

Fort Wayne Bonsai Club Newsletter

Volume 9 Issue 6

June 17, 2006

June Meeting- Bonsai Show At The Conservatory

This month our meeting will be a tour of Lindenwood Cemetery on June 17th at 10:30 am. The address is 2324 W. Main, if you need directions email me or call me at 260-637-5104. The trees at Lindenwood are labeled and we will be looking for trees that can be used as bonsai to see how they grow in their natural environment when left alone. Lindenwood will provide a self-guided tour map and they have graciously agreed to provide a building for our meeting. We will meet in the parking lot by the main office and we will be shown to the Chapel in the Woods in the center of the cemetery where we can have a brief meeting and refreshments before we tour the cemetery. The cemetery personnel would love to see some samples of our work so if you have something you would like to show off or something you are having problems with and would like help or advice please bring them. We will car pool thru the cemetery to observe the trees. You might want mosquito spray, cameras and paper for taking notes.

Note, Jerry and I will be attending the Maba Convention in Milwaukee on Saturday, June 24th. If you have considered attending call or email me.

July Picnic, Change of Plans

I have received an email from Cheryl regarding the picnic. She would like to change the picnic to August. She says, "My shoulder is giving me so much trouble and with doctors and therapy and acupuncture, - the garden tour in July, I just can't do it. I hope August is Ok, I have not been able to get Elkhart Bonsai Study together yet. Just getting older and slower. Charlie's health is shaky in addition. Last year at this time his kidney's failed --- well the kidneys are not well yet. All in all --- it has been a hellva year." She went on to say, "I do hope I have not ruined your program. August 12 or 19 would work for me."

I would like to propose that we accept Cheryl's offer for August 19th even though we do not normally meet in August. I would also like to offer to go ahead and have our normal picnic in July on the 15th at my house. We will have our regular barbecue ribs from Chef Jerry with the club providing the meat and beverages. Everything else will be carry-in. If you do not attend this meeting and plan to attend the picnic please call or email me to let me know what you plan to bring! We will also have our annual auction. You may bring anything gardening or bonsai related to sell in the auction. The club will get 10 percent and the rest will go to the seller. This auction always gets exciting and is a great place for new members to expand their collection at a very reasonable cost.

Japanese Garden Update

There is no update on the Japanese Garden. We have not yet received the new plan from Bonsai Bob. He has been busy repotting. I drove by the garden this week and found the parks department has not removed the large pine and the large blue spruce that we agreed need to be removed. I will

discuss this with Lynda Heavrin before the meeting. After those trees are removed we need to schedule a workday down at the garden to do some pruning and cleaning. We will try to schedule it for a Saturday or Sunday in late July or early August.

The Show Last Month

Our show last month was very successful, we had a lot of beautiful trees and many members of the public came through to admire. We even had one lady drive from South Bend just to see our show! She may join our organization. I have several names who will be receiving the newsletter for the next 3 months.

A reminder to guests, you will receive the newsletter for 3 months. If we do not hear from you by the end of that period we will delete you from our mailing list. If you do not have time to attend meetings you can join as a mailbox member and receive the newsletter monthly to keep up on happenings and receive the educational articles. You are still welcome to attend a few meetings a year when possible.

Now you can start working on your plants for the fall show on October 21st.

Secretary's Report- May 20, 2006

The May meeting of The Fort Wayne Bonsai Club was the semi-annual Bonsai Show at Foellinger-Freimann Botanical Conservatory from 10:00-4:00. The only business item discussed was the reminder by Darlene Kittle that the June meeting will be a walk through the Lindenwood cemetery where a wide variety of trees grow. YES, **CEMETARY!** Yours truly is scheduled to provide snacks.

I will make comments brief. We have been up to our nerve lengths raising our new puppy, and I hear her whining for me as I type, from the kitchen with those puppy teeth just waiting to get through the barrier and into the carpeting, rugs, furniture. Today, June 10 is my 59th B-Day and way too old for this! We're also aching from opening and cleaning the lake cottage. After abandoning the boat and cottage for nearly two years for Kathy's breast cancer treatments, the boat got launched and initial cleaning done. At today's gas prices, I brought it home from the marina at slightly over idle speed as the V-8 and Holly four barrel hissed fuel through its mouth.

I thought traffic through the Spring Show was light. It is good, however, to see new members participating. The sale table was well stocked and offered visitors an opportunity to buy into this hobby.

God has produced abundant rain to aid my watering chores. With all of that water, it may be time to fertilize or check the cubes if on continuous feed. We are still hoping to find a retirement home in a warm winter climate. It looks like today's outdoor picnic will be rained indoors. Soon it will return to blistering steam in northern Indiana and I'll be watering like nuts. **CACTI ARE BEAUTIFUL!**

It's not too early to dig through your stuff and put together a list for the July auction. If it is in Elkhart we may have some extra players? Stay tuned. June is frenetically busy and many of us have to choose between conflicts. Mow, mow.....

