

Garden Notes

Northwest Horticultural Society

Spring 1995



NURTURING NATURE

This issue revolves around nurturing natural processes in our gardens. The rewards are great - whether from composting, lawn renovation, or allowing beneficial insects to flourish.



© Photo: Don Normark

Lawn Renovation

by Ciscoe Morris

Often lawn renovation is not successful. In many cases, the standard procedures of removing thatch, pulling plugs, and overseeding do improve appearance at first, but soon the lawn reverts to its previous unsightly state. The key to successful renovation is to analyze growing conditions and take the necessary steps to solve underlying problems.

The best times during the year to undertake renovation are mid-March to mid-May and mid-September to mid-October. Soil should be moist but not wet. Never apply lawn weed killer, such as 24D, within the six weeks before or after renovation.

Lawn Replacement

If poor soil conditions or unmanageable levels of thatch exist, drastic measures are sometimes required. Check the soil. If it doesn't drain or a pick won't go through it, standard procedures will not solve the

problem. Thick thatch (a mat of living and dead stems, stolons, and rhizomes that prevent air, water, and nutrients from reaching the root zone) is the other principal reason for making a major change. A lawn with thatch accumulation of more than two inches generally has been taken over by thatch-producing weed grasses. Whether the problem is thatch or poor soil, unfortunately it is best, and often imperative, to remove the sod. A sod-cutter, available from rental stores, is customarily used for this purpose. You can compost the removed sod or recycle it at Pacific Topsoils, (206) 522-7180 for a fee.

Next is a choice: to raise the planting bed or to amend the soil. To create a raised bed, bring in manufactured soil, taking extreme care to select a quality product. Additional nitrogen is often required for healthy grass growth. Generally, a two or three way mix works best. Raise the soil surface a minimum eight inches. Till one inch of manufactured soil into the surface layer to create a transition layer for

drainage. While this method of lawn bed preparation is effective, it is often prohibitively expensive, and raising the soil level can create some interesting aesthetic challenges also. The alternative is to amend the soil.

In most cases, soil amendment, incorporating organic compost, adequately improves soil structure, aggregation, and drainage. Do not use sand. Unless mixed perfectly in the right proportions, it will form the equivalent of concrete in your soil! Till a two-inch layer of compost six inches down into the existing soil. If lime has not been applied to the lawn within the last three years, add dolomite lime at a rate of ten pounds per one hundred square feet. Rototill it in combination with the compost into the native soil. Till only until the soil is granular, never dust.

For seeding Northwest lawns, a 50-50 mix of perennial rye and fine fescue is a good combination. When buying unmixed seed, two parts rye and one part fescue by weight yields a 50-50 mix. Avoid mixes that have more than ten percent blue grass. Blue grass usually dies out within three years in this area.

Apply seed with either a broadcast or drop spreader. Use six pounds of seed per 1,000 square feet. Divide seed quantity in half and apply twice in perpendicular directions. Keep seed out of borders. Before applying seed, roll and then lightly rake the soil to loosen the surface. After applying, roll one more time to assure that the seed is firmly in contact with the soil. A covering of peat moss, approximately one-quarter inch thick, can keep the seed moist in hot, dry weather, but is generally not needed in spring or fall. Gently water in the seed. Keep the soil surface moist until the seed germinates and through the first three mowings. As many as six waterings per day may be needed if conditions are warm and sunny.

Standard Procedures

When a lawn does not demonstrate extreme soil and/or thatch problems, removing thatch, pulling plugs, and overseeding can achieve a successful renovation. If moss is a problem, treat it with moss killer about one week before removing the thatch. To avoid having the moss return, it is necessary to change the conditions of shade and lack of proper maintenance procedures that create a thin lawn. For example, lime supplies nutrients essential for healthy grass growth.

Thatch removal: Removal of thatch is only necessary if it is thicker than one-half inch. Hand tools are a waste of time; however, attachments on home lawn mowers work. Before beginning, mow the lawn as low as possible. When using a mower rake or lawn mower attachment, it is often necessary to go over the lawn three or four times in different directions. Try not to allow more than one-half inch of thatch to remain. Rake the loose thatch brought to the surface. Do not compost thatch. It does not break down well.

Aeration: Try to rent an aerator machine with a rubber flap on the back (see reason below). Make at least one pass in each direction to pull enough plugs. It is best to rake the plugs to facilitate overseeding, but there is no harm in leaving them to break up naturally.

Overseeding: It is always a good idea to overseed as part of the renovation process. As with installing new grass, use a mix as close as possible to a 50-50 perennial rye and fine fescue, as discussed above. The key to successful overseeding is to make sure that enough seed gets into the soil rather than becoming caught in the thatch layer.

Rental machines made to drill lawn seed into the ground are now available; however, they are expensive and hard to find. An easy trick is to use the rubber flap on the aeration machine. Simply aerate one more time after spreading the seed. Lean the machine back until the flap hits the ground. It will pull the loose seed into the holes. Importantly, application of a lawn starter fertilizer is necessary for germination and root growth. Keep the lawn surface moist until the new grass becomes well established. Mow the lawn when the new grass blades become one third taller than the height the lawn is normally mowed.



Rototilling compost into native soil improves its structure, aggregation, and drainage.

Photo: Mary Morris

Ongoing Care

It is important to realize that renovation can succeed only if the lawn receives proper ongoing care.

Grass needs to receive approximately one inch of water per week. To learn how long it takes to apply one inch of water, measure how long it takes to fill the majority of several tuna cans placed on the lawn. A general guideline, with variations depending on soil type, weather, and grass species, is to water when grass does not snap back when walked on and/or when it begins to show blue/green color. It is best to apply water slowly and infrequently so it deeply penetrates the soil and promotes deep root growth.

Fertilize with organic or slow-release synthetic fertilizer with a 3-1-2 ratio. A good schedule for most lawns is April, June, September, and between November 15 and December 1. Follow label application rates. Apply half the recommended rate to lawns growing in shade. The most important application is the one in November because it enhances deep root growth. Use only slow release synthetic fertilizer in November. At this time of year temperatures are too low for organic fertilizers to break down and become available for plant use. Never apply fertilizer during periods when the lawn is not being watered in summer.

