



# **BONSAI TREES: GROWING, TRIMMING, SCULPTING AND PRUNING**

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# INTRODUCTION

"Bonsai art is the display of a landscape - without the landscape."

--Nobu Kajiwara

This quote couldn't be truer. Growing and sculpting bonsai trees can be quite a satisfying hobby. It is a hobby; however, that requires a tremendous amount of patience. When you take a simple sapling and mold it to your desire, you'll be rewarded with a beautiful piece of art you can truly be proud of!

The term bonsai literally means plant in a pot or tray planting. Bonsai however is much more than simply a plant in a pot. The goal of bonsai is to create the appearance of great size and age. This is accomplished by creating a bonsai with strong roots that extend in all directions, creating a sense of stability, a large trunk which tapers as it goes upward, a clear apex, and well formed and well placed branches. These features all combine to create a careful blend of symmetry, balance and proportion. It also must be displayed in a pot which harmonizes well with the plant material.

Bonsai is the art of growing trees in a confined space to simulate certain environmental conditions such as great age, extreme weathering, twisted or contorted form, landscape, or other factors. Bonsai trees are modeled on and take inspiration from nature. The idea of bonsai is to recreate some of nature's most stunning and beautiful effects on trees which are reduced in scale.

When undertaking bonsai, you are beginning an experience that will expand your horizons in countless ways. You may find a new sense of appreciation for nature; you may start looking at trees, bushes and shrubs differently. You will certainly find yourself looking around all the "worst parts" of your local nurseries where they keep the plants that most people wouldn't look twice at. How the art of bonsai will change you is as unpredictable as nature itself, but be assured of one thing: Bonsai will change the way that you look at things.

To the Japanese, there is a link to many of the ideals that their society is based on. Zen Buddhism - where the pastime originated, man, nature, elements and change all are intertwined into this unique method of meditation and expression. To our world now, bonsai is viewed as a hobby that allows a greater understanding and being with nature and also a way to enhance our gardens.

The tree and the pot involved with bonsai form a single harmonious unit where the shape, texture and color of one, compliments the other. Then the tree must be shaped. It is not enough just to plant a tree in a pot and allow nature to take its course - the result would look nothing like a tree and would look very short-lived. Every branch and twig of a bonsai is shaped or eliminated until the chosen image is achieved. From then on, the image is maintained and improved by a constant regime of pruning and trimming.

Bonsai is the art of dwarfing trees or plants and developing them into an aesthetically appealing shape by growing, pruning and training the trees into containers according to prescribed techniques.

Overall, bonsai is a great interest, hobby or even profession to undertake. Although famous theologians have claimed that it is actually 90% art to a meager 10% of

horticulture, it has to be said that a successful bonsai is most definitely a horticultural masterpiece.

Once arriving in the Western world, this enjoyable and rewarding pastime has never turned back, and has gained a magnificently diverse range of plant material and techniques.

Given proper care, bonsai can live for hundreds of years, with prized specimens being passed from generation to generation, admired for their age, and revered as a reminder of those who have cared for them over the centuries. Although these bonsai are extremely beautiful - meticulously cared for over the years and containing such a wealth of knowledge, age is not essential. It is more important that the tree produce the artistic effect desired, that it be in proper proportion to the appropriate container, and that it be in good health.

Bonsai is an artistic representation of a natural tree. It is an image, an illusion of nature. It is smoke and mirrors that defies the senses. The best bonsai are magicians' tricks that have fooled the eye into seeing a far off place in the distant past, or the side of a craggy cliff. We all have to strive to be the magician."

In this book, we will introduce you to bonsai techniques and how to grow your own bonsai masterpieces. The beauty of bonsai is that there is no definitive "right way" to do it. We can offer up tips and tricks to craft your own bonsai, but how. Enter into the world of bonsai and gain a new insight into life!

## **BONSAI HISTORY**

The history of bonsai is long and storied. Bonsai first appeared in China over a thousand years ago on a very basic scale, known as *pun-sai*. Pun-sai was the practice of growing single specimen trees in pots. These early

specimens displayed little foliage and rugged, gnarled trunks which often looked like animals, dragons and birds. There are a great number of myths and legends surrounding Chinese bonsai. The grotesque or animal-like trunks and root formations are still highly prized today.

