

TO YOUR FAMILY
 FROM OURS,
 THE "CLIPPINGS" STAFF



HAPPY HOLIDAYS

Dues Reminder:

Please pay your dues in a timely manner so that every club can have the new membership list and dues by January.

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PBA Member Clubs/Societies: Annual subscription is included in the membership dues paid to the PBA Club or Society of your choice. Telephone numbers of points of contact for information about any member club or society and its annual dues, are listed on the last page of this newsletter.

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Please send ad copy/articles to the editor: J. F. Koetsch, 6709 Caneel Ct., Springfield, VA 22152; (703) 569-9378.

PBA OFFICERS:

President	Joe Gutierrez
1st Vice-President	Cindy Blackburn
Educ. Vice-President	Chris Cochrane
Secretary	Julie Walker
Treasurer	Jerry Antel, Jr.
Membership	Judy Wise (202) 554-3045
Newsletter Editor	Jules Koetsch

PBA CLIPPINGS STAFF:

Editor	Jules Koetsch (703) 569-9378
Assoc. Ed./Art Dir.	Beth Potratz (703) 255-9386 Email: Bonsaist.aol.com
Asst. Editor	Jeff Stephanic
Advertising Editor	Jerry Antel, Jr. (301) 320-5251
Sensei Sam	Steve Pilacik 205 Quick Road Elkview, WV 25071
Calender Coord	Doug French (703) 502-9426 Email: Dfrench200.aol.com

PRESIDENT'S MESSAGE by Joe Gutierrez

Another year has come to an end, and by now most of us have put away our trees for the winter. It has been a very successful year for PBA; and most of us have actively participated in our Spring Show, our Annual Auction, and hosting of IBC '96 and participation in the dedication of the International Pavilion and the Chinese Pavilion at the National Bonsai and Penjing Museum. By all accounts, IBC '96 was a great success, and once again I need to thank all of you who participated in any way whatsoever (whether participating in some committee or volunteer function or simply being a registrant). I want to offer each and every one of you my sincere thanks.

Because we hosted IBC '96, we did not have our usual Fall Symposium this year, but we are now in the process of actively preparing for our Spring Bonsai Festival, as well as for next year's Fall Symposium. All input would be welcome.

As we close out the year, please start thinking not only about winter storage of your trees, but also about suggestions for our educational programs for next year (with particular emphasis on the Spring Bonsai Festival and the Fall Symposium). It is also important to start giving some input to club officers regarding recommendations to the Nominating Committee for the election of new PBA officers which will take place at our annual meeting in April.

I would like to extend to each and every one of you my heart-felt good wishes for the Holiday Season and for much success in the coming New Year!

Joe Gutierrez

(Editors' note: At it's Annual Meeting on November 18, the Medical Society of the District of Columbia awarded Dr. Gutierrez its Distinguished Service Award. Make an opportunity to congratulate him.)

Editorial by Jules Koetsch

Maybe some of you have read Peter Mayle's book, "A Year in Provence," or watched the series on PBS TV. My wife had done both and couldn't resist wanting to tour Provence. Provence, France, happens to be a province in the most southeasterly part of France. So we left by air for France on 17 October. We rented a 4-door Fiat compact and fitted in quite nicely. And the small size of the Fiat fitted in quite nicely on some of the very narrow streets and roads. We toured the country-

side for 13 days. It took only a few days to realize that exploring the cities was too hectic. The cities, for the most part, are built with streets which circle around the old city walls built to keep out marauders before the use of cannons made them worthless. Also, streets are so narrow that, even though they are one-way, you are lucky to get through with a compact car, much less a delivery truck. Hence, we spent our time mostly on the road going through small towns and looking at the countryside.

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Meeting location and club contact number for additional information is as listed unless otherwise noted in calendar listing. A member of any one club is eligible to participate in any PBA or PBA member club event.

BALTIMORE BONSAI CLUB

Cyburn Arboretum, Baltimore, MD
3rd Sunday, 1 PM
(410) 668-1868

BOWIE BONSAI CLUB

Bowie Community Center, Bowie, MD
Last Monday, 7 PM
(301) 350-3586
(202) 667-1016

BROOKSIDE BONSAI SOCIETY

North Chevy Chase Recreation Center, Chevy Chase, MD
3rd Thursday, 7:30 PM
(301) 365-7621

CHESAPEAKE BONSAI SOCIETY

Call for meeting time and location
(410) 263-2748

GREATER PHILADELPHIA BONSAI SOCIETY

Pennypack Watershed, Willow Grove, PA
4th Thursday, eve.
(215) 663-1678

KIYOMIZU BONSAI CLUB

Clearwater Nature Center, Clinton, MD
4th Sunday, 2 PM
(301) 839-2471

LANCASTER BONSAI SOCIETY

Manheim Twp. Park, Stauffer Mansion
Lancaster, PA
2nd Thursday, 7 PM
(717) 872-5941