Different types of grasses require different mowing heights. Cut the rye and fescue mix to one and one-half inches whenever the blades reach two inches. Cut blue grass and fine fescue to one and one-half inches as well. Pure rye stands should be cut to one inch. Bent grass should be mowed to about five-eighths of an inch. All grass should be mowed whenever the blades are one-third taller than the recommended mowing height. It is not necessary to pick up the clippings. Blades will not increase thatch as long as the lawn is cut in a timely manner.

Ciscoe Morris is Director for Grounds and Landscaping at Seattle University and has been a Washington State University Master Gardener for fifteen years. He is a garden expert on KIRO radio 710 AM (9 a.m. - 12 noon on Sundays) and television (Home and Garden Program on Saturday at 9 a.m., and the Tuesday noon news).

What Is IPM?

by Ciscoe Morris



IPM is the acronym for Integrated Pest Management, an environmentally friendly method of pest control. The object is to limit the use of pesticides by maintaining healthy plants and by using alternative methods of pest control whenever possible. Sound complicated? It's fairly easy if you follow the easy steps that follow.

Determine a treatment threshold

IPM requires acceptance of some level of damage. Beneficial insects require the presence of damage-causing insects as a food source. Damage tolerance depends on the seriousness of the pest, your preference, and the role of the plant in the landscape. Reserve the lowest damage acceptance thresholds for serious pests that do permanent damage to the health or appearance of your tree or shrub. Balsam woolly adelgid is an example of a pest that can kill true firs within three years after initial infestation. Other pests, such as weevils, rarely do permanent damage to rhododendrons and other host plants. However, the damage can be unattractive. The decision as to when and if to spray is subjective based on the location and characteristics of the plant.

Monitor to see if pests and/or beneficials are present

The next step is to determine if pests are present in high enough numbers to cause damage beyond what you are willing to accept. Fortunately, most plants do not need close monitoring because pest problems are rare. Make a list of the plants in your garden that normally have problems and monitor them regularly. Do not forget to look for beneficial insects (see "Insects As Gardeners' Friends on page 4"). Sizable populations of beneficial insects give adequate control if you give them sufficient time.



Choose a control

Once you decide to implement pest control, don't just reach for the spray bottle. Instead use one of the following strategies.

Mechanical: squish, squash, slice, or dice the pest. Use sticky cardboard or beer to trap offenders.

Cultural: select trees and shrubs that are resistant to the common pests and diseases in your area. Care for plants correctly. Stressed plants are much more susceptible to disease and insect pests than healthy, well-cared-for ones.

Biological: bring in predator and parasitoid insects to help control damaging insects. Enhance conditions for the native beneficials by allowing pests to exist as a food source, and by providing plants that attract good bugs to your garden. Use biological pesticides such as BT (*Bacillus thuringiensis*).

Poisons: use only if there is no effective alternative. Choose the poison that is the safest for humans, pets and other animals, beneficial insects, and the environment.

Monitor effectiveness

The last step is to go back and see if your control measures were successful. Keep accurate notes. Learn from your mistakes as well as successes. Fine tune your IPM program to make it more effective. Finally, enjoy learning more about nature and the creatures in your garden. Best of all, know that you are helping to make the environment healthier and safer for all of us.

Controlling Rhododendron Root Weevils - An IPM Case Study by Susan L. Miller

In the Northwest, root weevils can be a pest of our popular rhododendrons. Leaf chewing by adults is the most common evidence of the weevils, although this damage is rarely of significance to the plants. However, larvae feeding in the soil on the roots or girdling the crown can cause the death of the plant. Let's follow this problem through the IPM process.

1. Assure yourself of the identification of the weevil. Larvae are creamy white, worm-like, and "C" shaped with a dark head. Adults are brown or black beetles with elbowed antennae.
2. Begin monitoring for adult root weevil damage in late April to early May, depending on the weather, to get an idea of how many larvae survived through the winter, and how serious the problem will be in the summer.
3. Consider which products or techniques you will use to control the problem. Control options should be combined to maximize their effect. Some options are:

Resistant varieties are available which are not damaged by adult feeding. WSU Cooperative Extension bulletins EB0970 "Root Weevil Control on Rhododendrons", EB1229 "How to Identify Rhododendron and Azalea Problems", and EB0826 "Insect and Mite Control in Ornamentals" list some of these varieties.*

Mechanical control can be achieved by eliminating the movement of the adults. The adults feed at night on leaves, but hide in the soil at the base of the plant in the daytime. Use supersticky material (such as Tanglefoot or Tack-Trap), or very slippery silicone-coated material.

Chemical control, if the measures discussed above have failed, is available for adult weevils in the form of foliar sprays, such as Azatin and Orthene. Early summer controls are most effective. Check the Cooperative Extension's *PNW Insect Control Handbook** as well as product labels for rates and restrictions.

4. Keep a record of the rhododendron varieties most susceptible, when problems begin, and measures used and their effectiveness. Continue to monitor during sensitive periods for new problems or increased populations.

*Cooperative Extension publications can be purchased by calling (206) 296-3900, or writing:

Washington State University
Cooperative Extension\King County
506 Second Avenue
Room 612
Seattle, Washington 98104.

Susan Miller is IPM Specialist, Washington State University Extension/King County and has primary responsibility for IPM education of nursery and landscape professionals, County employees, and Master Gardener diagnosticians.

Insects As Gardeners' Friends

by Sharon J. Collman

As I sit looking out the window, birds are about in the garden and early rhododendrons are in flower. Small bush tits are flitting in and out of the shrubs and a red-breasted nuthatch is picking insects out of the bark of a Douglas fir. Chickadees are gathering little packages of protein (insects) to fuel the development of their next brood. Hopefully, some will consume the early mosquitoes already active in the garden.

