

POTOMAC
BONSAI
ASSOCIATION

Newsletter

ISSN 0160-9521



Bonsai Tools and Techniques By: Jules Koetsch

Note: This is the first in a series of articles on Japanese bonsai tools and bonsai techniques. Japanese bonsai tools have been designed, over the years, to best meet the needs of the bonsaiist. For instance, Japanese saws cut on the pull stroke and not on the push stroke as with Western saws. Pulling the saw on the power or cutting stroke prevents the blade from buckling and permits the use of a thinner blade thereby yielding a narrower cut in the wood when compared to that made by a Western saw. Chisels are laminates of soft and hard steels; the hard steel maintains the cutting edge for a long period of time while the soft steel cushions the hard steel preventing shattering. However, there are many Western tools that are satisfactory substitutes for Japanese bonsai tools and even though they may not stand up to as much abuse as the Japanese counterparts, they are more readily available and perhaps less expensive.

SAWS - VIEWS AND WAYS TO BUY

The saw cuts should be smooth and not jagged as from a saw with big teeth. If the saw's teeth are dull or dull easily, the tree's cells will be smashed and although the wound heals, sooner or later decay will become a factor. If one decides to be thrifty and purchases a cheap saw, the set of that saw in an unskilled hand may be immediately lost.

A suitable length of saw blade is about 20 cm (8 inches) so that you are not likely to err and injure other branches. Also for the last reason,- select a single-edge saw. While cutting, no matter how logical it may seem, do not snap or break the branch in an upward direction against the blade or the blade may be damaged and the set of the saw teeth destroyed. Often one finds the saw blade rusted when it has not been used frequently. Hence habitually one should wrap both sides of the blade in an oiled cloth.

In selecting a saw, recognize whether the blade can be easily opened or closed with respect to its wooden handle. The flexibility of the blade should be limited. Next select a saw whose blade when snapped, twangs with a high metallic tone.

POTOMAC BONSAI ASSOCIATION
c/o National Arboretum
24th & R Sts, NE
Washington, D.C. 20002

NON-PROFIT ORG.
U.S. POSTAGE PAID
SILVER SPRING, MD
PERMIT NO. 2359

PBA Newsletter: Published by the Potomac Bonsai Association, Inc., a non-profit organization, in the interests of its affiliate member clubs and societies.

Circulation: Over 300 internationally on a monthly basis.

Corresponding membership: \$6.50 for 12 monthly PBA Newsletters.

PBA Membership includes 12 monthly PBA Newsletters- covered by part of the annual membership dues.

For **Corresponding Membership**: Make check payable to Potomac Bonsai Association and mail it to M. Hersh, 102 Devon Ct., Silver Springs, MD 20910.

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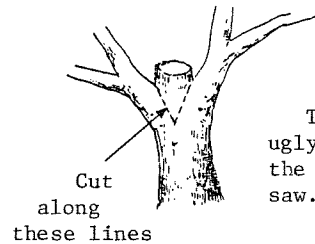
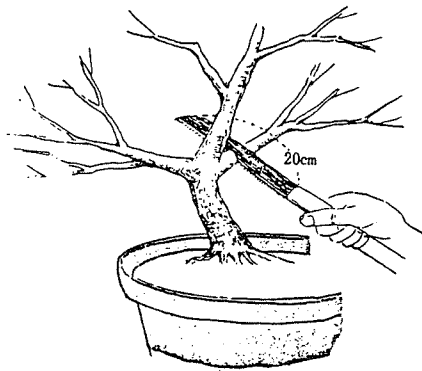
Send advertisements and articles to J.F. Koetsch, 6709 Caneel Ct., Springfield, VA 22152, (703) 569-9378

President: Bill Merritt (703) 536-4052 Layout Editor: Bill Spencer
Editors: Jules F. Koetsch (703) 569-9378 (301) 593-4681
Mary Holmes (301) 721-1309 Production Mgr: Harvey Everett
Snips and Slips Editor: Mary Holmes (301) 933-0483
Subscription and Circulation: Molly Hersh and Josephine Finneyfrock (301) 589-3725

