The New York
FOREST OWNER

A publication of the New York Forest Owners Association

September/October 1996

COVER:

DR. NORMAN RICHARDS with a new toy and serious business on the family's tree farm. See page 4 for further details. Photo by **Jeremy Richards.**

FOREST OWNER

A publication of the New York Forest Owners Association
Editorial Committee: Betty Densmore, Chair, Alan Knight, Mary McCarty, Jim Minor, Bob Sand, and Eileen VanWie.

Materials submitted for publication should be addressed to: ***R.J. Fox****, Editor, R.D. 3, Box 88, Moravia, New York 13118. Articles, artwork and photos are invited and are normally returned after use.* ***The deadline for submission for Nov/Dec is Oct 1..***

Please address all membership fees and change of address requests to P.O. Box 180, Fairport, N.Y. 14450. Cost of individual membership subscription is $20.

A coupla-nice-uns from Dale Schaefer's woodlot, Western Fingerlake's Chapter.

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PRESIDENT'S MESSAGE

Spectators at One of the Six College Exhibitions.

By Bill Minerd

As I write this, the first of August has arrived marking the short slide into Autumn. At this mid point of summer I would like to glance back at one of the significant chapter events of this year and share with you a letter from a special friend of NYFOA.

Last June 8, 1996 marked the Third Annual Family Forest Fair sponsored by the Central New York Chapter. Not much has been reported in these pages regarding the continued success of this event and the dedication of the members who organize and contribute their time to offer an outstanding educational program for the public.

The theme for this year's program was **"The Forest: Natures Classroom"** and revolved around educational programs conducted by faculty from 6 regional colleges. It was an opportunity for the colleges to highlight their institutions and meet potential students and parents. The colleges participating were SUNY Cobleskill, SUNY ESF, Wanakena Ranger School, SUNY Delhi, Cornell University and Paul Smith's College. In addition to the colleges, 32 commercial companies provided advertising support and were acknowledged in the 26 page program that was distributed to over 500 participants who attended this year's event.

Vern & Marge Hudson, and Mary Richardson (l) Discussing the 1996 NYFOA CNY Chapter Family Forest Fair

Despite the threatening weather, a steady stream of people arrived to enjoy the interpretive wagon rides, exhibits, lectures and good food. I would like to think that most of all they came to enjoy the forest. The public's support helped raise $500 for a general scholarship that was awarded by the Central New York Chapter to the Wanakena Ranger School. This event was a great success in terms of meeting the educational objectives and providing additional funds for the chapter.

A special thanks to Vern and Marj Hudson who again hosted this event on their farm and to Tom Graber, Chapter Chair, Mary and Loren Richardson, Charlie and Marion Mowatt and a host of other members and non members who made this a very special day.

I recently received the following letter that I would like to share with all NYFOA members:

Dear Bill:

Although we worked on this together, today I received "official" notice of NYFOA's generous establishment of The New York Forest Owners Association Fund, which causes me to want to make an "official" reply. Such generosity has always been important to the life of the ESF and the Faculty of Forestry, but in today's world of shrinking budgets and higher costs, it is critical. While I can thank you and NYFOA today, it is the students and the forests of New York for years to come who will benefit the most. I hope that the students will always remember to say "Thanks" and to honor the many good folks of NYFOA who make this fund possible. As for the forests, they will go on with or without us, but I know that they will be better in many ways because of NYFOA's generosity, and most of all because of landowner stewardship.

Special thanks to you and to Charlie Mowatt for taking the initiative and for your confidence in ESF and forestry.

Very best regards,

James Coufal
Chair, Faculty of Forestry
Professor of Forestry
& Environmental Studies

And I would like to add a special thanks to the College of Environmental Science and Forestry for the over thirty years of their support of NYFOA. ▲

ATTENTION SNOWBIRDS!

Do you head for warmer weather when the snow begins to fly, but don't wish to miss an issue of the NY FOREST OWNER? Please contact the NYFOA Office with your winter address and time frame. Write to Debbie Gill at NYFOA, Box 180, Fairport, NY 14450 or call 1-800-836-3566. If this is a permanent arrangement, let me know that as well and I will automatically make the change each year!

PRUNING TREES FOR PLEASURE AND PROFIT

By Norman A. Richards

Dr. Hardy Shirley, former Dean of our College of Forestry and a founder of NYFOA, in 1967 co-authored a book "Forest Ownership for Pleasure and Profit". It was based on the point that for many forest owners an important distinction from other possibly more lucrative ways to make a profit is the intrinsic pleasure they can gain from forest ownership and management. Different from the unlanded person's enjoyment of woodlands, the owner's pleasure often depends heavily on the knowledge and skills with which they manage their property.

Pruning trees as a forest management activity is a good example of this. While informed and skillful pruning often can bring good financial rewards from higher value timber over the longer run, much incentive for forest owners to prune trees comes from the more immediate satisfaction of seeing trees which look better and of anticipating that the pruning will improve the forest resource for the future. Along with forest regeneration and stand thinning, tree pruning is a natural process of forest development over time as well as a process we can manage. Our management decisions for specific trees and stands can consider three alternatives: let nature take its course; accelerate and guide natural processes more to our liking; or counter natural situations to change elements we don't like. All three must start with some understanding of the natural processes.

Natural Pruning of Trees

Ample healthy branches are key to growth of a tree. A branch receiving adequate light not only supports its own continued growth in length and diameter; it also contributes photosynthetic support to the rest of the tree. But as a tree adds new branches with increasing height growth, lower branches are shaded and their productivity declines. Especially after a young stand of trees develops a fairly closed crown canopy, shaded lower branches slow their growth and begin to die. Continuing diameter growth of the tree stem forms an enlarged "collar" around the base of declining and dead branches; a good indicator that a branch no longer benefits the tree. For the natural pruning process to be completed, dead branches are weakened by decay and must break off close enough to the stem for collar growth to close over the branch stub. From the timber standpoint, boards cut through live branches have tight knots due to interconnected branch and stem wood. Dead branch stubs embedded in stem growth form loose knots that degrade boards. Growth closure over the stubs eventually produces knot-free wood valued from older forests.

Many decay fungi that enter dead branch stubs are capable of spreading down a branch's annual rings to the center of the stem where they develop "heart rot" wood deterioration and decay. A critical life-saving feature in tree stems is the "compartmentalizing of decay" whereby biochemical processes generally prevent the stem decay from spreading outward into rings formed later. Also, internal decay is slowed when stem growth has closed over the branch stub or other entry-point of the decay fungi. Therefore, branches that die when small favor rapid completion of the natural pruning process, and any decay that got in is likely to remain minor. Larger dead branches usually delay the natural pruning and may allow resulting stem decay to develop enough to degrade wood values as well as weaken the standing tree. Much stem breakage in wind or ice storms is related to stem heart-rots for which large branch stubs and stem wounds are the major entry points.

The author with a new toy.
Photo by Jeremy Richards.

Three factors commonly interact to set the rate and extent of natural pruning in forest trees: the density of trees in young stands, the species, and the rate of stand height growth. In dense young stands, most lower branches die when small so natural pruning proceeds effectively. Natural pruning is poorer on more open-grown trees where low branches can live longer and grow larger. One can deduce the history of an old woods from this. Trees with long clear stems probably developed in fairly dense young stands such as can occur in forest clearings or productive old fields close to a good tree seedsource. Trees with large lower branches or remnant branch cavities indicating open growth when young are common in old pastures, burns or other sites where reforestation was erratic. Heavy browsing by

deer also can leave trees escaping browse too wide-spaced to have good natural pruning.

Shade intolerant species such as poplars, paper birch, and red pine have their lower branches shaded out and dying when quite small in closed stands. Lower branches of shade tolerant species such as sugar maple, beech and hemlock are more likely to either grow large before dying or remain alive to form deep-crowned, short-boled trees, unless growing in dense stands when young. Several of our valued trees, such as white ash, red oak and white pine, are intermediate in shade tolerance. They are tolerant of some shade as seedlings but require more light as they grow older. These need fairly dense stands when young to get good natural pruning; otherwise they are likely to have large dead branches in their lower crown when older. Somewhat independently of shade tolerance, species also vary in the rate at which dead branches decay and break off to permit stem growth to complete the natural pruning process. Poplars, paper birch, and the shade-tolerant basswood lose their dead branches quickly for good self pruning. Pines and spruce can hold dead branches for many years of loose-knot formation.

For all species, good site conditions that favor rapid height growth tend to improve natural pruning by forming denser stands earlier that shade out lower branches. Natural pruning in a closed stand is most rapid during the youthful years of height growth which is greatest and persists longest on good sites. Then, as height growth slows on older trees, natural pruning also slows to form a relatively stable crown depth. Therefore, good forest sites are often indicated by greater length of naturally clear stems as well as greater tree heights. Foresters may refer to "3-log maples" to indicate a better natural maple site compared to one with mostly two logs clear length. However, if trees have grown artificially wide-spaced as in a sugar bush, a good site may produce trees with deeper live crowns as lower branches survive longer.

Accelerating and Guiding the Process

The factors affecting natural pruning identify ways we can accelerate and guide the pruning process in a young forest stand to the extent this fits our landowner goals and resources. As a first step, especially for shade-tolerant and intermediate species, we should try to get stands established

Cut the branch; spare the branch collar and tree stem. Photo by Jeremy Richards.

with a good density of trees for early closure and the start of natural pruning. Then we should keep a young stand closed for natural pruning to progress for a while before we make a first thinning. Especially, thinning a stand of shade-tolerants too early can disrupt the natural thinning process. But stand crowding slows diameter growth, so one needs to seek a balance between fostering natural pruning and diameter growth on trees. By observing a stand's development yearly, one can identify the time when a slowing rate of natural pruning along with the slowing of diameter growth may justify a first thinning if growth rate is a management concern.

