Managing plant diseases

We have had an outstanding year for students of plant diseases. I’ve lost track of all the issues we’ve had to consider – spot anthracnose of dogwood; needle blight of leylands; fireblight in apple and pear; early blight, leaf spot, and southern wilt of tomatoes; powdery mildew in squash; downy mildew of basil; cedar apple rust; brown patch and pythium on lawn grasses; … the list goes on. For the first time ever I’ve seen bacterial leaf scorch in oak.

Much of this has been normal, business as usual. There’s just been a lot of the usual packed into a brief period of time. Part of the problem is that we have had both frequent rain and high humidity for much of the spring and summer. Those environmental conditions don’t cause disease. But they are significant in providing conditions favorable for growth of diseases.

Every time I deal with one of these issues, I am ready for the inevitable question – how can I eradicate it? The answer is never satisfying, because there is very seldom a cure. In a few cases, diseased parts of plants may be removed leaving the plant to recover. In some cases the pathogen is obvious all over the plant; it’s too extensive to remove but no big deal, perhaps comparable to a hangnail.

In other cases, the pathogen is found throughout the plant or is inside tissues where it is blocking movement of water throughout the plant – fatal.

We do not have remedial treatments that can salvage severely infested plants under these conditions. It doesn’t matter whether you are organic or not, whether the plant is integral to your landscape design, whether you are counting on the plant for food. No matter how important the plant is to you, in most cases, there is still no cure for plant diseases.

Sometimes people think I’m holding something back. “I don’t care if it’s not legal, there must be some product.” “What do commercial people use?” A few years ago I distributed to commercial landscapers a list of fungicide products broken down by categories of how they act. The last category on the list was curative products; there were no products listed.

I’m going on about this because people seem so incredulous that I can’t offer them a cure. But if you stop and think about it, we can’t cure flu. We can’t cure AIDS. We can’t even cure the “common cold.” In some cases people (as well as plants) outlast and survive the disease problem. In some cases, not so. So, if plant diseases are so incurable, what can we do?

The disease triangle/pyramid
We can practice prevention, and that requires knowing a little bit about how plant
Managing plant diseases

(Continued from page 1)

diseases work. Plant pathologists typically begin with the disease triangle or disease pyramid to describe the essential requirements for plant disease. In the triangle we find 3 components: a pathogen, a susceptible host, and an environment suitable for the pathogen to thrive. In the pyramid analogy we add a 4th component, time sufficient for the disease to develop.

The pathogen is an agent capable of causing disease. With plants the most common pathogens are fungi, bacteria, or viruses. There are examples of each of these that may affect humans. But the pathogens that affect humans seldom create problems for plants and vice versa. I don’t think I’ve ever heard anyone suggest that we can eradicate a flu virus or a bacterium such as Escherichia coli. Likewise it is not reasonable to assume we can eradicate plant pathogens. We accept that they may always be present and learn to deal with them – prevention. We’ll get to some techniques.

A susceptible host is a plant that when exposed to the pathogen is likely to be infected by it. Depending on the relationship between the pathogen and the host, the infection may be insignificant, serious, or fatal. People get dandruff, but it’s not fatal. It’s unattractive, like some leaf spot diseases. But it’s seldom more serious than that. People get colds that may be serious. But they are seldom fatal. And people may be affected by heart disease or cancer that could be fatal either quickly or eventually.

With plants, sometimes we can avoid a disease by using a different plant. Pathogens are often host specific. Pets may get distemper but not people. Likewise the disease that affects your tomato is not likely to affect your squash because the two plants are entirely different species. On the other hand, you choose a Leyland cypress to fit a specific landscape need that a wax myrtle may not fit. And it’s fine that corn doesn’t get early blight but it also doesn’t provide the essentials of a tomato sandwich. In some cases, there may be a variety of a plant species that is resistant to certain problems. So occasionally variety selection is a way to reduce disease pressure. We’ll come back to that.

