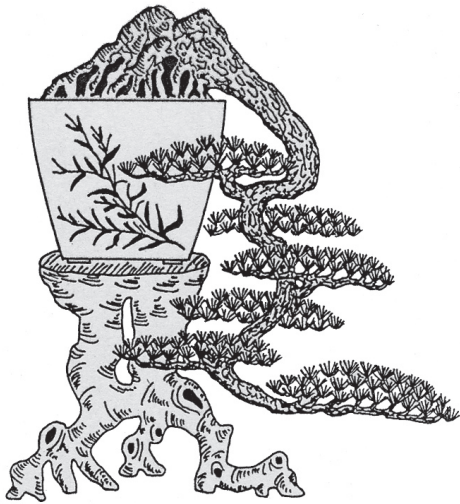


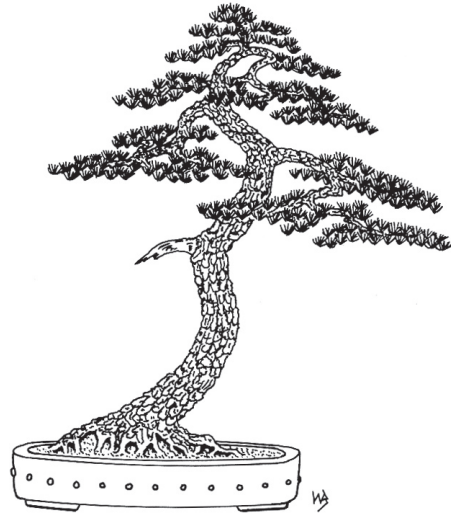
### What is Bonsai?

Quite simply, bonsai (pronounced 'bone sigh') is the practice of growing trees in pots. It combines both horticultural and artistic skills. The bonsai is intended to be a miniature of a fully-grown, mature tree. The translation of the Japanese word 'bonsai' is literally 'tree in a pot'. There is good evidence that many cultures – Egyptian, Indian, Chinese, Japanese - began doing this long ago, but the Japanese are credited with refining this activity to the art form it is today. Virtually every country in the world has practitioners of this ancient art. Many public gardens and arboretums have displays of bonsai, and most major cities have a local bonsai club. The same word 'bonsai' is used both for singular and plural, similar to our English words 'sheep' and 'fish'. Contrary to what many people think, bonsai is not a specific tree species. Bonsai can be created from many varieties of trees, shrubs, and vines.



### General Information

If you have just acquired your first bonsai, you must now learn how to care for it. It is impossible to give care instructions for every type of bonsai and for every climate in a short brochure like this, but this will help you to get started. In general, your bonsai will grow best if it experiences the same or similar environmental conditions as it would experience had it been growing 'wild'. This means that almost all bonsai must be grown OUTDOORS. (A few varieties of tropical plants can be grown as indoor bonsai, but even these will do best if they are grown outside during the summer). Bonsai can be brought indoors for display for a day or two without suffering, but they really prefer being



outside. Bonsai need the daily temperature variations, the intensity of the sun, and seasonal variations in temperature to remain strong and vigorous. The surest way to kill a bonsai is to keep it on top of the television, or on the coffee table. Bonsai are not houseplants.

One of the great pleasures of growing bonsai is to watch them go through all the seasonal changes that they would go through in the 'wild'. Deciduous trees will have their leaves turn colors in the fall, and then lose their leaves, just as their full sized cousins do. These same trees will sprout a new crop of leaves the following spring.

Most bonsai owners display their trees in their backyards on benches that are three or four feet high. Bonsai should be viewed at, or near, eye level. Placing your trees on a bench or table will allow you to see and appreciate your bonsai more fully. Apartment dwellers can keep their trees on a balcony, taking extra care that they don't fall off or get blown off. Do not place your trees directly on the ground. Doing so makes them more likely to be attacked by slugs, insects, chipmunks, and the neighbor's dog.

Join your local bonsai club. Experienced growers of bonsai in your area are your best source of information on which trees grow best in your region.

