedlings have grown from cute little wonders of nature into 3 foot or taller unruly monsters. Now, before harvest, is the worst time for tomato troubles.

Caring for Tomato Plants

How you care for your tomatoes during the summer can help to minimize potential problems.

Your tomatoes need an even supply of moisture throughout the growing season. Applying a heavy mulch to the surface of the soil, after the soil has warmed up, will help to maintain a consistent level of moisture in the soil. Fluctuating moisture levels can result in misshapen fruit, and contribute to blossom-end rot and growth cracks.

The best irrigation for tomatoes is a slow, deep watering, which encourages the plant to grow deep roots. Use soaker hoses or drip irrigation to deliver water directly to the roots without wetting the foliage. Wet foliage supports the growth of fungi that can attack the fruit and plant. Do not water late in the day because the foliage does not have a chance to dry off before nightfall.

Wait until the fruit is golf-ball sized before applying any fertilizer, then side dress each plant with 2 to 4 ounces of 5-10-5, keeping it away from the foliage and fruit. Cultivate lightly and water deeply. Repeat this procedure every 3-4 weeks throughout the growing season.

If you are a smoker, wash your hands thoroughly with soap and water before handling your tomato plants. Tobacco mosaic virus is readily transmitted from plant to plant by your hands.

Tomato Diseases

According to Dr. Victoria Smith, an assistant scientist at the Connecticut Agricultural Experiment Station, the most common tomato diseases in Connecticut are early blight and Septoria leaf spot. Anthracnose can occur in a wet, windy summer when a tropical storm or hurricane blows through. But it is usually not a problem.

Both early blight and Septoria leaf spot are caused by fungi which attack the leaves, rendering them quite unsightly. “It’s not worth spraying a home garden to control them,” says Smith. “By the time these diseases appear in mid-July, most tomato plants have set their fruit and established their yield.” The best control is to remove all suspect leaves and fruit and discard them in the household trash; do not add them to the compost pile because these fungi can overwinter in plant debris.

Early Blight

Early blight often occurs during the first assault of hot and humid weather. Look on the oldest leaves for dark brown spots, 1/4 to 1/2 inch in diameter, with dark concentric rings. Eventually the leaves turn yellow and fall off, usually from the ground up. Fruits may be infected.

Septoria Leaf Spot

Septoria leaf spot does not usually damage seedlings, transplants, or fruit. Symptoms usually first appear on the older, lower leaves and stems when fruits are setting. Look for small, water-soaked circular spots 1/6 to 1/8 inch in diameter on the undersides of older leaves. The spots are distinctively circular and are often quite numerous. As the spots age, they sometimes enlarge and often coalesce. When spots are numerous, affected leaves turn yellow and eventually shrivel up, brown, and drop off. Defoliation can quickly spread up the plant towards the new growth.

Tomato Insects

I control pests by encouraging praying mantises, predatory wasps and toads, all of which consume an astounding number of insects without upsetting the delicate balance of nature.

Earlier in the year, cutworms and flea beetles do the most damage to young tomato plants. By the time summer comes, the most common bad-guy bugs are aphids, white flies and tomato hornworms.

Spraying with insecticidal soap will control aphids and white fly nymphs. “Spray first thing in the morning after the plant’s been well watered,” says Edmond Marrotte, consumer horticulturist for UConn’s Cooperative Extension System. “This will

minimize burning to the foliage." Be sure to spray the plant thoroughly, including the undersides of the leaves where the white fly nymphs are feeding.

Aphids
Aphids are the most numerous and easiest to spot insect in my garden. Look on the undersides of leaves and on the tender terminal growth for these small green or pink insects. Their feeding can cause curling of the foliage. They are carriers of several virus diseases. They suck out plant juices and excrete honey dew which attracts ants. Fortunately they are easily controlled with a spray of water from the hose or insecticidal soap.

Whitefly
This is a true pest from hell! Look on the undersides of leaves for these miniature white moth-like insects that fly off in a cloud when they are disturbed. Several life stages of this insect can be present at the same time — egg, crawler, nymph, adult. The easiest stage to control is the nymph.

Yellow sticky boards are an alternative to spray. The color attracts the insect and the sticky causes them to adhere to the board. Be sure to clean traps frequently; it's amazing how quickly insect numbers mount up.

Tomato Hornworms
Tomato hornworms are the most dramatic of the tomato insects. They are 3 to 4 inches long with a horn at the tail end. Handpicking is the best method of control, however, let them be if you see white oval projections attached to their skin. These are the pupae of parasitic wasps that have been eating the caterpillar from the inside out.

"Tomato hornworms are very small (less than 3/8 inch) when they first hatch," says Ed Marrotte. "The larvae begin eating right away and they will grow quickly; an easy way to find them is to look for their droppings." Then, pick them off.

Follow a set pattern to control insects and disease and practice good sanitation by removing all dead leaves and weeds from your garden. Who knows, you may end up with the best of all tomato problems: How to enjoy your abundant harvest!

John J. Leto lives in West Haven and has been a volunteer at the Beardsley Zoo Greenhouse in Bridgeport for 12 years. He is the President of The Greater Bridgeport Men's Garden Club and Tunxis Hill Garden Club of Fairfield. He is a frequent guest on WICC 600 AM radio shows including "Italian House Party" and "Family Breakfast Show".

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Connecticut Butterfly Gardens

The Bird & Butterfly Garden at Lockwood Farm, Kenwood and Evergreen Avenues, Hamden. Open Monday-Friday, 8:30 am-4:30 pm; closed state holidays. Free admission.

The Butterfly Garden at Dinosaur State Park, West Street, Rocky Hill. Open daily 9 am -4:30 pm; 860-529-5816. Free admission to the garden; $2 adult admission to exhibit center.