An environment suitable for the pathogen to thrive forms the third leg of the disease triangle. The popular pansy provides a good example of how this works. Pansy is a host susceptible to a common soil borne pathogen that causes its roots to rot. But the pathogen (Phytophthora sp.) doesn’t thrive in cool weather. So even if we know or suspect that the pathogen is present in a plant bed, it’s usually safe to plant pansies there by mid to late October after the soil has cooled. The weather during the pansy growing season will prove better for growth of the pansy than for growth of the pathogen. Consequently there is no disease present. There is a pathogen present, and there is a susceptible host. But without suitable environmental conditions for the pathogen, there is no disease.

Because many plant pathogens thrive in conditions present during our warm growing seasons, it’s not surprising to find diseases developing during those times. Many pathogens thrive in conditions that are warm and damp. And although we can’t do much to control the weather, we will look at things we can do to influence the very local environment where a plant is growing.

Time sufficient for the disease to develop provides a 4th dimension that turns our triangle into a pyramid. We find that sometimes we have the first three requirements and the pathogen may start to grow. But it will require time for the pathogen to penetrate into plant tissue and establish a parasitic relationship. If the weather (environment) changes before that relationship is established, then disease may not develop.

The time scenario may affect many pathogens during spring. Rhizoctonia, a fungus responsible for many plant diseases (brown patch in grasses and damping off, root rot, stem blight in herbaceous plants) thrives when temperatures are consistently above 60° F. So it tends to sit dormant throughout the winter. By sometime in April we may have nights when the temperature does not fall below 60°. But usually it will cool off again, and disease will not develop. But in our area we can generally expect that after about the first of June, the temperature may not fall below 60° again for some time.

For plant disease to develop, we must have a pathogen, a susceptible host plant, environmental conditions favorable to the pathogen, and sufficient time for the pathogen to establish a parasitic relationship with the plant. If we can eliminate any one of those, then we remove the likelihood of plant disease. How can we do that?

Prevention – the pathogen
We suggested above that we cannot eradicate the pathogen. Pathogens may spread as millions of microscopic spores in air or water. I sometimes compare them to pollen blowing in the spring breeze – small and ubiquitous. There are differences in that plant pathogens in the wind are probably much too small to see and more numerous than grains of pollen. While not all of them are wind borne, perhaps you get an idea of the scope of trying to eradicate them. Numbers, however, are important. If there are a million and we can reduce the number to a thousand or even ten thousand, we improve our odds.

Many pathogens have multiple growth forms. After the wind-borne spores are spread, they begin to grow into more complex structures. Some are spread by wind. Some are soil inhabitants. They may move with water. The pathogen may move across the soil with runoff. It may move with raindrops splashing on the soil. As the drop splashes, it may pick up a bit of pathogen and splash it onto lower leaves of plants. Water running down a plant’s leaves and stems may move a pathogen to other plant parts. And the pathogen may be picked up by birds, insects, or humans and moved from one plant to another. Remember that many of these pathogens thrive in moisture and wet plants give them opportunities.

(Continued on page 3)
In the previous paragraphs are suggested some strategies for managing these pathogens to at least reduce their capacity to infect. An important aspect of disease management with some pathogens is how they spend time when environmental conditions are not suitable for their growth. Often that is winter and they will spend it in a dormant state protected by the remains of a dead plant or buried in the soil. Especially for vegetable gardens, removing dead plant material is a good strategy. In some cases, tilling the soil in the fall will expose pathogens to drying. We’re trying to keep the numbers down.

We can reduce pathogens splashing onto plants by mulching. We can reduce spreading of a pathogen on a plant by pruning out diseased parts. When pruning, we may need to sterilize pruners between cuts, especially for bacterial pathogens. Avoid working with plants when they are wet; it increases the likelihood of spreading the pathogen on hands and tools.