See you at the grave. (My family has my plot ready for planting at Lindenwood!)

Sincerely, Rod Schueler, secretary

See you at Lindenwood!

Kathy's Corner Bonsai Club Library Book List Contact Kathy Lee @ 637-6242 to Check out books.

Daylily Show July 8th Botanical Conservatory 12 – 4

Iris Rhizome Sale Botanical Conservatory July 16 12 – 4

The library list will no longer be printed in each newsletter. It will be printed every 6 months. Refer to you January newsletter for the list or call Kathie. The library will be brought to most meetings. If you would like to donate books call Kathie.

2006 Calendar of Local or Nearby Events

May 20th 2006- Spring Bonsai show at the Foellinger-Freimann Botanical Conservatory

June 17th 2006- Meeting, Tour of Cemetary to look at labeled trees.

June 22nd to June 25th- MABA Convention in Milwaukee, WI. Contact Darlene for more info.

July 15th 2006- Club picnic at Cheryl Owens home in Elkhart, IN. Caravan from Kittles. Don't miss this!!

August- No meeting.

September 16th 2006-Meeting-Field trip to Jack Weikle's home.

October 21st 2006- Fall Bonsai show at the Foellinger-Freimann Botanical Conservatory

November 18th 2006- Meeting, location & Program to be announced.

December 16th 2006- Christmas luncheon, location to be determined.

June 2007- Ben Oki workshop.

This is the best time of year to take cuttings of many plants to start new bonsai. Many cutting can be used to create mame (4 to 6 inches) bonsai, or shohin (under 10 inches tall) bonsai. Or they can be allowed to grow to any size you prefer.

Propagation of Woody Plants by Cuttings

by Brent Walston

Introduction

Most cuttings are pretty easy with the proper environmental conditions. Cuttings need: 1) a clean well drained rooting medium, 2) a rooting hormone provided either naturally or by applying one, 3) a constant supply of moisture to make up for the lack of roots, 4) sufficient light to allow the manufacture of food (softwood and semi hardwood), 5) bottom heat in some cases, although almost all do better with it.

Rooting Medium

The medium must be sterile for good rooting percentages over a wide range of species. Some species appear to be immune to ever thing fungal in the soil and others are very prone to infection . Most roots also need air to form, as well as to minimize infection. You must balance the need for drainage against

the need for a constant supply of moisture. Without automatic mist the medium must hold more water. A good place to start is 50% peat and 50% perlite. With automatic mist or in an environment of cool moist air such as a coastal area, it is better to move closer to all perlite.

Perlite is now nearly universally used instead of sand or volcanic aggregate because it is lighter, sterile, and inexpensive. I use about eight parts perlite to one part peat and one part vermiculite. The peat and vermiculite make the perlite easier to handle, reduce the fluffiness and aid in punching the holes for the cuttings. I also harden off and grow out the cuttings in the propagating flats so the peat and vermiculite give me a small amount of nutrient holding capacity, perlite has none.

I use 18 inch square propagating flats with mesh bottoms that give excellent drainage but still hold the medium inside. The mesh is about half inch squares. Ground covers are frequently grown in these flats. I use a dibble board that I made to punch the holes for the cuttings, 182 per flat. All of this is old fashioned these days with the advent of Oasis type cells, but for me it is cheap and easy and allows me to keep the rooted cuttings in the flat longer.

Rooting Hormones

There are two types of rooting hormones on the market, talcs and solutions. Talcs such as Hormex contain the hormone indolebutyric acid, or simply, IBA at various concentrations, that's what the numbers mean, Hormex #1 is 0.1% IBA. Rootone is 0.1% IBA and also contains another hormone. Rootone also contains a fungicide, Thiram. Rootone is fine for easy cuttings but will be worthless for cuttings needing a high level of IBA. The liquid hormone solutions such as Dip and Grow and Wood's are a solution of IBA and NAA in alcohol. The alcohol acts as a carrier so lower concentrations can be used. Both are only 1% IBA at full strength. Some cuttings are sensitive to alcohol and can burn. I have found the solutions not effective for cuttings requiring low levels of hormone.

How do you know what levels for each species? There is one book that is far superior to all the others for this type of encyclopedic information, Propagation of Woody Plants, by Dirr and Heuser, available from Timber Press, they have a Web site. It costs about \$40. It is my propagating Bible, although I know most of it by heart now. It is a compendium of studies from around the world including the information compiled by the International Plant Propagators Society, IPPS. If you have only one propagating book it should be this one. Beginners will find it only slightly overwhelming at first.

