



The Bonsai News of Houston

MONTHLY NEWSLETTER OF THE
Houston Bonsai Society, Inc.

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July 2003

July Meeting—Open Workshop

The next meeting of the Houston Bonsai Society (HBS) will be Wednesday, July 2 at 7:30 p.m. at the Houston Garden Center in Hermann Park, which is located at 1500 Hermann Drive. Refreshments will be served at 7 p.m. Come early so you can visit with other members before the meeting begins.

The July program will be an Open Workshop, and I encourage everyone to bring trees that you've worked on during previous club workshops so we can see how they're progressing.

You may want to bring the tree that has been challenging so that you can discuss styling ideas with other club members. There will be members willing to explore possible styling alternatives with you. Again, this may be the occasion to ask horticultural questions about your tree(s).

We've had several meetings with a speaker or presentations, and we've not had an Open Workshop in several months. It's time to bring your tools, trees and questions to a meeting when there will be plenty of time to share ideas and explore possibilities.

See you at the meeting!

--Ken

No Study Group in July

We will not have a study group in July--so we'll see everybody in Austin at the Symposium!

July 11-13: LSBF Symposium

The Lone Star Bonsai Federation (LSBF) is sponsoring the 2003 symposium in Austin on July 11, 12, and 13. Even if you haven't registered yet, even if the workshop you are dying to take is full, even if it seems a long way to go, DON'T MISS IT. The symposium offers an opportunity unlike any other to learn about bonsai--not just by taking workshops but also by observing workshops and demonstrations and visiting with other bonsai enthusiasts from around the state--and around the Southwest.

For information, phone 817-283-5895 or e-mail ts.hendricks@worldnet.att.net.

Yagers Made Lifetime Members

Because of their many years of tireless service to the HBS, most recently with a generous gift of trees, the HBS board has voted Sam and Mary Yager as lifetime members.

Mary and Sam have been fixtures in Houston's bonsai community for many years now. Sam is past president of HBS and a former LSBF delegate and alternate. Mary and Sam were two of the pillars of the 1998 state bonsai convention here in Houston.

Our thanks to Mary and Sam for all their dedication and hard work. The HBS would not be possible were it not for Sam and Mary and folks like them.

HBS Bylaws Amended

At the June meeting of the HBS, the membership voted in favor of proposed amendments to its bylaws. The amendments relate to the publication of the board minutes, the nomination of officers from the floor, and the selection of the audit committee. The HBS membership adopted all three amendments. See the June 2003 HBS newsletter (p. 30) for the complete text of the amendments.

Letter from the President

If you missed the meeting with Greg Setter, you missed some good information and a good time. You also missed seeing me mess up and need help wiring the first tree Greg worked on! Greg is friendly and very knowledgeable. He worked on two elm trees that were gifts from Sam and Mary Yager. Greg refined and wired the two trees. Although the tree Greg wired was done far better than the one Ken and I wired, Ken and I got some great on-the-job training. One of the trees was raffled, the other was auctioned. Greg gave individual care information for each tree to the two winners.

The refreshment tables, prepared by our own Paula Hickman, were good places to meet friends and enjoy goodies. I would not want to have to try to think of what to bring each month to please everybody; so the next time you see Paula, thank her, and don't hesitate to bring something new to donate to the refreshment table. A lot of people are working behind the scenes. Thanks to all.

If you have input on anything that may help the club--refreshments, training, speakers--talk to us. This is OUR club. We need your input.

See you at the meeting and at the Symposium in July.

--Virgil

Monthly Bonsai Care

by John Miller

John Miller, who writes a monthly column for the Bonsai Society of Dallas and the Fort Worth Bonsai Society, has agreed to share his column with us. We need to make adjustments for our warmer, damper climate, longer summers and erratic winters.

Now its hot and what do you do? Drink lots of water, head for the shade, and put lots of insect repellent on. Well, guess what? Your bonsai are a lot like you except they can't do it for themselves.

Check your water practices. I prefer to water heavily in the evening. That gives the plant all night to renew itself without losing most of its water to evaporation. Then in the early morning, they get a quick foliage spray, wetting the surface of the soil which may have dried out overnight. This was what I did while working since the morning task only took 10 minutes or so. Now I still prefer to water heavily in the evening but the morning is more done more slowly and trees given a little more individual attention as some of them do not need water in the soil. Be sure to do the double watering bit--water thoroughly and then after a few minutes water again so that the dry soil particles will get moistened.