Butterfly Garden Basics
by Pamela Weil

Whether it's only a few plants outside your kitchen window, or a large area in your backyard, creating a haven for butterflies will bring you immeasurable joy. Any butterfly garden, whatever its size, must provide sun, shelter from winds, and food for

the butterfly in its adult and larval (caterpillar) stages. Locate your butterfly garden away from bird feeding areas and include a "puddling" area (more about this later).

Your butterfly garden must be in a location that's warm and sunny most of the day. On cool days and in the mornings, butterflies bask in the sunlight. The sun increases their body temperature, which must rise to 85-100 degrees F before they can fly. This is why butterflies are active on sunny days and inactive on cloudy days. Add a few light-colored stones or rocks to your garden for the butterflies to use as basking sites.

On gusty summer days, butterflies need protection from the wind. Tall flowering perennials or shrubs at the back of the garden will block the wind and protect the butterflies while they are nectaring.

If you're just starting to learn about butterflies, begin with a regional field guide. Jeff Fengler of the Connecticut Butterfly Association (CBA) recommends Jeff Glassberg's Butterflies Through Binoculars, which only covers the species found in the Washington D.C. to Boston region. This is so you won't be overwhelmed by multitudes of similar looking species, many of which are not found in our area anyway, that a guide for all of North America would contain.

Nectar Plants

Flying requires great amounts of energy which adult butterflies receive from nectar-producing flowers. Nectar contains energy-rich sugars and lipids and has about the same basic chemical make-up, no matter what flower it comes from. A hungry adult butterfly may visit several different flowers for nectar. However, some butterfly species do have nectaring preferences.

Host Plants

Butterflies lay eggs on host plants and later, when the eggs hatch, the larvae (or caterpillars) eat the leaves: they require a different menu than adult butterflies. Most adult butterflies lay their eggs on or near specific plants because these plants meet the nutritional needs of the larvae or caterpillars hatched from the eggs. The specificity is apparently so strong that most caterpillars will starve to death if they cannot find their host plants in a field or yard soon after emerging from the egg. Monarch larvae, for example, only feed on plants in the milkweed (Asclepias) family.

Many larval host plants are either weeds or weedy looking, such as common milkweed (Asclepias syriaca), dandelion, dogbane (Apocynum spp.), white clover, vetch, stinging nettle (Urtica dioica) and thistle. Not attractive to begin with, they are even less attractive after being eaten by the caterpillars, which feed voraciously for a few weeks before forming a chrysalis. Consequently, I prefer to locate the breeding and feeding ground in a patch of wild vegetation in a corner of my property, near but not with my more formal butterfly nectar garden. Here in this"wild" garden, plants that are nectar rich but invasive (beebalms and some of the goldenrods, for example) can also spread at will.

Not everyone agrees with this separate-but-equal treatment. "Larval and host plants can really look great planted side by side," CBA member John Himmelman says. "To see an example, visit the butterfly garden at Dinosaur State Park in Rocky Hill."

Puddling

Create a puddling site in your butterfly garden, which is a bare patch of soil where water can regularly accumulate and then evaporate, thus concentrating minerals in the soil. Puddling is a behavior mainly practised by male butterflies, who gather to extract nutrients, especially sodium, from the mud.

A few rocks coming out of the mud will provide something for the butterflies to sit on. "Keep the area bare and hose it down once in a while," says Himmelman, "that's all you have to do."

Don't Use Pesticides

Pesticides kill butterflies. Even organically acceptable pesticides such as rotenone and pyrethrin kill butterflies and their larvae. The bacterial insecticide BT (Bacillus thuringiensis) will kill butterfly larvae.

Instead of using pesticides, handpick insects or knock them off with a strong jet of water. Control aphids with homemade sprays of soapsuds, garlic, chives, and/or Tabasco.

Choosing Plants

What to plant is the question. Butterfly plant lists are plentiful; just open any book about butterflies. There are so many choices that deciding what to plant can be confusing, even overwhelming. And shouldn't we in Connecticut plant what Connecticut butterflies need? And how do we know what that is?

Happily for us, information is available from the Connecticut Butterfly Association. Three active CBA members — Christine Cook, John Himmelman and Carol Lemmon — provided information for this article.

Planting a garden specifically for one butterfly species isn't a good idea. "Some butterflies, such as Hackberry Emperor and Tawny Emperor, are very colonial and may not be in your area," says Christine Cook. "We don't know why that is: why they can get used to one location and not want to move to another."

The best approach is to choose plants that will supplement the larval food sources that are already growing in your own backyard. Larval food sources are often shrubs and trees. In my backyard, for example, there are willow and black cherry trees; both are larval food sources for the Eastern Tiger Swallowtail. So if I plant some nectar sources that Swallowtails will like, chances are good that I will be rewarded with Swallowtail visitors. Larval and food source information can be found in many butterfly books. And the CBA publishes a variety of readily available reference materials on the needs of Connecticut butterflies.

If you prefer a more openended approach — the more butterflies the merrier — choose plants that will consistently attract large numbers of many different butterfly species. "The Best Perennials and Shrubs for Connecticut Butterflies" is a collection of plants that are favorites of the three CBA members; most are native to North America. Which should be no surprise, when you think about it. "These are native butterflies," says Himmelman, " and it makes sense to offer them the plants that they evolved with."

The butterfly nectar garden plant list includes perennials and shrubs that bloom from early spring through frost because butterflies need nectar throughout the year. And an ideal garden should have grasses and sedges. "Many butterflies," says Lemmon, "including almost all your skippers, feed on grasses and overwinter in them." It does not include annuals, although many are excellent (heliotrope and zinnia, for example).

Most of these plants require some sun and well drained soil. But if you have different conditions, don't despair. John Himmelman attracts butterflies to his sunny water garden with pickerel weed, turtlehead (Chelone), buttonbush, cranberry, and milkweed. In a shady fairly dry spot, Christine Cook recommends spicebush and Joe-Pye weed.