MEI-HWA PENJING SOCIETY

(Chinese language spoken)
Bowie Community Center, Bowie, MD
2nd Sunday, 1 PM
(301) 390-6687

NORTHERN VIRGINIA BONSAI SOCIETY

Greenspring Horticultural Center, Annandale, VA
2nd Saturday, 10 AM
(703) 575-5616

RAPPAHANOCK BONSAI SOCIETY

Call for meeting time and location
(540) 775-4912

RICHMOND BONSAI SOCIETY

Imperial Plaza, 1717 Bellevue Ave., Richmond, VA
4th Monday, 7 PM
(804) 527-4000 Ext. 4621

WASHINGTON BONSAI CLUB

U. S. National Arboretum, Washington, D.C.
3rd Saturday, 2 PM
(202) 543-7433

Organizations sponsoring regular events of interest to PBA members:

U.S. Botanical Gardens
(202) 226-4082

U.S. National Arboretum
(202)245-2726

December

Baltimore Bonsai Club

Sunday TBA
Holiday Party

Kiyomizu Bonsai Club

Sunday 8
2 pm Annual "Potluck" Dinner.

Northern Virginia Bonsai Society

Friday 13
Annual Chinese Dinner. Held at China Garden, Rosslyn Virginia (USA Today Bldg.). \$16.00 per individual, starting at 6:30 for a multicourse banquet. Contact Judy Wise (202-554-3045). All PBA members invited.

January

Washington Bonsai Club

Sunday 26
2 pm Dan Chiplis on the care and feeding of the National Collection. (Note this is different than the normal meeting day of Saturday).

Please submit your club's new schedule as soon as available. To Doug French at Dfrench200.aol.com or (703) 502 - 9426.

Thank you for your cooperation.

December Monthly Care Tips

By now the bonsai that are hardy in this areas zone should be given winter protection. Watering may be at a rate of every other day or longer intervals if the plants are not taking water. Use of a moisture meter will tell you how much water they're absorbing from day to day. If the ground gets frozen and along with it the soil in the pot, there isn't much one can do but to wait until the outside temperature warms to the point where the ground thaws and water will penetrate the soil. One can apply an anti-dessicant to the foliage of coniferous trees to reduce the moisture loss through the needles. It is paramount that the bonsai be in a spot which is protected from the wind - a burlap screening can be used as protection. Also it is preferable to not expose plants that are not in a greenhouse or the like, but in or on the ground to any sun during the winter. The sun especially on warmer days will cause the bark to swell and then produce unsightly cracks. If you suspect any insect infestation or have had a problem with any insect species, hit the trees with the recommended insecticide be-

ing putting them into winter protection. Spider mites are the usual scourge that can be taken care of at this time of year. Usually the inside of a greenhouse can be fumigated before bringing in the plants for the winter. Black pines can have their 2 year or older needles removed and needles on the ends of sprouts can be reduced in number to 2 or 3 fascicles or pairs of needles for the upper section, 5 to 7 for the mid-section and 9 to 11 for the lowermost section. Pruning - this is a good time to prune maples. Once the sap rises in a maple around the end of February and early March pruning cannot be done until all the leaves have come out. Otherwise the maple will bleed to death if pruned in late winter or early spring. Hornbeam and elm can be branch pruned at this time. Wash the trunks of the above three species of trees. This is done using water and tooth brush or the equivalent. Moss - best to remove moss from the surfaces of the soil and put it somewhere where it will be available next spring. Moss on the surface of the soil is blamed for root rot in the winter.

WINTERIZING PART II, by Jules Koetsch

GROOMING: Before putting the trees away, this is a good time to prune excessive growth and growth in the wrong direction.

DECIDUOUS: Prune back branches and branchlets to secondary internodes. This will result in the often cherished result: lots of twiggy growth. This is a particularly good time to do the latter on maples since pruning on a maple in Spring when the sap is rising can lead to the maple literally bleeding to death. One must wait then until the leaves have sprouted.

CONIFERS: Arschel suggested that on white pines the needles may be trimmed to about a centimeter (about 3/8ths of an inch). On black pines, the Japanese usually like to remove all second year growth of needles. Another approach is to trim those needles as for the white pine to stimulate bud growth.

WIRE: Wiring should be checked on all trees before putting them into storage. Remove all wire that appears to be about to or already is cutting into the bark. Removing all wire from a deciduous is usually recommended. One school of thought is that wire left on branches of some trees when temperatures plunge below freezing will cause the death of those branches. Furthermore, branches may start to swell in late Winter/early Spring before one realizes that the wiring is then too

tight. However, Arschel suggested that before storing conifers, you might wire/rewire, but do the wiring loosely so that any winter growth will not be dug into.