Many of our bonsai would do just fine in the full sun all summer long. However none of them like their feet scorched which is what is happening when the sun heats the pot (and thereby the soil) to temperatures over 120 degrees. Dappled shade would do nicely because the sun will not shine on one spot very long but partial shade (such as morning sun and afternoon shade) will not suffice when the morning sun is as hot as it is here in Texas. When you put sun screen on remember to shade the pot as well as the soil. A light mulch on top of the soil will work great. The pot needs to be covered with foil or set in a box made to fit. Old rags work fine also if they do not blow off.

Since the trees are in stress because of the heat, they are particularly sensitive to insect problems. The organic people say that bugs are attracted to plants that are in stress and will head there first. That may be true or it maybe that the healthy plants' natural defenses keep insects in check and you see the bugs on the stressed tree first. Whatever, watch for any signs of damage and treat for them. Sometimes the tree is almost dead before you notice the damage (e.g., spider mite damage on junipers). That is why I like the organic approach of using Garrett Juice. It is not only a foliar feed but kills spider mites, scale and most other small insects.

The humidity in summer varies quite a bit but when it sticks around for a few days look for fungal problems to appear, mildew being the most prevalent. Foliage spraying in the morning will not be a problem because it dries pretty quickly. Treat with potassium carbonate which you can find at any nursery with a decent organic section. There are several chemical sprays available, too.

That takes care of everything but the bar-b-que and lemonade. I guess the equivalent would be to feed the tree with fertilizer balls. Many are available commercially or you can make your own, depends on how many bonsai you have at your table. Even with the fertilizer balls I like to give a feeding with a liquid fertilizer every other week also. Chemical fertilizers may burn roots if the soil temperature (remember the sun factor) gets too warm, probably like upper nineties or more. Be sure to read the label for guidance. The change to a winterizing fertilizer will not take place until September.

You still need to visit the barber shop or beauty salon and get your top worked on during the summer. Your trees too keep growing and need their periodic beauty treatment. Keep the ends trimmed and the stray shoots cut out. Its not that bad when you can sit in the shade with a big lemonade and really enjoy being with your bonsai. That way you will have your tree ready for the fall show or you will be ready to enjoy it when the change of seasons gives it pretty colors.

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Letters to the Editor

We think Paul's soil article is great. Since we are new to growing bonsai, the soil thing is very confusing. We now keep the newsletters in the car so we can refer back to them when stopping at plant stores. Thank you,

--Calvin, Scott and Mary

* * *

First of all I want to thank you for sending me a copy of each issue of *The Bonsai News of Houston* in which the "Soils" article appears. What started as an act of frustration due to the lack of data has turned out to be both a fun and learning experience for me and I only hope others also benefit from the research.

As noted in your newsletter, this program is constantly updated. Whenever I read about, or hear of a product I am unfamiliar with, it is researched and most importantly, a sample is obtained. One can read, write and

look at pictures but there is something missing until you have the real thing in hand. As part of the soils presentation made to our club every third year, a sample of every product discussed is available to see, touch and feel.

In response to a "Letter to the Editor" from Ron Smith, thank you for reading the article and taking the time to write the editor, but I must point out that Solite and Isolite (pronounced ee-so-lite) are two different products.

Solite, which now recommends their product as a soil amendment, is manufactured by the Solite Corp. of Richmond, Va. Solite is an expanded shale lightweight aggregate very similar to Haydite. It was developed as a lightweight substitute for gravel in concrete.

Isolite is manufactured by the Isolite Corp. of Osaka, Japan and, as Ron noted, is quite expensive. Isolite is diatomaceous earth that is fired at an extremely high temperature which turns it into a porous ceramic granule. Isolite was developed for sewage treatment facilities where polluted waters constantly flow through the granules, which have pores large enough to allow the microorganisms to thrive but small enough to prevent flushing them out. The main drawback, in addition to price, is its weight. Dry weight is 32# per cu. ft. One other comment; Isolite has become the latest "must have" soil for orchid growers. They like it as the orchid roots will not adhere to the smooth ceramic surface.

* * *

Soil and Soil Amendments

By Paul Weishaar

President, Indianapolis Bonsai Club (IBC)

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Thanks to HBS-member Pedro Rodriguez for calling this article to my attention and obtaining permission to reprint. The article documents a two-part program that Mr. Weishaar presents to the IBC every three years. It is updated for each presentation. You may read the entire article on the Internet at <http://www.indybonsai.org/calendar02.html> <http://www.indybonsai.org/files/Bonsai%20soil%20presentation%20revised.PDF>. Please send me your comments, particularly those with a Conroe-Houston-Galveston slant.

