

## MONTHLY TIPS

*(Eds. Note: The following article was written by Dave Bogan of the Greater Evansville Bonsai Society and is reprinted from their November newsletter 'Bonsai by Design')*

### **Greenhouse vs. Cold Room/Cold Frame**

Some consider them all about the same. Actually there is a big difference, with the main difference being heat, light, and your intentions.

**Cold Room/Cold Frame:** Key word here is cold. Generally used to over winter your deciduous trees. Typically our winters are not severe enough to require this type of protection but there are some definite benefits. First, even though our winter is not real cold, some species can suffer damage. Most damage is usually apparent in the branching. Fine branches can be broken in the wind or some may have slight die back. Once you have a tree with nice ramification, you don't want to lose all that hard work. So, these structures are first used as shelters. The down or maybe good side to these structures is heat created by the sun. Sun and warmth can fool a plant into thinking it's spring. So your trees generally will awaken early. Temperatures inside these structures should be closely monitored. Manually done - open a door or lift the lid of a cold frame on sunny days or automatically via motorized vents and fans. Generally it is recommended to go automatic here. I have seen temperatures of over 75 degrees during February on sunny days. All it takes is one or two days of sun during which you forget to open the shelter. Also, on these sunny days if your glass area is close to the tree tops, you can experience death of the trees upper areas. Remember, glass can intensify the heat of the sun.

Next, no matter how you vent it, your trees will eventually awaken earlier than their brethren outside. This can be good or bad. Remember, once awakened, they need to continue receiving good light and temperatures. A drop in either can cause unwanted growth -leggy due to low light, or damaged foliage from cold temperatures. The good side, if you maintain proper levels once awoken, you can start your spring work earlier and actually extend your trees growth season.

**Greenhouse:** Greenhouses are for starting new plants or growing plants on through the winter. Generally in Bonsai, you don't need a greenhouse except for tropicals. There are though a couple ways of using your greenhouse. You can simply maintain your tropical through winter in a warm atmosphere by maintaining a minimum temperature of around 50 - 60 degrees. Tropicals will exist but not grow in these lower temps. If you increase your temperatures and maintain a minimum of 70 degrees they will actually grow through the winter. If you want better growth, you must add supplemental lighting. Utilizing HPS (High Pressure Sodium) lights and a minimum of 70 degrees, your tropicals will grow very well- maybe not quite as well as in summer outside but they will do well. The other huge benefit of a greenhouse is humidity. Tropicals love humidity.

Now, let's take the next step. I am in the lucky position to have both a cold room & a heated greenhouse. The best of both worlds. Generally, my deciduous stay out until Christmas. They then go into my cold room (actual room within my greenhouse). Luckily, my cold room maintains a minimum temperature above freezing. Actually it probably averages around 40 - 50 degrees. Thus the reason my trees stay out till Christmas making sure they enter and stay dormant prior to coming in. By the end of January I am ready to start working on my deciduous. I bring them into the greenhouse, prune, wire and repot them if needed. They then go back to the cold room. By mid February I can maintain a temperature of above 50. My trees start to bud by late February. In March, I now average a temperature of around 60 degrees. My trees start their spring probably 2 months early. The downside to all this is my trees must stay in until late April so they don't get shocked by a late cold spell outside.

The huge benefit of greenhouse is starting early. There's nothing better during a cold winter day than working on your trees.

For those to you that have greenhouses **with** a grow lighting system consider this.

Generally in winter the coldest period at night is just before sun rise - furnace working its hardest at this point you have your lights set to come on in the a.m. consider turning them on earlier in the morning and maybe not run them as late at night. My lights are set to come on at 4:00 a.m. and turn off at 8:00 p.m. thus 16 hours of strong light for growth. Almost all types of growth lighting systems add some heat in your greenhouse. You might as well utilize it during the cold part of the morning. If you question my timing, consider how long our day is during the highest growth periods of summer, I maintain a growing atmosphere in my greenhouse.