Especially for pines, spruce and other trees that hold dead branches for several years, some people like to prune all trees in a stand to above head-height for improved human access and appearance--although perhaps at the loss of some wildlife value. But the benefit/cost for future timber value is likely to be better from delaying pruning until after the first thinning, and then prune only the number of most-promising trees that can be held to high value diameters--generally at least 16 inches for most good-market species. Depending on species and site conditions, this is likely to be no more than 40 to 60 best trees per acre for hardwoods and 80 to 100 trees per acre for conifers.

Pruning for timber improvement should be at least one commercial log-length for that species -- commonly 13 to 17 feet allowing for stump height-- or as high as the pruning equipment readily permits. In our forests, the first or butt log usually contains most of a tree's timber value, and pruning above this is difficult. Pruning conifers usually requires removing several whorls of dead or dying branches, whereas pruning promising hardwoods more likely involves removing only a few persisting lower branches that spoil the potential quality of the first log or two. Pruning after thinning may partly compensate for thinning countering natural pruning. But more important, thinning stimulates stem diameter growth to cover the branch sites, restrict stem decay, and start production of clear, quality wood.

Pruning to Change Natural Processes

Most forest owners are likely to have some areas with fewer naturally promising young trees than they would wish, and therefore may want to do "corrective prun-

PRUNING TREES FOR PLEASURE AND PROFIT Cont'd

ing" on some trees to substantially change undesirable branch situations more than simply accelerate the pruning process. Corrective pruning is best done as soon as a problem is observed. It is usually directed only to the problem branches, leaving normal pruning to nature or until after the stand has been thinned. Common situations for correction are a healthy low branch extending into an opening or a few large low branches on an otherwise promising tree that has grown with too much space for natural pruning. Young trees should have about 2/3 of their height in live branches to assure full growth, so it may be wise to remove open-growing branches in stages as a tree grows taller.

On woodland edge trees along a field or road, there is often reason to remove large persisting branches spreading into the open. However, one should think twice before removing such branches, as they may have value to the stand. Especially on southeast to southwest-facing edges, low branches protect edge stems from winter sunscald damage and may reduce drying winds into the stand. On these edges, I like to prune protruding branches back partway, to a healthy sidebranch, to reduce branch growth while keeping it alive for stand protection. On north to northeast stand edges and internal stand roadways, low edge branches can be removed with less concern.

In the last issue of NYFO, Peter Levatich had an excellent article on the problem of forking trees. He noted that tendency to forking is a genetic variable among individual trees and recommended removing such trees in thinnings. But unfortunately, some of our best species have a tendency to forking because of their natural branching structure. When opposite-branching

Young trees should have about 2/3 of their height in live branches to assure full growth,

trees such as maples and ash lose their young leader due to damage or breakage, the pair of branches below it may gain equal dominance and form a fork. Similarly, loss of the leader in whorled species such as pines and spruce can result in two or more branches of the top whorl taking over to form a fork. In a young stand otherwise short of good trees, one may want to correct forking if low enough to reach with pruning tools. An example is young white pine damaged by weevil where it may be possible to salvage enough stems by corrective pruning to form a fairly good stand in the long run. A problem is that pruning a double stem at a fork creates a large wound and can seriously weaken the stem at that point. I think a better corrective practice is to prune the unwanted stem of a fork back to the lowest healthy sidebranch. The favored stem will take over with further growth and the pruned stem will become a secondary branch that may be removed in a later pruning if desired.

Pruning Tools and Techniques

The common traditional method of pruning forest trees is a polesaw with a curved blade that cuts on the draw. This is hard work, especially to prune to some height. I spent the summer of 1954 on a Forest Service firecrew in Oregon, but due to wet weather spent most time pruning natural ponderosa pine poletrees to 17 feet. For several years thereafter I couldn't conceive of pruning for pleasure, but now pruning is becoming a favorite activity for any spare time I have on our tree farm in the Catskills.

In addition to one's management objetives, the two major concerns in pruning should be the safety of the pruner and minimum damage to pruned trees. Pruning with a chainsaw can be a problem in both respects. Hazardous chainsaw pruning can be more gambling than an investment in the future, and it is easy to make poor cuts and damage the tree stem. One should use a relatively small saw that can be handled accurately without rapid tiring; a hardhat with face and ear protection is a must, and the saw shouldn't be used much above one's head. Even with these precautions, I have received more minor injuries from chainsaw pruning than from other chainsaw work.

Last spring I tested and purchased a power pruner which consists of a 10 inch chainsaw bar with automatic oiler on the end of an extension pole, connected to a small gas engine at the other end (see photo). The saw has small teeth and a relatively slow speed for good cutting control to minimize stem damage, and is fairly well balanced except when fully extended to prune around 17 feet. My goal is to improve at least 1000 trees around the tree farm by selective pruning, in which case the $600 purchase price should prove a good investment.

To minimize damage to pruned trees, it is best to avoid pruning in the "bark slipping season" of most active stem diameter growth during May through August. Also large branches should be cut twice; a rough cut away from the stem to remove most of the weight, and then a careful finish cut to avoid stem damage. Live

branches should be cut to remove the branch but leave most of the enlarged branch collar that is actually part of the stem growth. In cutting dead branches, the branch collar generally should be left undamaged. But if a long collar has grown out around a dead branch, it may be better to remove part of the collar to permit closure of the branch site closer to the stem. A basic rule for pruning as well as for thinning and other woods activity is that any unnecessary damage to tree stems we want to keep may cause stem decay and deterioration that counters our improvement efforts in the long run.

All the do's and don'ts that can be listed for a woods improvement activity such as pruning may intimidate an inexperienced forest owner and mar the pleasure of such work with uncertainty about doing things "correctly". But the great many natural variables affecting the development of trees and forests leaves even long-experienced forest owners always uncertain of the outcome of their activities. As suggested at the beginning of this article, we do need some basic understanding of the natural processes being worked with in order to give our actions a reasonable chance of success. From there, we learn best by doing and often learn most from unsuccessful results. Pleasure in forest management can come from being a thoughtful active participant in the processes of development and change in our woodlands, carefully observing the outcomes of our efforts. ▲

Norman Richards is Professor in Forestry at SUNY College of Environmental Science and Forestry. He has often shared with readers of the NY FOREST OWNER experiences managing the family tree farm in Delaware County.

Gymnocladus dioica

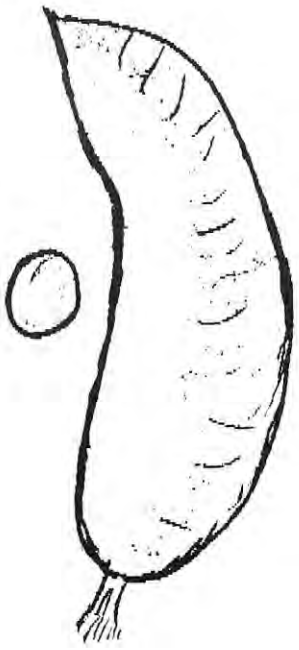
By John Braubitz

Last fall a student brought me some large pods that she found in front of the Episcopal Church on Genesee Street in Auburn and asked me to identify them.

They were approximately 4 1/2 to 5 inches long, 1 1/2 to 2 inches wide, v ery hard, thick and almost black. Most pods had two seeds and were separated by pulp.

It didn't completely fit the characteristics of black locust (Robinia pseudo-acacia) or honey locust (Gleditsia triacanthos).

The next day I stopped by the church yard for visual clarification. What I found were trees approximately 35 feet tall with leaves singly compound, about two feet long, having 3-7 pairs of bipinnate leaves.



These trees fit the characteristic traits attributable to the Kentucky Coffee Tree (Gymnocladus dioica).

I was impressed by their size and esthetic beauty and pleased that these trees of marketable size have been retained. They are a species of which there are few in our area, and it affords people the opportunity to see them.

Various sources claim the tree was named for its use by the pioneers as a substitute for coffee; and currently the roasted ripe seeds, only, are considered for such use, (the fresh seeds and surrounding pulp are poisonous.)

I collected some of the seeds and have grown a seedling from one of them, which is about 15 inches high. This I eventually hope to plant in my backyard. To help you in identifying this tree, compare your findings to the drawings I have made of the seed and the leaf. ▲

John Braubitz is a Professor in the Science Department of Cayuga County Community College.

OF DANGERS, ACCIDENTS, & RISKS

By Peter S. Levatich © 1996

You hear it frequently:"Chain saws are dangerous". I do not agree and want to tell you why I do not think so even after forty-six years of working with a variety of them. My view on accidents may help you, and a discussion of risks in the forest can only benefit all of us.

1). A piece of equipment when properly maintained is not dangerous by itself, be it an automobile or a chain saw. How often have you seen one come apart on its own account? A tree standing in the woods very rarely tips over and falls on you unassisted. Such events are as rare as lightning striking you or me; it can happen but for all practical purposes, it does not. It is only when you and I operate equipment or work on trees that danger exists. It is you and I who are dangerous, therefore, not equipment or trees.

A tree standing in the woods very rarely tips over and falls on you unassisted.

2). What is an accident? When someone gets maimed or a loss of some kind occurs? By some definitions, yes. But for this discussion and for our work in the woods, we should be more restrictive. For our own benefit, we should call an accident any event which is not expected. Every unexpected event, while you work in the woods, is an accident, whether anyone gets hurt or not.

3). The concept of risk is larger and not as simply defined; it depends on many circumstances. Would you, for example, jump out of a second story window to go and check your mailbox? Would you take the same risk if your house was on fire below you? We take risks and we decline risks; risk is a gamble with danger. While accidents are unexpected events (you do not know what is coming), risk-taking implies that you have a fair idea that your intended action is dangerous. Risk, fortunately, is minimized by knowledge and experience. If you know how to jump out of that second story window and have some experience doing it, you are at less risk. You still gamble with danger, but less so if you know what to do and how to do it. There is also a wealth of information about risk-taking which is stored in your subconscious, since you and I are taking all sorts of risks all the time from the moment we get out of bed each day until the day is done. Experiences with risk are constantly evaluated and the data is stored in our brain to assist us to cope with what we face. We develop a "feel" for risky situations; an inner voice seems to say: "Do it", or "You better not do it this time", etc. Lastly, perhaps, our physical, mental, and emotional condition at the moment of risk-taking determines the outcome. If you are unimpaired physically, mentally, and emotionally, you can take larger risks than otherwise. What is the outcome of risk-taking? It can range from total success to total failure. It can involve unexpected events as well. The alternative to taking a certain risk is to take less of a risk, if such a route is available. There is no life without some risk.