While birds pick off insects, insects also pick off other insects. One of the most beneficial is the ground beetle. These medium to large black beetles run out from under pots or sod. Their food is anything they can get their mandibles into, like slug eggs, slugs, cutworms, crane fly larvae and other tasty bits. I once saw a ground beetle under a street light grab an exhausted tent caterpillar moth when it fell to the ground.



Black lady beetle.

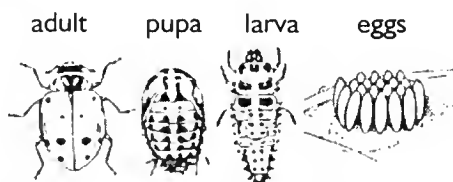
The ladybug, or lady beetle or ladybird beetle, comes quickly to mind when beneficial insects are mentioned. It comes in many sizes and colors that would not be recognized by many gardeners: gray with black markings, black with red spots, and the tiny all-black mite destroyer. Yellowish eggs are laid in clusters standing on end, larvae are orange and black "alligators", and their orange sack-like pupa case is attached to bark or leaves. These are voracious feeders on mites, aphids, and other insects.

Syrphid flies or hover flies get the "hover" part of their name from their ability to hover in one spot, then instantly move a foot away. These yellow and black flies are



Syrphid flies (also known as hover flies).

great pollinators, but it's the larvae that are most valuable. The larvae are greenish or yellowish, flat-bottomed, "headless" caterpillars, that is they do not have a head capsule, just a pointy end with a great set of mandibles for sucking aphids dry. They probe about with the pointy end in search of an aphid. When they find one, they lift it high and drain it dry. This is a sight to behold.

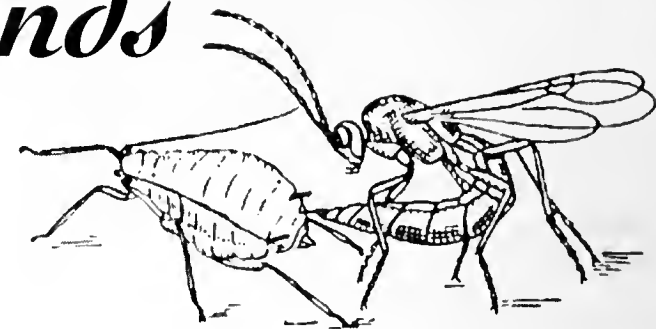


Life cycle of the lady beetle. Larva and adult feed on other insects.

If you have seen little, round bodies glued to leaves and twigs, consider yourself lucky for you have a parasitized aphid mummy. This is worth real money to the gardener. If you place some in a jar, you'll see a little wasp emerge. Quickly release it outside so it can get water and nectar and begin its search for other aphids. Aphid mummies can be distinguished from other round hard things on leaves in that they retain evidence of the three body regions, legs and antennae. If there is a little trap door and a hole, then the wasp has already emerged and is seeking new aphids to parasitize.

Scale insects also can be round and hard. The covering is the hardened back of the scale or a covering to protect the female beneath. If you find holes in these, they too have been parasitized and if there are many holes, the scale population may well be on the decline. It's also possible you are looking at old scales that have long since died. Peek underneath to see if anyone's home.

Thatch ants get their name from the mounds of thatch-like debris that they pile over their underground nest. When I was a kid at Hamlyn Park in Seattle, I found out the hard way that their bite hurts. We learned to keep our distance. At the time I couldn't appreciate their value in scouring



Small brachonid wasp laying an egg in an aphid.

the shrubs and trees for other insects to feed their huge underground population.

Nature's recyclers are the wood borers and the carrion feeders. They tunnel through dead and dying wood, speeding the decomposition and breakdown of the wood and the return-to-soil process. Flies and beetles turn a corpse into a dried mat of hair, skin and bones in short order, then other insects come along to feed on the left-overs. Most gardeners at one time have smelled a foul odor in a shed, for maybe a day or two, then it's gone. That's the insect clean-up crew at work.

The home garden, vegetable or ornamental, is alive with hundreds of little flies, gnats, beetles, parasitic wasps, honeybees, bumblebees, butterflies, and many others. Only a few cause real damage to the garden. Without them, there would not be pollination and the resulting fruit, vegetables, seeds, and pods. Most work away quietly, doing their many little tasks, serving birds, bats, fish, and humans in an incomparably beneficial way.

As E.O. Wilson (Pulitzer prize-winning author of *The Ants* and also *The Diversity of Life*) puts it: insects are the "little creatures that run the world". It's all the better, if that world is a garden.

For pictures of beneficial insects, order PNW343 "Beneficial Organisms Associated with PNW Crops" (refers to gardens), EB1447 "Predaceous Ground Beetles", and other bulletins from the Washington State Extension/King County 506 Second Avenue Room 612 Seattle, Washington 98104 (206) 296-3900

Sharon J. Collman has been in the field of Urban Integrated Pest Management for twenty-five years. She is a specialist with Washington State University Cooperative Extension and founding Project Coordinator for the Urban IPM Resource Center and Clearinghouse located at CUH, as well as a student in the Ph.D program at CUH.

Creating New Soil-Compost by Carolyn R. Ferek

When considering creating a compost system for your garden, it is important to weigh several factors including availability and cost of materials to construct a site or bin, the time and effort required for the project, and aesthetic impacts. Home composting is frequently a positive for both gardener and the environment beyond our gardens; it provides an excellent, free soil amendment and recycles valuable resources, preventing their loss through landfill disposal and also importantly decreasing the pressures for expansion of landfills.

What is compost?

The biological process of recycling organic debris transforms these materials into an earthlike substance (humus), which in turn forms a beneficial growing environment for plant roots. When we segregate organic waste from inorganic trash and promote its decomposition with adequate moisture and air supply, it becomes compost, a valuable soil amendment which enhances plant growth, protects soil from erosion, and conserves soil moisture. The decomposition process is initiated by bacteria, followed by fungi and protozoans, and, later in the cycle, centipedes, millipedes, beetles, and earthworms.