Mr. Harold W. Merritt
5451 N. 22nd Street
Arlington, VA 22205

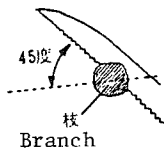
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HOW TO USE A SAW



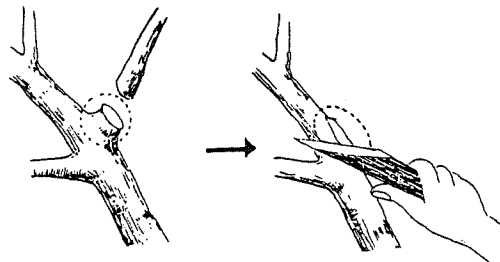
To remove the ugly stub shown in the diagram use a saw.

SAW BLADE TEETH (Enlarged)



In using a Japanese saw, the cutting or pull stroke should be slow and with even pressure, - refrain from using too much pressure down on the blade during the pull stroke. Cut the branches with the saw blade at a 45 degree angle as shown.

FOLLOW-UP PROCEDURE



After using the saw, use a knife or chisel to smooth the surface of the wood.

PURPOSE AND HOW TO USE

In using shears, one must decide as to whether or not the shears will cut the branch or trunk with one stroke and the accompanying crushing of the wood cells is justified. For thick branches and thick trunks and particularly for medium sized branches and the like for a tree with hard lignum (woody tissue) such as ume and gazanzashi, - it must be decided if the removal using shears is beyond one's strength. If the latter is true, then use a saw and smooth-off the cut with a knife or chisel.

In shaping garden shrubbery, the small branches are cut-off with shears to form the overall shape while a saw is used only in the case of removing heavy branches.

PRUNING SHEARS

VARIETY AND VIEWPOINTS

One often sees bonsai pruning shears in with flower-arranging shears and shrub pruning shears where the long and narrow blades have angled cutting edges on both blades.

Pruning shear have a distinguishing feature in that the size of the grip is larger than that found on scissors used for removing small branches and leaves. Also the grip is far enough removed from the fulcrum or pinned joint of the scissors so that one can have enough mechanical advantage to cut branches.

In recent years in working on bonsai there has been a strong tendency to use pruning shears with a single cutting edge for all pruning tasks. The cutting blade is semi-circular in shape and the cut is made by revolving the blade as shown in the diagram which action gives one the feel of how effectively the cutting edge is penetrating the wood.

AIMS IN USE AND HOW TO USE

When new pruning shears first fall into your hands they must be broken in by rubbing off whatever burr and foreign matter that may be attached to the blades. This is done by making a sheaf of 5 blades of heavy grass and cutting through the bundle 60 times.

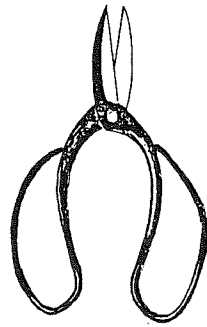
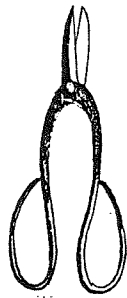
When first using scissors, select for cutting small and medium branches for which you have no doubt that you will be able to cut through them with one stroke. Thin branches can be cut near the tip ends of the cutting blades while heavier branches are placed closer to the fulcrum or well inside the opening of the blades so that the mechanical advantage is there to cut the branch with one stroke.

In using shears with two cutting blades, wherever possible align the blades so that they lie at about a 45 degree angle to the branch being cut. Do not use scissors that do not have a sharp cutting edge, otherwise the branch might wither and die.

Please heed this warning! In cutting any branches at a right angle or 90 degree angle to the branch, resistance to the cut is highest and there is the probability that the blade may be chipped or nicked.