JIN OR SHARI: During the mid-winter months is a good time to do jin or shari. Arschel likes to let the exposed wood dry out for at least 3 days before applying lime-sulfur. The usual procedure is to apply the lime-sulfur to the wood when the wood has been heated by a summer sun. The sun in Winter is not nearly as hot so you might use a hair-dryer as a substitute.

MOSS: Arschel said there are two schools of thought. One is that you leave the moss in place so there is less likelihood for the soil to dry out. The other is that leaving the moss in place encourages root rot. In any case, remove any moss that is growing on exposed roots and up the base of the tree. Also, keep the moss on the soil away from the trunk by leaving a space between.

PESTS: Much as we all hate to use pesticides, it is best to check your bonsai before putting them away to insure that they are pest-free. Spider mites and scale are the most common pests. It is best to try to rid your plants of pests or they more than likely will infect others, especially if they are packed tight in enclosed quarters. Miticides and dormant oils are among the pesticides used at this time of year. Be very careful to read

the instructions on the pesticide. Also, go to your local nursery or hardware store where they might have the big, thick book by Ortho which describes in detail what pests occur on specific plants and what pesticides are safe to use on those plants.

Some additional suggestions from Arschel: Straw is used to give an airy mulch in place of leaves. To find the frost level in your area, contact your local extension agency. Once the chore of putting your bonsai under wraps for the Winter is done, you can relax except: **DON'T EVER FORGET TO WATER YOUR BONSAI!!!** How often the plants must be watered depends on where they are located - outside or in a shelter. Caution: In a polyhouse moisture can collect on the top of the soil misleading one into believing the soil is drenched where it may be dry. For bonsai outside for the Winter, the soil should be checked at perhaps a 2- or 3- week interval. After all, the soil won't take water if frozen. Hopefully, the mulch will keep the moisture in the soil, and possibly prevent the soil from freezing. For bonsai under cover, the interval for watering can be much less than 2 weeks but certainly much less frequently than when the bonsai are not dormant. You will have to determine this interval on your own. May all your bonsai successfully survive this Winter.

ERROR, ERROR by the Staff

There was an error in the October issue of "Clippings". On all the photos that were used of IBC '96 were taken by Jimmie "D" Ford of the Richmond Bonsai Society. We on the staff of "Clippings" apologize for the mistake. We appreciated all the wonderful pictures that we had at our disposal.

Thank you Jimmie "D".

BECOME YOUR OWN VERDERER by Jules Koetsch

The literate may recognize the word *verderer* - also spelled *vederor*. It is the title of the official in charge of the royal forests of England. Dan Chiplis, Assistant Curator of the National Bonsai and Penjing Collection, demonstrated how to become your own *verderer* of a bonsai forest to members of NOVA Bonsai Society at the May '96 club meeting. Dan expertly explained and demonstrated how to successfully put together a forest of maples. What follows is a mix of describing what Dan did and said, along with the author's interjections.

Most bonsai neophytes usually don't have at their disposal the number and varied sizes of a specific species of tree needed to make a forest planting. Hence, an urge to create a forest bonsai may have been delayed just because they lacked a source for the requisite trees. What is the requisite number? I've been told that one of the definitions adopted by the Japanese is that a "forest" bonsai is one with 11 or more trees in it - there's no top limit for number of trees. However, any bonsai with 5 to 10 trees in it is downgraded to a "grove."

Be that as it may, the usual American definition of "forest bonsai" is 7 trees or more. So, you are now faced with the aspect of finding 7 or more trees if you're out to make a forest planting. Some of the usually accepted guidelines for selecting trees for a forest planting are:

1. Trees should all be the same species. The mixing of species is considered not too effective. After all, you're trying to make an impression of vastness as compared to the that of solitude for a single bonsai. It is conceded that making a forest planting using a mix of tree species

is not easy and often does not make a pleasing composition. There is only one such bonsai in the National Collection - a mix of cedars, pines, and hornbeams.