Materials for Composting

Most living organisms need relatively large amounts of brown carbonaceous material and smaller amounts of nitrogenous materials. Microorganisms in compost use carbon for energy and nitrogen for protein synthesis. The optimal proportion of these two elements for composting averages about thirty parts carbon to one part nitrogen by weight. For most of us, a mixture of half browns and half greens will work just fine. There is often a visual correlation between high nitrogen content in green plant material and high carbon content in brown material.

Most materials do not have the ideal carbon to nitrogen ratio, so it is effective to mix the greens and browns by weight, rather than volume, and also to maximize exposure of surface area, allowing bacteria greater access to this available food. When large or woody materials are chopped or shredded into smaller pieces, the composting process thus quickens.

Compost organisms need a balance of water and air to survive. Avoid letting your pile become either too soggy or too dry. It should be about as moist as a wrung-out sponge, obviously moist to the touch, but yielding no moisture when squeezed.

If your goal is fast composting, the pile must be large enough to hold heat and moisture, yet small enough for air necessary for microbial activity to reach its center. The hotter the pile, the faster the composting process. As a rule of thumb, it needs to be a minimum three feet cubed, or one cubic yard. A smaller pile will dry out easily and cannot retain the heat required for fast composting. However, by insulating the sides of smaller piles, higher temperatures and moisture can be maintained. Piles larger than five feet cubed normally prevent adequate air from reaching the center. If composting speed is unimportant, you can disregard size and still create excellent humus over a period of six months to two years.

Creating a Compost Site

Yard debris can be composted in various ways: on the ground or in simple holding bins, undisturbed for slow decomposition, or in turning bins which produce finished compost in as little as one month. Low maintenance methods of composting will still create an excellent



A well-designed composting area in the Miller Garden, Seattle.

©Photo: Mary Randlett

compost, but may take six months to two years to yield a finished product. If you wish to use a bin, it can be constructed with free pallets (check with your grocery store) or unused fencing material, for example. Or you can buy a bin from your local nursery or garden store.

Turning units are the best containment if you have a high volume of yard waste and desire a high-quality compost in a short period of time. It is most appropriate for non-woody materials. Using a series of at least three bins, alternate layers of high carbon and high nitrogen materials in a 30:1 ratio and moisten to the damp-sponge stage. When the bin temperature decreases significantly, turn the pile into the second bin. Add water if needed and more high-nitrogen material if heating is not occurring. When the pile starts to cool again, turn it into the third bin. Within four weeks, the compost should be ready for use in your garden.

When siting a bin, factors to consider are convenient access for turning the pile and for adding water and composting material to assure speedy decomposition. Successful placement is often in the back of a garden, on the north side of the house, or in the shade of a tree. If located in direct sunlight, it will tend to dry out.

Benefits and Uses

Whether your pile is quick and hot or slow and cool, when the compost bacteria have finished their work, its contents have been transformed into a new product: dark, loose, crumbly material resembling rich soil.

It is important to note that compost provides nutrients but it is not a substitute for fertilizer. More important than the nutrients compost supplies is its ability to make existing nutrients more easily available to plants. Compost improves the structure of every type of soil.

Compost is also used as a mulch for flower and vegetable beds, lawns, and around shrubs and trees. As such, it keeps soil warmer in winter and cooler in summer. It conserves water, helps control erosion and compaction, and helps control weeds. It is also used as a soil amendment when dug into garden beds and when planting new grass, with best results occurring when mixed with fertilizer into the top half-foot to foot of soil. It is useful when starting new seedlings in flats or small containers, as well as for growing transplants and larger container plants.

Carolyn Ferek is employed by the Washington State Energy Office and is a trainer and the Outreach Coordinator for the King County Master Recycler Program.

Worm Boxes

Food Composting with Worms

by Carolyn R. Ferek

It is often maintained that the earthworm is a gardener's best friend. Of it the British scientist Charles Darwin said, "It may be doubted whether there are many other animals which have played so important a part in the history of the world as have these lowly organized creatures." Decomposition occurs by the work of billions of microorganisms, but the earthworm performs the principal role in revitalizing waste and converting into earth again.

Worm composting systems use "redworms", a close cousin of earthworms, to compost food scraps. Redworms can be purchased from nurseries and other outlets, found in leaf or manure piles, or obtained from a friend's worm bin.

Worm bins are usually wood boxes with tightly fitting lids that provide a dark, moist environment while excluding rodents and other pests. Several holes should be drilled in the bottom for drainage of excess water. An old packing crate or trunk can be a bin, or one can be constructed with lumber or plastic. Commercially manufactured bins are now available. Bins are best located in a shady spot protected from winter weather or in a cool indoor space.

A box depth of about one foot is recommended to allow good breathing conditions for the worms. Surface area is more important than depth. Generally, one square foot of surface is required for every pound of food waste to be composted per week. For example, a two-by-four foot box will suffice for eight pounds of weekly scraps - the typical amount produced by two or three adults.

Once you have your bin, you will need to set up house. There is a variety of materials you can use to bed your bin. Shredded newsprint, narrow strips of corrugated cardboard, shredded computer paper, sawdust, dry fall leaves, or other high-cellulose material are just a few. You can use all of the above materials or just one in your bin. Once your materials are stockpiled, you are ready to begin the process.

Fill a large leakproof trash can or other container with water and put in your bedding materials. After twenty to thirty minutes of soaking, use a pitchfork or your hands to pull out the materials. Let excess water drip from them before placing in the bin. Continue to do this until the bin is filled to the top. While filling, fluff the bedding by lifting and turning it. This helps separate and aerate the materials. A large bin takes two to three hours to bed, but, once done, you won't have to do it again for six to eight months.

Now you can add your worms, starting with at least several hundred. They will stay where it is dark, so you won't see them again unless you dig for them. Next, you bury the food. It is important that you do not throw it on top of the bedding. When you begin the burial process, start at the top left. The next time you

add food, bury right next to the last spot and continue to maintain the pattern. If you see food when you are burying, don't think you are doing something wrong or feeding the worms too much. Some worms (and other decomposers) will come for the fresh food while others complete the job on the last feeding. In six to eight months, worms will turn the food wastes and bedding into high quality soil amendment.