Moisture

Without a root system cuttings rely on absorbing moisture through the stem and leaves. This works just fine if the medium is constantly wet and the humidity is high and it is cool, seventy to eighty degrees during daylight hours. This is the toughest aspect to achieve at home. You must reduce the rate of transpiration to protect the cuttings from wilt. You can do this by keeping them cool, keeping the leaf surfaces wet, and by reducing the leaf surface area. You can remove some leaves to reduce surface area so that only two or three small leaves remain, or you can, as I prefer, remove the bottom leaves then cut the remaining leaves in half. After a while you get a feel for how much leaf area each species can support given your individual conditions.

For the home owner the above can be as simple as keeping the cuttings under the bonsai bench (But off the ground) that is watered once or twice a day where they will receive no direct sunlight. The next step up is to build a propagation case and provide it with automatic mist. The first case I built was eighteen inches wide by about six feet long and two feet high and covered with clear fiberglass. It held

three or four flats. It had three Floramist nozzles overhead (available from Mellingers for about a buck apiece).

I am a great tinkerer which gets me in trouble but I have a lot of fun designing and building stuff. I built my own mist system and put heating cables in a bed of sand in the bottom. I built my own 'leaf type' mist switch that was counterbalanced and dropped down when wet opening the contact on a microswitch, and rising when dry closing the circuit and kicking in a solenoid allowing the water to flow to the misters. Commercial units are available for about \$150. Mine never did work right and I was always frying cuttings.

I now use timed mist, as do most professional growers. You can now get sophisticated periodic timers from Charlies Greenhouse supplies, they are about \$75. They allow timed periodic mist, so you can vary the period between mist and the duration of the mist. For our climate I find five seconds of mist every twenty minutes sufficient to keep the leaf surfaces constantly wet. Mine is in series with a 24 time clock that is programmed to turn it off during the night. It can still be too wet on cloudy days so I also have it in series with a thermostat that does not allow it to come on unless the temperature is above 72 degrees F. In a propagating case leaving the doors cracked open will allow sufficient air for ventilation.

Sufficient Light

It is thought that roots are stimulated in cuttings by high light levels, although I have not seen the studies to support it. But cuttings do root as a response to food moving down the stem in the phloem (remember your botany test, phloem and xylem) and stopping at the bottom cut. Finding no roots to store the food, it backs up at this point and changes take place in the presence of hormones to convert stem tissue to undifferentiated tissue (callus) to finally root tissue.

This process works better of course if there is sufficient food to make this happen, thus the need for retaining leaves on softwood and semi hardwood cuttings. Food is also stored in the stem tissue itself, and this is sufficient for leafless hardwood cuttings, although the process is much slower. High light levels obviously play a role here by keeping up photosynthesis. You must balance out the need for light against the buildup of heat. For simple systems all shade works just fine. A VERY light foliar feeding also seems to aid in this process, although nitrogen encourages algae to grow in the medium and will soon create a wonderful swamp if you overdo it.

Bottom Heat

Automatic mist and bottom heat revolutionized the nursery industry around the time of the second world war. Before that most production was by hardwood cuttings, which was slow and effective for a limited number of species. These days there are very few plants that cannot be propagated from cuttings and those that can't can usually be done by tissue culture.

Bottom heat acts a stimulant for the production of roots as well as for faster root growth. In general bottom heat should be ten degrees hotter than the ambient air temperature, although any amount of bottom heat is useful. I have mine set on a thermostat that turns it off during the day when it is over 75F in the propagating room to save propane. The temperature should not be allowed to fall below sixty five and optimal seems to be about 75F or 80F for most species.

Some species are more sensitive to heat than others. Most of the tropicals I have grown in the past, liked it hot. Maples also root much faster when hot. It is thought that a few cultivars of Juniperus actually prefer cooler temperatures once they callus, but the jury is still out on that one. I have had Fuchsia root in five days on high heat, pomegranate in seven to ten. I even had some Japanese Maples begin to root in ten days last year.

The easiest and cheapest way for the homeowner to get into bottom heat is by purchasing a heating mat and controller, you can get a small system for about one hundred bucks. They use a lot of electricity, even a small one, be prepared for your bill to jump. Larger systems are hot water fed. A regular hot water heater can be used with a small circulation pump hooked to thermostat. Commercial units are called Biotherm and manufactured by a small company here in California. I designed and built my own with drip tubing parts. It has worked fine for eight years.

Cuttings fall into three categories, 1) softwood, 2) semi hardwood, and 3) hardwood.