So then, if we desire to minimize risk-taking and avoid unexpected events while engaging in dangerous activities in the woods, can we get anything accomplished? Of course we can! If you are interested in how I have done it, read on. But be warned: my methods work for me because of my education and long experience, my temperament, and my objectives. Some, or all of these, may be different in your case. You must not adopt my methods but must use them only as a guide to develop your own methods. Remember also, that the economic values that we extract from the forest with our forest work are dwarfed by the costs of injury or other loss. For example, whether you hang up a $1000 black cherry tree or a firewood cull, flag it,.and get a skidder or tractor to pull it down; in neither case is further risk-taking warranted with the chain saw on your part.

What I do:

A). When purchasing new equipment, I read all about it first. No exceptions. Then I practice on low risk objects. In the case of a saw, I practice on old high stumps and logs. Then I practice some more until I know exactly what happens and what to do.

B). Continuing education is essential. I read all that comes my way even if it seems old hat. Surprisingly, good tips are everywhere. I talk shop with others, not to argue but to learn from them. I carefully test new ideas I hear about to see if they work for me. I attend courses; NYFOA Chapters sponsor courses from time to time. The Northeastern Loggers' Assoc., Inc.[1] administers workshops (you do not have to be a logger to attend!), the NORTHERN LOGGER[2] has Calendars listing events, I read the Bailey's Catalog[3] (get that in any case) for small equipment descriptions and try some items if they seem to fit my need.

C). I watch my equipment and check it regularly, fixing well what needs it. I have not had a breakdown in years. Good maintenance builds confidence based on reliable performance and it is less expensive than lurching from breakdown to breakdown.

I watch my equipment and check it regularly, fixing well what needs it.

D). When felling, I cut out the vee by making the upper, nearly vertical cut first, sighting across the top of the saw (a perpendicular line is cast there) for the direction I want the tree to fall. The nearly horizontal cut is more accurate that way because you can look down the vertical cut to guide the saw. The two vee cuts have to be joined exactly and must form an angle greater than 90° to ensure that the hinge stays intact until the tree reaches the ground.

E). I wish I had learned the felling technique sooner in which the back cut consists of a plunge-cut to form the back of the hinge first and is then completed leaving a small rear support for the tree. Using a plastic wedge in the plunge-cut kerf, the back cut can be completed without the danger of the saw getting pinched when the

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[1]Northeastern Loggers' Association, Inc.; PO Box 69; Old Forge, NY 13420.

[2]THE NORTHERN LOGGER AND TIMBER PROCESSOR; same address as 1, above.

[3]Bailey's; for catalog call 1-800-322-4539.

rear support is severed. **SLICK and low risk.** Excellent for direction felling: all you have to do is to drive that wedge in. I have downed hundreds of trees this way with very few unexpected events.

F). I have learned two important things in a felling course a few years ago for which I am grateful. One is the left hand should hold the saw with the thumb wrapped under the handle, like when a bird grabs the branch it stands on; a much stronger grip. The other is a last look upward before the tree is released to fall to the ground. You look up to see what dead material is above you which may come loose when the movement of the tree begins. Insurance companies have found that loggers are mostly injured within 8 feet of the stump. It is helpful to know what is ready to come down on your location so you can avoid it (lower the risk!).

G). When felling, I select and clear an exit run 45 degrees from the stump, away to the rear. When I complete the back cut, at the first sign of movement in the tree, in the kerf of the back cut, or when hearing a sound of the last fibers parting, I am on my way, shutting off the saw and not bothering to look up until I am away those 8 feet or more.

H). When bucking, steel-toed boots have served me well, protecting my toes from rolling and dropping logs. I always wear chaps, a hard hat, gloves and ear protection before starting the chain saw. I always hold the saw firmly with both hands when it is running and have had no trouble even falling down with the saw (an unexpected event) because of firm control. I stand still in one spot when the saw runs and wait till the chain stops before beginning to move my feet.

I). I fear unbalanced trees: trees hung up on other trees instead of falling to the ground, trees that are leaning widely in one direction, or are structurally loaded unevenly with branches only on one side, etc. These have unpredictable tensions in them. In my book, these are risk trees, loaded with unexpected events, ready to pop. I flag the hung-ups and leave the leaners alone. Most of the hung-ups will come down in the next wind storm.

J). Finally, a word about emotions. I watch myself carefully, I have learned that my awareness and response to unexpected events is closely related to my mood. I do not work in the woods when I am troubled, anxious or depressed, when I don't feel like working in the woods just then. I am not proud of these moods but they happen. Not being a professional I can afford to choose my days of work. This lowers my risks. Similarly, I can tell when I am getting physically tired because I start catching my feet in the forest litter like a tired old horse. So I pack up and go home in peace.

Mostly, I recommend careful training and preparation so that one is confident of the selected task. It is a real joy to do things well, to have few unexpected events, to be able to gauge your risks and act accordingly. Chain saws are not dangerous. You may be dangerous using them, but with practice and care you will become less dangerous in a short time and a better person for it. ▲

Peter, a representative for Tompkins County to the NYSDEC Region 7 Forest Practice Board and a Master Forest Owner, is a regular contributor to the NY FOREST OWNER.

WE BELIEVE

By R. J. Fox, Editor

We all believe in private property; it's in the Fifth Amendment. Property which is held in public trust is ***not*** managed for maximum efficiency nor is it owned for that purpose. What management there may be can not provide the individual or corporate incentives that are required by capitalism and the free enterprise system (the preferred system of democracies). On the other hand, capitalism and free enterprise require government oversight to offset or prevent the various abuses of discrimination, price gouging and monopolies, lack of ethics, and general disrespect for long range public welfare.

In fact it was the over-exploitation of our natural resources that compelled the People of the State of New York to buy abandoned, abused and at risk lands for posterity. Some land was purchased and protected by constitutional amendment (Forest Preserve lands of the Adirondack and Catskill Mountains) to preserve absolutely New York's options for future use and current limited uses. Other lands have been acquired throughout the state and administered by the Office of Parks, Recreation, and Historical Preservation with similar limited uses.

But some lands were purchased to guarantee the continual future production of forest products (lands purchased under the Hewitt Amendment, presently over 700,000 acres throughout the state), and for a land use which requires citizen participation in the current multiple use policy.

Champion International Corporation, in a recent land exchange proposal, has offered to trade off this legacy for a repeat of 19th century laissez faire—to trade 40,000 acres of Adirondack stream corridor lands for a comparable valued state forest lands of marketable conifer plantations.

NYS service foresters have managed these lands for over 60 years. The spruce plantations throughout the state coveted for pulp by the industry represent a public investment that should be sold to the highest bidders and only when their size and stand management returns optimum values!

These public holdings are unique; in addition to the multiple use and sustained yield policies, there are intrinsic values that are our legacy. Public ownership provides options for our future and an unknown landscape. ▲

Saving the American chestnut through genetic engineering

Part two: Adding defensive weapons in the plant-pathogen battle

By C.A. Maynard, and W.A. Powell

Two years ago, we wrote an article for the NY FOREST OWNER [Mar/Apr, '94] on our research using genetic engineering techniques to produce a blight-resistant American chestnut (Castanea dentata). This is an update describing our progress as of the summer of 1996.

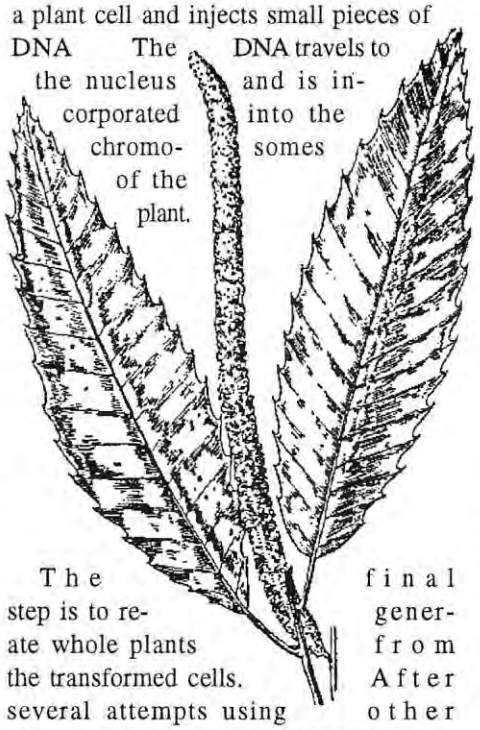
A quick review for those folks that can't find their back issue of the FOREST OWNER: our project, partially funded by grants from the New York State Chapter of the American Chestnut Foundation, is an attempt to use genetic engineering to design entirely new genes to give the American chestnut blight resistance. We also hope to use the same genes, or at least the same approach, to provide disease resistance for other important forest tree species. There are two parts to the project. The first part is to identify compounds capable of stopping the growth of the blight-causing fungus. The second part is to deliver the genes that code for those compounds into individual cells of chestnut, and to regrow those cells into whole trees.

After five years of work, we have constructed three potential resistance genes. The first encodes a tiny protein (peptide) which attacks the fungal cell membrane and prevents the growth of the pathogen. The second is a completely different peptide which binds to the building blocks of the fungal cell wall and therefore inhibits its growth. The third is an enzyme which can weaken the cell wall of the fungus. The use of three different weapons against the chestnut blight fungus will help ensure a durable resistance that will last well into the future.