Worms are not fussy eaters. They like just about any food. It is easier to list foods you should not add to the bin. They are dairy products, meat, fish, bones, or oily materials. Worms digest food much faster if you make it smaller for them. So crush eggshells and cut up those broccoli stalks, apples, and watermelon rinds.

Most worm ranchers keep their bins outdoors. If you decide to do this, keep in mind that worms work their hardest in a temperature range of 45-75 degrees Fahrenheit. This means that in winter your worms will be unable to eat as much or as often. (An alternative for excess food waste is to bury it in your garden, at least eight inches deep and well-covered. Buried food scraps may take two to six months to decompose.)

With regard to the amount of food to add to the bin, you need to compute how much food you have and the surface area of the bin. As mentioned above, an effective ratio is one pound of food per week for every square foot of surface area. In this connection, decide how and where to save your food scraps. Some people keep a small container near the kitchen sink and feed their worms daily. Others find it

easier to keep a five-gallon bucket with a tight-fitting lid outside the back door and feed when the bucket is full (approximately every two weeks for a family of four).

Two or three times a year, when most of the contents of the bin have become dark worm castings (vermicompost), they can be harvested. Finished compost will be about one-quarter to one-half the volume of original materials. You can begin the harvesting by moving it all to one side of the bin and adding fresh compost to the empty side. Then you can begin burying food waste in the new bedding. The worms will finish decomposing the old bedding and then migrate to the fresh bedding and food scraps, allowing the finished compost to be harvested after about six weeks. Then fill the rest of the bin with fresh bedding.

Vermicompost can be used in much the same way as yard debris compost. It is ready to use as top dressing for houseplants, a nutrient-rich source for vegetables, and also a mulch around trees and shrubs.

(A good resource on the subject of worms is *Worm Digest*, Box 544, Eugene, OR 97440. An annual subscription is eight dollars.)



Note how the worm bin is raised on bricks to prevent the bottom from rotting.

Photo: John Watson

Wiggly Wonderment For Kids

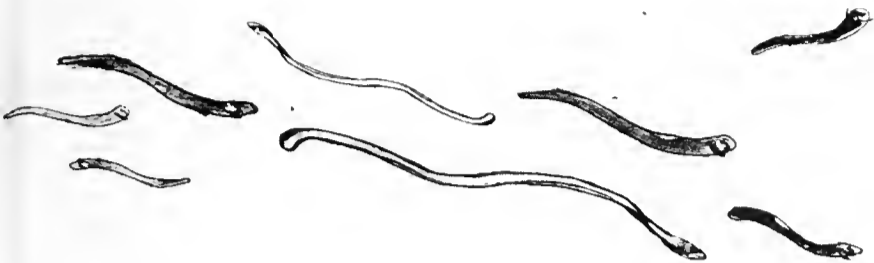
by Carl Elliott

Children are immediately captivated by life in a worm bin. Its size and accessibility are just right for children to see the marvels of decomposition and the diversity of organisms involved. It is a joy to see people of all ages and without composting experience realize that their food waste has great value to the soil and worm bins offer an almost instant reward of fine vermicompost for the garden, effectively closing the recycling loop.

At Seattle Tilth Children's Garden, all classes and tours start with life inside a worm bin. Usually red worms are studied: segments counted, delicate movements of expansion and contraction viewed. Through observation of the worms' environment, children gain an understanding of soil life outside a bin and the conditions necessary for optimum soil health. Perhaps the most interesting aspect of the worm bin for children is the change from food to soil, a collaborative process by worms and many other secondary decomposers.

Two excellent books on worm bins are written by Mary Mapplehoff: *Worms Eat My Garbage* (about setting up a worm bin) and *Worms Eat Our Garbage* (listing classroom activities for 4th - 8th grade levels).

Carl Elliott is Garden Co-Coordinator of Seattle Tilth and the Good Shepherd Center. He has eight years of horticultural experience in organic gardening.



Many local nurseries now carry redworms, including:

City People's Garden Store
2939 East Madison
Seattle, WA 98112
(206) 324-0737

Herban Renewal
10437 19th Avenue
Seattle, WA 98146
(206) 243-8821

Molbak's Nursery and Greenhouse
13626 N.E. 175th Street
Woodinville, WA 98072
(206) 483-5000

Sky Nursery
18528 Aurora Avenue North
Seattle, WA 98133
(206) 546-4851

For information on composting you may contact:

Washington State Energy Office
914 East Jefferson, Room 300
Seattle, WA 98122
(206) 296-5370

King County Recycling and Composting Information
400 Yesler Way, Room 600
Seattle, WA 98104
(206) 296-4466

Seattle Tilth
4649 Sunnyside Avenue North
Seattle, WA 98013
(206) 633-0451

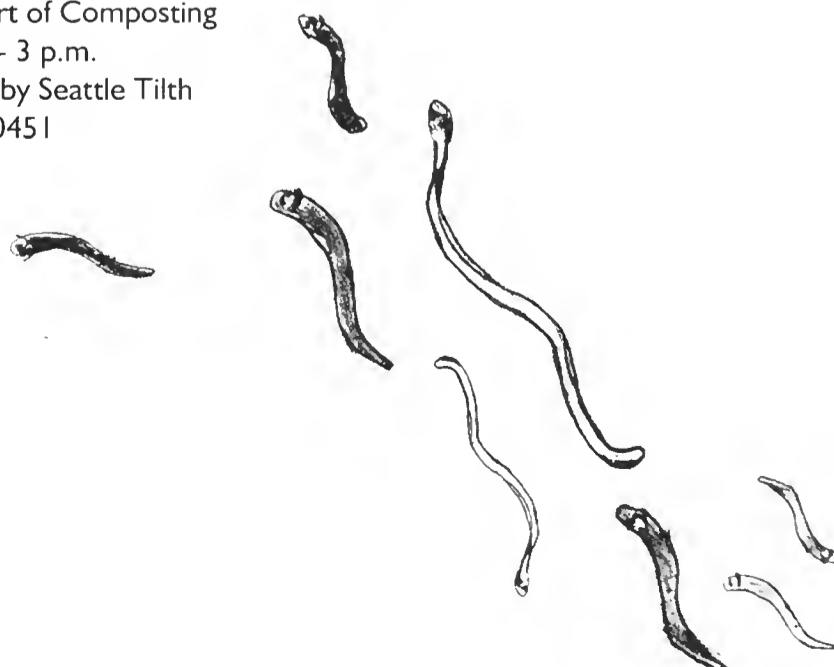
[Please note: Seattle Tilth can return calls only within its local calling area and send materials only to addresses within Seattle City limits.]