Part 2. Soil Amendments

For the purpose of this discussion amendments are defined as any favorable item you can or should add, either in liquid or solid form, externally to your Bonsai or into your soil mix. These items include such basics as water and fertilizers as well as vitamins, hormones, micro-organisms, pH adjusters and other special use additives. Whatever the amendment is, the only way it can be utilized by the plant is to be in a soluble form the plant recognizes. This is the

primary difference between manufactured and organic products.

WATER

Gardeners often describe water as the necessary evil, you have to have it but too much or too little will create devastating results. If you have created a good Bonsai soil mix as we discussed in Part I of this program, you are off to a good start because there is little point in supplying water to trees that are unable to make productive use of it due to poor soil or poor soil management.

The most frequently asked questions are "How much should I water" or "How often should I water". The answer is, only when the tree is thirsty. This is actually the hard part of learning to water. Every where you read or talk about watering you get instructions like "water daily" or "water weekly". You must adapt to the instruction "water only when needed ". You have to get to know your Bonsai and sense their needs. There are just too many variables, soil, rain, temperature, wind, sun, humidity, clouds, drainage, pot size and material, etc., to say, water ten minutes every day.

As we mentioned earlier, by controlling the soil mix you can control the amount of water necessary. For instance, if you have a tree which needs a lot of water, prepare a mixture that retains the water. Conversely, if it is a tree which needs less water, use a more porous soil which drains rapidly. By doing this you can water all your trees at the same time and the soil mixes will adjust the timing of when you water them again.

Pot bound Bonsai dry out faster and will require watering more often than those with a normal root structure with a soil buffer. Newly potted bonsai, on the other hand, demand very little water until transpiration is restored and new growth is evident. Over-watering newly potted Bonsai which have been root pruned, except at the initial watering to settle the soil, is a frequent cause of failure.

If you have the soil mix based on the needs of the tree, you should not have to worry about over watering during the growing season. In the Spring and Fall you must adjust your watering schedule as the trees need much less moisture therefore the soils retain moisture longer. Remember, most stress to which Bonsai are subject, including spider mite and disease, is a by product of the over-watering syndrome.

"How and when do I water" is another frequently asked question. Psychologically, hand watering my Bonsai is one of the more pleasurable times of the day. Never think of watering as a chore. Think of it as a pleasure. This is when you can relax and look and enjoy each and every one of your trees. What does this have to do with the question? Two answers. . . . If you have an automatic sprinkler watering system which waters everything including soil, pot, foliage, trunk and anything else in the vicinity, it is recommended you water in the early morning before the sun rises. This allows the Bonsai time to absorb the moisture both through the soil and foliage prior to the heat of the day while at the same time not creating an extended period where the

Calendar of Events

July 2	Monthly meeting of HBS, 7:30 p.m. Hermann Park
July	NO SATURDAY STUDY GROUP
July 11-13	LSBF Symposium, Austin. Ted Matson and Ed Trout. Tex. Talent: Hansen, Holmes, Hubbard, Klajnowski, Padilla, Setter, Ware, Wilken. 817-283-5985, www.wimberley-tx.com/~bonsaijg/2003.html
Aug. 16	Saturday Study Group, 9:00, Bayland Park
Sept. 13	Saturday Study Group, 9:00, Bayland Park
Sept 20	Shohin Society of Texas, Carving & Follow Up
Oct. 11-12	HBS Fall Show
Nov. 15	Saturday Study Group, 9:00, Bayland Park
2004	
Feb. 6-8	Shohin Seminar, Ramada Inn (1-209-826-4444), Santa Nella, CA
May 21-23	LSBF State Convention, Houston. Kathy Shaner, Guy Guidry, Mary Miller

moisture stands and creates an environment in which harmful bacteria and fungi can grow. Standing moisture also attracts insects. If, on the other hand, you walk through the Bonsai and hand water, it is recommended you do this in the evening and only water the container. This allows the Bonsai all night to utilize the moisture in the soil while not providing the environment for the insects and fungi.

One other comment on when to water. . . do not water for a day or two prior to doing any major bending of a branch or trunk. Withholding water will make the tree more flexible and minimize the chance for breakage.

Types of Water

Softened Water. Water softeners of the Zeolitic type (the most predominate type) produce water that can injure trees. The Zeolite softener replaces the calcium in water with sodium. Calcium is the element that makes the water "hard". The sodium does not settle out or evaporate; in fact, it accumulates in the soil and container. Long term use can cause soils to become less permeable and can cause sodium sensitive plants (citrus, orchids, etc.) to burn. If you cannot bypass the water softener, you have to counteract the softening process.