**Prevention – Susceptible Host**

Another strategy for disease management is denying the pathogen a susceptible host. In vegetable gardens this gets directly to crop rotation, among our oldest and most dependable disease management strategies. We don’t always know how long a pathogen can survive without a host. But rotations of several years tend to be most effective. By rotating we try to use a spot for a crop then avoid growing any member of the same plant family in that spot for 3 to 4 years or longer. It’s easier if you have plenty of space. But if you only have a 4 X 4 foot bed, dividing it into quadrants for rotation is better than doing nothing. It’s not the best, but it’s better. In the presence of some pathogens you cannot expect acceptable results with a susceptible host, but another non-host plant can do just fine.

With permanent plantings such as fruit trees or landscape plants, we need to select plants carefully before planting. For almost any plant you choose, there is information available about what pest problems you can expect and whether it’s important to select a variety with some resistance. Perhaps you’ve heard of apple trees with multiple varieties growing on the same tree. It’s not really magic if you know how to graft. But I have pictures of two varieties of apple growing on the same plant with leaves inches apart. One variety is covered with cedar apple rust while the other shows no symptoms. Selecting a resistant variety can be valuable.

With plant selection it may be important to carefully reconsider the source of recommendations before making your selection. No matter how large, colorful, and juicy the fruit may appear in the catalog pictures, it doesn’t make much difference to you how the plant grows in California. What makes a lot more difference is whether the plant can survive and thrive and produce edible fruit in the humidity of a North Carolina summer. Remember that our climate is very favorable for diseases that thrive in a warm, moist environment.

One further thought about all the Leyland cypresses and the multiple insect and disease problems they are having. Dr. J. C. Raulston had a lot to do with promoting the use of that plant in N. C. landscapes. And it was a very successful promotion. But 20 years ago Dr. Raulston was already discouraging people from planting it anymore because of his prediction that we would have problems. His suggestion was that when everyone is planting something, “run the other way.” As with flu, the more available hosts there are, the more readily a pathogen can spread and infect.

**Prevention – Suitable Environment**

Perhaps the least used and easiest strategy for limiting plant disease is managing the plant environment. Our knee-jerk reaction is that we can’t control the environment. But we can cover plants with fabric in the fall or spring to reduce freeze injury. We don’t control the total environment, but we impact the specific plant environment. We have many opportunities to do this with plants.

We start with matching the plant to the space. Rather than buying a plant and planting it, we start by determining if we have a good location for the plant. Fruit trees for optimal production need to be in full sun all day long. It also happens that full sun speeds up drying foliage so that there is less leaf wetness. Planting fruit trees in open exposed areas also allows the air to move around them and speed up drying. Tomatoes that are planted in full sun and three feet apart have better sun exposure all around, more air moving about, less leaf to leaf contact between plants, and better odds of handling disease pathogens successfully. Plant location and spacing is a critical part of disease management.

If our best plant location happens to be a backyard surrounded by trees and shrubs, it’s likely that air movement is not optimal. In these cases it may be desirable to manipulate the growing environment by removing selected plants or by pruning to raise the canopy of trees and open them up for better air movement. There may be other considerations that restrict your options. But if your plant environment is less than optimal, then your plant growth may also be less than optimal.

Some pathogens thrive in the soil environment, and good soil preparation can make that environment more favorable for plants and less hospitable to disease pathogens. Thoroughly digging and loosening soil improves drainage and aeration – more favorable for plants and less hospitable to disease pathogens. Adding organic matter such as compost may contribute to disease suppression. It’s important to remember that plants don’t live in holes in the ground. We may dig a hole to introduce the plant to the soil environment. The plant will be more likely to thrive and less likely to experience root rot if that encompassing soil environment is well prepared.

Pruning offers a means of managing the internal plant environment. Plants may grow two shoots where one would be sufficient for human purposes. Plants don’t automatically grow shoots with optimal spacing. Nature seems more inclined to quantity than to quality. So for our human purposes we start pruning trees in their early growth to select and keep well spaced branches and to remove those that compete. Such pruning allows sunlight and air movement throughout the plant and speeds up drying the foliage to reduce the conditions suitable for disease growth.