Compost Hotline
4649 Sunnyside Avenue North
(206) 633-0224
[Information distribution same as for Seattle Tilth as noted above.]

Upcoming Workshops On Composting

Master Recycler and Composter Training
April 25 - June 3
Sponsored by King County Solid Waste Division
(206) 296-5370 or 296-4483
[Note: designated for King County (non-metropolitan Seattle) residents only.]

The Fine Art of Composting
April 15, 1 - 3 p.m.
Sponsored by Seattle Tilth
(206) 633-0451



Catalogs

B & D Lilies

330 "P" Street
Port Townsend, WA 98368
(360) 385-1738
\$3

B & D Lilies puts out a beautiful, glossy catalog each fall, with a supplement in the spring. Cultural information tailored to Northwest growing conditions, a question and answer section, and lengthy descriptions of each offering make this a reference tool for learning about lilies. The plentiful color photographs are nearly irresistible. Look here for the tall, dramatic trumpet lily 'Black Dragon', the exquisitely fragrant, pure white giant 'Casablanca', or the delicately freckled, butter yellow Asiatic hybrid 'Solstice'.

Heronswood Nursery, Ltd.

7530 288th Street N.E.
Kingston, WA 98346
(360) 297-4172
\$4

Can one nursery really grow all these wonderful and unusual plants? We use the Heronswood catalog in the Miller Library as a reference tool, referred to often for descriptions of new and hard-to-find varieties. It also has the dubious distinction of being the catalog most frequently stolen from our collection. Divided into category of plants (shrubs, vines, perennials, etc.), it offers concise descriptions for each plant that include information on size, fragrance, color, rarity, comparisons, and suggestions for use. Owner Dan Hinkley has written several paragraphs on favorites such as buddleias, cistus, hydrangeas, asters (sixty-two listed!) with cultural advice for our climate and growing conditions. No Northwest gardener should be without this catalog, let alone the plants it offers.

Seed Blum

Idaho City Stage
Boise, ID 83706
FAX (208) 338-5658
\$3

Heirloom seeds for a fascinating variety of edibles, flowers, herbs, with useful drawings and lengthy descriptions.

Whitney Gardens & Nursery

P.O. Box F
Brinnon, WA 98320
(360) 796-4411
\$3

Specializing in rhododendrons and azaleas, this seven-acre garden and nursery on the Olympic Peninsula is wonderful to visit in April or May. The catalog is beautifully photographed, with lengthy descriptions of old favorites and new introductions

Books

Best Borders

Tony Lord
Viking, New York, 1994



Detailed planting plans, inspiring color photographs, and interviews with the gardeners who have created or worked with some of England's most famous borders make this an enjoyable book to read, as well as lovely to look at. Most useful to gardeners with small plots is the chapter on a town garden in Oxford, which is overgrown with an amazing number and variety of beautifully selected plants that create a canyon of towering, blooming borders.

Color Encyclopedia of Garden Plants and Habitats

Fritz Kohlein and Peter Menzel
Timber Press, Portland, 1994

This book is a newer, more comprehensive *Right Plant, Right Place*. Forty different types of garden situations are described (rock gardens, wildflower meadows, shady woodland margins, etc.), followed by an encyclopedic listing of selected plants best suited to these situations. Perennials, bulbs, grasses, climbers - all types of plants are considered, with color photos, descriptions, and cultural information on each.

Valerie Easton is a librarian at the Elisabeth C. Miller Library, CUH.

Library Resources

New for Spring

by Valerie Easton

Inspiring new gardening books and enticing spring catalogs are arriving at the Miller Library. Here are some you shouldn't miss.

Hydrangeas: Species and Cultivars, Volume 2

Corinne Mallet
Centre d'Art Floral, Varengeville, France, 1994

This volume, along with its companion published in 1992, are translated from the French, and are so beautifully photographed as to be works of art themselves. European, Western, and Japanese cultivars are described, photographed, and arranged by color. The most interesting section is on how to use hydrangea in the garden; "the hydrangea is not an exclusive plant. Imitate nature and combine hydrangeas with a wide variety of other species; the other species will be show off the advantage, and so will the hydrangeas." Many ideas for plant combinations are illustrated in photographs showing colorful medleys of hydrangeas, perennials, and small trees to great effect.

The Undaunted Garden

Lauren Springer
Fulcrum Publishing, Golden, Colorado, 1994

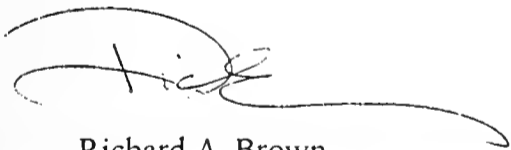
"I don't understand the concept of a low-maintenance garden...gardening is always an active relationship between a person and a group of plants," begins Lauren Springer, and she goes on to describe the creation of her lush and lovely Colorado garden. She has taken all her own photographs, which are truly gorgeous, and well illustrate her practical advice and detailed plant descriptions in chapters such as "Roses for Realists" and "Flowers with Fortitude".

President's Message

When I was about nine years old, a fourth-grader attending Richmond Beach Elementary School, and giving one of those short talks before my classmates as all students were regularly expected to do, somewhere in the course of my exposition I mentioned the word "compost". I was not prepared for the reaction. My classmates' response to that word left me with the distinct impression that "cool" people didn't associate with composts or at least publicly admit to it. I've never forgotten that moment or the embarrassment I felt at the time.