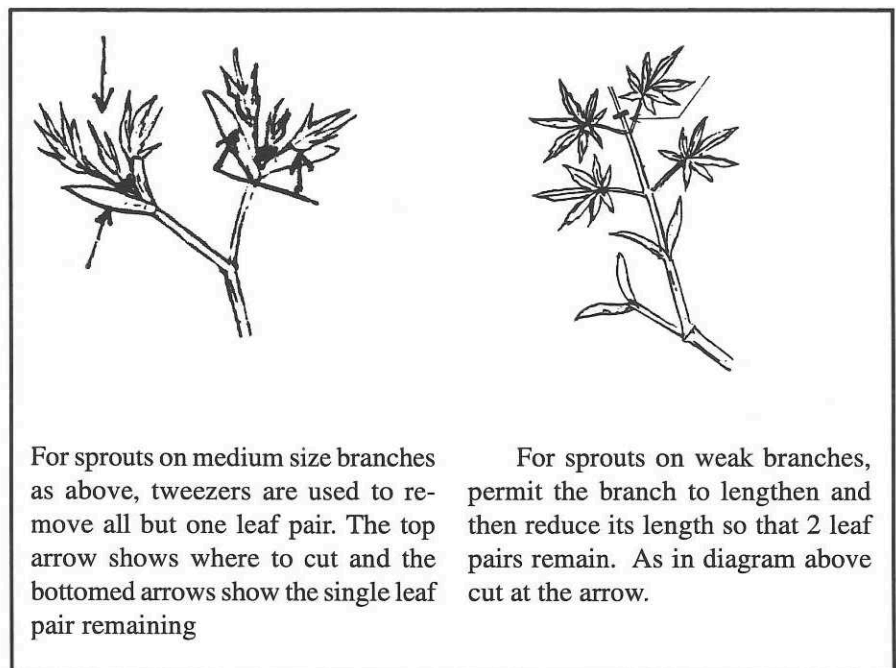
2. Trees must have trunks with different thicknesses. Placing the thickest trees in the front with decreasing trunk thicknesses as one proceeds to the rear of a forest composition can give the appearance of vast depth.

3. Trees need not be perfect as "stand alone" bonsai. Often the trees can be rotated and positioned so that a branch on one can fill in a spatial void created by another. To have the right mix of tree diameters for a forest planting, one can either have started them from cuttings or from seed, or find a nursery with the needed trees. It is always a good idea to have one or two extra trees because there is always the possibility that one member of the forest might die. I have had that happen and others have told me with deep chagrin, that they too have lost either the biggest and main tree or the one in the mid-sec-

tion of the tray. Dan proposed the following as a quick source for forest bonsai. I have been using such a source. My neighbors, like most people who have Japanese Maples on their grounds, are overjoyed to get rid of the tiny seedlings which annually sprout up around the adult maples. After digging up the maples, Dan suggested putting the smallest in flats; the medium-sized ones in flats, but spaced apart more than for the smallest; and the largest ones in individual pots.

Let them grow for a 3-year period before creating the forest. During that time, you can do some styling, clipping, and pruning; and also, the different trunk thicknesses will develop. Also, during this period, you should work on the plants to get more ramification. In the Spring, at the first flush of growth, pluck out the center section when the leaves have partially unfolded. See the accompanying diagrams. Do this over a period of a few weeks.

At any juncture where branches are to be removed, leave leaf pairs as shown in the diagram as shown



For sprouts on medium size branches as above, tweezers are used to remove all but one leaf pair. The top arrow shows where to cut and the bottomed arrows show the single leaf pair remaining

For sprouts on weak branches, permit the branch to lengthen and then reduce its length so that 2 leaf pairs remain. As in diagram above cut at the arrow.

Editorial continued from page 3

Like every true bonsaiist, I had my eye out for trees that could qualify for bonsai. I had ample opportunity since I did the driving while Jane navigated - looking at maps, trying to find road signs, and always remembering where north was. Most of the landscape was dominated, in the early part of the journey, by vast fields of grape vines which seemed at times to almost extend to the horizon. We were surprised to see how low the vines had been pruned so that they were at most about 3 feet tall. The vineyards resembled fields of large bonsai, and I was reminded of the advertisement appearing in a previous issue of PBA Clippings offering grape as bonsai.

Scattered here and there over the landscape were groves of Olive trees that tend to thrive in the hot, dry summers of Provence. The live trees were introduced in Provence by the Greeks some 2500 years ago. One wonders how many different species of plant life were brought in by the Celts, Greeks, and Romans. Roman ruins are still very much in evidence throughout Provence, and some of the Roman amphitheaters are still being used for staging events. The Romans were much concerned about the quality of the fresh water at their disposal and built aqueducts and canals to carry water to their cities. This is evidenced by the giant aqueduct at Pont du Gard which spanned a river for 1/5th of a mile to connect two canals bringing water for miles from a mountain source to a city.

Most of the rolling terrain had been given over to farming so that one had to look to the limestone cliffs and mountains such as Montagne St. Victoire for bonsai. The artist Cezanne painted that mountain some 60 times and never was satisfied with

his results. The mountain resembles Mount Fuji in Japan with its slopes forming unbroken, graceful lines. Japanese artists also have the same obsession as Cezanne - they feel that they can never capture the sense of Mount Fuji with a painting. So don't fret if you feel that you still haven't found that perfect tree to bonsai - keep searching.

One spectacular place to see flora is the Grand Canyon of the Verdon, France's counterpart to our Grand Canyon. This canyon is about 20 miles long and 1 1/2 mile deep, carved between limestone rock faces by the Verdon River. Its pale gray and light ochre-colored rock faces stand in stark contrast to the red of our Grand Canyon. Furthermore, there is more greenery in the Grand Canyon of the Verdon - plenty of bonsai candidates in the canyon and on the bluffs.