Some enthusiasts believe that butterflies prefer dark colors, deep purples and pinks, over white. But who knows. "Some people swear by their purple butterfly bush," says Cook. "Others swear by their white." And whatever you plant, plant lots of it. Not one here, one there. "Six of something is more attractive to the butterflies," says Cook.

Don't plant any species in your butterfly garden, however attractive to butterflies, that is potentially invasive. Invasive plants still being sold by some Connecticut nurseries include purple loosestrife, yellow flag iris and honeysuckle. Sometimes a specific plant is described as "sterile" or "non invasive." Don't believe it, and don't plant it. "Invasive plants harm butterflies by taking over their habitats," says Lemmon. "Instead of a field of native plants species that would provide nectar sources for butterflies from April until December, a field of one plant might only provide nectar for just two short weeks."

Native Plants vs. Cultivars
Many of our native plants have been "improved" by plant breeders. Whether or not the newer cultivars really are an improvement can be debatable. And what to plant — these newer "improved" cultivars or their native parents — is also controversial.

These "improved" cultivars may offer a better habit, longer bloom time, more flowers and/or larger flowers than their native parent. But they may not be as beneficial to the butterflies. Or, they may be better. Three examples of outstanding cultivars are the New England aster 'September Ruby', Rudbeckia 'Goldstrum' and Joe-Pye weed 'Gateway'. To further complicate the matter, some exotic plants are fine, too. Butterfly bush, for example, is not native to North America.

Evaluate each plant on its own merits. In general, stay away from plants with double flowers. "When you breed something for one expression, you may lose out in another," says Lemmon. "The double blossom may make it difficult for the butterfly's proboscis to find the real nectar source." The flower may have lost its scent; the nectar may not be of the same quality. We humans have no way of knowing.

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John Himmelman has written and illustrated over 50 children's books, many with nature-related themes.
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Easy Perennials From Seed

by Andrea M. Masisak

Some people experience post-holiday blues, I get the greens. It's a relief when the manufactured merriment of the holidays has passed and I can joyfully contemplate my new seed catalogs. Far from being a depressive malady, the greens are a state of hope in which I'm one step closer to the challenge and promise of the upcoming season.

The rewards of starting plants from seeds are many — quantity, variety, rarity, monetary and, not least, a sense of accomplishment. I can raise plants for pennies, which allows me to sample widely and to try rare plants not usually available at local nurseries. If I need to fill large area quickly, I don't have to spend hundreds of dollars to do so. This allows me more money to spend on plants that I cannot raise from seed. And unlike an expensive plant purchase that I feel compelled to suffer with, if a plant doesn't perform or if I tire of it, out it goes. For example, 12 pots of Achillea 'Summer Shades Mixture' from a noted nursery cost over $55. A packet of 100 seeds of Achillea 'Summer Pastels' (a similar mixture of shades) cost me $2.95, and I still have seeds left. When I tired of the plants, I felt no guilt about pulling them out. If I'd paid $55, they would still be in the garden.

I've been raising perennials from seed for six years and have found them to perform equally as well as their store-bought counterparts. Seedlings may take a bit longer to establish themselves in the garden, but even a larger purchased plant will take a season or two before putting on its best show. Some perennials, such as Coreopsis grandiflora and Shasta daisy and the grasses Miscanthus sinensis and Pennisetum alopecuroides, will grow and flower abundantly in their first season. It's much more common to see the fruits of your labor in the second season when you will be rewarded so generously that even gardening friends will be surprised to learn you started from seed.

Plants grown from seed are surprisingly tough and seedlings are not the delicate darlings many believe. The ornamental grass Miscanthus sinensis is a case in point. Several years ago I planted two wispy seedlings. I never fertilized, but they grew to 4 feet by fall and even produced seed heads. Last spring I pried them out of the ground leaving behind two large craters. One plant was so heavy I needed help getting it into the wheelbarrow, and several months later it was still alive on the compost heap.

I start most of my perennials at the end of February, and they are usually ready to be hardened off and planted by mid to late May. Seed starting is not an exact science and germination and growth rates vary greatly among plants. Consult the seed packet for specific instructions, although I've successfully germinated seeds that supposedly required either heat or cold to germinate without providing these conditions.

While it's true some specific varieties can only be vegetative propagated (Coreopsis 'Moonbeam') or are highly variable form seed (Heuchera 'Palace Purple') most perform beautifully.

Seed Starting Supplies

I have raised perennials in a commercial greenhouse using basic plastic trays, and at home using a Floralight and a self-watering mini greenhouse system known as the Accelerated Propagation System (APS), which I set up at the back of the living room. While growing in the greenhouse afforded space and yielded good results, I have found the APS units to be virtually foolproof for the home grower, especially those of us with limited space. APS systems are available at some nurseries, but the Gardener's Supply catalog (1-800-863-1700) has the widest selection of sizes and a good selection of Floralights.

The Floralight can be used for houseplants as well as seed starting and the APS units will last several years if given reasonable care. With the number of plants I was able to start, I recouped my initial investment in a season or two.

The APS unit is an insulated growing tray divided into square cells, sizes vary depending on the model chosen. It has a clear greenhouse cover, a water reservoir, a pegboard, and capillary matting which continuously wicks moisture from the reservoir and delivers it to the growing tray. The system fits together in a neat self-contained unit, and I can easily fit four APS 40-cell units under my 4 foot tabletop Floralight. If I get total germination, the rewards can be truly staggering.

When initially starting seeds in the APS, I use a soilless seed starting mix such as Jiffy or Peter's that is weed and disease-free, and I pre-moisten the mix before using. A soilless mix is important because the greatest threat to emerging seedlings is the soil-borne disease called damping off, which causes sudden death. By the time seedlings are big enough to be potted up, damping off is not a big concern.

To minimize the changes that your seedlings will succumb to damping off, make sure that all of your seed starting materials are thoroughly clean before use. After using the APS, soak all parts in a diluted beach solution (one part bleach to nine parts water), rinse, dry and carefully store.