We are now in the process of testing these genes, individually and in combination, in hybrid poplar because it is much easier to transform and regenerate than American chestnut. Because they interfere with both the cell membrane and the cell wall, we expect that the combination should be especially deadly to the fungus. Because two completely different processes are blocked, it should be nearly impossible for a new strain of the blight-causing fungus to overcome both mechanisms simultaneously.

The second part of the project involves actually transferring these genes into cells of a chestnut and regenerating those cells back into a whole tree. We have been making progress in this area too.

One gene transfer process makes use of two bacteria, *E. coli* and *Agrobacterium tumefaciens*, which is a natural genetic engineer. It is a routine procedure to insert "designer genes" into *E. coli*. From *E. coli*, the genes can then be moved into *Agrobacterium* using a natural bacterial mating process. If plant tissues are then mixed with the engineered *Agrobacterium* cells, the *Agrobacterium* attaches itself to a plant cell and injects small pieces of DNA. The DNA travels to the nucleus and is incorporated into the chromosomes of the plant.



The final step is to regenerate whole plants from the transformed cells. After several attempts using other plant tissues, we are now using immature plant embryos taken out of one-month-old chestnut burs. These tiny embryos, about 1/16 of an inch long, can be extracted from the developing nuts and transferred to tissue culture medium. With the correct combination of growth regulators, they can be induced to form not one, but thousands of new embryos. If we transform the developing embryo cultures using *Agrobacterium*, and then grow the cultures for a few months on a selective medium that only allows those cells that have picked up new DNA to grow, we can select just those few embryos that contain the new genes out of the thousands that do not.

What we have outlined above is still very much work in progress. We have constructed three genes that show great potential when used together to produce durable resistance. We have developed a procedure for transforming chestnut cells. We have produced thousands of embryos and are screening for the few that we hope to have taken up the new genes. Still to come is the laboratory and field testing that will be necessary to see if these new genes do indeed convey blight resistance.

Another project we have undertaken is to set up Internet web pages describing all of the research in progress in our labs. These web pages are updated periodically, so, for those with World Wide Web access, please visit out our sites at:

http://www.esf.edu/course/cmaynard/Maynard.html; *and*
http://www.esf.edu/faculty/efb/facpage/powell.htm

In addition to sponsoring our research, the New York State Chapter of the American Chestnut Foundation also sponsors a variety of planting projects and educational programs. For more information on joining the chapter, contact the New York State Chapter of the American Chestnut Foundation, c/o Buffalo Museum of Science, 1020 Humboldt Parkway, Buffalo, New York 14211

Our genetic engineering project is only one of the efforts underway to restore the American chestnut. For more information on other American chestnut restoration projects going on around the country, contact The American Chestnut Foundation, 469 Main Street, PO Box 4044, Bennington, VT 05201-4044. (802) 447-0110 or e-mail: chestnut@acf.org. They now also have a web site:

http://www.sover.net/~chestnut/ ▲

Charles Maynard serves on the Faculty of Forestry and William Powell, the Faculty of Environment and Forest Biology at the State University of New York College of Environmental Science and Forestry.

JAMAICA'S HILLSIDE FARMERS

By Henry Kernan

Winter enticements to the Caribbean Sea are sunshine and warmth, and the long beaches with gentle surf on one side and a backdrop of hazy,cloud-covered mountains on the other. Among the most enticing is Jamaica's north shore, one hundred miles or so of bays, headlands and sandy stretches between. Travelers in the thousands come by plane to Montego Bay but few go further inland than the coastal highway. They come and go unaware of the rugged mountains beyond where most Jamaicans live as hard-scrabble farmers, with no more than a few acres, hand tools, and a yearly cash income of less than $200.

Jamaica does have good farm land. Twenty per cent of the island's 4500 square miles is coastal plain, generally level, fertile and well watered. The legacies of colonial dependence have retained those lands for exporting sugar to already saturated, over-priced, and protected foreign markets. A hill farmer must look down with wonder and envy from his tiny, hand-cultivated plot upon such large plantations which produce nothing he can eat, wear, or use. What quirk of history placed him so far back and above the good farm lands?

In contrast to many small and poor countries in the tropics, Jamaica has never been isolated or self-sufficient. For the Spanish, Jamaica was a way-station on the Atlantic trade route. The English take-over in 1655 made the island a lair for pirate raids upon the Spanish treasure fleets. Morgan, Kidd, Blackbeard, and other such unsavory characters worked out of Port Royal near the present capital city of Kingston. When destroyed for the fourth time by hurricanes in 1722, Port Royal was rated the richest and most wicked city of the New World. By then, piracy had become unprofitable even to Port Royal's experts in pillage and extortion.

Meanwhile sugar cane had spread around the hot, well-watered periphery of the island and established large plantations. The crop and ownership pattern has lasted until this day. With protected markets in Great Britain and her North American colonies, and cheap slave labor from Africa, Jamaica prospered in the 18th century as never before or since. But such markets and such labor did not last. The colonies became independent and traded with other West Indian producers of sugar and molasses. The second shock was the end of the legal slave trade in 1807; the third was the emancipation in 1833. Nevertheless, the lopsided economy of large, inefficient plantations drifted along as a forgotten backwater of the British Empire until independence came in 1961.

The last 35 years have seen the advent of bauxite mines and scores of tourist hotels. But like the fields of sugar cane, they are hopelessly, almost tragically, tied to the ups and downs of the world markets. The three are still not capable of solving the economic and social problems of Jamaica's hillside farmers.

Their predecessors were the gentle, easy-going Arawak Indians. Between forced labor and disease, they soon disappeared with scarcely a trace. Africans are made of sterner stuff. In spite of disease and the brutalities of forced labor, they multiplied and now are 95% of the population. A group of them even broke away to the independence of an inland republic long before the end of slavery.

With freedom, the former slave's first desire was land of his own where life, however tedious and laborious, was better than slavery. He became a subsistence farmer on public domain of the interior but with the crudest of tools: a machete (called a cutlass in Jamaica), a hoe, and a five-prong fork for turning the soil. His land was and is a few acres of steep slope and his crops beans, casava, bananas, and corn. He has still no beast for traction or burden, but only poultry, pigs, and goats. Such farming tools are not enough to raise the user above a subsistence level, and much less so now than a century and a half ago.

The lack of change in farming is all the more striking in that other aspects of Jamaica hill life have progressed. Almost all inhabited places have paved roads, electricity, and piped water. They have schools, bus services, churches, and farmer's leagues. Yet the fact remains that no farmer, however diligent (and the Jamaicans are a diligent, hard-working people), can pull himself up with a cutlass, a hoe, a goat, and a few acres of hillside land.

The story is one familiar to every farmer. Unless he can raise output, he cannot pay the increasing costs of capital inputs and consumer goods.

One answer is the shift to tree crops, coffee, cacao, and citrus: papaya, mango, and avocado. The shift does take place to a limited extent. For example, Jamaica's "Blue Mountain" coffee is of such superior quality that it brings a double price on world markets. Livestock is another answer; but like tree orchards, pastures require a massive change in land ownerships.

Everyone agrees that more hillside farmers should move off their steep farms and take up larger units on the coastal plains. Physical and theoretical barriers to such a move are not formidable, but those of an economic and political nature are seemingly intractable. Ever since Lt. Maynard did in Blackbeard Buccaneer in hand-to-hand combat in 1718, Jamaica's economy has turned upon sugar cane. No country willingly gives up a privileged market for exports, and Jamaica's sugar markets are privileged. They support powerful interests and much employment. Moreover, the problems of moving rural people away from the home acre are daunting. The change is certain to take place, but slowly, haltingly, and at a pace not responsive to current problems.

Patience is in order; but then the economic crunch is of long standing. Jamaicans built much of the Panama Canal; they manned the banana field of Central America, and they have moved in large numbers to Great Britain, Canada, and the United States. Even then, they retain roots in Jamaica by means of family farms in which they have inherited rights.

Another response has been the move to cities and into trades other than farming. Most Jamaican farmers are carpenters, masons, electricians, mechanics, and so on as well. They spend a few years at trades and return to the family farm as a back-up for hard times elsewhere. Thus the countryside becomes less agricultural and draws more upon small industries, trades, services, remittances, and residences. The change brings tension and confusion, but is the only answer to the hopeless stagnation of farming with hoe, fork, cutlass, and goat.

The most interesting parts of Jamaica are not the beaches and luxury hotels, nor the sprawling capital. The most interesting and best parts are the farms and villages of the mountainous interior where most Jamaicans live amid scenery as wildly beautiful as when the Arawaks lived out their lives among those hills so long ago. ▲

Henry Kernan is a consulting forester in World Forestry, a Master Forest Owner, and a regular contributor to the NY FOREST OWNER.

Application for Membership in the New York Forest Owners Association.

I/We would like to support good forestry and stewardship of New York's forest lands.

( ) I/We own _____acres of woodland.

( ) I/We do not own woodland but support the Association's objectives.

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ADDRESS_____

_____

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Annual Dues

(Please Check One)

INDIVIDUAL	$20
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SPONSORING	$101and up

MEMBERSHIP INCLUDES:

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CHAPTERS/AFFILIATES

SOUTHEAST ADIRONDACK

Last year it was the microburst, this year–Hurricane Bertha; but nothing dampens the spirit and enthusiasm of SEA Chapter members in holding their summer woodswalks. Over twenty members braved the rain, as **Amy Cranell** guided members through the Dell Estate, outside the walls of Fort Ticonderoga. **Jim Durler**. Chapter Vice-Chairman, then led a discussion of proper pruning of apple trees for improved health and vigor. Various aspects of restoration and maintenance were demonstrated. Restoration of the former apple orchard (some 75 years old) is at an intermediate stage, since total restoration will require a number of years. The project is being accomplished entirely through volunteer efforts. The afternoon was spent touring the fort and its museum. Fort Ticonderoga is unique in that it has been restored exclusively through private funding.

Brittany Spaniel "Lucky" Hastings,Amy Crannell (Tour Guide), Ken Rayna, and other SEA members listen, as Jim Durler goes over principles of pruning apple trees. Photo by Patricia Kay.