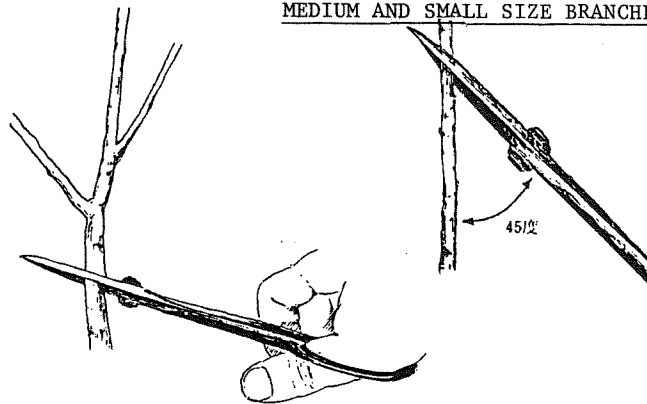
For long branches with lengthy parts that are devoid of foliage, one usually is hesitant about where to cut the branch so that there is grow-back. Until one becomes proficient in selecting the appropriate spot for a one-time cut, make a series of cuts thereby homing in on the right location. These are known as "grow-back cuts".

PRUNING SHEARS



Two Types

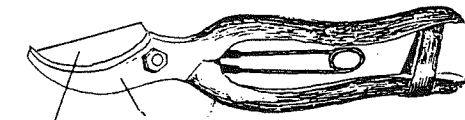
MEDIUM AND SMALL SIZE BRANCHES - PRUNING BACK



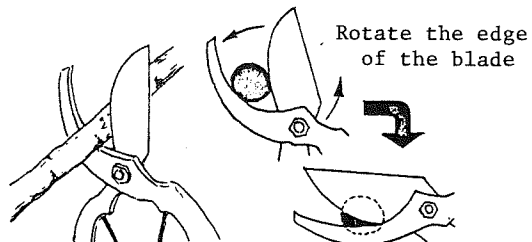
Cutting using the tips of the blades.

Cutting with branch well-into blades

PRUNING SHEARS FOR ALL SIZES OF BRANCHES

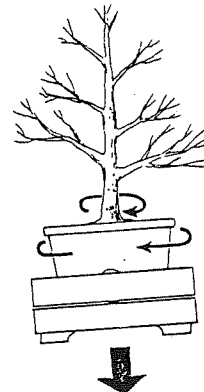


Cutting blade
Support blade



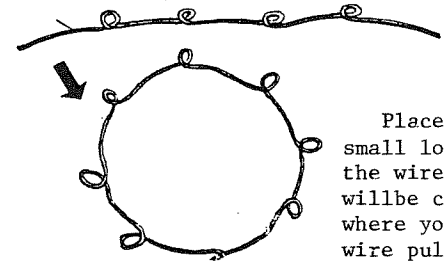
Rotate the edge of the blade

SHAPING THE TREE

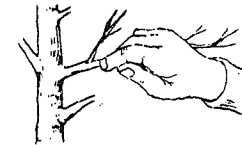
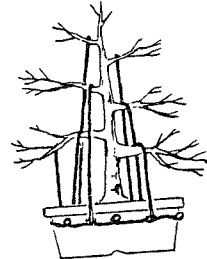


Use a rotating table.

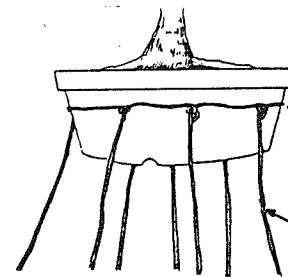
Wire with small loops equal in number to the large branches to be shaped



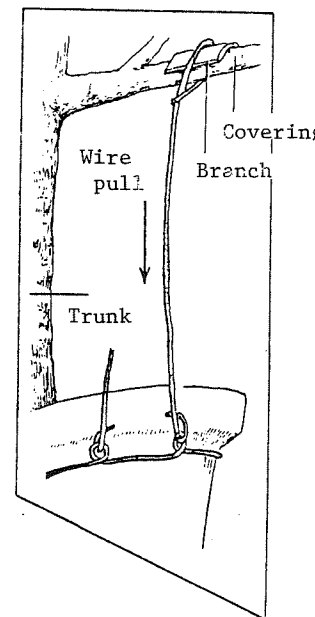
Place the small loops in the wire so that they will be close to where you want the wire pulls to be anchored.