I use 40-cell units for perennials, sowing two to four seeds per cell to increase my odds of germination. Even if only one seed per cell germinates, that gives me 160 seedlings and potentially 640 if all four germinate. Total germination is rare, but I have risen up to 200 seedlings at one time. I am limited by the size of my one Floralight because when it comes time to pot up my seedlings I only have light space for 100 plants at a time. The year I raised 200, I kept the light on for 24 hours a day and rotated the seedlings every 12 hours. I now try to keep my seedlings production down to manageable levels. The moral of the story is to make sure that you have the light and space to accommodate your seedlings as they grow.

Caring for the Seedlings

Once they have their second set of true leaves (the first set are seed leaves called cotyledon and shouldn't be counted), I pot each seedling individually into clean plastic pots. I use a prepackaged potting soil, which I further amend with additional perlite to improve drainage and premoisten before using. Normally, I use 2-1/4 inches square pots, but extensive root systems can require a larger pot. You'd be surprised at what a large root system a very small seedling can produce, and a larger 3-inch pot may be needed to accommodate this larger root system. After you've potted up your seedlings, give them a thorough but gentle watering to settle the soil and collapse any air pockets.

If you want to grow the seedlings on in the APS, you will have to thin them out. Use baby scissors to snip off the extras. Don't pull them out because you risk damaging or uprooting the ones you want to keep. Feeding with a seedling fertilizer, such as Roots Plus for Seedlings, can be done by adding one tablespoon to the APS reservoir.

Seedlings will continue to require 14 hours of light per day and should be kept no more than 2 to 3 inches from the bulbs. The goal is to produce strong, stocky seedlings not weak, spindly ones. Times are available to control your light automatically. There are expensive fluorescent bulbs that promise to deliver a broader spectrum of light, but I get great results using one warm and one cool fluorescent bulb. Some seed starters use a small fan to create a gentle breeze. Air movement is said to reduce the change of fungal diseases and to stimulate growth hormones in the plants. I've never used a fan, but I light brush my hand over the plants at least once a day. Room temperature is kept between 60 and 66 degrees with low humidity.

The APS is self-watering, but once the seedlings are out of the unit you must be attentive to watering and occasional feeding with a seedling fertilizer. This minimal monitoring is hardly a chore. I'm amazed and captivated by the lushness and growth my seedlings exhibit during the bleakness of late winter and early spring — it's a joy to watch and gives me a great sense of accomplishment.

By using the APS and a good light fixture, the perennials I have suggested should be easy to grow from seed. If some are still too small to transplant in the spring, I continue to grow them on outdoors through the summer, potting up as needed, and planting in the early fall. Once they are planted outside, I'm not one to pamper my seedlings; aside from basic tending they have to make it on their own. My biggest problem is felonious felines who smother young plants when digging in the mulch.

Selecting seeds

Plant catalogs, nurseries and gardens provide inspiration for what I'll start from seed. When I see a perennial that strikes my fancy, my first thought isn't where can I buy it, but are seeds available? One of the most comprehensive sources is the Thompson & Morgan seed catalog (1-800-274-7333) listing hundreds of perennials by genus and species, including the very rare. Park Seed (1-800-223-7333) is another favorite. Many horticultural and plant societies offer members free seed exchange programs. The benefit is not only access to unusual varieties, but the knowledge and experience of members who have raised them.

Many named varieties are available from seeds: Echinacea 'Magnus' (1998 Perennial Plant of the Year), Hollyhock 'Nigra' and 'Chatter's Double Apricot', Penstemon 'Husker Red' (1996 Perennial Plant of the Year), Dianthus 'Zing Rose' and, though not named, you can find seeds of the most genus and species for plants found in the most exclusive nursery catalogs. For example, last spring White Flower Farm offered Dictamnus albus (the white-flowered form of gas plant) for $19.95 each. I bought a pack of 20 seeds from Thompson & Morgan for $2.49.

For economy's sake, I see no point in buying any perennial I can possibly grow from seed, especially when there are so many tempting plants, like woody ornamentals, that I'm unable to grow. The financial incentive may have started me on seed starting, but the rewards of raising my own plants are far more than monetary. There is an overwhelming sense of pride and amazement when I look at what I've grown. This year banish the blues with some seed starting — your success will make your friends green with envy.

Andrea M. Masisak is a freelance writer and a Master Gardener certified by UConn's Cooperative Extensive System.

Easy Perennials to Grow from Seed

Common Yarrow Achillea millefolium Sneezeweed Achillea ptarmica 'The Pearl Superior' Butterfly Weed Asclepias incarnata 'Ice Ballet' Garden Columbine Aquilegia vulgaris 'Nora Barlowí' and 'Music' hybrids Tussock Bellflower Campanula carpatica Valerian Centranthus coccineus ruber and alba Snow-in-Summer Cerastium tomentosum Tickseed Coreopsis grandiflora 'Early Sunrise' Delphinium Delphinium 'Magic Fountain Mix', 'Dwarf Blue Butterfly' Maiden Pink Dianthus deltoides 'Brilliancy' and 'Ipswich Pinks mixed' Dianthus Knappii Foxglove Digitalis grandiflora and mertonensis Coneflower Echinacea purpurea 'Bravado' and 'White Swan' Fleabane Erigeron speciosus 'Blue Beauty'	Spurge Euphorbia polychroma Blanket Flower Gaillardia grandiflora 'Goblin' Grasses Miscanthus sinensis and Pennisetum alopecuroides Flax Linum narbonense 'Heavenly Blue' Cardinal Flower Lobelia 'Fan' hybrids and L. siphilitica Musk Mallow Malva moschata 'Zebrina' Beard-Tongue Penstemon 'Husker Red' and 'Cambridge Pastels' Cinquefoil Pontentilla Thurberi amorubens 'Monarch's Velvet' Pontentilla nepalensis 'Miss Willmott' Coneflower Rudbeckia fulgida 'Goldsturm' Sage Salvia superba 'Blue Queen' Lamb's Ears Stachys lanata Stokes' Aster Stokesia laevis Chrysanthemum Leucanthemum superbum 'Snow Lady' Primrose Primula polyantha 'Gold Laced'

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Visiting Gardens All Season Long

by Enid Munroe

Gardeners who joined the Garden Conservancy’s Open Days program last year were able to visit over a hundred of the best private gardens in the Northeast. In 1996 over 200 gardens will be open over sixteen weekend days from April through September in Connecticut, Westchester, Putnam and Dutchess counties, Long Island and New Jersey. The Garden Conservancy’s Open Days Directory is modeled after England’s National Gardens Scheme “Yellow Book” program that has turned garden visiting in England into a national mania.