With Japan's adoption of many cultural trademarks of China - bonsai was also taken up, introduced to Japan during the Kamakura period (1185 - 1333) by means of Zen Buddhism - which at this time was rapidly spreading around Asia. The exact time is debatable, although it is possible that it had arrived in AD 1195 as there appears to be a reference to it in a Japanese scroll attributed to that period.

Once bonsai was introduced into Japan, the art was refined to an extent not yet approached in China. Over time, the simple trees were not just confined to the Buddhist monks and their monasteries, but also later were introduced to be representative of the aristocracy - a symbol of prestige and honor. The ideals and philosophy of bonsai were greatly changed over the years. For the Japanese, bonsai represents a fusion of strong ancient beliefs with the Eastern philosophies of the harmony between man, the soul and nature.

In an ancient Japanese scroll written in Japan around the Kamakura period, it is translated to say: *"To appreciate and find pleasure in curiously curved potted trees is to love deformity"*.

Whether this was intended as a positive or negative statement, it leaves us to believe that growing dwarfed and twisted trees in containers was an accepted practice among the upper class of Japan by the Kamakura period. By the fourteenth century bonsai was indeed viewed as a highly refined art form, meaning that it must have been an established practice many years before that time.

Bonsai were brought indoors for display at special times by the 'Japanese elite' and became an important part of Japanese life by being displayed on specially designed shelves. These complex plants were no longer permanently reserved for outdoor display, although the practices of training and pruning did not develop until later - the small trees at this time still being taken from the wild.

In the 17th and 18th century, the Japanese arts reached their peak and were regarded very highly. Bonsai again evolved to a much higher understanding and refinement of nature - although the containers used seemed to be slightly deeper than those used today. The main factor in maintaining bonsai was now the removal of all but the most important parts of the plant. The reduction of everything just to the essential elements and ultimate refinement was very symbolic of the Japanese philosophy of this time.

At around this time, bonsai also became commonplace to the general Japanese public - which greatly increased demand for the small trees collected from the wild and firmly established the art form within the culture and traditions of the country.

Over time, bonsai began to take on different styles, each which varied immensely from one another. Bonsai artists gradually looked into introducing other culturally important elements in their bonsai plantings such as rocks, accent plants, and even small buildings and people which is known as the art of *bon-kei*. They also looked at reproducing miniature landscapes in nature - known as *sai-kei* which further investigated the diverse range of artistic possibilities for bonsai.

Finally, in the mid-19th century, after more than 230 years of global isolation, Japan opened itself up to the rest of the world. Word soon spread from travelers who visited Japan of the miniature trees in ceramic containers which

mimicked aged, mature, tall trees in nature. Further exhibitions in London, Vienna and Paris in the latter part of the century - especially the Paris World Exhibition in 1900 opened the world's eyes up to bonsai.

Due to this phenomenal upsurge in the demand for bonsai, the now widely expanding industry and lack of naturally-forming, stunted plants led to the commercial production of bonsai by artists through training young plants to grow to look like bonsai. Several basic styles were adopted, and artists made use of wire, bamboo skewers and growing techniques to do this - allowing the art to evolve even further. The Japanese learned to capitalize on the interest in this art form very quickly - opening up nurseries dedicated solely to grow, train and then export bonsai trees.

Different plants were now being used to cater for worldwide climates and to produce neater foliage and more suitable growth habits. Bonsai techniques such as raising trees from seed or cuttings and the styling and grafting of unusual, different or tender material onto hardy root stock were further developed.

Bonsai has now evolved to reflect changing tastes and times - with a great variety of countries, cultures and conditions in which it is now practiced.

In Japan today, bonsai are highly regarded as a symbol of their culture and ideals. The New Year is not complete unless the *tokonoma* - the special niche in every Japanese home used for the display of ornaments and prized possessions - is filled with a blossoming apricot or plum tree. Bonsai is no longer reserved for the upper-class, but is a joy shared by executive and factory worker alike.

The Japanese tend to focus on using native species for their bonsai - namely pines, azaleas and maples (regarded

as the traditional bonsai plants). In other countries however, people are more open to other opinions.

The evolution of bonsai over the past two centuries is truly amazing. Perhaps it is symbolic of how small the world is getting as people from Europe to the United States and even in Greenland are exploring bonsai as a hobby.

And now it's your turn! First, let's explore styles of bonsai.