TREE FARM/NYFOA PUBLIC RELATIONS

Arbor Day, April 1996. (From left) Willard Ives (Past Chairman, NYS Forest Practice Board); Muriel Karp (Empire State Forest Products Association) NYS Senator Mike Tully;Barry & Jill Cornell (Tree Farm & NYFOA)

LEAF

By J. E. Coufal

Hung around all summer
and no one paid
much attention to me
or to my zillion sibs.

Well, to be honest,
a coupla those two-legged
bipeds did stop 'neath us
once, and one said
somethin' like "Whew,
sure does feel good
in the shade of this tree."

Tree, my cuticle!
He was in shade cast
by me and my Kin.
Just 'cause my roots
are stuck in the point 'o
one of the dendritic
ends 'o this corky giant
don't mean I ain't an
individual leaf.

Green sure don't seem to
attract much attention.
Sometimes I wonder what
they'd think if I
held my breath...
or if I was
suckin' up oxygen and
spittin' out CO_2
instead 'o vicy-versy.
Catch their attention
quick like,
you betcha.

Ya know when
they finally notice me
and my brethren?
When we put on
our light show
as part 'o our
dance of death,
that's when!.
All summer we work
our mesophyll
to the pith, and
when we're about to
drop off someone notices.
Big deal.

And yeah, softheart,
that's dance 'o
death.
Really frosted me once
when some dude said,
"But it's part of the cycle.
They'll come back next
spring."
Maybe "they'll" come
back,
but not me, baby,
I'll be long gone.

I'm not one 'o those
tremblin' weaklins
who drop off with
a sigh of simple
resignation.
Shook me up t'other
day when my buddy
Red (he's from the
rubrum branch 'o the family)
dropped off.
I may be yellow
(saccharum is my sapline),
but A'hm no coward,
so I hung on.

Well, last night I
really got frosted.
I mean really
frosted. This morning
some silly puff
'o wind caressed
my petiole, and like
some giddy ash,
I lost it.

So here I lie.
and here come that
dude with the rake.
Listen to him mutterin'
about the "damned leaves"
and all his hard work!
Not only insensitive and
dumb, but fickle.

Heard whispers among
the branches once,
said these bipeds would
give us blades a
real Viking funeral...
a hot pyre,
Don't understand what
the heck he doin'
stuffin' us in that ugly
black
plastic
b.....

LETTERS

MORE SIP VALUES

As NY Master Forest Owners, we have participated in SIP since its introduction at Paul Smiths College in 1991.

It is clear that financial support to encourage stewardship activities results in an improved and more sustainable financial timber return on investment.

There are further economic benefits derived from SIP which reduces the yearly cost of chemical applications needed to decrease invasive dominance through their physical removal while encouraging the diversity of compatible species.The total benefits of improving our forest resources include the physical and mental well being created by building nature trails to enhance awareness of the environment.

Best management practices as carried in the SIP program, conserves soil and water as well as improving air quality.

With property taxes in our region forcing open space into development, it is imperative that the SIP financial encouragement be continued.

—Jane & John Geisler, Verbank

SAY IT ISN'T SO

From the article, "Symposium on NIPFs" by Michael Greason (NYFO M/J '96, 16) was the following: "Who would expect that giving development rights could be construed as increasing property values and contributing to higher real property taxes?"

More information—please!

—Lee Laechelt, Exec. Dir. AFA, Birmingham, AL

From my notes made during Michael Jacobson's,"Landowner Attitudes toward Landscape-Level Mgmt.", the remark was made that 36% of easements result in taxes higher than 100% of market value!; and, I agree more information is certainly needed.

—Mike Greason, Albany

PLANT AMERICAN ELM

I read Victor Johnson's article, "Reflections of 50Years", (NYFO JUL/AUG '96). An article in Agricultural Research/July 1996 describes 10 different hybrids with resistance to the Dutch elm disease.

Mr. Johnson espressed a wish to see the beautiful American Elm grace the land again. It may be time for him to start planting some of these new releases and watch his wish take hold. Hopefully, the same success will occur with the American Chestnut.

—Frank Winkler, Newark, NY

PAY A CONSULTANT?

By Mike Greason

Often landowners question paying for consultant services even when considering a timber sale. Usually the landowner wants to have all the money and not share a percentage of the sale income.

Most of us employ lawyers to draw our wills and conduct our legal business. We may hire an accountant to prepare our tax returns. Isn't it logical then to hire a forestry expert to assist us if we lack the technical expertise to competently represent ourselves? Unfortunately the answer to this question is much too frequently, "No."

When people ask me about hiring a consultant, I like to respond with an example from the days when DEC service foresters were marking a lot of timber.

A few months before I was contacted by a landowner who had purchased 34 acres of woodland, he was contacted by a logger and offered $7,600 for all the timber. The owner mentioned he would like my opinion before signing a contract. The logger responded that I would spoil the sale; and he guaranteed he would pay less, if I was involved. The owner contacted me anyway.

As we walked the property, the new owner expressed an interest in receiving some income to help offset the parcel purchase. The woodlot was the most impressive stand of timber I had ever seen. The discussion which ensued covered short and long range goals, various management options, and projections of future opportunities. To meet the college costs of an eleven year old son and to compromise between short term needs and long term desires, we set upon a course of management involving a selection harvest on seventeen acres. I commenced to mark 377 thousand board feet (MBF) of primarily white pine and hemlock to favor hard maple and hemlock growing stock. It is not everyday a forester can mark 20 MBF per acre and still call the sale a selection cut; but this sale represented about 40% of the trees on the site. The cut was planned to be a little heavy in the white pine because many of those trees were over mature and the owner needed to recoup some of his land purchase investment.To make a long story shorter, the logger returned to point out that I had indeed missed more than half the timber. He reduced his bid to $7,000. The landowner mused over the fact the offer had only dropped $600 and decided to solicit bids to see what competitors might offer. A dozen bids came in ranging from $11,200 to $11,400 and one bid arrived at $17,635. Needless to say this landowner would have been happy to pay consultant fees. He entered a contract where he was in control of which trees would be cut. He had money in hand before the cutting started. And he had a performance bond to assure contract compliance and to protect his interests.

After two decades, the other half of the stand was successfully harvested with the assistance of a forester.

Last summer I happened to have the opportunity to show this area to another forester. We agreed the stand is highly productive, carrying at least 25 MBF per acre of very high quality sugar maple and other species. It is again ready for a very profitable harvest. This woodlot stands tribute to the benefits of careful forest management carried out with professional forester assistance.

This story does not state that loggers are crooks. I want to make that point clear. We all know some are dishonest; but any business transaction between a willing buyer and a willing seller can present the sort of issues seen here without concluding that deception is occurring. Loggers have different costs and different marketing opportunities. Some can simply afford to pay more than others. Some are more efficient. Perhaps the logger had plenty of timber bought ahead and was only interested in cheap wood or didn't want any finance charges and only offered available cash. Many factors may determine what someone is willing to pay for their resource

SHOULD I USE AN INDUSTRIAL FORESTER?

Industrial foresters normally buy timber for their parent company and, in that position, have a responsibility to their employer to supply the mill with raw wood products. In order to gain access to private forest land, many companies provide forestry services to landowners.

These sevices and the agreements that go with them vary by company. Some companies provide free service in return for some type of commitment from the landowner for stumpage availability. Some companies charge fees for service, but do not require the wood be sold to them. The variety of services and the cost/benefit factors vary considerably as do those of consultant foresters. Landowners should assess their needs and determine who best fulfills them.

Some companies will develop forest management plans that make the forest owner eligible for the forest tax law (Real Property Tax Law, Section 480-a) or for federal cost sharing under the Stewardship Incentive Program (SIP). Many also perform Tree Farm inspections for certification under that industry sponsored recognition program.

The important factors landowners need to consider when choosing a forester are: who best understands and can fulfill the owner's goals; what are the cost/benefit returns for the services rendered; who has the personality the owner is most comfortable with; and whose references check out the best.

Forests are long term investments. They are often an under-appreciated, misunderstood resource.They are also dynamic and diverse. When contemplating any management action, forests deserve our full careful consideration. Landowners should make informed decisions about when to harvest, when to wait or when to invest in some sort of conservation practice. Owners should develop a clear set of realistic goals so maximum pleasure and economic reward can be gained from ownership investment. A professional forester can be an extremely valuable guide for forest owners as a resource for information upon which to base informed decisions.

As a public forester, I have met outstanding foresters from all sectors of the forestry profession. There are no simple answers regarding with whom the owner should do business. It comes down to the comfort of the person doing the choosing. Fortunately, there is plenty of competition, so landowners have a good pool of professional help. —*M.G.*

inventory.

The point of this story is that it pays to know what you are selling (or buying). To make informed decisions, people often benefit from expert advice. In my experience, forest owners have always gained by using a good forester. Gains can be direct income or they may include less tangible benefits as well.

This landowner gained financially in both the long term and the short run. He also retained aesthetic, recreational, wildlife and assorted values which could have been lost if he had proceeded without technical assistance.

Here the public interest is to encourage the owner to utilize a forester and provide encouragement to the private sector to utilize acceptable standards.

I recently was thanked by a landowner who had contacted me for advice regarding a timber sale. I had discussed issues, sent him pamphlets, and encouraged him to hire a forester. He had followed that advice and was pleased to have his harvest underway. He had hired a Cooperating Consultant Forester and ended up selling to a logger I've had a friendly relationship with for years. He did, however, leave himself open to losing control. To gain an extra favor of having yard trees pruned, he gave the logger the right to cut extra trees in the sales contract. I don't understand why someone would hire a forester to help with a timber sale and then leave himself open to be exploited. In this case, he will probably be all right; but he surely left himself vulnerable. And he no longer has the residual stand of timber planned for the future.