A few years ago the Cooperative Extension of the University of California issued advice on treating soft water for use on plants. "Softened water can be treated to

eliminate these hazards. The treatment involves simply adding calcium that was present before softening removed it. This can nullify the effect of sodium added in the softening process. Gypsum (primarily calcium sulfate), available at most nurseries, is a cheap and safe material to use for this purpose. Its safety feature is its relatively low solubility yet enough gypsum can be dissolved to treat softened waters effectively. One-half teaspoon per gallon of water should be sufficient in most cases to supply the necessary calcium to change the water to an unsoftened state." Gypsum also dissolves existing salts.

In following up on this advice as it pertains to watering Bonsai of a larger quantity where you use a hose or irrigation system, I could not find any published data. In talking with some Bonsai nurserymen around the country most suggested sprinkling a light covering of gypsum over the soil about once a month. As the gypsum is slow dissolving this should suffice.

Distilled Water. Using distilled water (water which has had all salts and other solids removed) may seem extreme but it is beneficial. If you have a limited amount of Bonsai or have small Bonsai (mame), using distilled water should be considered as it will prevent the salt build-up in soil and on pots. Instead of using commercial distilled water you can collect rain water in large barrels. Rain water, through the process of evaporation over 48 hours +/-, is naturally distilled.

Hard Water. In areas where the water is very alkaline (commonly known as hard water), such as here in central Indiana, it is difficult to grow many species of trees, especially acid loving trees, without modifying the pH. pH is measured on a scale from 1 (acid) to 14 (alkaline) with 7 considered neutral. Indianapolis water has a pH of 7.4; Greenfield, 7.6; and Bloomington, 7.9. What is pH? Having ask that, that this is probably as good a place as any to discuss pH.

UNDERSTANDING pH

"pH" is a complicated chemical measurement that determines the concentration of hydrogen ions which regulate the acidity or alkalinity of the medium. The scale ranges from 1 to 14. Low numbers indicate an acid environment, high numbers indicate alkaline. Halfway, or 7, is neutral. pH can only be measured in a soluble form.

While pH is critical when it is considered in the light of agricultural yields, the only importance of pH in bonsai soils is its influence on the ability of the plant to absorb nutrients. Most plant-essential nutrients in soil reach maximum availability in the pH range of 6 to 7 and they decrease both above and below this range. In addition, the activity of various micro-organisms, which are essential to plant health, can be strongly dependent on pH.

It is noteworthy that most woody plants we use for bonsai include this range (6 to 7) in their total range of pH preference. What this means is that various species of plants can only absorb nutrients when the pH is in their range.

There are a few exceptions to this range of 6 to 7, e.g. on the low side the rhododendron family (pH 4.5 to 5) and on the high side most desert plants (pH 7 to 8).

Since we are actually determining what our trees are growing in, it makes it simpler to analyze the pH. The majority of the soil components presented in Soils Part I and used today are synthetics and as such are neutral. Only a few are slightly acidic (peat moss, akadama and kanuma). This translates to the fact the pH of the water you use may be far more important than the soil in determining the pH of the medium which in turn dictates the ability of the tree to absorb the nutrients. Remember we noted earlier the Indy water has a pH of 7.4. Use that as a starting point.

So how do you change the pH? If you want to bring the pH to a neutral range add some gypsum. To raise the pH, which creates an alkaline condition, add lime in the form of granular dolomite limestone (available in small quantities at garden centers). To move the pH to a lower range, or acidic, you must add iron sulfate or aluminum sulfate. Rather than trying to find these chemicals individually, the fertilizer manufacturers have made it easy as they have added both chemicals to fertilizers noted for acid loving plants. You can fertilize and control the pH in one step.

CHEMICALS IN WATER

Chemicals which are commonly added to our domestic water supplies do no harm to plants. There is no evidence or study that Fluorine has any effect, good or bad. Chlorine, the other substance usually added to city water passes off so quickly when in contact with air that most of the chemical is dissipated while the water is running into your watering can, the rest passing off as gas when the water reaches the soil.

GYPSUM

Gypsum is one of those rare materials that perform in all three categories of soil treatment: an amendment, conditioner, and fertilizer. Gypsum amends soil alkalinity and acidity as it lowers high pH conditions and raises low pH conditions. Gypsum also counteracts with and leaches out harmful salts. Salts is the common generic name given to non-soluble material particles that are introduced through various solutions and remain in the soil. A build-up of salts halts the absorption of nutrients by the roots. Central Indiana water is high in non-soluble salts, therefore gypsum is recommended as an additive to Bonsai soil. A handful in a 5-gallon bucket of soil is adequate or it can be lightly sprinkled on existing soil on a monthly basis. Gypsum conditions and improves soil structure allowing air and water penetration and root development. Gypsum is 100% Calcium Sulfate.