## **BONSAI STYLES**

It is important for you to remember, as a beginner, that no single bonsai style is the "right" style. Bonsai is meant to be a representation of a tree in nature. Crafting a bonsai masterpiece is tantamount to how YOU view that tree. You are not learning from a bonsai master, you are simply being given instruction on how to create your own bonsai. What you make of it lies simply in your own mind.

You should strive to make your bonsai trees look as natural as possible. Let the tree suggest its own possibilities. If the trunk bends to the right, let it bend that way. Work with it to make it a main feature of your bonsai. You must listen to the tree and hear what it is telling you. Then you will come up with a beautiful creation!

Bonsais should simulate age. You should try and project the appearance of maturity in your tree – just in a miniature form. Even if your tree is relatively young, you can groom it so it looks like it has been growing for years and years.

Two features that give the appearance of age to trees are the caliper of the trunk and the degree of taper of the trunk. The trunks of bonsai (in most styles) will be very wide at the base and taper very smoothly to the top of the tree

There are two general styles of bonsai: the classic (koten) and the informal or 'comic' (bunjin). In the former, the trunk of the tree is wider at the base and tapers off towards the top; it is just the opposite in the 'bunjin', a style more difficult to master.

When you start a bonsai, always remember that you are working with a living plant. Look carefully at its natural characteristics and you may discern within them a suitable style, or styles. Often you can train a plant into several styles, even if it is basically upright like a beech or elegantly slender like a maple. Even if one style only really suits a particular plant, you still can interpret this in many different ways.

More than anything else you should not try to train a bonsai to grow in a style it is not accustomed to. Study the natural growth patterns of the tree you are going to grow and enhance on the pattern nature gave it.

The five basic bonsai styles are formal upright, informal upright, slanting (or windswept), semi-cascade and cascade. All have their own individual beauty and serenity.

### **Formal Upright**



A tree with a style such as formal upright occurs when it has grown in the open under perfect conditions. The most important requirement for this style is that the trunk should be perfectly straight, tapering naturally and evenly from base to apex. The branches should be symmetrically spaced so that they are balanced when viewed from any direction. It is quite a demanding style to achieve.

Junipers, pines, and spruces are great to try and grow in the formal upright style.

To achieve an effective formal upright style, make sure that about one third of the trunk is visible from the front. This can be from the base to the first branch or cumulatively, as seen through the tracery of its branches.

Generally, the placement of branches follows a pattern. The first branch up from the bottom is the longest and in proportion usually is trained to grow to an equivalent to a third of the total height of the tree. This is the 'heaviest' branch almost making a right angle to the trunk.

The second branch directly opposes the first branch and is higher on the trunk. As the branch structure ascends, they taper assuming a somewhat cone-like form.

The top of the bonsai is usually very thick with foliage - so full and tightly ramified that it is difficult to see its internal structure through the mass of leaves or needles.

The tip of this style of bonsai also has a slight curve, to lean forward and effectively 'look at the viewer'. Depending on what species of tree you are using, the whole tree does not *have* to be symmetrical but rather the branches could ascend by alternating on each side.

The branches and trunk of a formal upright bonsai always take on a very distinctive taper. This is achieved by cutting off the growing tip of the trunk or branch with each new year and wiring a new branch into position to form the apex. This is something quite hard to do, however it produces a stunning result when the trunk starts to mature and the taper starts becoming prominent.

### **Informal Upright**



In nature, such trees bend or alter their direction away from wind or shade other trees or buildings, or towards light. In an informal upright bonsai the trunk should slightly bend to the right or left - but never towards the viewer. This applies to all types of bonsai. Neither the trunk nor branches should be pointing towards the viewer when the bonsai is viewed from the front.

For this style, try a Japanese maple, Trident maple, or almost any conifer and ornamental tree. You'll have a dramatic result with a pomegranate or other flowering tree.

An informal upright bonsai basically uses the same principles of the formal upright bonsai only that it is informal. The style still requires a tapered trunk, however the trunk direction and branch positioning is more informal and closer to the way a tree would look when exposed to the elements at an early age. The trunk usually takes on an unexpected curve or series of twists and the branches are thus positioned to balance this effect.

As with formal upright, the crown of the tree is mainly very full with foliage and despite the informal trunk, is most always located directly above the base of the tree. This is an attribute of the informal upright style, if not done like this, the tree would be slanting.