Even though most of the rolling terrain reflected man's handiwork, one must still be impressed by the rows of Lombardy poplars or columnar Italian cypresses planted by man to demarcate the edges of pieces of property. And then there were the occasional stretches of narrow, two-lane highways whose widths were mediated by long, long rows of London plane trees flanking them on both sides. Their branches overhead created a vault enclosing the highway in a cathedral-like atmosphere. It reminded me of the American Indian's remark when one of the first white men to America told him that he should attend church. His response was that he need only to look up to the roof of the forest and be in his god's cathedral.

One of the everlasting frustrations for me is not being able to use some trees like the London plane tree (or its counterpart, the American sy-

camore) for bonsai. Their exfoliating bark would make their trunks points of interest. Currently, I'm trying to dwarf *Liriodendron tulipifera*, which has the common name of Tulip poplar. I'm intrigued by its unique leaf shape. So far, I'm not making much progress. Leaf pruning hasn't been effective and probably - as some of my bonsai books mention - works only on deciduous trees such as maples and elms. Unless someone finds a sport of the Tulip tree, as was the case when a sport of a boxwood was found to become Kingsville boxwood, I'm out of luck. A recent news article told of some successful attempts to dwarf fruit-bearing trees so that the fruit could be picked more readily and the loss of tree height could be compromised by the closer spacings between the plantings.

Incidentally, while looking up London plane tree in Wyman's Gardening Encyclopedia, I came upon his listing of the American sycamores as Buttonwood. Now almost everyone in bonsai knows that Buttonwood comes from Florida and does not look anywhere near like an American sycamore. The Brooklyn Botanic Garden's pamphlet on indoor bonsai classifies Buttonwood as *Conocarpus erectus* but Wyman's book had no mention of *Conocarpus erectus*. There must be a zillion species of plants in the world so one should, I guess, have some trouble matching a plant with a botanical, much a less common names. Autumn is a good time for seed collecting on conifers; and seeds are the safest things to bring into the U.S.A. to evade a flap with Customs. I found a cone on a tree which I brought home and think that it came from a *Chamaecyparis lawsonia* 'Westermanii'. That's the

Verderer, continued from page 5

on page 5. Through Spring and into early Summer, pull off individual leaves, especially the large ones and those poking out obtrusively from the tree canopy. In that regard, Dan mentioned that while he was in Japan brushing up on bonsai techniques at a bonsai nursery, the owner told him to do the leaf plucking just described. Dan began by using a scissor to carefully snip-off each leaf. The owner intervened and said, "NO, not that way. Just go around and pull off those leaves using your fingertips."

Every other year, in late June, you can completely defoliate a maple. Leaves will grow back in a few weeks and be smaller than the preceding ones. This is usually done on trees older than 5 years.

When working with seedlings, you should let them grow so any cutting back usually is limited. It is best to cut the branches and roots so that they proportionately get the same nourishment. All of the above concerning leaf clipping and branch pruning is done to get more ramification and closer inter-nodal spacing of the leaves.

Styling each tree: After the 3-year preparatory period, the maples are ready for their final pruning and styling. Each tree is individually tended, and wiring is applied where necessary. After using clamshell or branch cutters, Dan suggested using a sharp knife to cleanly trim off the edge of the cut (bark and cambium layer) so that the healed scar won't be too big. As for using cut-paste as a sealant for the wound, Dan noted that some people have found that it does good and some people don't use it. Some have found that it may work on some species of trees, but not on others. Dan used it on the maples.

An old bonsai adage is that only two parts of the tree, i.e., branch to trunk, or side-branch to main branch, should be joined at any juncture. Sometimes, three are left at a juncture which is called "chicken branching," but Dan, prefers to call it "enhancing the detail."

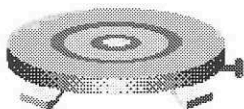
When removing a side branch, make the cut as close as possible to the main branch so that an unsightly bulge does not develop at that point. NOTE: MAPLES SHOULD NOT BE BRANCH PRUNED OR

TRUNK FORESHORTENED IN VERY LATE WINTER/EARLY SPRING WHEN THE SAP IS RISING (as evidenced by the swelling of the leaf buds)!! That inaction is necessary. Otherwise, a maple can bleed to death before the cuts heal.

Once the trees have been styled, they are lined up in descending order of trunk thickness with the thickest being number 1. This gives you a chance to evaluate what you have, and use that information in formulating the design of your forest. Even with 7 trees, there are a number of permutations and combinations in which you can place the 7 trees.