If you grow fruit trees, summer sun allows you a good chance to evaluate your winter pruning. If you look at the ground beneath the fruit tree canopy in summer, you should be able to observe

(Continued on page 4)
Some Strategies for Avoiding Plant Disease

Inspect and purchase only healthy plants

Remove potential sources of infection well in advance of planting
  Vegetable gardens – remove dead plants and plant debris at the end of the growing season
  Remove stumps and roots of trees prior to planting lawns or landscape plants

Prevent spread of disease by pruning out diseased plant parts

Rotate crops
  Avoid planting any plant behind another plant from the same family

Learn what problems are predictable for specific plants

Select plants resistant to known pest problems

Select plants and plant varieties with a proven track record under local conditions

Avoid use of plants that have been planted extensively throughout your area

Optimize plant health by locating plants in optimal growing conditions
  Fruits and vegetables in full sun

Improve air movement and sun exposure to reduce wet foliage
  Give plants adequate space
  Remove screen plants and/or raise tree canopies
  Prune young plants to develop well spaced stems

Avoid overhead irrigation

Avoid working with wet plants

Thoroughly prepare an area for root growth outside of planting holes

Insure good soil drainage

Use mulch to reduce soil borne pathogens splashing onto foliage

Reference Guide to Vegetable Plant Families for Rotation

When possible do not follow any vegetable plant with a plant from the same family. Develop rotations that allow 3-4 seasons between families. Because plant pathogens are not always obvious, they may build to levels insufficient to cause symptoms in a single season. Planting the same or similar host in the same location the next year provides an opportunity for the pathogen to continue increasing to the point of causing serious problems. Plant rotation is among the oldest and most effective strategies for reducing plant disease problems.

Composite family: artichokes, chicory, endive, escarole, lettuce, salsify
Goosefoot family: beets, spinach, Swiss chard
Gourd family: cantaloupes, cucumbers, gourds, pumpkins, squash, watermelons
Grass family: corn
Legume family: beans, southern peas, edible pod peas, peanuts, soybeans
Lily family: asparagus, chives, garlic, leeks, onions, shallots
Mallow family: okra (also includes cotton)
Mustard family: broccoli, Brussels sprouts, cabbage, Chinese cabbage, cauliflower, collards, cress, kale, mustard, bok choi, kohlrabi, radishes, turnips, rutabagas
Nightshade family: eggplant, potatoes, peppers, tomatoes (also includes petunia and tobacco)
Parsley family: carrots, celery, parsley, parsnips

I have a knee-jerk reaction to anything claiming to be “the truth.” I have less difficulty with “a truth.” “A truth” suggests insight; “the truth” suggests to me a claim akin to divine enlightenment. Call me a skeptic.

But when I first encountered this book, I had previously met the author and was aware that he held a faculty appointment at the University of Minnesota. Knowing that he had a good scientific reputation (including a previous book called The Truth about Garden Remedies), I tried to set aside my prejudices and opened the book. It was a good decision.

My earliest readings in organic gardening date back to a previous era when Americans were planting backyard (or even front yard) gardens in record numbers – the early ’70s. I still have the 1971 Rodale volume that got me well started on my first organic garden in 1973. For years we plodded along trying methods that worked well in one part of the country but might not work the same way in other areas. It only took me one season of handpicking squash bugs to decide that squash may not be the best use of my gardening time.

The Rodales deserve a lot of credit for moving the organic movement in the right directions. They have probably been long on marketing and short on science. They found what worked for them, in their locations, under their conditions. If it worked less well for the rest of us, we had to be innovative.

Research in organic gardening has come a long way with most agricultural colleges and universities participating today in advancing our store of knowledge. The book before us today does a good job of summarizing some organic strategies. While it is philosophically well grounded in the organic approach, it is somewhat short on soil management compared to the effort spent on pest management. Perhaps the author can be forgiven for spending most of his time on those questions that home gardeners are quick to bring to any gardening discussion – how do I manage pests. And if you’re looking for organic philosophy, it’s sure to emerge in discussions of sevin or rotenone.

The author doesn’t shy away from suggestions such as hand weeding or using floating row covers as insect barriers. He also delves into the mysterious plethora of products that are available. Every topic concludes with a summary of the benefits, drawbacks, and the author’s bottom-line decision guide.