The next question which tends to follow is, "How much should I pay?" Some consultants work on sales commissions. Others charge by the hour, the acre or the job. Landowners need to develop an understanding of their relationship with their consultant under any system of payment as one would with their doctor or lawyer. The relationship should become one of mutual trust. With any system, one needs to recognize that a forester is a professional with fringe and indirect costs similar to any business. As a business, the forester has to charge enough to remain profitable. Cheapest isn't necessarily best.

Another question is, "How do I select a forester?" DEC has a directory of private foresters who have agreed to follow accepted standards and a code of ethics. Memberships in professional organizations can give insight to someone's character or commitment. Foresters may belong to the Society of American Foresters, the Association of Consulting Foresters or the New York Institute of Consulting Foresters. In addition, as when hiring a cabinetmaker, electrician, or plumber, one should always check references and interview the prospective service provider to see if there is a positive feel to the relationship. Remember that forest ownership is a valued investment that deserves careful consideration. Make informed decisions.

Some might wonder why someone in the public service forestry arena would be encouraging hiring a forester from the private sector. Administering service forestry programs in my vision is serving as a catalyst to encourage private forest owners to become active managers of their resources. It is not meant to be a program to compete with the private sector.

Our staff often writes forest management plans for landowners. These are not meant to be the detailed plans that an owner would need to qualify for a forest tax law (Real Property Tax Law, Section 480-a) management plan. Those, by policy, cannot be written by staff as we do not want to be placed in the position of certifying our own work. The plans our foresters do prepare are intended to give the owner a written record of the service forester visit and a refresher of the dialogue and recommendations which took place during the visit. These plans serve as encouragement to actively manage resources and how to get started. Some owners may wish very detailed inventories and analyses which go beyond the limited time allotment of a DEC service forester.

Federal cost share programs, which are administered by DEC service provide the incentive to hire someone to implement long term practices that usually aren't undertaken without such incentives. These conservation practices provide a societal benefit while helping the landowner gain more from the land. Active management according to proven standards yields very good investment returns over the long haul.

The Forest Tax Law, Section 480-a of the Real Property Tax Law is another example of society's interest in providing an incentive to forest owners to retain and actively manage woodlands. Public oversight of these taxpayer investments is appropriate.

When a landowner sells timber, immediate returns easily carry the cost of hiring a private forester. Here the public interest is to encourage the owner to utilize a forester and provide encouragement to the private sector to utilize acceptable standards. DEC's Cooperative Forester Program is a team building approach to enhance New York's great renewable forest resource. I do not agree with the often made charge that DEC's service forestry program is ineffective:

We simply do not need to see every acre every year. And our services are available on request, not forced upon landowners not seeking advice. Government cannot hire enough foresters to do the complete job of managing all of New York's forest resources.

With public and private sectors working cooperatively together, New York's forest resource can be enhanced.▲

Mike Greason is a Supervising Forester for NYS DEC Division of Lands & Forests in the Central Office in Albany and 1993 winner of NYFOA's Heiberg Award.

IF YOU WANT SIP

By Michael Greason

As a public forester, I cannot lobby; I can inform landowners about programs and how to provide input into their future.

Like many people interested in New York's forest resources, I believe the Stewardship Incentive Program (SIP) is the best program I have seen in my career for motivating landowners to become active managers of their forest resources. Past issues of the Forest Owner magazine have discussed SIP at length. Beyond saying that 807,000 acres of forest stewardship management plans have been developed and implemented so far, I will not go into more detail about the success of the program. Instead I will focus on the future of a very popular landowner program.

State and Private Forestry represents approximately 5% of the U.S. Forest Service budget. 95% goes to National Forests. Of the $156 million proposed for the State and Private Forestry budget for the upcoming year, the House of Representatives proposes zeroing out SIP and the Senate is proposing $4.5 million again. The President has recommended $20 million, which would bring us slightly above the $18.5 million allocated the year before last. This year's allocation resulted in New York receiving $60,000 for the whole state and represented 7.4% of our previous $808,000 allocation. At this level, many landowners anticipating funding to implement practices described in their management plans will be very disappointed. It is possible next year's funding will be a compromise between the House and the Senate proposals.

At a recent meeting of Stewardship Coordinators I learned that SIP is the most contentious item in the Forest Service budget. Cost share incentives are not a popular item unless you are a farmer.

I also learned landowners might turn this around if they respond immediately! I never realized that members of Congress credit each letter received as representing 125 votes. That means that if every member of NYFOA would write expressing interest in SIP, you would signify 250,000 forest owners or half of New York's forest owners. **You could make a difference!**

The presenter did say New York showed a "blip" this past year, but that the effort was not sustained.Therefore, those of you who did write made an impact that was heard. The speaker suggested that to affect the 1997 budget an immediate response is needed. He went on to say that in **October** the President and the Chief of the Forest Service need to hear from landowners. Then in **January** or **February** the House and Senate members need letters. Individual letters carry much more weight than form letters or phone calls.

Urban forestry programs have been gaining because those benefactors are traditionally more prone to seek and gain attention.

I do not want an increasing federal deficit nor unwise spending; however, cost sharing forestry practices have proven to be a cost effective expenditure of tax payer money. Besides providing rural based jobs, these practices increase understanding of management opportunities and produce more wood products and those related jobs to the overall economy. Considering the 25 factor multiplier associated with timber stumpage to finished product, this cost sharing provides a great return on investment. ▲

Contact Debbie Gill at 1-800-836-3566 for addresses of your representatives.

News Release

CORNELL PRODUCES VIDEO ON BIODIVERSITY

What is biodiversity? Is it important? Who needs to know more about it? What do the terms used in discussing biodiversity mean? What management practices enhance biodiversity?

Answers to these questions are given in the new Cornell Cooperative Extension video, **"Biodiversity for Forests and Farms."** It is useful to rural landowners, educators, natural resource managers, land-use planners, agriculturists, forest owners and anyone else who wants to conserve and enhance forests and farms.

During the past decade, ecologists have documented the complex relationships among plants, animals, their habitats and society. They have demonstrated that with wise stewardship, forests and farms will continue to provide habitat for fish and wildlife and the many ecological services upon which we all depend.

In this visually appealing 28-minute video, colorful graphics, outdoor settings and wildlife scenes illustrate healthy ecosystems. Interviews with wildlife and forest ecologists, farmers and forest owners define the concepts of biodiversity and ecosystem management, describe the ecological services and societal benefits provided by healthy ecosystems, outline threats to the conservation of biodiversity and describe management practices that protect and enhance biodiversity for forests and farms. New technologies of GAP analysis and Geographic Information Systems are introduced. Sources of additional information and assistance are provided.

Produced by Cornell University's Media Services ETV Center, the video was written by Mike Allmendinger, ETV Center, and Paul Curtis and Gary Goff, department of natural resources, College of Agriculture and Life Sciences at Cornell. Funding was supplied by the U. S. Department of the Interior, Fish and Wildlife Service, National Education and Training Center; USDA, Cooperative Research, Education and Extension Service and Cornell's College of Agriculture and Life Sciences.

Copies of the video are available from the Cornell University Resource Center, 7 BTP, Ithaca, N. Y. 14850. The price of $24.95 includes mailing within the United States. Contact AV Librarian Rich Gray at (607) 255-2090 for more information. ▲

ROAD & TRAIL CONSTRUCTION AND WATER DIVERSIONS

A skidder trail in Dale Schaefer's woodlot.

By Jim Minor

A good group was in attendance for the presentation on this topic by Utilization and Marketing Specialist, Dan Parrent, for NYS DEC's Region 8 (from the Bath office). The meeting was held at the Cumming Nature Center on May 15th.

Dan covered the theory and principles at this session, but cautioned that you really needed good hands-on experience to become satisfactorily skilled in this area. Dan also stressed that you needed to start planning early.

This planning includes answering the question, "Why do you want a road?" Possible answers include occasional use for a 4 x 4 or a second answer might be for logging trucks. Next you need to gather information from aerial photos, forest-type maps, soils maps, topographic maps, property maps, and tax maps.

Next, you need to get out and "recon" the property to identify control points; that is, locationz that have significant impact on the location of the road. Positive control points include you want to reach. Negative control points (points you want to avoid) include severe slopes, highly erosive soils, rock outcrops, swamps, tops/toes of slopes,and specific trees. For stream crossings you need to pick a good stream crossing site. Dan also noted that to start the plan it's better to start at an uphill site and work your way down, tyiong together the end points...work out the road roughly on a map.

Dan emphasized that the singlemost important factor in road design was keeping water off the road and this played an important part in the grade (slope) of the road. A grade of 0% was not ideal as it does not drain. A slope of 3-5% (i.e., 3 to 5 feet of rise for every 100 feet of run) is ideal for drainage; 10% is a nice average for a logging truck trail (specifically to enter the property and for approaches to landings); 15% for short sections of truck roads;and 20% is the maximum for truck trails. However 20% is about average for skidder trails, given western and comparable NY topographies. 30-35% is the maximum for skidder trails.

In practice you can not keep water off the road, but you want it to leave the road. More than 90% of erosion in forest lands comes from forest roads and skidder trails. Youneed toengineer water control into the road design and you start by making sure you have a 2-3% slope, using road control devices on steeper slopes. When cutting across slopes, you can "out-slope" (pitch the road side-to-side leaning towards the down-slope by 2-3%) or in-slope (pitching 2-3% back into the side of the hill into a drainage ditch that will have to be emptied someplace along the route). In-sloping is good in that the in-slope ditch catches water from up-hill slopes before it has a chance to cross the road.

Dan then went on to describe the use and construction of culverts, broad-based drainage dips, waterbars, and stream crossings

This very informative and enjoyable evening was followed the next Saturday by a woodswalk at WFL member Dale Schaefer's new property, pointing out the application of these principles. ▲

Jim Minor is Newsletter Editor for the Western Fingerlakes Chapter of NYFOA. This article is a version that appeared in the NEWSLETTER of the WFL Chapter.