FIRST AND FOREMOST: NEVER, NEVER SPACE THE TREES SO THAT THEY ARE EQUALLY SPACED OR ARRANGED SYMMETRICALLY!!! A viewer finds little interest in such a composition. It's tantamount to what Papa Kaneshiro once said about not putting a bonsai in the precise center of the pot (except for cascades). If it were in the center of the pot, people would quickly pass it by noting that it was in the center of the pot and 'all is well with the world.' If it's off-center, the passerby stops

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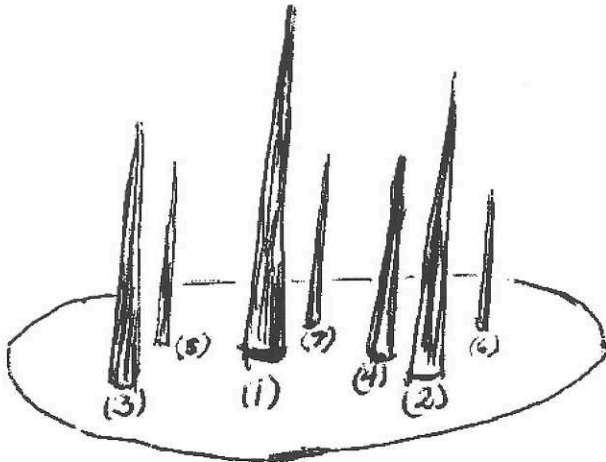
Sensei Sam

I guess I've always had the dream of owning and operating a full-time bonsai nursery. When I was living in Philadelphia, my backyard grew as many trees as it would hold. There was really never enough room, and I had a million excuses why I didn't do this, that, or the other

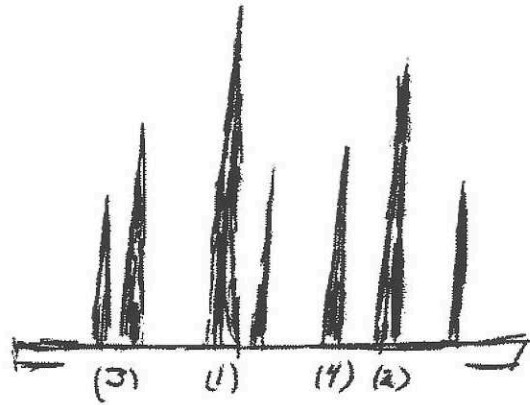
thing. Well, one day I just ran out of excuses and moved to West Virginia. Then came the hard part, finding a house and enough affordable land to re-start the nursery. Well, I found about 25 acres just south of Parkersburg, WV. Right now I have a functional barn with water, electricity, and land.

The plans for the future: The barn becomes a studio/display area with a guest room (for visitors). The flat land houses up to 40 display benches; the northern edge up to 6 or 7 large poly houses; the rolling hill, a field of trees.

The potential is here - its up to me.

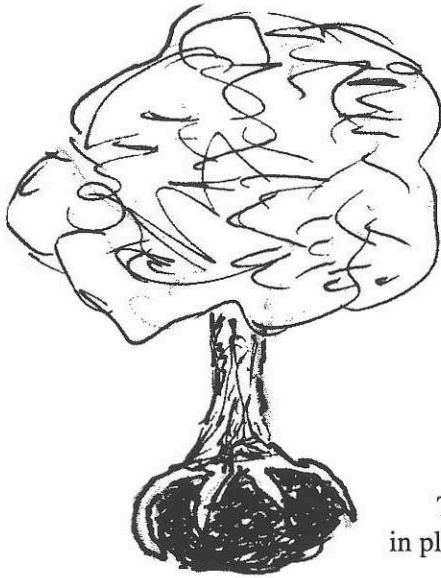


Perspective view

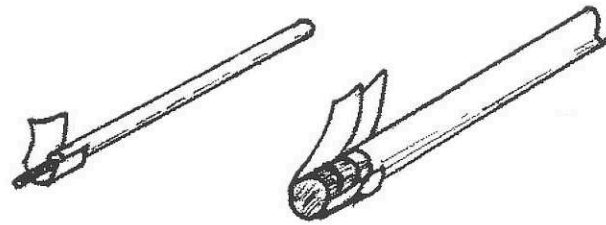


Frontal view

Diagram of the forest planting.



Thin dowel with bar magnet taped in place.



Thick dowel with 3 disc magnet taped in place.

Roots clasped around a ball of muck so that the tree stays upright when being positioned in tray.

Verderer, continued from page 7

dead in his tracks and takes a closer look to discern why the tree is not in the center of the pot. By pausing, he can't help but notice the tree and conclude, "Nice tree."