Our place was one of the seven gardens in the Westport-Fairfield area on last year’s trial run, and we loved all aspects of the experience. Keeping a garden motivated all summer hones your gardening skills and defines your standards. For instance, you must consider seriously whether or not “God is in the edges.”

Most gardens appreciate being fussed over, and on tour days our plants seem to outlive each other in presenting themselves to the garden inspectors. Experience teaches how to avoid pre-show jitters. Ceaseless garden patrol for instance reveals that the physostegia is about to run amok in the boltonia or that something has dematerialized during the night. And I’m getting pretty good at guessing bloom times and keeping fifty or so containers looking smart and fresh all summer long.

Our ten-year-old granddaughter, director of admission and head go-fer, observed that gardeners are really nice and have good garden manners, too. In 1994 our rather modest accomplishment here was on the Southport Garden Festival tour the same day as Martha Stewart with fifteen hundred visitors. They bent not a blade of grass.

We enjoy meeting other gardeners, exchanging plant stories and arranging seed swaps. Everyone seems to love the great burgundy leaves and odd seed pods of Ricinus communis, the mop-headed Joe pye weed (Euphorbia amygdaloides), my black plants and sedum collections, the grass garden, the blooming groves of papaver somniferum, the pot collection, tuteurs and arbors. And they are entertained by our various little gardens tucked in here and there that I can't help making because plants that I can't help collecting need a bed.

We visited other Directory gardens last summer. Following are descriptions of a few of our favorites, and each will be on the tour again the year.

In Washington one can see Barbara Robinson's sophisticated composition of plants and shrubs, old walls, lattice work fences, arbors, paths, sheds, sculpture, aisles of lavender and islands of grass set in meadows and woodlands.

I love the old Westport cottage garden of the totally passionate gardener, Barlow Cutler-Wotton. Barlow is continually infusing her project with new ideas and new plants while maintaining the integrity of the garden and its history.

The Open Days program appeals to gardeners of all levels and tastes and demonstrates the multiple approaches to Northeast gardening. There are large, formal, professionally designed estate gardens maintained with old world-old money standards, and the small personal naturalistic domains of dedicated and passionate individuals. This enlightened program adds a profound new dimension and inspiration for those who love gardening in all of its manifestations.

Enid Munroe is an artist, garden writer and author of An Artist in the Garden (Henry Holt, 1994). Enid and Harry Munroe garden in Fairfield.

Resources
The Open Days Directory lists the gardens with a brief description, dates and hours and travel directions. Admission is $5 to each garden, with proceeds benefiting the Conservancy's preservations programs or split with the charity of the garden owner's choice.
The directory is available from the Garden Conservancy at P.O. Box 219, Cold Spring, NY 10516 (914-265-2029). The 2002 price is $15.95 plus $4.50 for shipping and handling.

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September/October 2001

A Garden for Migratory Birds

by Christine Cook

The chilled blue currents of the sky swirl with swallows and robins. A thousand goodlucks all over the world! There is always a late afternoon in the late of summer when someone in my family slowly and softly whispers, "the light is changing." A passing, a fleeting of things.

Is it this change in light that signals to migrating birds? What innate knowledge tells them it is time to go? What star maps might they follow? Which unseen magnetic field holds them to their course? The mystery of migration is slow to give up its answers.

Migrating songbirds in Connecticut fill the autumn air with a cheerful celebration of warbles, trills and whistles. Two locations where migratory birds gather in our state are Hammonassett State Park and Milford Point.

Different Forms of Migration

Some migrating birds will travel in huge concentrations assisted by the north wind on their backs. Occasionally 200,000 birds an hour will pass in a broad front. Others will make a solitary effort flying alone.

Some birds will make a complete migration, heading to southern Florida, Central or South America. Others like the American Goldfinch may fly only a couple of hundred miles in a partial migration. Irruptive migrators (who move south to secure a reliable food source) like Evening Grosbeaks may only move in particularly harsh years.

Scientists know that in some species the adults leave earlier than the young, imprinted with the experience of where to find cover, shelter, food and water. The young must travel by instinct. Songbirds can travel 200 miles a day but then must rest and refuel for three to five days.

A Change in Bird Metabolism

Bird's lives are intimately connected to the changing seasons and the changing food sources on which they depend. Consider, for example, the Scarlet Tanager. As fall approaches, the male's flamboyant spring plumage has changed to a softer drabber olive. He will start to stay up longer at night because that is when he will fly, avoiding predators.

Connecticut's first autumnal frosts arrive in the northwest hills about September 25 and on the coast about October 26. With the frosts go many of the protein enriched insects the Scarlet Tanagers and other birds have been dining on and feeding their young.

The Tanager's metabolism has changed to allow him to convert more of his food into fat, which is high in calories and provides the necessary energy to fuel his southward migration.

Autumn is burgeoning with berrying plants. Berries, because of their high caloric content that can be converted into fat, are excellent food sources for migrating birds.

Berrying Plants for Migratory Birds

Planting berrying shrubs and trees will bring these beautiful creatures into your yard and will help to enhance Connecticut's environment by building more reserves and eventually increasing the bird population density.