Jin (carved remains of dead or unwanted branches to look like dead and rotting limbs of a tree) is also more appropriate and effective with the informal upright style.

### **Slanting Style**



Trees that slant naturally occur as a result of buff setting winds or deep shade during early development. Whether curved or straight, the whole trunk leans at a definite angle. The stronger roots grow out on the side, away from the angle of the trunk lean, to support the weight.

Almost any type of tree will work well with this style.

This style bears a great similarity to the informal upright. The trunk can be either curved or straight, but must be on an angle to either the right or left (never to the front), with the apex *not* directly over the base of the bonsai.

This style is quite a simple one that can be achieved by many methods. At an early age, the bonsai can be trained to an angle by means of wiring the trunk until it is in position. Alternatively, the tree can be forced to grow in a slanted style by putting the actual pot on a slant, causing the tree to grow abnormally.

With formal upright, informal upright and slanted styles, the number three is significant.

The lowest branches are grouped in threes, and this grouping begins one-third of the way up the trunk. The bottom-most three branches almost encircle the trunk, with two branches thrusting forward, one slightly higher than the other. The third branch, emanating from a point between the first two, is set at such an angle as to make the foliage appear lower than the other two.

This pattern presents an easy way to tell front from back and sets the tone of the entire composition.

### **Cascade Style**



The growing tip of a cascade bonsai reaches below the base of a container. The trunk has a natural taper and gives the impression of the forces of nature pulling against the forces of gravity. Branches appear to be seeking the light. The winding main trunk is reminiscent of a stream meandering down the side of a mountain.

There are many types of trees that can be used to achieve a cascading bonsai. The key here is to make sure the tree isn't naturally straight and upright. You should not try and coax a naturally straight trunk tree into a cascading bonsai.

If done right, this style of bonsai can be quite aesthetically pleasing. The trunk, which is tapered, grows down below the container and gives the impression of the tree being forced down by the forces of gravity. The tree trunk usually also twists as if to emulate a meandering stream with elegant alternating branches protruding from it.

All that is required to create this style is a tall, narrow pot which will enhance the style and accommodate the cascade and a species of plant that will willingly adopt this style if trained.

The main trunk should be wired to spill over and down the edge of the pot, with the main focus on the major bend

(forming an upside-down U shape). Emphasis should also be kept on keeping the branches uniform and horizontal to the almost directly vertical trunk. Another major aspect to remember is that both cascade and semi-cascade should be positioned right into the center of the pot, the opposite to what you would do for any other style.

### **Semi-Cascade**



The tip of a semi-cascade, like the cascade, projects over the rim of the container, but does not drop below its base. The style occurs in nature when trees grow on cliffs or overhang water. The angle of the trunk in this bonsai is not precise, as long as the effect is strongly horizontal, even if the plant grows well below the level of the pot rim. Any exposed roots should balance the trunk.

Flowering cherry trees, cedars, and junipers work very well in this style of bonsai. Many people feel this style of bonsai is the epitome of beauty in the art.

In general, bonsai cultivation is considered an outdoor art. Since bonsai is the miniaturization of trees and means tree in a pot, one may wonder which is better – outside or inside bonsai gardening. The opinions vary.

# INNIE OR OUTTIE?

One school of thought is that trees are outdoor plants and putting them into pots does not transform them into indoor plants. Many believe that if you bring bonsai inside, they will die. While not necessarily true, you will probably see much better results if you let your bonsai flourish outside rather than indoors.

Just remember that you are going to be growing and cultivating a tree in a tray or pot. Trees need lots of sunlight and care to grow. Just because the trees are in a tray or pot instead of the ground doesn't mean they don't need the same care.

However, Bonsai are still trees and must have outdoor living conditions. Trees need good light, good humidity levels, good air circulation and importantly, many species NEED the cold of winter to go dormant. Inside our homes, trees receive comparatively poor light levels and the dry air with low humidity levels created by central heating systems can cause many problems.

There are species that will tolerate indoor conditions and with the correct placement and care can thrive. There are also many species that are not hardy enough to tolerate the winter cold. But, these are in the minority.