To help get started in forest design, it is best to study actual bonsai forests as in the National Collection or those in bonsai literature. You will find that the thicker trunked trees, also being the tallest, are positioned toward the center of the tray when viewed from the front. The overall outline of the tops of the trees slopes away toward the sides so that when viewed from the front the feeling of perspective and distance can be interjected. Another way of creating the effect of distance is to gradually diminish trunk sizes going from front to rear. Building the forest always begins with the placement of the number 1 tree followed by numbers 2, 3, and so on. If those trees are predominantly in the forefront of the composition, the forest is considered as being viewed from the inside. If those trees are behind smaller trees and not in the immediate forefront, the forest is said to be viewed from the outside.

Another surefire way to make an interesting forest is to follow the Japanese suggestion that trees be planted in groups of three and the very least two. First, the 3 trees are placed so that the distances between each are unequal. Then when they are placed in the composition, the distances between them and other groupings are slightly larger than the distances they are apart from one another.

You should at least make a few pencil line sketches as to how you are going to place the trees. The accompanying sketches, one possibility a perspective and the other a frontal view, approximate Dan's 7-tree for-

est. You can have some fun doodling, making sketches of various combinations of trees. For a more sophisticated approach you can use one of two devices to make a mock-up of a forest. Both devices involve getting wood dowels or sticks, about 36" long and varying in width from 1/4" to 5/8". Cut them into lengths appropriate to the height that trees of their respective thicknesses would have - the 1/4" diameter dowel would be the shortest tree, and so on. The first method was demonstrated by Vaughn Banting when he put together a forest at the U.S. National Arboretum. He had a styrofoam pad about 2" thick and about the same dimensions as the tray for the planting. The dowels were pushed into the styrofoam at the desired locations so that the vertical dowels gave an impression of how the final composition might look.

The second device was one Cliff Pottberg showed me some 20 years ago. Just as in the technique above, you make different sized dowels. At the base of each dowel you can tape one or more magnets (see the accompanying sketches). Now the dowels can stand on end and be moved about on either a jellyroll pan or cookie sheet made of steel.

Putting it together: Having an idea of how you will design your forest and all the trees styled, you are ready to get down to the task of assembling the forest. The tray's drainage holes are covered with screening, and a thin layer of potting soil is placed over the bottom of the tray.

The trees can be removed from their containers one at a time when you are ready to position them. Always start with the number 1 tree followed by number 2, number 3, and so on. Each tree will have the soil removed from the roots. Since the

trees will not stand up vertically in place without the soil, a ball of muck is used. It is placed under the roots, and the roots are wrapped around it. Dan makes the muck using Bacto peat, some milled sphagnum moss, and Turface dust which is mixed with water to make a pliable composition that will hold a ball shape.

As mentioned above, always start with the number 1 tree, placing it first, to be followed progressively down to the last or smallest tree. The placement of the number 1 tree is the most critical step in making a forest bonsai. The second most critical step is the placement of the smallest tree. The placement of the smallest tree not only can add the impression of great depth to the forest when placed in the rear of the composition, but it can also turn the movement of your eyes as they are drawn around the composition.

DO STAND FAR ENOUGH AWAY FROM THE FOREST WHEN ALL THE TREES ARE IN PLACE SO THAT ANY FINAL, SMALL ADJUSTMENTS IN POSITION CAN BE MADE. When viewed from the front looking into dead-center, no tree should be directly behind another tree.

Once the trees are positioned, the next step is to run some thin wire from near one treetop to another so that all the trees are linked together. This helps steady the trees as you add soil. Dan uses a slightly moist soil mix so that the roots do not lose moisture as they would with a dry soil mix. With the trees potted, the soil is covered in one of two ways so that the soil stays moist and surface roots can get better established. One way is to cover the soil with a Aftercare: The finished forest bonsai is thoroughly watered. Because the tray of a forest

Continued on page ten

Windchill submitted by Chris Cochrane, RBS

Hi ladies and gents,

I've had a running discussion with a fellow bonsai nut about the effect of windchill on things other than human beings (and perhaps other warm blooded critters). My contention is that the calculation is based on how fast something warm loses heat. For example if the wind chill is -30°F and the actual temperature is 0°F to a plant the real temperature is 0°F . No matter how much zero degree air blows by the plant, the plant can't get any colder than the air. To those of us who produce our own heat it feels colder because the wind carries more of that heat away.

My fellow bonsai nut says that the windchill can cause the temperature of plants and other coldblooded inanimate objects to drop below the air temperature.

Any opinions out there?

As a Meteorologist, I can assure you that windchill confuses a LOT of people. This list seems to have a better grip on it than the general public, but I will add my two cents anyway. Since most of the posts on this thread come from the USA, I will start with the definition in the Glossary of Meteorology published by the American (read US) Meteorological Society. I am using the 1959 edition;

"Windchill index - (Also called windchill factor.) The cooling effect of any combination of temperature

and wind expressed as the loss of body heat in kilogram calories per hour per square meter of skin surface. The windchill index is based on the cooling rate of a nude body in the shade; it is only an approximation because of the individual body variations in shape, size, and metabolic rate."