Check the place where the branch is to be bent and then cut the wire pulls so that they are slightly longer than required.



Place the ring on the pot and let the pulls hang down.



Place a protective covering over the branch, pull it down, and wrap the pull-down wire over the covering.

MANAGING THE SHAPING OF THE TREE

In time the tree should conform to the shape that the wires artificially provided. Some trees will revert to the original shape over a period of time.

In changing the shape of the branches, the leaves may be positioned such that light will strike the undersurfaces of the leaves. If this is the case, place the tree so that it is in the shade for half-a-day for a period of 4 to 5 days.

If the wire is left on over the Winter and the tree is exposed to cold temperatures, cracks or fissures will develop in the branches. To prevent this, the tree should be placed in a greenhouse where the temperature is not as cold as the outside.

Do not use the above technique if the necessary pull cannot be achieved to bend the branch and if the force may be such that the branch will be damaged where the wire and covering are located. For some trees one must be patient over a period of years and leave the wires in place to get the tree to conform to the desired shape.

Editor's Comment and Apologies: Please accept our sincere apologies for the September 1983 issue of the PBA Newsletter. In the haste to get an already late issue into the mail, - what with the holiday (labor Day) and other delays, we overlooked checking the issue. Of course this had to be first one in the number of years dealing with our printer that the issue was improperly collated. By taking the issue apart and reassembling it using the page numbers as a guide, you should be able to come with a properly assembled Newsletter.

Mycorrhizae

The subject of mycorrhizae was introduced to many PBA members by Dr. Edward Hacskeylo at the 1977 and 1978 PBA Symposiums. Recently Felix Laughlin went one step further than the accepted technique of removing mycorrhizae from soil/root systems and transplanting it into containers where the bonsai were void of any mycorrhizae. Collected bonsai sometimes come with their own mycorrhizae. Bonsai grown from seed in containers often are free of any mycorrhizae. He took the bull by the horns so to speak and contacted a few organizations to obtain information on how to obtain some material which would produce mycorrhizae. The following is a reprint of the enclosure to the Battelle Institute's letter in reply to Felix's inquiry. It will serve to refresh your memory on the whys and wherefors of mycorrhizae. Remember that ectomycorrhizal fungi attach themselves to the outsides of the roots and are usually visible in the root/soil system of a plant appearing like a white powdery fungi.

Technology: Mass Cultivation of Mycorrhizal Fungi

The need--a process for mass cultivation of mycorrhizal fungi-organisms that enhance plant growth.

Problem--Mycorrhizae, formed when certain fungi become symbiotically associated with plant roots, enhance plant growth by increasing uptake of nutrients and water and by producing essential growth factors. Thus, when soil levels of these organisms are low, inoculating the roots with ectomycorrhizal fungi--fungi able to live outside a host--would stimulate growth of trees and shrubs. However, commercial application of such inoculants has been severely restricted because their cultivation has been limited to growth on solid culture media.

A solution and its status--Battelle Columbus researchers have demonstrated liquid culturing of mycorrhizal fungi that could lead to mass production and important commercial applications. In this work, cultures of three ectomycorrhizal fungi were grown in a submerged aerobic culture system. All three showed improved yields when compared with growth on solid media. The effects of incubation temperature, pH of the media, and various nutrient additions were evaluated during this research. As a result of this work, U.S. patent 4,327,181 (assigned to Battelle Development Corporation) has been issued.

Advantages and benefits--Inoculation of roots of trees and shrubs with ectomycorrhizal fungi at the time of planting could provide several important benefits:

- improved survival rates for tree and ornamental plant seedlings
- improved growth rates and product yields in many tree and ornamental plant species
- less need to cull plants
- less need for chemical fertilizers

Potential business opportunities--Initially, principal uses of mass cultivated ectomycorrhizae would probably be to grow seedlings:

- for reforestation
- for use on spoiled or strip-mined lands or other soils that need to be reclaimed
- in ornamental stock nurseries

The potential market is huge: about 2 billion seedlings are grown each year for reforestation purposes alone, and approximately 190 tree nurseries in the U.S. produce bare-root seedlings. In addition to enhancing seedling growth, ectomycorrhize may find use in the standing forests and home gardening markets. Beneficial impacts on field crops are also possible with further research. At present, no competing technologies are known.