It is far more difficult to cultivate indoor Bonsai than outdoor Bonsai. Outdoor species very rarely die immediately when grown inside, they can survive for months. However they slowly lose their health and vigor in the adverse conditions they have to cope with, and become susceptible to bugs and disease until they finally start to show outward signs of ill-health; yellowing leaves, lose of foliage and eventually death.

There are many varieties of plants that do well as an indoor bonsai such as ficus, aralia, azalea, Norfolk pine, serissa, gardenia, or boxwood. Note that these are all woody-stemmed plants and can have their limbs wired to direct the growth.

Tropical and subtropical varieties can not tolerate tempers below 40 - 50 degrees F. These plants can be left outside when the temperatures stay above this. Light inside the house should be by filtered sunlight from an east, south, or west window. Grow lights 12 hours per day work well. Outside in summer place in partial shade

There is NO coniferous species that can tolerate indoor cultivation for more than 2 or 3 years. This is important to keep in mind as most successful bonsai trees are of the coniferous species.

In mild climates, temperate bonsai should remain outdoors year round. In cold climates, temperate climate plants should be grown outdoors during the warm seasons of the year, but will need winter protection. It is possible to grow temperate climate plants indoors in winter if they are first given the required period of dormancy.

The urge is strong for beginners to grow their bonsai indoors. Although a few traditional species for bonsai may be grown indoors year round if they are given a dormant rest period, you should be aware that this requires some skills usually obtained from growing bonsai for a few years. We can safely say that as a beginner, you should begin with growing your bonsai outdoors.

Alright, then, how do you start your own bonsai masterpiece? Let's first consider the tools you'll need.

## **TOOL BOX FOR BONSAI**

Bonsai requires very few tools. Tools, however, make certain jobs or tasks easier and quicker. Tools can range from a few dollars to a few hundred dollars. As with most things, you get what you pay for. The range of quality (and price) in tools is immense and it is suggested that you buy the best *basic* set of tools that you can afford. You will come to appreciate them with time, and, if you care for them, they will last you a long, long time.

There are three tools that are essential to even beginning the process of shaping a tree for bonsai.

You need a pair of scissors which will allow you to do the fine work of trimming in a small space. These scissors should be *sharp* and you should only use them for bonsai work. You may want to try a small set of pruning shears to start with. Eventually, you will want a pair of shears made especially for bonsai work.

Possibly the most important tool you can have in bonsai growing is a pair of concave cutters. Concave cutters allow you to cut branches off of the tree and leave behind a concave wound. The wound will heal much faster than a straight cut, and will callous over in such a way as to make it very difficult to tell a cut has been made at all. These cutters are an essential part of your collection.

You will eventually need a pair of wire cutters, although these won't need to be purchased immediately. If you put wire on, you will eventually have to take it off. These wire cutters allow you to cut the wire right up to the tree's bark, without harming the tree. These too are essential.

You will also want to get several different thicknesses of wire. In general, anodized copper wire is recommended. It is very flexible until it is bent, then it sets and holds its position. You will use it to position and train branches. We have more on wire in the wiring section of this book.

Once you become more proficient at bonsai art, there will be some more tools you will want to add to your tool chest. These tools make certain tasks easier and allow you to do more things with your trees.

Knob cutters are very similar to the concave cutters, except that they have a spherical head, which allows you to cut branches and leave a small hollowed out scar.

A folding saw is a useful tool for cutting through branches larger than the diameter of either concave or knob cutters. These are particularly important for working with bigger trees.

Small scissors are great for working with really small trees or really twiggy growth where it is hard to get larger shears in close. These are a must have if you want to do detail work on smaller trees.

A root rake is used to clear away dirt from the root ball before repotting. It is used to gently comb out the roots and to remove dirt.

Finally, a simple pair of tweezers can be extremely useful in bonsai grooming. Tweezers have all sorts of purposes in bonsai, from pinching back new growth and pruning to removing unwanted objects from your bonsai. Most bonsai tweezers will have a small trowel on the end, useful for patting down moss, sowing seeds, and many other odds and ends.

Now that you have the tools, what about the tree? Should you start from seed or buy a sapling? You can do either.

## **TO GROW OR NOT TO GROW**

You can start your bonsai from seed, but be warned, it can take awhile to see your results. Unless you're starting

your bonsai hobby at age 4, being able to see the fruits of your labor will probably not come to reality. While it may be nice to be able to have complete control over your bonsai from the beginning, we have to advise against it.