Note that windchill is an index based on the cooling rate of human flesh. This index was very cleverly designed to be equivalent to the value of a temperature reading with the same cooling rate in still air. The rate of cooling of human flesh with (case 1) an air temperature of 0° and a windchill of -30° is the same as the cooling rate of human flesh with (case 2) an air temperature of -30° and no wind. Unfortunately, because of this equivalence, the index is sometimes called the "Windchill Equivalent Temperature". This is where a lot of the confusion comes in, it is not a temperature it is a cooling rate. Fred Bruckman is correct in what he says above. In case 1, an inanimate object would only cool down to 0° .

The index goes something like this;

Under 900: Comfortable with normal winter clothing.

900 to 1400: Properly clothed. Work and recreation becomes uncomfortable unless hats, coats and gloves are worn. Outdoor work and travel are safe with quality

1400 to 1600: winter clothing.

1600 to 1800: Frostbite can occur with prolonged exposure. Heavy outer clothing is essential.

1800 to 2000: Frostbite can occur in a few minutes. Multiple-layer clothing becomes essential.

2000 to 2200: Unprotected skin can freeze in one minute. Adequate face protection becomes important. Elementary school children require continuous adult supervision while outdoors. Work and travel alone is not advisable.

2200 to 2300: Adequate face protection becomes mandatory. Work and travel alone is hazardous. Special warm-up breaks are recommended for outside workers.

2300 to 2400: Outdoor conditions become dangerous. School closures should be considered.

2400 to 2500: Outdoor conditions are dangerous even for short periods of time. All non-emergency outdoor work should cease. Buddy system and observation are mandatory.

2500 and higher: Danger is extreme.

So at 2100 watts/square metre skin freezes in one minute, but how cold is that. People ask that. AAargh! This is just a measure of the rate of cooling. It does not matter if the temperature is -10°C or minus -10°F or -20°C , if the windchill is 2100, skin can freeze in one minute. Perhaps this

Continued on next page

Verderer, continued from page 9

thin layer consisting of either shredded bark or milled sphagnum moss. Dan prefers the sphagnum moss as it makes a nicer looking cover. However, he had some collected moss, so he dusted a thin layer of fine soil over

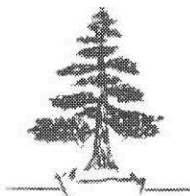
the coarser soil, and then by wetting a brush used for potting, he brushed water over the fine soil. The collected moss should be broken into small clumps and the soil is trimmed

around the edges so that when a piece of moss is pressed into place, it looks like a little mound.

The last step is to adjust the heights of trees, pruning the tops where necessary.

Windchill, continued from previous page

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will put things in perspective. When my sons were growing up, they would think nothing of playing street hockey for hours on end at $-45^{\circ}\text{C}/49^{\circ}\text{F}$ with no wind, yet a windy day at $-25^{\circ}\text{C}/-13^{\circ}\text{F}$ would drive them into the house. It is relatively easy to dress for the cold, but wind makes it much harder.

On Sat 3 Feb 1996 Quang D. Tran wrote: "The weather here (Chicago) is extremely cold. The temperature has dropped down to 14° below with windchill temperature around 50° below the freezing point. That's cold. There have already been 28 cold-related deaths so far here in Chicago, mostly elder peoples and homeless. May they rest in peace."

The point is, windchill is for people, not trees. In fact trees are warmer in the wind than they would be in the same airmass but without a wind. As others have pointed out though, moisture loss resulting from the wind is another story.

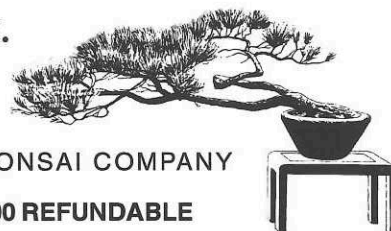
Written on the internet by Don Green -dong@yxyO.ywc.yk.doe.ca, Yukon Weather Centre - Whitehorse, Yukon

The other bonsai enthusiasts can be contacted at Fred Dragon's Garden Bonsai Nursery, 303 U.P. Church Rd. Ligonier, PA 15658 phone 412/593-7341 fax/data 412/593-6588

I think this really covers the subject!! Thanks Don

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Editorial continued from 6

best I could do using Charles R. Harrison's book, Ornamental Conifers. With a lot of luck, I may get one or more of the seeds to grow.

All in all, Jane and I survived a great trip to Provence in spite of some very uptight moments when the driver (me) missed a turn, or the navigator (she) had trouble finding street or route identifiers to check against a number of maps. It seems that you

are supposed to know the name of the main streets you are on, and so they neglect to provide any signs for them. Then the side street signs are in small print on 8" x 10" plaques in out-of-the-way places on the sides of buildings and facing side streets so you have a devil of a time even finding them.

Bon voyage when traveling in France.

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