Softwood Cuttings

These cuttings are taken from new growth at the succulent stage. When a turgid plant tip snaps when bent at ninety degrees it is ripe for softwood cuttings. Most perennial cuttings are done this way, very few woody plants. In general low levels of IBA improve rooting but are not necessary. I find that Hormex #3 on the very bottom of Fuchsia cuttings, not more than 1/8 inch stimulates incredibly dense roots starting in about one week. This would ordinarily be too strong for this type of cuttings and there is some necrosis where the cutting was actually dipped, but roots are amazing.

Semi hardwood Cuttings

Most woody plant cuttings these days are from semi hardwoods. These cuttings are taken from wood that grew this year but is now firm and hard, with hardened leaves. It is well lignified at the base but still may have a soft tip that may or may not be removed. It is better to go by the feel of the wood instead of the calendar. The peak season is June and July. There are also infinitely varying degrees of hardness and each species and sometimes cultivar will respond differently. This is a matter of experience and volumes have been written about it. Some species such as birch and Picea have very narrow windows of opportunity. Others, such as most crabapples can be taken all summer long.

By far, most semi hardwoods require hormone in the range of 0.3% to 1.6% IBA, or Hormex 3 to 16. There are some that require no hormone such as willow, Salix, although I shallow dip my Salix species now and start them flats instead of water. They begin rooting in less than a week and are ready to transplant in two to three weeks. The root systems are denser and more fibrous with hormone treatment. Some cultivars of Japanese Maple, Acer palmatum, require high levels of IBA, I am now using shallow dips in Hormex 30 (3% IBA) for some of them.

Many species will not root immediately, although most root over four to ten weeks. Some species will take a year or more to root after initially callusing in a few weeks. These I take off the heat at the end of the season and keep shady and cool until they do root. Hawthorns and many Chamaecyparis fall into this category.

Many semi hardwoods respond favorably to wounding. The bottom of the cutting is sliced thinly through the cambium for about an inch, taking out a sliver of bark without removing much wood. This is best done with the edge of sharp shears or a sharp knife to make a clean cut. This provides a surface for callus and hopefully root development. It helps Malus, Acer, and roses. It is also interesting to watch where roots develop on various species. If you wound, the roots will often form in a line along the callus tissue. Many cuttings form in a ring around the bottom of the cut (Chaenomeles), others form at the lenticels (openings in the stem similar to stomata on leaves), and yet others form at the leaf scars (roses). For some it is necessary to have a node at the bottom of the cut, other not (Clematis, Acer).

Hardwood Cuttings

Hardwood cuttings can be taken at any time of the year, but are usually taken late in the season or winter and stored in sand, sawdust, etc. They are cuttings from wood that has gone through an entire season of growth. They can be treated just like softwood cuttings in summer for some species, but most are done at the end of the season and either stored and planted in the spring after they callus or simply planted in open ground in the winter. With the advent of mist and bottom heat their popularity has diminished except for some commercial crops such as grapes.

And finally

Be Clean! To avoid fungal infections, a very serious problem with cuttings, keep everything as clean as possible. Think of it as handling meat in the kitchen. You must always remember where those hands have been. Use a ten percent bleach solution (nine parts water, one bleach) to clean everything including the flats, shears, your hands and the cuttings. After the cuttings are made soak them in the bleach solution for fifteen to twenty minutes, rinse all of the bleach off thoroughly (it will oxidize the IBA), then dip them in hormone and stick.

All of the foregoing is necessary to understanding how and why fertilizers work. But the bottom line is still the same. In general, *all* bonsai can be fertilized with a soluble 20-20-20 at full strength every other week from the first new growth in the spring until late fall when the daytime temperatures fail to rise above 50F.

The club has the following items for sale:

Wire assortments: club members \$33.00, subscribers \$38.00, non-members \$40.00

Micromax micro-nutrients: \$5.00 for members, subscribers \$6.00, non-members \$7.00 Bonsai soil, shopping bag of 2 scoops: \$5.00 for members, subscribers \$6.00, non-members \$7.00

New Fertilizer blocks. ½ lb bag \$2.50 for members, Subscribers \$3.00, non-members \$3.50 1 lb bag \$5.00 for members, Subscribers \$5.50, non-members \$6.00

We also have bonsai slabs for forest plantings. Prices range from \$25.00 to \$50.00. Call Darlene or Ed regarding purchase.

All these products are great buys and priced much lower than retail if they are even available in this area. Call or email Darlene or Ed if you want products brought to this meeting.

Membership Roster and Subscribers

A new membership roster was in the May newsletter. You will receive it twice a year with any changes. See last May's newsletter for Roster or email me and I will email it to you.

See you all at the meeting!! Bring a Friend!!