Seeds take a relatively long time to germinate and become a proper plant to use for bonsai - with preferably a 1/2-1" (1-2cm) diameter trunk (unless you want to do mini-bonsai which are about 4" high and a totally different practice). Life's too short to sit, watch and wait for a tree to grow.

Trees used in bonsai aren't special in any way. They are exactly the same as the trees you see all around you every day. So, essentially, don't plant your bonsai from seed. Get some more immediate satisfaction by purchasing a young sapling from a nursery or garden center. In doing so, you'll be able to cultivate not only the tree, but your skills as a bonsai artist as well!

Bonsai are ordinary trees or plants, not special hybrid dwarfs. Small leafed varieties are most suitable, but essentially any plant can be used, regardless of the size it grows to in the wild.

Go to your local nursery or garden store and see if you can find some low-priced plants that have relatively thick trunks and good bonsai potential that you can turn into bonsai through training (pruning, wiring etc.) You can even look around your garden and see if you have any potential bonsai plants there that you could use.

A bought Bonsai is not a bad Bonsai. Only the quality of the tree determines what a good and talented plant is. Not its origin.

But the experiences and story of a collected tree will add mental and historical value to a Bonsai that makes it increase its value as a piece of art.

In general, select a specimen, that will be tolerant of the stress of being cut, wired, and replanted. Specimens like Cotoneasters, Lonicera and Juniperus, are advisable starters for Shohin growing. They can be found on nurseries in sizes suitable for beginners work.

Make sure that you buy a tree that grows well in your "neck of the woods". You must be sure that whatever tree you choose will thrive well where you live. Be sure that the plants you consider meet the requirements for good bonsai.

Let's look at some prime species for bonsai tree growing.

## **TREES**

Almost any type of tree or shrub will be suitable for bonsai. In general, most experts agree that pine trees aren't good for the beginner. When you are ready to work on your first tree you should select a species that is "forgiving" to the beginner.

One of the most often recommended is the dwarf garden juniper. They are readily available, take pruning well, can be worked on most of the year, and are generally inexpensive. They also root well as cutting, so you can begin starting your own "mini nursery" as you shape your first tree.

There are some other species of trees that are "perennial" favorites among bonsai growers.

### Beech Trees

Beech make excellent Bonsai, there are types of Beech spread throughout the world's temperate zones.

They tend to be grown in informal styles, and leaf trimming every other year will reduce the size of leaves on the larger types. It is important that leaf trimming is carried out as early as possible, as beech may not come back into leaf that year if it is left to late.

The Southern Beeches are closely related to beeches from the Northern hemisphere, differing in that they have both deciduous and evergreen species. From a bonsai viewpoint they can be treated as their Northern counterparts, except that you should not leaf trim the evergreen species.

They have no special needs but tend to do better in an alkaline (lime) soil rather than a peat based compost.

### Cedar

There are throughout the world many species termed 'Cedar'. Probably the first thing that springs to mind about cedars is that they have, when in a pot, quite weak root systems. The roots themselves being rather fleshy, are prone to damage by frost, so the trees must be sheltered when conditions demand it.

As with all conifers they will do better in a more open, grittier soil than their deciduous counterparts.

### Cherry

The Cherry is a member of one of the largest family of plants on the planet, the 'Rosaceous', The Rose family is really diverse, with the Cherry family at one end, apples and pears, then Quinces, Cotoneasters, through the Raspberry/Blackberry group, past Roses themselves and on to Strawberries.

The Cherry family itself includes Apricots, Peaches, Plums Damsons and Gages, all of which will make good Bonsai. The Apricot or 'Mume', as it's called in Japan is the earliest flowering of the group.

The Cherry family propagates easily from seed, sown in the autumn. The seeds need a cold winter to germinate. They will take from cuttings but can prove difficult. Plants grown from seed or cutting can take ten to fifteen years to flower.

They have no particular needs, as far as their cultivation is concerned.

Pruning should be carried out in mid summer, allowing time for next year's flower buds to develop.

Allowing them to set fruit may stress the tree beyond its ability to survive.

## Elm

The elm family is a group of trees that will forgive you almost anything, will grow in a range of soils and are easy to obtain, with species native to most of the Northern hemisphere.