Having grown up in a gardening family, the compost itself was part of our family. Our garden waste went into it; our kitchen organic waste went into it; and great soil came out of it. Occasionally, while unloading it, we'd find that trowel or weed fork or some other tool long thought lost. Composting, gathering leaf mold and rotten wood from the forest, and using these materials in our garden were just standard operating procedures at our home. I thought everybody did these things.

At a time when recycling is a major pastime, and energy conservation a way of life, it's easy to write off composts as just another contemporary fad. In fact, they've been around a long time and, as every good gardener knows, for good reason. Find out for yourself; make one, use it, and we'll all be the better for it, including your garden. Composting - it's NOT a dirty word.



Richard A. Brown



Dr. Harold B. Tukey Honored

H.B. Tukey, Jr., founding director of the Center for Urban Horticulture, was recently awarded Honorary Membership in the International Society for Horticultural Science, the highest honor of the Society. He is the second American to receive this award.

LIBRARY ANNIVERSARY LECTURE

Dr. Ghilleen Prance, Director of the Royal Botanic Garden, Kew, will give a lecture in honor of the Tenth Anniversary of the Elisabeth C. Miller Library at CUH on October 16th. Associated with it will be a major event which members will enjoy attending.

Deadlines Coming Up For NHS Scholarship & Grant Applications

NHS invites applications for the annual Elisabeth Carey Miller Scholarship Award. This program supports the research and education of students with environmental horticultural goals. Applicants must be enrolled in or accepted to the University of Washington Center for Urban Horticulture or other University graduate programs directly associated with urban horticulture, including the College of Forest Resources, the Institute of Environmental Studies, the Departments of Landscape Architecture, Botany, and Biology. *The deadline for applications is April 15.*

NHS also invites applications for this year's grants. NHS grants support horticultural programs in the Northwest of environmental and educational value conducted by individuals, organizations, and institutions. *The deadline for grant applications is July 1.*

For application details, please call or write:

NHS

Isaacson Hall

University of Washington GF-15
Seattle, Washington 98195

(206) 527-1794.

Seed Exchange: Special Chinese Seeds Still Available

NHS has an exciting group of wild-collected seeds from China offered in our '95 Seed Exchange. The collecting expedition from the Alpine Garden Society, and joined by the Kunming Institute of Botany, included well-known Chris Brickell and Ron McBeath. The collection covers the Yangtze-Mekong-Salween divides in western China. Our allotment of seed includes *Arisaema*, *Delephinium*, *Primula*, *Fritillaria*, *Gentiana* - these and much more from the regions described in Mystery

Rivers of Tibet and The Land of the Blue Poppy (Frank Kingdon-Ward).

A summary of relevant field notes will be available to those interested at the Miller Library at CUH.

This is an exciting opportunity, and we hope you will try some seed-growing and also share some of the ensuing seed with all our members.

Please refer to your NHS Seed Exchange 1995 List for ordering information, or call or write the NHS Office.

Upcoming Events



APRIL

**April 6, 13, 20,
May 4, 11, 25, June 1**

7 - 9 p.m.
CUH COURSE
Botanical Illustration
Louise Smith, botanical illustrator
Focus on accurate pencil drawing and wash and dry brush water-color techniques. Introductory/intermediate level.
\$85, plus supplies
Preregistration: (206) 685-8033

April 8
9:30 - 1:30
RHODODENDRON SPECIES FOUNDATION WORKSHOP
Perennial Gardening
Carol Buchanan, author and former college instructor
Classroom instruction followed by outdoor planting experience.
\$8 members, \$10 non-members
RSF Botanical Garden, Federal Way
(206) 838-4646

April 18
7:30 - 9 p.m.
(Coffee at 7)
NHS LECTURE
Woodland Gardening
David Mason, British plantsman and garden designer trained at Wisley, the Royal Horticultural Society garden outside London.
\$7 NHS members, \$10 non-members
NHS Hall, CUH
Preregistration advised:
(206) 527-1794

April 18, 19, 20

Tues. 1 - 8 p.m., Weds. 10 a.m. - 8 p.m., Thurs. 10 a.m. - 1 p.m.
CHILDREN'S HOSPITAL PLANT SALE
University Village parking lot,
25th Avenue N.E. & N.E. 45th St.,
Seattle
(206) 526-2153

April 22

11 a.m. (carpools depart RSF 7:30 a.m., 10 a.m. Mukilteo Ferry)
RHODODENDRON SPECIES FOUNDATION TOUR
Meerkerk Rhododendron Garden; magnificent rhododendrons and companion plantings during their peak season. Bring a sack lunch.
\$12 members, \$15 non-members (includes ferry and garden fee)
Preregistration: (206) 838-4646

April 22 - 23

Saturday 9 a.m. - 4 p.m., Sunday 10 a.m. - 3 p.m.
KING COUNTY MASTER GARDENER FAIR AND PLANT SALE
CUH
(206) 296-3900

April 29

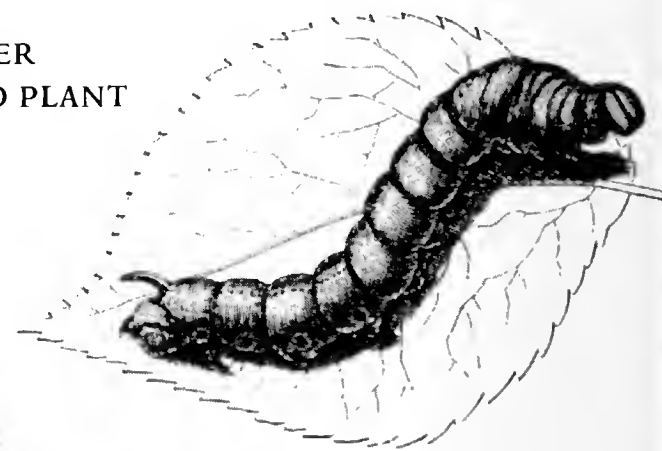
8 a.m. - 9 p.m.
NHS TOUR
Portland Gardens
On this one-day bus tour, catch the glory of spring in the famous Platt Garden and other beautiful gardens.
\$55 members; \$65 non members, includes box lunch
Preregistration: (206) 527-1794