SUPERTHRIVE

Superthrive is one of those products you immediately are wary of. If you have ever read their brochure or container, you find they guarantee the product will do everything in the world. . . 60 years unchallenged, #1

grower, #1 activator, #1 transplanter, etc., etc. . . . The drawback is they do not include a list of ingredients. The closest they come is touting 50 vitamins and hormones. But you know what, I have found no one who says anything negative about it and it seems everyone uses it [including me]. It is strongly recommended you follow the mixing instructions of 1 drop per gallon since we don't know the ingredients. This is mentioned, as I have seen articles in Bonsai books that recommend 10 to 20 drops per gallon. Most users recommend adding Superthrive whenever you water.

MYCORRHIZA

Most trees have a mutually advantageous association (symbiosis) with a fungus. This living together of a fungus and a tree root is called a symbiotic mycorrhiza. The word, mycorrhiza, itself means fungus-root.

Basically, the fungus grows on and within the roots to provide a mutually beneficial relationship. The mycorrhizal fungi hair roots (hyphae) greatly increases the nutrient absorbing surface and often extend the absorbing perimeters beyond the root surface. In return, the fungi obtain carbohydrates from the roots for metabolic purposes.

Old anchor roots which have lost their root hairs do not readily absorb food. The mycorrhiza provides hair root substitutes in the form of the hyphae.

For many years it was thought that mycorrhiza benefited only pine trees but recent research has shown that all but three plant families benefit from the mycorrhizal association. The three families are Chenopods, Mustards and Rushes/sedges, none of which are used for bonsai.

Mycorrhizal fungi (12 species in package) is available in composted pine bark packaged by the Hollow Creek Nursery. It can be ordered at stonelantern.com. This is the only source I have been able to find. The mixture also contains five trace elements.

Beware of obtaining mycorrhiza through the US Mail. After the recent Anthrax situation, mail is being irradiated to kill anthrax spores. This also kills mycorrhiza.

FERTILIZERS

Why do we fertilize? The answer lies in the soils we use and the fact Bonsai is a form of container gardening. In our quest for the perfect growing medium we have arrived at a point where we are using a sterile or nearly sterile mix. In this totally artificial environment, we now have to provide most if not all the necessary nutrients to maintain the health and growth of the trees.

Unlike we gourmet diners, plants cannot distinguish between their sources of nutrition. Whether the elements come from factory, animal, garden, or ocean, a plant uses nutrients only when in their absorbable (ionic) form. Therefore the difference in all fertilizers is how long it takes a nutrient to reach the stage where it becomes useful to the plant, what it carries with it, cost and convenience.

There are 16 elements necessary for proper plant development. If even one of the elements is missing the plant may not grow to its optimum potential

Major Elements. Federal law requires a chemical fertilizer label to list the three major, or macronutrients, Nitrogen (N), Phosphorus (P) and Potassium (K) in a precise order (0-0-0). To list it is to guarantee it. Organic fertilizer packagers are not required to do this; however, most are now doing it due to public demand. Similarly there is no requirement of anyone to list any of the other elements but many are including them.

Nitrogen [N], the first element, is necessary for above ground vegetative growth, giving leaves and stems a healthy green color. If it is lacking, the new leaves take what little there is and the older leaves turn yellow and fall off. While some nitrogen comes from the atmosphere, most of it comes from fertilizers that must be absorbed through the roots.

Phosphorus [P], the second element, also contributes to the green color of the leaves but it is more important for root development and the formation of seeds, flowers and fruit. Increased disease resistance is another benefit.

Potassium [K], the third element, is necessary for photosynthesis. Without photosynthesis, plants starve. Potassium also improves the rigidity of trunks and helps plants overcome adverse soil conditions. Potassium is especially helpful when applied in the fall to increase winter hardiness.

Minor Elements. The next three elements, Carbon, Hydrogen and Oxygen come from the atmosphere and from water. You will not find these on fertilizer labels.

Trace Elements. The remaining elements are in quantities too small to be measured accurately. Many

packagers are beginning to list the ones they include. I do not like to list proprietary products but at the present time I have found only one fertilizer that contains all major and trace elements: Liquid Grow Plant Food (7-9-5) by Dyna Gro Products.
(To be concluded in August)

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