Caring for your bonsai involves careful watering, pruning, re-potting, insect and pest control, pinching, winter storage, fertilizing, and perhaps wiring. With proper care most bonsai should outlive their owners.

### Sunlight

Sunlight is critical for a tree's good health, but how much is best? For most conifers – spruces, pines, junipers, tamarack, etc. – full sun is best. For many broadleaf, deciduous trees full morning sun and partial afternoon sun is best. In general trees with thick coarse leaves will tolerate more sun than those with thin, delicate leaves. As an example of the later, the Japanese maple, full sun can desiccate the leaf margins, so these grow best in filtered sunlight.

### Watering

Watering is the single most important factor in keeping your trees alive. It is also the hardest skill to learn. This is because various species of trees have different water demands. Some trees tolerate dry conditions better than others. Some trees will 'tell you' they are thirsty when their leaves look limp. For other trees limp leaves mean the tree has already died. So where do we start? All bonsai trees are grown in special bonsai potting mix – not dirt, not potting soil, and not garden soil. This special bonsai soil is coarse and granular, and should allow for water to freely run through it. All bonsai pots have holes for drainage. When bonsai are watered, most of the water runs out the bottom of the pot, and only a small amount is retained in the pot. If a bonsai is growing in a free draining soil mix, during the active growing period (spring to fall) they are usually watered once a day. Water your bonsai with a watering can, or with an attachment to your garden hose that will deliver a gentle spray of water. Be careful you do not blast the soil from the pot with too strong a spray. Water until water runs from the bottom of the pot. Watering is best done in the morning so the tree and soil are fully hydrated during the hottest part of the day. It is often said that it is impossible to over-water a bonsai if it is in a good potting mix. However,



as the roots grow, and as the potting mix starts to break down and become more compacted, the pot will not drain as freely as it once did. So some trees may require water today and others not. You should check to see if your bonsai need water by gently probing with your finger slightly below the soil surface to check for moisture. Do not water if the soil is still moist. However, do not let the soil become bone dry. Some bonsai growers insert a short section of wooden chopstick near the edge of the pot. To check moisture simply withdraw the chopstick and examine it for moisture. Then replace it again. Most conifers generally don't like their roots to be wet all the time and tolerate dry conditions better than broadleaf trees. Smaller pots will require more frequent watering than larger pots. Wind, humidity, pot size, temperature, and soil compaction all are factors in how often you should water. When you go on vacation have a reliable neighbor water your trees.

### Fertilizing

Fertilizer is important for your tree's health and vigor, and its ability to withstand stress. During the active growing year – spring to fall - your tree should be fertilized. You may either use time release fertilizer applied properly in the spring, or use water-soluble fertilizer and water with your watering can. During the growing year, if you do not use time-release fertilizer, fertilize 'weekly weakly'. A fertilizer such as 10,10,10 applied at half or quarter strength once a week works well. Too much fertilizer creates rapid growth with large leaves – a phenomenon we want to avoid. Trees that are dormant should not be fertilized.

### Pruning and Trimming

As your tree grows it will be necessary to trim and prune it to maintain its bonsai shape and size. Severe pruning is generally done in the spring. Lesser pruning is done throughout the growing year. Pruning is also done to equalize the vigor in different portions of the tree. The 'strong' areas – usually the top of the tree and the ends of the branches, are pruned more than 'weak' areas of the tree – the inner branches and the lower branches.

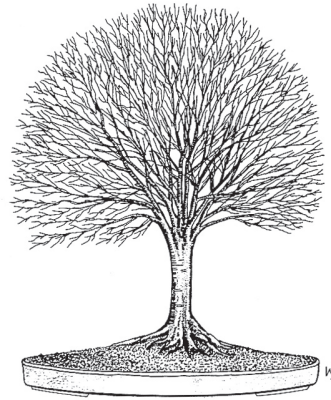
### Wiring

Your bonsai may have wire applied to the trunk and branches. This wire is to hold the branches in a particular position and is not meant to remain on the tree forever. Typically the wire remains on the tree anywhere from a few months up to a year. Do not let the wire cut into the bark of the tree as this will permanently scar your tree. Any wire that needs to be removed can be cut off with a special wire cutter designed for bonsai. Cutting the wire is preferable to unwrapping it. If when the wire is removed the branch springs back to its original position, wire will need to be re-applied.