1996 NYFOA FALL MEETING

In the Heart of the Catskill Mountains

HOST: Catskill Forest Association
WHEN: Saturday & Sunday, September 28 & 29, 1996
WHERE: Belleayre Mountain Ski Center, Highmount, NY; and the Property of Paul & Lillian Steinfeld, Hallcott Center, NY
COST: $25.00 per person (includes continental breakfast, lunch, dinner, and registration fee.).

Saturday, September 28, Belleayre Mountain Ski Center, Route 28, Highmount, NY

8:30 - 9:30	Registration and Continental Breakfast
9:30 - 10:00	Welcome
10:00 -12:00	Concurrent Sessions (will include a Catskill Preserve woodswalk, a tree grafting workshop, orienteering, an introduction to the US Fish & Wildlife Service program *Partners For Wildlife,* a chainsaw sharpening workshop, and fly-tying demonstration.
12:15 - 1:30	Lunch
1:45 - 3:45	Concurrent Sessions (repeat of morning sessions)
On-going Sessions -All Day - featuring local wood-crafters and the culture of the Catskills	
3:00 - 6:30	Social Hour & Auction
6:00 - 7:30	Barbecue Dinner
7:45 - 9:00	Issues Panel: **"Forestry Extension Connections in New York State"** **Michael Greason,** Supervising Forester, NYS Dept. of Environmental Conservation **Dr. Peter Smallidge,** State Extension Forester, Cornell Cooperative Extension **Dr. Edwin White,** Director, NYS Center for Forest Research & Development

Sunday, September 29, Steinfeld Property, Hallcott Center, NY

Breakfast	On Your Own
8:30 - 9:00	CFA Annual Business Meeting
9:00 - 12:00	Woodswalk. Demonstration & Summary of 36 Years of Forest Management.

Accommodations

The Valkyrian Motel is holding as block of rooms (8) until September 14 for NYFOA members. It is located in the village of Fleischmanns, only a few minutes from Belleayre Ski Center and the Steinfeld property. Rooms accommodate 2 to 4 people. Rates are $40 per couple per night. Additional persons are $10 each. Call the Valkyrian directly to make reservations.(914/254-5373. Tell them you are with NYFOA. There are many other fine accommodations in the vicinity of the Fall Meeting. Call CFA at **914/586-3054 f**or a listing.

Registration Form

Please return this form with your fee **no later than September 23!** to
Catskill Forest Association, PO Box 336, Arkville, NY 12406
(Make check payable to Catskill Forest Association)

Name:_____ # of Persons_____

Names of Others in Party:_____ x $25.00

Mailing Address:_____

_____ Phone_____ TOTAL_____

City State ZIP

THE NYFOA SCHOLARSHIP FUND

• Wednesday, March 20, 1996, was a landmark day in the history of the New York Forest Owners Association. NYFOA President Bill Minerd, and President Ross Whaley of the SUNY College of Environmental Science and Forestry (ESF) formally agreed to establish a permanent endowment for forestry education and research purposes at the College. It is known as The NYFOA Endowment Fund.

• The purpose of the fund is defined in the agreement as follows: "Grants and awards shall be assigned by the ESF Chair of the Faculty of Forestry, in consultation with the President of NYFOA." This wording was chosen so that NYFOA could retain significant influence in selection of scholarship recipients and research direction, without unduly restricting the scope of the grants and awards, within a forestry context.

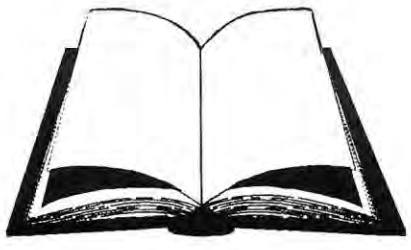
• The NYFOA Fund will be supported by invitation of gifts, donations, bequests, honoraria, and memorials from all NYFOA members, chapters, affiliates and others in agreement with our stated purposes. These tax deductible, charitable donations are invested by the ESF College Foundation, Inc. Scholarships, grants and awards will be assigned from the income earned by the investments. Thus, the endowment will be a permanent fund in the name of NYFOA. The NYFOA Fund should surpass the $10,000 minimum threshold in short order.

• Funding from such sources as the NYFOA Board of Directors, Chapters, Affiliates and allied organizations and industries will be important to the success of the NYFOA Scholarship Fund. Your active participation in generating interest at any of these sources is encouraged.

• However, individual NYFOA members probably represent the greatest potential source of support over the long run. Donations, in the form of memorials, honoraria and bequests, would be very appropriate means of commemorating personal relationships. At the same time, we are dedicating our support for the type of study vital to the needs of forest owners, present and future.

• A more direct means of supporting The NYFOA Fund is for NYFOA members to donate a portion of the gross receipts from the sale of forest products from their lands. At harvest time, it would appear that forest owners could justify donating 1% of gross receipts to support study that helps to increase future productivity and enhancement of other woodland benefits.

NEW YORK FOREST OWNERS ASSN.



SCHOLARSHIP FUND
BALANCE: **$5707.22** (6/10/96)

In (honor) (memory) of_____
I enclose $_____for the **NYFOA SCHOLARSHIP FUND.**

OPTION: I pledge $_____ with the initial gift of $_____ The balance to be paid in installments on (dates)_____

Name_____
Address _____
_____

_____
Signature Date

Please send acknowledgement to the above address

Gifts are deductable to the extent provided by law Make checks payable to ESF College Foundation. Mail to Development Office, SUNY-ESF, One Forestry Drive, Syracuse, NY 13021.

THE CICADAS

By Douglas C. Allen

Few events in the insect world are more spectacular or more disconcerting to landowners than the emergence of a periodical cicada (ci-cay-dah) brood. Early this summer residents in southeastern NY and parts of NJ experienced an "invasion" of periodical cicadas - one homeowner collected six buckets of emerging nymphs from his backyard and off the sides of his house in one day!

Fig. 1. Cicada adult.

Description

Cicadas have sucking mouthparts and are the largest members of the Order Homoptera (ho-mop-tera); which also includes the more familiar aphids, scales, planthoppers, and spittlebugs. Though many people never see a cicada, the loud, piercing, high-pitched mating call of the male is a common sound during summer. The large bodied adults of some species are 2" long. Adults are strong fliers with well developed, membranous wings and very conspicuous eyes (*Fig. 1*). Nymphs, the immature stages that spend most of their lives in the soil, are 1" to 2" long when full grown and almost crayfish-like in appearance with oddly shaped front legs that are fitted for digging (*Fig. 2*).

Life History

The two principle groups in this family are dog-day cicadas and periodical cicadas. Adults of the former appear in late summer (during the "dog days" of July and August, hence the common name), the latter appear during early summer. Dog-day cicadas require 2-5 years to complete a life cycle and rarely are abundant enough to attract attention, but because many broods overlap, adults can be heard every year. Periodical cicadas, on the other hand, have 17- (northern U.S.) or 13- (southern U.S.) year life cycles, the longest known among insects. Approximately 13 distinct populations (called broods) of the 17-year cicada have been identified. Both the 17-year and 13-year broods often consist of three distinct species.

The 17-year species (sometimes referred to as harvest flies or 17-year locusts) spend all but a few weeks of this period in the ground where the nymphs feed by sucking sap from plant roots, causing little apparent damage. Upon completing development in the 17th spring of the life cycle, nymphs emerge from the soil in prodigious numbers and leave behind innumerable conspicuous emergence holes. They quickly ascend plants, buildings or other available perches where they attach themselves and transform into adults. Shortly thereafter, the very loud noise made by large numbers of males calling for a mate fills the air with an unbelievable din. Some entomologists believe that in addition to fulfilling a mating function, this sound also may repel predators. Other scientists have demonstrated that certain natural enemies use this sound to locate cicadas.

The female uses her sawlike ovipositer (an egg-laying device at the posterior end of the body) to cut through twig bark and splinter the sapwood (*Fig. 3*). Eggs are deposited in the splintered wood. Following egg hatch, nymphs fall to the ground, burrow into the soil and disappear for another 17 years.

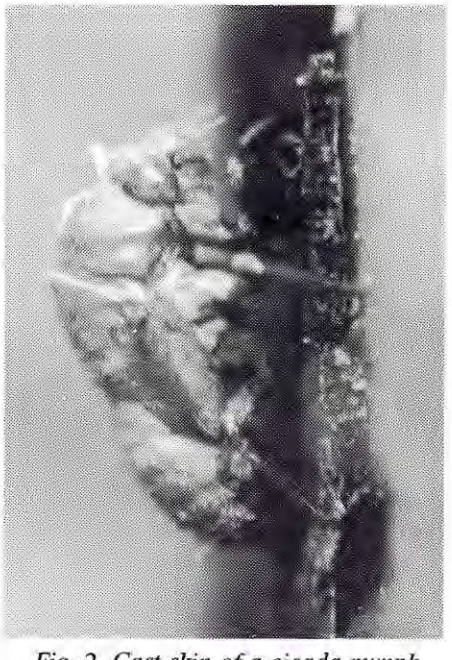


Fig. 2. Cast skin of a cicada nymph attached to tree bark.

Fig. 3. Oviposition damage. Note broken tip of branch (black arrow) that results in "flagging".

Damage

Though it is fascinating to behold an emergence of 17-year cicadas, their unexpected, overwhelming abundance and noise are a nuisance. The principle damage associated with these outbreaks occurs when females kill twigs in the act of egg-laying, which results in conspicuous flagging of branch tips.

Egg laying has been observed on more than 70 species of trees and shrubs, but oak, hickory and apple appear to be most susceptible. This damage does not kill the tree but can detract from its appearance.