Buy this book; read it; then keep up with where it is on the shelves. (You can also find it at your library.) It is a good cover to cover read providing you the opportunity to evaluate the author’s perspective. When someone suggests you use sevin or rotenone, you will have a reliable source that will help you decide if either of those is acceptable for your needs.

---

Plant-a-Row for the Hungry

Hunger. You may not see it. But it is here. Right alongside our obesity epidemic, there are people in Chatham County dealing with hunger. Children are among those hardest hit. North Carolina ranks second worst in the nation for food insecurity among children under five years old. In Chatham County more than 30% of children live in poverty. 45% are eligible for school lunches free or at reduced cost. How well do those children eat when school is out? In the past year food pantries, soup kitchens, and hunger support organizations nationwide have reported overwhelming increases in need for food assistance.

Gardeners can help. And you have. This summer we appealed to gardeners for help via our home gardener E Letter. (Subscribe by sending an email to al_cooke@ncsu.edu.) In June, 104 pounds of fresh produce showed up at the CORA food pantry in the next eleven days after our first appeal. The first Monday in July, a farmers market delivered 85 pounds of unsold produce. Employees and volunteers report that recipients are especially glad to get fresh food. As gardeners you know why – it’s real food, and it’s real good. And gardeners have been generous.

We’re asking for more because the need is great. We hope you are planning now for your winter planting. Will you Plant-A-Row for the Hungry?

The Plant-A-Row campaign was initiated by the Garden Writers Association in 1995. Since that time they have encouraged America’s gardeners “to plant an extra row of produce each year and donate their surplus to local food banks, soup kitchens and service organizations to help feed America’s hungry.” Since that time, over 14 million pounds of food has been donated by American gardeners. It’s people helping people.

Can you help? If you grow food, how much more effort does it take to grow an extra row? You can start planning now for your most successful garden ever. Most of us tend to have more than we can use of at least something. You can find agencies that will help distribute that food at http://www.ces.ncsu.edu/chatham/ag/homehort/Harvest4Hunger.html. They have the system set up to get that food to people, not too far away, who can use it.

For help in planning your garden, Extension has educational resources. Home Vegetable Gardening is available online, http://www.ces.ncsu.edu/depts/hort/hil/pdf/ag-06.pdf or by calling your local Extension office to request a copy. It includes basics for the beginner and an excellent chart of suggested varieties, planting times, and plant spacing (available separately as the Quick Reference Guide, http://www.ces.ncsu.edu/depts/hort/hil/pdf/hil8103.pdf). There is also a wealth of crop specific information available in individual Horticultural Information Leaflets listed at http://www.ces.ncsu.edu/chatham/ag/homehort/homeveg.html. All publications are also available on request in printed form by contacting your local Extension office.

Meanwhile if you can help, plan to Plant-A-Row for the Hungry.
Fall Classes for Home Gardeners

Chatham County Center of Cooperative Extension announces a number of educational opportunities for home gardeners in the fall. **Please call Chatham County Center at 919.542.8202** to pre-register for any of these opportunities.

**October 6, 8:45 a.m. – 4:30 p.m. – annual Farm and Industry Tour.** Pre-registration required by purchasing tickets, $15. Fee includes lunch and transportation from one of several pick-up locations. Tentative schedule includes Triangle Arabian Center, Cure Nursery, Piedmont BioFarm, and Carolina Brewery.