The next logical step--Optimal conditions for cultivating ectomycorrhizal fungi need to be identified and refined on a laboratory and small fermentor scale. This should be followed by greenhouse evaluation, use of selected species of pine and fir, and a thorough market analysis. Battelle will be pleased to discuss a program for further development including estimated time and costs and patent licensing arrangements.

For further information--For additional information, please contact Dr. John H. Litchfield (614) 424-7624 or Mr. R. S. Harris at (614) 424-7426.

Battelle indicated in their cover letter that their product is not available commercially. The following letter is a positive response to the order Felix placed with the International Forest Seed Company. We'll be anxious to know the results.

RECEIVED FEB 17 1983



Columbus Laboratories
505 King Avenue
Columbus, Ohio 43201
Telephone (614) 424-6424
Telex 24-5454

February 14, 1983

Mr. Felix B. Laughlin
President
Northern Virginia Bonsai Society
1775 Pennsylvania Avenue, N. W.
Washington, D. C. 20006

Dear Mr. Laughlin:

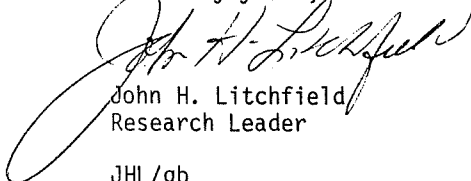
Thank you for your letter of January 24, 1983 requesting information on our work on submerged culture production of mycorrhizal fungi.

I am enclosing copies of a prospectus giving background information and U.S. Patent 4,327,181 "Aerobic Submerged Fermentation of Sporulating Ectomycorrhizal Fungi" assigned to Battelle Development Corporation.

We are aware of research by Abbott Laboratories on the development of a mycorrhizal fungal product, but to our knowledge, no product of this type is available for sale yet to either the forest products industries or through nurseries or garden stores.

We appreciate learning of your interests. Please feel free to write or call me on any further questions.

Sincerely yours,


John H. Litchfield
Research Leader

JHL/gb

Enclosures

Tales Of A Traveling Tree

The tree came to my back yard
In a most circuitous way.
But now that it's arrived there
It's darned well gonna stay.

Its first hundred years or so
It graced a mountainside.
I doubt this past experience
Prepared it for its ride.

From the Rockies to Seattle
To Washington, D.C.
To Rochester and back
This tree has come to me.

We shared the trip from Maryland
Up to the Empire State.
'Twas there that ponderosa pine
Came face to face with fate.

For the author of its travels
Was Dan Robinson, you see.
He styled it, then 'twas raffled.
And the winner? - that was me.

Around my jubilation
Opinions there were mixed.
But I'll say this one last time -
That drawing was NOT fixed.

So now we're both in Maryland,
The pine's journeys now complete.
For me its place among my trees
Is nothing but a treat.

Mary Holmes

Just Imagine

The other day as I started with Galahad for our evening constitutional, the sun was low on the horizon and thunderheads were piled up and reflecting the sun's low rays with a rosy golden glow. They looked like snow-capped mountains in the evening light. This is not an unusual phenomenon, but by progressive skips of memory back I remembered another such evening when a Fuji-shaped cloud rising up over a line of trees in Maryland reminded me of my favorite mountain, Mt. Hood, lording it over the surrounding forests. It is a particularly pleasant memory and one that I cherish. Back now in the present though, it struck me that among the things I like about real bonsai nuts is a quality we all seem to possess - imagination. It takes a lively, open imagination to appreciate bonsai, and it is probably that those who appreciate bonsai the most are the ones possessing that quality.