Ecological Significance

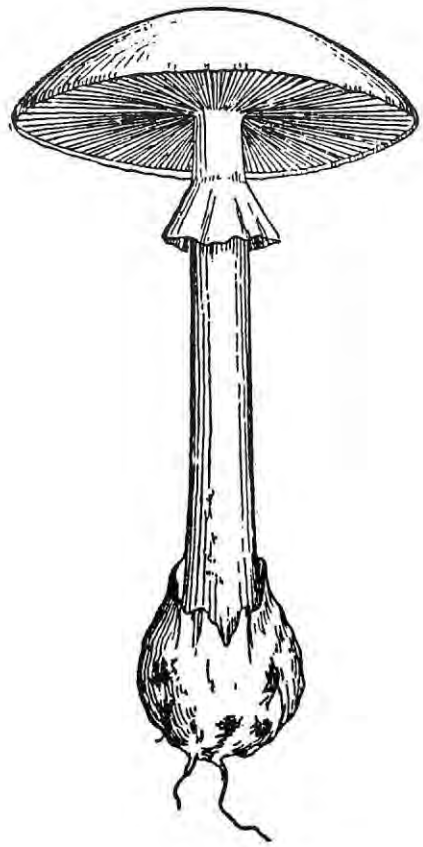
It is important to remember that insects are "pests" only because in some fashion they interfere with human values or interests. To one degree or another, all species that occur in forest systems play important ecological roles. The cicada is no exception.

For example, recent studies of the Apache cicada in Colorado River riparian communities revealed the ecological importance of this species. Feeding by the nymphs influences the vegetative structure of mixed stands of cottonwood and willow that occur in certain habitats. Excess water removed from the host's water conducting tissues (the xylem) during feeding is eliminated as waste and improves moisture conditions in the upper layers of the soil. Xylem fluids are low in nutrients and the nymphs must consume large amounts of it to accommodate their energy needs. Most of the water is quickly excreted and becomes available to shallow rooted plants. The upper layers of the soil are relatively dry, but willow and cottonwood roots are able to obtain moisture from deep in the soil profile. Additionally, cicadas comprise an important prey species for birds and mammals, and the burrowing activity of nymphs facilitates water movement within the soil.

The Legendary Cicada

Much folklore and several interesting customs are associated with cicadas. For example, many native American tribes utilize them for food; the nymphs are fried in butter and eaten like popcorn! Other tribes believe the periodic appearance of this insect portends something evil. The Chinese often prescribe cast cicada skins for ringing in the ears or ear infections (periodically each nymph stops feeding for a short time and sheds its skin prior to forming the next, larger, nymphal stage). Also, extract brewed from cast skins is thought to quiet babies. So, don't be surprised someday if your physician says "take two cicada skins and call me in the morning!" ▲

This is the 28th in the series of articles contributed by Dr. Allen, Professor of Entomology at SUNY/ESF. NYFOA is preparing a book of these reprints and the books will be provided to the public for the cost of production; please contact the editor for details.



Destroying Angel

MY GARDEN GROWS *CONTRARY*

By Jane Sorensen Lord,Phd, OTR, ND

Five years ago Gordon helped me lay out raised garden beds complete with eight foot railroad ties, good dirt, and mulch straw. We have seven 8'x8' and one 16'x16'. I was interested in growing medicinal plants and herbs. Period.

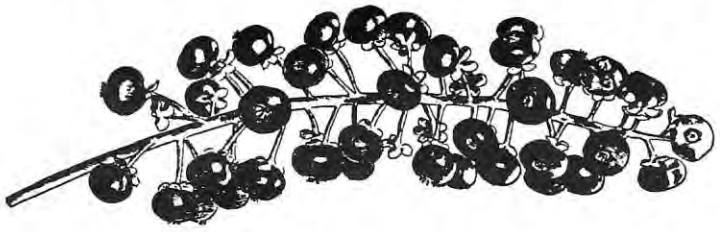
I bought some, started some from seed; but at least half are plants I dug up from the roadside and introduced to my land. I drive around a lot, both for business and amusement. I carry a trowel and plastic bags in all our vehicles. When I spot a medicinal plant that I have not seen on my land, I stop and dig it up.

It usually works like this: I see the plant on my first drive by; (Wow! That looks like snake root!) I turn around as soon as I can and drive by the other way for a second look. If I think that's what it is, I turn around again and pull over. I check the direction that the plant is facing and the amount of sun it is in. Then I dig it up. When I get home, I try and plant it in the same direction and amount of shade that I found it.

This has worked well. The survival rate is good. I have plants for my lotions and potions; and gardens that intrigue visitors. "Why isn't that poke weed? Or jimson weed?" or "You put mullein in your garden?"

Taking care of weeds with the same loving kindness as domesticated plants gives striking results. Lobelia, which is a small unbranched 10-12" plant in the wild, grew almost three foot high branching out to two feet in diameter under cultivation. (I use the leaves for a tea which is applied to the skin of the forearm to dissuade the urge to smoke cigarettes, sort of cheap Nicorette.) When it began to develop hundreds of seed pods,.

Jimsonweed



Pokeweed

I dug it up and planted it well out of the garden.

I put jewel weed in a garden because we have a lot of poison ivy around to which I am susceptible. Jewel weed will prevent the breaking out of poison ivy rash by opening up a stem and smearing the slime where you know you brushed poison ivy. I keep a bottle of witch hazel with jewel weed stems in it around for poison ivy break-outs I missed. This also soothes rashes and bug bites instantly.

After invading three beds with its pop open seed pods, all surviving jewel weed has been redirected to an out-of-the-way wet area at the foot of a hill. I'll have to walk a bit farther to get it, but I got back 120 square feet of garden space.

Mullein, which is used for colds and asthma, has also expanded from its given site, but only one or two plants per bed; and the tall yellow spike of flowers look neat anywhere, I think. I have two kinds of mullein, too. I also have moth mullein which is small and a perennial (the standard plant is a biennial); its small yellow or white flowers which line their spikes have orange centers.

A mullein volunteered this season in the dry soil across the pond and grew almost seven feet high; I think I'll move everyone over there in the fall, then next year I'll have a large patch for this elegant, useful plant.

Great celandine, an attractive lobe-leaved plant with yellow flowers that can be used for yellow dye, or as a pain killer, took outright advantage of my largess. First, it grew so big, over three feet in diameter, it stunted my hyssop. Then it popped seeds much earlier than anticipated. This spring little great celandines were EVERYWHERE—in gardens, in paths, even at the foot of a white pine, where no one grows.

I know it seems silly to get mad at a plant, but I really felt miffed. Knowing it likes dry, I dug up the mother plant and planted it about 18" from the water's edge. It died in early July. But it spewed out its seeds and I assume I'll have a manageable celandine patch farther away from the shore. I am still pulling out babies from the garden.

My method of gardening is interesting, cheap, and fun, if not orthodox. I talked Gordon into landscaping part of our property by collecting wild seeds and strewing them about in the fall. I knew he had really joined in on the fun when I picked him up at the train station last week and he said,

"I spotted a huge patch of black-eyed Susan blooming beside the tracks just outside of the Middletown Station! I'll show you the next time we go to Home Depot." ▲

Dr. Jane, a regular contributor, is a Master Forest Owner and with her husband, Gordon, a Certified Tree Farmer. She has a private consulting practice in Occupational Therapy and Naturopathic Medicine and teaches on the Faculty of Health at Indianapolis University.

The Marketplace

ATTENTION small woodlot owners/part time loggers - For FARMI winches and VALBY chippers, write Hewitt's Hill Haven, Locke, NY 13092 or call (315) 497-1266 (Before 8AM or after 6PM).

MEADOWVIEW NURSERY: QUALITY FIELDGROWN SEEDLINGS AND TRANSPLANTS for reforestation and establishing wildlife habitat. SPECIALIZING IN NUT TREE & WETLAND VARIETIES. P.O. Box 241, Byron, NY 14422 (716) 548-2207 FAX (716) 548-9014.

FOR SALE: 170 acres Allegany County; 80 acres pine and hardwoods; deer, turkey, grouse; call Henry Hansen, evenings (716) 334-3569; Good project for interested woodsman.

For Sale — A well-managed timberland tract in Ellenburg, NY consisting of 191 acres near Upper Chateauguy Lake. Asking $85,000. For more details contact Ben Hudson at Wagner Woodlands and Co., P.O. Box 128, Lyme, NH 03768 (603) 795-2165.

WHITE OAK NURSERY: DECIDUOUS SEEDLINGS, TUBE-GROWN SEEDLINGS, WHIPS TO 5 FT, including most commercial hardwoods and the premier native ornamental shade trees and flowering shrubs of the East. 8456 Harpers Ferry Road., Springwater NY 14560, Livingston County. 716/669-2178.

FOR SALE: 92 acres, Chautauqua County, one third forested with pond and stream. Abuts state land, near East Side Overland Trail. Great family investment. $70,000. 716/664-7097.

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Circulation 1950.

THE LEAF
By Dorothy S. Darling

Without sound it falls
    But with such grace
A leaf in tint of gold
    Floats on the autumn air
Downward to its resting place.

Touched by the rays of sun,
    It delights the alert eye,
And is nudged by falling kin
    To form a bright path
For the feet of the passerby.

God delights me with thoughts,
    Instilled and slipping from my head
To follow my pen's ink upon the page
    Before thought and moment have fled

R.J. Fox, Editor
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NEW YORK FOREST OWNERS ASSOCIATION
GROWING TOMORROW'S TREES TODAY

FOUNDED 1963

Dr. Hardy L. Shirley

We are saddened to learn of the death of one of NYFOA's founders, former Dean of the State University College of Forestry at Syracuse on July 24th in Elizabethtown.

WOODLOT CALENDAR

SEP 14: AFC; Old Growth Forests; Jamestown & Lily Dale. 716/763-9067.

SEP 14: SEA; 3PM; 3rd Annual Picnic; 518/792-1726.

SEP 14: THRIFT; Red & White Sawmill; Tim Engst, *Stump to Board;* Williamstown.

SEP 28: WFL; Noon; Harvest Festival; Hopkins Family Farm; 716/367-2849.

SEP 28: NYFOA FALL MEETING; Catskills; Registration Form page 18.

OCT 5: CFA; Conservation Easements; phone 914/586-3054.

OCT 17: CDC; 9AM; Special 4-Topic Program; Albany Coop. Extension; 518/753-4336.