To create a sanctuary build diversity into your design. Provide water, shelter and nesting sites. Include plants of different heights from canopy to groundcover. Give birds a place to perch and sing their hearts out! Make sure they have nest building material. Plant evergreens that will give protective cover from predators.

Elderberry (Sambucus canadensis) has berries that disappear in July — the Robins don't even give them a chance to ripen. Twenty-eight different songbirds consume them, including Indigo Buntings and Gray-cheeked Thrushes. One of the earliest birds to arrive in the spring is the Rose-breasted Grosbeak. It is also one of the earliest to leave, rarely staying past November. Connecticut elderberries supply much of its fat for the first trek of its journey.

Highbush blueberry (Vaccinium corymbosum), decorated with bluish berries in late July and early August, feeds 22 different songbirds. The Hermit Thrush, considered by many to have the most beautiful voice, feasts on this plant. The Baltimore Oriole, one of the first to leave in mid August, will leave his post in the tops of trees eating caterpillars to dine on blueberries. If he happens along some blackberries (Rubus allegheniensis) he'll consume them readily, too.

Spicebush (Lindera benzoin) has a berry enjoyed by vireos. In September you rarely ever see the red berries beneath the aromatic yellow leaves — they are eaten too fast. They are particularly sought out by the Wood Thrush who makes his exit between late August and mid October.

Carolina rose (Rosa carolina) has hips which ripen in late August and persist until late March. Thrushes and vireos love them. Our winter migrants rely on them when snow is on the ground.

The fruits of viburnums need to freeze before they sweeten and are sought out by some late lingering migrants. Arrowwood viburnum (Viburnum dentatum) has a bluish black drupe from early September to late November. Highbush cranberry (Viburnum trilobum) save their cinnabar-colored fruits until February, not only feeding the straggling Robins but some of Connecticut's yearlong avian citizens. Include withe-rod (Viburnum cassinoides) with its pink, blue and black drupes.

Bayberries (Myrica pensylvanica) have an extraordinarily high fat content and hold their ripeness from September to May. Tree Swallows can stay farther north longer than any other swallow because of bayberry. The Scarlet Tanager's diet is usually made

up of insects but it will pop down for some bayberries while on its way south in mid October. It also has a penchant for the fuzzy fruit of sumacs. The late drifting Yellow-rumped Warbler is uncommon and local, breeding in the northwest hills. It can be widespread during migration. It dines on bayberries, dogwood and viburnum. Nutritious fatty seeds of grasses, sunflowers and goldenrod round out its diet.

Eastern red cedar (Juniperus virginiana) provides both shelter and sustenance. Plant a male and female and watch a flock of Cedar Waxwings descend and demolish its horde of pale blue cones.

Hackberry (Celtis occidentalis) fruits from September through October with many fruits persisting into February. It is an incredibly important foodsource. orioles, Robins and the uncommon Fox Sparrow love the fruit.

The flame-colored foliage of virginia creeper (Parthenocissus quinquefolia) and poison ivy (Toxicodendron radicans) alert birds to their fat packed fruit. They are depleted quickly by a multitude of bluebirds, finches, flickers, sparrows, thrashers and vireos. Dare to leave a cache of poison ivy somewhere on your property!

Hollies attract Brown Thrashers, Hermit Thrushes and bluebirds. Both winterberry (Ilex verticillata) and inkberry (Ilex glabra) have abundant berries.
Dogwoods set a true banquet. There are so many kinds in our area. The fruit is high in calories and provides food for 27 birds. Red-eyed Vireos, incredible woodland songsters, relish them.

Many of our bird populations are declining because of development. We can choose to support them. Encourage them to visit by planting some tempting berrying trees and shrubs. Watch these elusive creatures dart and retreat amidst fall’s colorful leaves eating succulent fruit. Listen to them sing their effervescent songs before they flee too fast.

Christine Cook, the owner of Mossaics in Easton, CT, designs eco-friendly landscapes including moss gardens and native plantings. She also writes and lectures.

November/December 1995

Winter Protect Your Roses

Donna J. Fuss

Winter protection is part of a process that begins in April when you uncover your roses. Maintaining a healthy, clean, disease free garden is the first step in insuring that your roses will survive the winter successfully. As cold weather approaches, those of us who garden in Connecticut are faced with the issue of how and when to winter protect our roses.

The purpose of winter protection is actually two-fold. The first is to protect the plant's bud union (the graft) from severe cold and freezing. The second is to make sure that the rose goes dormant and stays that way until it wakes up in the spring. This can be quite a challenge in Connecticut where the winter is unpredictable (actually all of our seasons are unpredictable). Instead of a nice even temperature curve, we get a lot of blips and dips.

So let's meet the challenge. The timing is extremely important. You want to catch the roses when they are dormant, but before they freeze. In Connecticut, this is usually Thanksgiving weekend. While the rest of your friends and family are busily preparing for the Thanksgiving holiday, you'll be outside playing with your roses.

If you protect your roses too early, that is before the first inch of ground is frozen, you will create a nice, cozy home for rodents and give them a tender, succulent food supply — namely your bushes. So, this is one case where getting your work done early doesn't pay off. Your reward may be that your roses become mouse food. After several hard freezes, mice and other rodents have found other homes and your roses will be safe.

The timing is about the same for everyone in the state. However, the method that you choose will depend upon your individual weather conditions. How cold is your garden? What exposure is it? How much wind does it get? These are the questions to ask yourself before you decide what form of winter protection will be most effective for you.

I'll describe four different ways to winter protect, beginning with the method that provides the least amount of protection and ending with the method that provides the most winter protection.

If you live on the coast
If you live on the coast, and have your roses close to your house, with a south or west exposure, your task is easy. Cover the bud union with six to eight inches of loose sandy loam from some other part of your garden. Then rake some oak leaves over the soil. You many need to build some kind of cage to keep the leaves in place for the winter, because leaves help keep the soil in place during winter rains. Oak leaves work best because they have a tough cuticle and take longer to break down.