**October 13, 6:00 p.m. – Growing Your Own Food,** an introduction to food gardening including fruits and vegetables. Agriculture Building in Pittsboro. Pre-registration required. No fee. Class taught by Al Cooke, Extension Agent

**October 27, 6:00 p.m. – Landscaping with Native Plants.** Agriculture Building in Pittsboro. Pre-registration required. No fee. Class taught by Al Cooke, Extension Agent

**November 4, 3:30 p.m. – Tree Planting Demonstration.** Location TBA. No fee. Conducted by Al Cooke, Extension Agent and Bryan Lowrance, Certified Arborist, Bartlett Tree Experts

**November 10, 6:00 p.m. – Tree and Shrub Maintenance,** Agriculture Building in Pittsboro. Pre-registration required. No fee. Class taught by Al Cooke, Extension Agent

---

**Trees for Fall Color**

- Acer barbatum
- Acer griseum
- Acer leucoderm
- Acer negundo
- Acer palmatum
- Acer rubrum
- Amelanchier arborea
- Amelanchier laevis
- Amelanchier canadensis
- Aralia spinosa
- Asimina triloba
- Carya glabra
- Carya ovata
- Carpinus caroliniana
- Carpinus betulus
- Cercidiphyllum japonicum
- Cercis canadensis
- Cladrastis kentukea
- Cornus florida
- Cornus kousa
- Cornus sanguinea
- Cotinus coggyria
- Crataegus phaenopyrum
- Diospyros virginiana
- Fagus grandifolia
- Fraxinus americana
- Fraxinus pennsylvanica
- Ginkgo biloba
- Gleditsia triacanthos
- Halesia carolina
- Hamamelis mollis
- Hamamelis vernalis
- Ilex dedicua
- Koelreuteria bipinnata
- Koelreuteria paniculata
- Lagerstroemia fauriei
- Lagerstroemia indica
- Linderia benzoin
- Liquidambar styraciflua
- Liriodendron tulipifera
- Nyssa sylvatica
- Oxydendrum arboreum
- Photinia floribunda
- Prunus subhirtella ‘pendula’
- Prunus x ‘Okame’
- Prunus serotina
- Prunus x yedoensis
- Quercus acutissima
- Quercus coccinea
- Quercus muehlenbergii
- Quercus palustris
- Quercus phellos
- Quercus rubra
- Quercus shumardii
- Rhus glabra
- Rhus typhina
- Sassafras albidum
- Taxodium distichum
- Ulmus americana
- Ulmus parvifolia
- Vaccinium arboreum
- Viburnum prunifolium
- Ilex dedicua
- Koelreuteria bipinnata
- Koelreuteria paniculata
- Lagerstroemia fauriei
- Lagerstroemia indica
- Linderia benzoin
- Liquidambar styraciflua
- Liriodendron tulipifera
- Nyssa sylvatica
- Oxydendrum arboreum
- Photinia floribunda
- Prunus subhirtella ‘pendula’
- Prunus x ‘Okame’
- Prunus serotina
- Prunus x yedoensis
- Quercus acutissima
- Quercus coccinea
- Quercus muehlenbergii
- Quercus palustris
- Quercus phellos
- Quercus rubra
- Quercus shumardii
- Rhus glabra
- Rhus typhina
- Sassafras albidum
- Taxodium distichum
- Ulmus americana
- Ulmus parvifolia
- Vaccinium arboreum
- Viburnum prunifolium

- southern sugar maple
- paperbark maple
- chalk maple
- boxelder maple
- Japanese maple
- red maple
- common serviceberry
- Allegheny serviceberry
- Canadian serviceberry
- devil’s walkingstick
- pawpaw
- pignut hickory
- shagbark hickory
- American hornbeam
- European hornbeam
- katsura tree
- Eastern redbud
- yellowwood
- flowering dogwood
- Kousa dogwood
- bloodtwig dogwood
- smoketree
- Washington hawthorn
- persimmon
- American beech
- white ash
- green ash
- ginkgo
- honeylocust
- Carolina silverbell
- Chinese witchhazel
- Ozark witchhazel
- possumhaw
- goldenraintree
- goldenraintree
- crape myrtle
- crape myrtle
- spicebush
- sweetgum
- tulip poplar
- blackgum
- sourwood
- red chokeberry
- Chinese pistache
- weeping Higan cherry
- Okame cherry
- black cherry
- Yoshino cherry
- sawtooth oak
- scarlet oak
- chinkapin oak
- pin oak
- willow oak
- red oak
- Shumard oak
- smooth sumac
- staghorn sumac
- sassafras
- bacalypress
- American elm
- Chinese elm
- sparkleberry
- black haw
The Borrowed View

A concept that is sometimes useful in landscape design is commonly called the borrowed view. It makes a garden landscape or property look larger than it really is by incorporating extensive views from adjacent properties. It allows us a view of the distant mountains without requiring that we buy a mountain. It’s the concept used by the infinity pool that visually blends the water of the pool into the ocean in the distance.