It's John Naka's space for the birds and butterflies; it's kids (of any age) seeing elephants and dragons and mountains in cloud formations; it's even all the junk in Fibber Magee's closet spilling out and expanding to half-fill a baronial hall. It's all the impossible impossibilities. If I had to deal with the fact that a real eagle logistically couldn't sit atop a 2-foot bonsai, the joy of the tree is gone. But my imagination can "bonsai" that eagle and put him there in my mind's eye.

When Warren Hill styled a collected Balsam fir at the ABS Symposium I shuddered to think what I should ever be able to do with such a piece of material. It had problems I didn't even want to contemplate and, as happens to all of us at times, my mind locked onto all those problems, thinking of rules, and did not open up to its possibilities. At the end of the demo I couldn't take my eyes off it. It incorporated all of the "conventional" no-nos, but weaknesses had been turned into strengths and it worked - and how! I watched fascinated as one of my favorite trees, an old windsept white pine in Northern Ontario, emerged from this tree. I was suddenly back with dear friends and wonderful times admiring this wonderful old tree. Imagination has an emotional impact that logic and rules just cant produce.

We love and grow bonsai for a myriad of reasons: it's "cute"; it's "in"; it's a horticultural phenomenon; it's power and control over a living, growing thing; we love trees anyway and it's a way to have lots of them in a small space; it's an artistic expression. And for those who are lucky it's a way to expand the mind and free-up the imagination.

Mary Holmes

October and November Schedule

Key:

- | | | |
|-----------------------|-------------------------|------------------------------------|
| B - Buy tree | OB - Open branches | Sp - Spray foliage |
| C - Cut-off leaves | ON - Remove old needles | V - Best viewing time |
| D - Leaves fall off | PB - Prune branches | W1 - Return to once a day watering |
| F - Fertilize | PS - Prune sprouts | W2 - Water 2 times per day |
| I - Use insecticide | R - Repot | W3 - Water 3 times per day |
| HS - Half a day shade | RW - Remove wire | Wi - Wire |

CONIFERS	OCTOBER	NOVEMBER	DECIDUOUS	OCTOBER	NOVEMBER
	Cypress				Beech, white
Hinoki	B,F,R,Wi	Wi	Elm, Chinese	D,PB	PB
Sawara	R,Wi then Rw	Wi	Ginkgo	PB	- - - -
Hemlock	PB,needles yellow	V	Hackberry	D	PB,Wi
Juniper			Ivy,Boston	- - - -	- - - -
Needle	F	- - - -	Hornbeam	D,PB	Red leaves
Shimpaku	I,Sp,R	R,Wi	Maple		
Larch	PB,RW	PB,RW	Japanese	W2	PB,Wi,Red leaves
Pine: Black	PB,PS,R,W3, Wi	ON,R,Wi,Wi	Trident	- - - -	Wi, Red leaves
Corkbark	ON,R,Wi	ON,R,Wi,Wi	Weeping willow	- - - -	- - - -
Red	F,ON,R,Wi	F,ON,R,Wi, Wi	<u>FRUIT BEARING</u>		
White	F,ON,PB,PS, Wi	ON,PB,PS, Wi	Cotoneaster	I	I, Red leaves
Spruce	F,PB,PS,R, Wi	PB,PS,R,W1, Wi	Gardenia	- - - -	PB
Yew	F,R,Wi	Wi	Holly	- - - -	PB
<u>FLOWERING</u>			Ilex, dwarf	- - - -	PB
Andromeda	F	- - - -	Pomengranite	D	Remove leaves
Apple, crab	D,R,RW	W1	Pyracantha	I	- - - -
Apricot	F,R,RW	W1			
Japanese	W1 to W2				
Azalea	I,RW,W1 to W2	RW,W1			
Cherry	F,R	- - - -			
Forsythia	F,I,RW	- - - -			
Quince	PB,R,RW	Water every 2 days			
Tea, bohea	V	I			
Winter	I,PB,R,RW,	F			
jasmine	W1				
Wisteria	I	I			

Apologies to Paul Lewis and others if their species of tree is not included in the above list. The reason is that it is not among those found in the Japanese book which is the source for the above information. Your best bet in that case is to refer to Appendix 3 Basic Data on Bonsai Plants in "THE JAPANESE ART OF BONSAI" by Yuji Yoshimura and Giovanna M. Halford.