### Repotting

Repotting must be done periodically to keep your bonsai healthy. Trimming the roots prevents the tree from becoming pot bound and also stimulates new root growth. For almost all varieties of bonsai, repotting is best done in the spring just as the plant is awakening from dormancy. Most bonsai need to have this done every two or three or four years. Older trees require less frequent potting than younger trees; conifers require repotting less often than broadleaf deciduous trees.

To repot a bonsai the tree is carefully removed from its pot (there may be a wire anchoring it in place. Cut this wire and remove it.). The roots are then carefully combed out with a root hook. Trim off the root ends enough so that it



will fit back into the same pot. Replace the soil with new bonsai potting mix. Secure the tree in its pot with wire to anchor it in place. A tree that wiggles in its pot will have difficulty growing new roots. Newly repotted trees should not be exposed to full sun and drying winds until the roots are actively taking up water.

### Insects and Diseases

Many, if not most, insects are not harmful to your bonsai. Some are beneficial in that they prey on insects that will do damage to your trees. If you find that harmful insects have taken up residence on your bonsai, you need to take action. Many of these can be washed or picked off. Many are small and difficult to see. Red spider mites are frequently a problem with junipers, and can be discerned by holding a white piece of paper below a branch and tapping on the branch. If you see what looks like moving red paprika, you have a spider mite problem. Treat with an appropriate insecticide. Be sure to read all labels and application instructions for any pesticide. To do otherwise is a violation of federal law.

### Winter Care – Temperate Trees

A dormant period is necessary for all temperate trees, and trees that are not given this period of rest will die. This does not apply to tropical or sub-tropical varieties, which are described on the next page. The type of winter protection needed by your trees depends on the type of tree that you have and the severity of winter in your area. If you live in an area where the coldest night temperatures in the winter are no colder than about mid twenties Fahrenheit – typically the deep south - your trees will not need any special protection, and can remain on their benches all winter. But for most regions of the United States your trees will require winter protection of some sort. This can be accomplished by placing your tree in an unheated garage; an unheated shed; a cold frame; a window well on the north facing side

of your house; a root cellar; by healing them into a flower bed; by carefully burying them in light snow. Wherever you store your bonsai, they should not be subjected to repeated cycles of freeze-thaw. A sun porch that gets warm during the day and freezing at night would not be a favorable location. Also check periodically during the winter months to see if the tree needs to be watered. Other bonsai growers in your area are a good source of information regarding winter care.

### Indoor Bonsai

Tropical and sub-tropical trees can be grown as indoor bonsai. A few hobbyists grow these indoors all year long with supplemental lighting. But even these trees will do best if they are grown outdoors during the normal growing season. When night temperatures drop below 50 degrees Fahrenheit, these trees need to be brought indoors. Tropical environments receive about 12 hours of daylight all year long. Indoors, give your bonsai as much light as possible, perhaps supplemented with grow lights set on a timer to mimic natural conditions.

Most of our homes have a low relative humidity during the winter. Misting the foliage, or grouping your plants together, or placing pans of gravel and water under, or near, your bonsai will help raise the humidity. Remember, however, your bonsai pot must never be sitting in water deeper than the feet on the pot. The water level must never be above the bottom of the pot.

During the winter months your indoor trees will need to be watered less often. Whether this is every other day, or once a week depends entirely on your specific conditions. The rule-of-thumb is, if the soil is still wet – don't water.

For more complete care information, or to find a bonsai club in your area, log on to the Bonsai Clubs International website:

<http://www.bonsai-bci.com/>

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BCI

PO Box 8445

Metairie, LA 70011-8445, USA

Tel: 504-832-8071 or Fax: 504-834-2298

email: [BCIbizness@aol.com](mailto:BCIbizness@aol.com)



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Sketches Courtesy of Willi Benz