While the infinity pool is the next to the latest thing in marketing beach properties, the concept is at least 1,000 years old, reported in the oldest known Japanese landscape manual. Stripped of its subtleties, shakkei attempted to blend landscape design into the surroundings in such a manner that it seemed a part. Lines and colors are extended and repeated giving the illusion of continuity.

The concept was used extensively by 17th and 18th century designers in England and Europe to create extensive, uninterrupted views. An important component of many of these designs was the ha-ha, a sunken fence designed to separate without being seen. The device allowed a view of the surrounding lands while keeping livestock out without the unpleasant view of a fence.

![Cross Section of a Ha-Ha with the primary view from the right](http://www.ces.ncsu.edu/chatham/ag/HaHa.html)

See pictures of an English ha-ha from both sides at [http://www.ces.ncsu.edu/chatham/ag/HaHa.html](http://www.ces.ncsu.edu/chatham/ag/HaHa.html)

Where appropriate, landscapers still use this technique by applying a bit of framing then blurring the distinction between near and far. A hedge may be a part of the framing but is usually more effective if it is an informal rather than a formal planting so that it does not become the focal point but is simply a frame through which we look. At its best the frame will incorporate elements of the distant view to place it in context. The value of the frame is well recognized by photographers who find that the distant view is more aesthetically pleasing with some framework in the foreground. The photographer may even include a door or gate through which the primary subject of the photo is seen.

The borrowed view is often enhanced by including, in the foreground or the frame, elements also borrowed from the distance. These elements may be lines or colors. The shape of distant hills may be repeated in the form and shaping of selected shrubs. Colors of leaves in fall or flowers in spring may be repeated in the garden that is borrowing the view.

Another aspect of the borrowed view is appreciated in the broader concept of the landscape in which we live – the surrounding countryside. Most recipients of this newsletter live in a county that is nearly two-thirds forested. Much of that forested land is interspersed with rolling hills and fields where cattle graze and hay is baled. There are seemingly endless bucolic views that enhance our experience of day-to-day life.

A significant value to the borrowed view is that we do not have to go to the expense of owning it. A significant disadvantage is that we have not gone to the expense of owning it. Imagine the frustration of the residents of a mountain villa when another villa goes up in the middle of their view. Consider the beach resident who loses the view of a salt marsh with its abundant wildlife to have it replaced by a high-rise apartment.

We sometimes borrow a view so extensively that we come to feel that it is ours. In a sense – mystical? spiritual? – it is ours. But in the eyes of the legal property owners it is not. The tree that is an important contributor to our shade may be lost because the legal property owner has other plans. The forest that we drive by every day is one day clear-cut. Hard as that is, we should not be surprised. In our area many property owners consider that forest a thirty-year investment and have plans to sell the timber to finance retirement or a child’s college education. In most cases the property will grow into forest timber again. The absentee owner who has made monthly mortgage payments and annual tax payments may eventually decide to build a retirement home in the middle of our view.

As humans we find these changes difficult to accept. We sometimes take property owners to task for removing “our” tree or for clear-cutting “our” forest. In reality it was ours only in our minds. We only borrowed the view. For years we have been the beneficiary of something that has cost us very little. Perhaps instead of complaining, we should express appreciation for what we have had.

Fond Farewell

No one can remember the last time an issue of Green Thumb Prints was not laid out, printed, and processed for mailing by Susan Graham. Chatham County Center congratulates Susan on her new position as District Administrative Associate in the office of the district directors of Cooperative Extension on campus in Raleigh. We hope that this newsletter is close to the standards of excellence that Susan set.