NINTH ANNUAL PBA SYMPOSIUM

The Schedule:

Saturday

- | | |
|-------------------------|---|
| 8:00 a.m. - 5:00 p.m. | Registration |
| 9:00 a.m. - 10:00 a.m. | Panel of Experts (Fred Mies, Vicki Ballantyne, Mary Holmes, Richard Meszler) will show, discuss, explain the hows, whys and wherefores of caring for deciduous natives. |
| 10:00 a.m. - 10:30 a.m. | Coffee Break |
| 10:30 a.m. - 11:45 a.m. | "Beauty and the Beast" by Denis Hamel. Pests as they relate to and affect bonsai. |
| 11:45 a.m. - 12:45 p.m. | Lunch (Included in the registration fee!) |
| 1:00 p.m. - 2:30 p.m. | "Return of the Hornbeam" by Chase Rosade. As part of his program Chase will create a hornbeam forest. Raffle. |
| 2:30 p.m. - 2:45 p.m. | Coffee Break |
| 2:45 p.m. - 4:15 p.m. | Tree Analyses by Cliff Pottberg. Cliff will critique several selected bonsai of local stock. He has also promised to explain the mystery of the elusive apex. |
| 4:30 p.m. - 6:00 p.m. | Workshops:
Chase Rosade: hornbeam forest (5 trees & pot included)
Cliff Pottberg: tree analysis (bring your own trees - they need not be native deciduous) |
| 6:00 p.m. - 8:00 p.m. | Cocktail Hour |
| 8:00 p.m. - ? | Banquet & Auction |

Sunday

- | | |
|-------------------------|---|
| 8:30 a.m. - 9:45 a.m. | "Mystery Tree and the Mystery of Collecting" by Dr. David Andrews. This tree is such a mystery we may even pull a ringer in on David. Raffle. |
| 9:45 a.m. - 10:00 a.m. | Coffee Break |
| 10:00 a.m. - 12:30 p.m. | The British arrive with Peter Adams. Peter will bring slides of his own collection, as well as style a collected crabapple. Raffle. |
| 12:30 p.m. - 1:30 p.m. | Lunch (On your own) |
| 1:30 p.m. - ? | Workshop with Peter Adams: single tree maple (tree included in fee)
Collecting Trip with Dr. David Andrews |

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CALENDAR OF EVENTS

PBA SYMPOSIUM OCTOBER 15 & 16

Plan NOW!! To Attend

8 October BOWIE (301) 262-8578 or 262-0989: Bowie Community Center at
Sunday 2:00 p.m. Beginner's workshop and winter propagation.
Bring 1 or 2 gallon junipers, wire, tools for styling.

13 October ANNAPOLIS (301)263-3995: Annapolis Library at 7:30 p.m.
Thursday Styling Workshop.

15 and 16 October PBA SYMPOSIUM AT THE MARRIOTT MOTEL IN BETHESDA!!!!
Saturday and Sunday

The following clubs will forego their monthly meeting
and consider the Symposium the meeting for the month:

KIYOMIZU (301) 423-8230

NORTHERN VIRGINIA (703)256-4615

WASHINGTON (202) 593-4681

Note!!! There will be plenty to learn, see and buy at the PBA Symposium
whether you are a beginner or an expert.

23 October BALTIMORE (301) 669-1847: Cylburn Nature Center at 2:30 p.m.
Sunday Bob Ballentine will give a talk on insects and plant diseases
and a 3-ring circus will follow.

29 October BROOKSIDE (301)593-4681: No meeting this month due to the Symposium
Saturday and the show at White Flint Mall. The show will at the center court
of White Flint Mall between 10:30 a.m. and 6:00 p.m. Everyone is
invited. Directions: Take 495 to Wisconsin Ave. Go north on Wisconsin Ave.
Wisconsin becomes Rockville Pike. White Flint Mall is on the right hand side
of the road approximately 2 miles after getting off of the Beltway.