Don't use maple leaves, which will decompose quickly and rot out the roses underneath them. If you don't have any oak trees on your property, remember that a neighbor never minds you raking their leaves. I barter with my neighbors: cut roses all season in exchange for bags of oak leaves in the fall.

If you are a town or two in
If you are a town or two in from Long Island Sound, the common method of winter protection is hilling. Mound your roses with ten to twelve inches of soil and something to keep the soil in place for the season. The purpose of the mound of soil is to keep the bud union at a more constant temperature, and keep the canes from alternate freezing and thawing, as well as to protect them from the cold drying winds.
When you mound your roses with soil, the soil should be loose, but not too light and airy. It should always be taken from some other source than around your roses, because roses have shallow feeder roots that are near the surface, and these can easily be disturbed or frozen. There are plastic rose collars available in nurseries and garden centers that you snap into place and fill with soil. Buy one collar for a smaller bush, fit two together for a larger bush. You can also make collars out of roofing paper or newspaper. Fill these collars with soil and top off with leaves. Another method is to hold the mound of soil in place with pine boughs.

You may have noticed that I never said anything about cutting your roses down in the fall. That is because April is the time to prune. In the fall, the bushes should be cut back to about three feet. Just enough to prevent the wind from whipping them around, and loosening the roots in the soil. If you don't want to cut your tall bushes back at all, you can drive a 4 to 5 foot stake into the ground and tie the bush to it with butcher's twine. Roses die back from the top down, so leaving a good amount of canes gives you a better chance of more live canes to start with in the spring.

For a cold garden protected from the wind
The next method is appropriate for a rose bed in a colder garden that has some protection from the wind. It is called the box or crib method. You literally enclose your entire rose bed with a Styrofoam box. Don't use this method if you have moles or voles, because this will become a nice winter home for them and your bushes will be eaten by spring. Don't use this method if your garden is in a windy location, because it does not provide enough protection from cold winter winds.

This method requires a little (but only a little) carpentry. You'll need 1 inch by 3 inch by 30 inch stakes and builders Styrofoam insulation, which is sold in panels two feet high by about 2 inches thick. You're going to build a little house around your rose bed with Styrofoam walls and a Styrofoam roof.

Place sets of stakes into the ground about two inches apart so that the Styrofoam panel can slip in between them. These stakes should be set at four foot intervals for stability against the wind. Before you finish enclosing the garden, you should cut the roses down so that they will fit inside this box. Then strip off all the leaves and clean the ground of all debris.

The conditions inside of the box are perfect for fungal disease to grow over the winter, so it is also a good idea to give the bushes a final spraying with a fungicide. Now place the stakes and side pieces of the Styrofoam around the garden to completely enclose it. The top piece(s) of Styrofoam should not go on until the weather is cold, usually this is around Christmas. (Roses love holidays, too.) Don't forget to weight down the top of the crib with logs or bricks. They make fine sails if the wind gets under them.

For a cold, windy garden
The last method that I recommend is the rose cone. This is for the cold, windy garden. I use them and they work great for me. They are not right for every garden. If you have a warmer garden, or are in a sheltered area, the cones act like a greenhouse, and the roses can start to break dormancy too soon. This new growth will freeze and damage the bush.

The cone looks like an inverted Styrofoam wastebasket. You use the same preparation method as for the cribs — cut the canes down, strip the leaves, clean the ground, spray with fungicide — but add one more job of tying the rose canes together to fit under the cone. We use butcher's twine for the job.

These cones should have air holes near the top for air circulation. There should be four about the size of a dime. The cones come two ways. One with removable tops and one with solid tops. If you buy the kind with solid tops you need to cut the top open. I suggest that you mark the top so that you know which direction it goes on, and mark the cone so you know which top it belongs to. You won't put the tops on until Christmas, when it is really cold and you want to be inside. You don't want to be playing jigsaw puzzle with your cone tops.

Place the cone over the tied-together rose bush. The cone has a lip at soil level. It is important that you cover this with something that will freeze. This serves two purposes. One is to bond the cone to the soil and the other is to act as a seal against the winds. You can bring in other soil, compost or manure for this purpose. Wait until it is really cold (Christmas) before placing the tops on the cones, and weight each top down with a log or two bricks.

Your next job is to get cozy in a nice, warm house with a good supply of garden books and rose catalogs and dream of spring. I find a pad and pen are useful tools to write down all of the things that I vow to do better next year. Next year I will....

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September/October 1999

Insects that Overwinter in Our Homes

by Rose Hiskes

Fall is the time to seal your home against some of the nuisance insects that will be looking for warm winter quarters. For the most part, these insects are preparing for cold weather just like you are. They find small openings into your home and don't wait for an invitation.

The multicolored Asian ladybeetle, Western conifer seedbug and boxelder bug can all be problems in Connecticut homes. Multicolored Asian ladybeetles and boxelder bugs release an aggregation pheromone, or chemical message that says "Come together," prior to hibernation. They can be a bigger problem because they come in and bring a thousand friends with them.

The multicolored Asian ladybeetle occurs in many shades of orange and red, with or without black spots. The convex adults are around 1/4 inch long and 3/16 inches wide. The 3/4 inch long Western conifer seedbug is a dull brown true bug with small white markings on its back. Antennae have a dark base and top, while the hind legs have an enlarged flattened area that is leaf-like. Also a true bug, the boxelder bug is smaller, 1/2 inch long, black with small red areas along the margins of the wings.

The above bugs, though nuisances, do no real damage to your home or person. They are simply seeking a place to hibernate for the winter. They will not eat your food or reproduce. Handling the multicolored Asian ladybeetle or the Western conifer seed bug may cause them to give off a defensive chemical that may smell bad and stain fabrics or painted surfaces.

Outdoors, the multicolored Asian ladybeetle is very beneficial, eating many softbodied pest insects, including the hemlock woolly adelgid. The Western conifer seedbug eats the seeds of many pines, spruces and hemlock. The boxelder bug eats the seeds of the boxelder tree, a type of maple.