April 29

10 a.m. - 4 p.m.
ARBORETUM FOUNDATION SPRING PLANT SALE
Graham Visitors Center, Washington Park Arboretum
(206) 325-4510

April 28 & 29

Friday 11 a.m. - 6 p.m., Saturday 10 a.m. - 4 p.m.
EDMONDS COMMUNITY COLLEGE PLANT SALE
Edmonds Community College Greenhouse, 20000 68th Avenue W., Lynnwood
(206) 640-1356





MAY

May 6

10:30 a.m. - 4 p.m.
**SEATTLE TILTH ORGANIC
 EDIBLE PLANT SALE**
 Good Shepherd Center, 4649
 Sunnyside Ave. N., Seattle
 (206) 633-0451

May 10

7:30 - 9 p.m.
NHS LECTURE
 Flora of New Zealand
 Gordon Collier, New Zealand
 plantsman and owner of the
 fabulous Titoki Gardens.
 \$7 NHS members, \$10 non-
 members
 NHS Hall, CUH
 Preregistration advised:
 (206) 527-1794

May 13

10 a.m. - 5 p.m.
**VOLUNTEER PARK
 CONSERVATORY PLANT
 SALE**
 Volunteer Park, in front of the
 conservatory
 (206) 322-4112

May 20

10 a.m.
NHS TOUR
 Medina Estate Gardens
 An impressive array of gardens at
 the peak of the season.
 \$25 members, \$30 nonmembers
 Preregistration: (206) 527-1794

May 23

7:30-9 p.m.
NHS ANNUAL MEETING
 NHS Hall, CUH
 (206) 527-1794

For a comprehensive listing of
 seasonal plant sales, call or visit
 the Miller Library, CUH.

NHS Annual Meeting

Tuesday, May 23, 7:30pm
NHS Hall, Center for Urban Horticulture
3501 N.E. 41st Street, Seattle

Our Annual Meeting features Doug Bayley presenting "Recognition and Preservation of Historic Gardens". Doug is a landscape designer, Curator of the E.B. Dunn Historic Garden, a Vice-President of NHS, and former manager of Wells Medina Nursery. The Dunn Garden was designed by the Olmsted Brothers in 1915 as a summer "country place" on a bluff overlooking Puget Sound for the Arthur Dunn family. The current 2.7 acre garden comprises the eastern portion of the original estate. The Olmsted ideals of naturalistic groupings of trees set amidst broad lawns and flowering borders of shrubs and ground covers continue as vibrant and compelling today as they were at the turn of the century. Magnolias, rhododendrons, dogwoods, trilliums, and erythroniums abound beneath a canopy of douglas fir, chestnuts, and maples. Notable features of the garden include a rock-edged pond and water garden, a woodland glen of rhododendrons and herbaceous ground covers, a perennial flower border, and trails meandering through a forest full of rare seasonal effects.

Last year's scholarship and grant recipients will give progress reports. In 1994 the Elisabeth Carey Miller scholarship was awarded to Cynthia Gilbert who is working on her doctorate at CUH. Last year's grants were awarded to the Elisabeth C. Miller Library at CUH, Lakewold Garden in Tacoma, and the Urban Integrated Pest Management Resource Center and Clearinghouse located at CUH.

Announcement of 1995 scholarship and grant awards will be made as well as election of the NHS Board of Directors and Officers for the coming year.

NHS warmly invites all members to attend the Annual Meeting. It is complimentary for members and time for refreshments and socializing is planned.

Seasonings

by Ted Marston

Slugs and Moles - The Ones We Love To Hate

In my book, two of the Great Three of garden pests - the other being Himalayan blackberries - are slugs and moles. While blackberries are clearly visible, slugs and moles are more mobile and adept at hiding their depredations. At least blackberries are easily seen.

Molesting the Mole

Countless remedies have surfaced for controlling moles - ranging from chewing gum (said to gum up their innards), marigolds, gas pellets released underground, and electronic gadgets purportedly driving them away through a force field irritable to them.

None of these magic items work. The only sure thing I've found is the scissor trap which you place underground (carefully and wearing gloves to prevent your scent from adhering) to snare the mole. These traps are available wherever garden supplies are sold and come with good instructions for placing them.

The other effective technique I've used is to stop watering the areas where moles have their runs. My garden and lawn are laced with decades of mole runs, which they use to reach their diet of soil insects and grubs. Dry soil is uninteresting to soil insects. Using this technique, I can prevent them from throwing up any of those telltale mounds that look like artillery hits. However, once the fall rains come, the moles reappear.

Now, however, comes another possible mole deterrent. A Michigan State University wildlife specialist tested a remedy with

castor oil as the active ingredient. In twenty-six out of twenty-seven tests, the repellent stopped lawn damage by eastern moles. It's not known whether the odor or the bad taste it gives to grubs and other soil invertebrates that moles feed on makes it work. (It may not be effective on star-nosed moles whose tunnels are deeper with occasional upthrusts of volcano-shaped mounds of soil.)

Relentless Vigilance Against Slugs

A commendable update of slug control appears in the Northwestern Chapter of the North American Rock Garden Society Newsletter, February 1995. (The Miller Library at CUH has a copy.) It covers the subject in far more detail than available here, and the information is timely and varied. It includes lists of plants which Master Gardeners have found not particularly tasty to slugs. There's a discussion of *Field Guide to the Slug* (Sasquatch Books, Seattle, \$5.95). There are several formulas based on yeast baits. Several members provide anecdotal remedies. One member describes how he built an electric fence to deter slugs from a cold frame.

Just remember that the first line of defense against slugs is destroying their hiding places. A good garden cleanup can do wonders.

Ted Marston is a Northwest horticultural writer who has contributed to *Sunset Magazine*, *American Horticulturist*, and *Family Circle*.

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