Control
If any of these bugs are a problem in your area, prevention is the best strategy. Carefully look over the exterior of your home.

Caulk any cracks around windows, doors and utility pipes. Foam insulation strips will seal triple track storm windows. Where possible, screen vents, fireplaces and chimneys.

There are no pesticides registered for use against these pests in houses. The ladybeetle is beneficial so gently sweeping them into a dustpan and putting them outside will benefit you next summer. Remove large numbers of bugs with a dustbuster or large vacuum using on of the attachments. Using the beater bar or power head on a vacuum will kill insects. Leaving the vacuum outside for a time will allow the bugs to "escape" and find a winter home in your yard.

Western conifer seedbugs don't aggregate so they frequently occur in lower numbers that are easily removed by hand. There is a fly that parasitizes adult Western conifer seedbugs. Make sure you conserve this natural enemy by not killing any of the Western conifer seedbugs that have the white eggs of the parasite attached to their head.

The boxelder bug is less common than the previous bugs. Removing any of the host trees of these bugs that are near your home may also cut down on the number of pests entering your home, but is usually too drastic a step to take for most landscapes.

As the weather warms in the spring these insects will again begin moving about. Open your windows and let them go.

Rose Hiskes is a Research Assistant at The Connecticut Agricultural Experiment Station.

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May/June 2001

Recipe for Deer and Vole Repellent

The original recipe was first published in Heather Notes, a publication of the Northeast Heather Society and reprinted in the September/October 1999 issue of Connecticut Gardener.

“In a blender throw three large eggs, shells included. Add a large clove of sliced garlic, 2 cups of fresh green onion tops, and 2 cups of water. Liquefy, for about two minutes. Add this mixture to a pail which contains one or two quarts of warm water and some melted deodorant soap. Stir together, then add two tablespoons of chili powder or hot pepper and mix well.

With a kitchen scrub brush flick this mixture over the plants to be protected, being sure to get bits of eggshell on them. When used every two weeks or so, this mixture is totally effective — even in winter. Save a bit of this brew in a tightly closed jar to add to the next batch. It develops a ‘ripe’ odor, offensive up close but not noticeable in the garden.” The recipe has been modified by Leigh Tunick, a subscriber living in Sharon, Connecticut. Her “brew” controls both deer and voles.

Place in blender: 2 cups water, 2 whole eggs (including shells), 3 cloves garlic, 1 tablespoon cayenne, a drop of dish soap, and 2 cups of green onion tops (or regular onions). Blend on high to chop eggshells. put in covered container and allow to ferment (a couple of days in the sun will do it). Use 1/3 of the mix in a pail of water.

“I pour this down vole holes,” says Tunick. “They really hate it and go somewhere else.” Last fall the voles attacked a large miscanthus grass and an area in her garden that was heavily planted with daylilies and Japanese irises. They left after being “brewed” and she hasn’t seen them since.

It keeps deer away, too. “I flick it around about once a week, more or less, depending on the rain,” says Tunick. She finds that she has to apply it less often than she did a commercial repellent. “I had to reapply Hinder after every rain,” she says.

July/August 1997

Plant Science Day

by Pamela Weil

This event is held on the same day each year, the first Wednesday in August.

It's quite an interesting experience; once you've been, you'll probably want to return again. In fact, some Connecticut gardeners even take a day off work to attend Plant Science Day at Lockwood Farm in Hamden. The Connecticut Agricultural Experiment Station owns Lockwood Farm and it is a research farm where many Station Scientists conduct their experiments.

The Plant Science Day program begins with short talks and demonstrations under the main tent at 10:15 am. A program featuring a keynote speaker starts at 11:30 am, followed by more short talks and demonstrations until about 3 pm. In the meantime, there are exhibits in the barn and 62 experimental plots to explore; many of them quite fascinating.

Visitors are free to attend the programs or wander through the farm's entire 75 acres, but most of us stay within the demonstration plot area. You can explore on foot or ride the air-conditioned small bus.

Many of the demonstration plots are of interest to the home gardener. There are different varieties growing of wine grape, raspberry, strawberry, super sweet corn, winter squash, romaine lettuce, asparagus, beans, eggplant, cantaloupe, sweet potato, globe artichoke, pumpkin and tomato. You'll be able to compare notes with the Station Scientists conducting the trials.

The native woody shrub plot offers the opportunity to see full grown specimens of some of our native shrubs; the nurserymen's garden highlights the numerous plants developed here in Connecticut; and every gardener will recognize friends and foes among the weed and wild plant display. A bird and butterfly garden is new this year, a collaboration between the Experiment Station and the Federated Garden Clubs of Connecticut. The powdery mildew and medicinal herb exhibits were informative last year and have been continued and expanded this year.

Bring your soil, insect and plant questions and specimens with you, there is a question and answer tent. Buy a hamburger, or pack yourself a lunch. Coffee and cold drinks are free. It's always hot — remember sunglasses, sun tan lotion and a hat — and shoes and socks will help protect you from ticks and poison ivy.

Over 1,000 visitors are expected. If you come, you'll be glad you did.

Directions to Lockwood Farm,
corner of Evergreen Avenue and Kenwood Avenue, Hamden:

From Wilbur Cross Parkway (Route 15) traveling South:
Take exit 62 (Whitney Avenue). Take a right off the exit and go north for 2.2 miles. Take a left onto Evergreen Avenue, go 0.1 mile and take a right onto Kenwood Avenue. The farm is on your left; enter the second driveway

From Interstate 91 traveling North:
Take exit 10. Follow the Route 40 connector for 3.1 miles. Take a right onto Whitney Avenue (route 10) and go north for 0.6 miles. Take a left onto Evergreen Avenue, go 0.1 mile and take a right onto Kenwood Avenue. The farm is on your left, enter the second driveway.

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