Zelcova and Chinese Elm are the two species you are likely to come across on a supplier's benches. Both are excellent trees although the Chinese Elm is generally not as hardy when there is frost about, but try what grows in your area as all elms are capable of making good bonsai.

The Chinese Elm is a very easy tree to grow. Deciduous in temperate areas, it may retain its leaves in tropical and sub tropical regions. The Chinese elm is often wrongly sold as an indoor tree.

This type of tree is one that many agree can be grown from seed, although be warned that doing this will not produce immediate results.

They are easy to propagate. The seed germinates readily should you wish to try growing them this way;

however cuttings and layering are the best methods to increase your stock.

Elms respond well to leaf trimming, and on a vigorous tree this may be carried out twice in one season, but not every year.

### Ginkgo

Ginkgo Biloba (a.k.a the Maidenhair tree), together with Larch, Swamp Cypress and Dawn Redwood is a conifer that sheds its leaves over winter. Until the 1940's, it was known only from fossilized leaves and assumed to be extinct; however living specimens were discovered in China. The tree is sexual, that is to say a tree is either male or female.

Ginkgo makes a good Bonsai, but due to its growth patterns tends to be difficult to style, and hence should be allowed to take on its own shape. This tends to be that of the flame of a candle. The tree does not like to be wired and any changes are best made by pruning to a bud pointing in the desired direction.

It can in all other respects be treated as any other bonsai, having no unusual needs as far as feeding or watering. It will however need winter protection as it has very soft roots.

The soft, new foliage of the Ginkgo can be pruned by either pinching out, or with tools. Cuts made into old wood however, will take a long time to heal over.

### Camellia

Camellias are favored for their flowers that appear in profusion. When cultivated, these trees are probably among some of the most beautiful bonsai. Camellias require partial shade and protection from frost. They can tolerate hard pruning in the winter or after flowering.

Camellias can be styled into Informal upright forms with single or multiple trunks and Cascades in large and extra-large sizes.

### Cedar Elm

Cedar elms are a wonderful species choice for bonsai and like most elms, can survive quite a bit of neglect. One of its desirable features is its rough, fissured bark. Most specimens are collected from the wild and will invariably have an aged appearance. The branches ramify easily with normal pinching of shoots and the leaves are not over large. This species is a good one for beginners and collecting them is rather easy as well.

These trees will do well in almost any type of soil. Their natural environment is rather hot and arid and they do well to being kept on the dry side of moist. Like most trees, they use more water in the spring.

They can be kept in full sun to dappled sun. They have an interesting, if annoying habit when they are getting too much sun. They will rotate their leaves to be edge-up, so as to limit the exposure of the leaves to the sun's rays. If they get too much sun, they tend to go a bit yellow.

### Chinese Elm

This type of tree can be both indoor and outdoor bonsai. Chinese elm are quite good plants to choose for beginners at bonsai - with a predictable growth pattern and being quite forgiving when pruned.

The bark of Chinese elms can be quite interesting, some varieties with smooth bark and the others with rough, cork-like bark which cracks and becomes deeply fissured with age - adding character to the bonsai. Generally, the smoother bark varieties will be less hardy than those with rough bark and care should be taken.

Being quite versatile plants, they can be kept in a position of shade to full sun, but make sure that the plant receives some shade during the hotter months and does not dry out.

### Dwarf Pomegranate

This type of tree is becoming very popular among bonsai enthusiasts. This is mostly because of its fruiting and flowering qualities.

Apart from the pomegranate's stunning seasonal yellow-orange 'trumpet style' flowers, the dwarf pomegranate presents so many other notable characteristics.

It has a marvelous naturally-twisting style trunk that very easily adopts a gnarled, ancient appearance - something widely sought in bonsai. Its leaves are a dark green with shades of bronze and after flowering, the plant fruits, producing attractive spherical-like red golf-ball sized pomegranates.

Suited to bonsai styles such as informal upright, forest, cascade, literati, tree on rock, root over rock, twin trunk, windswept, group and twisting trunk style, this plant responds well to hot, sunny conditions, such as that which would be found in the Mediterranean.

### Ficus

Many people have "fake" ficus trees in their house. These are the larger species. However, a miniature ficus can make a beautiful bonsai addition to the larger ones.

The Ficus - or rainforest fig is a plant which is highly suited to bonsai treatment. Figs are mostly tropical plants, naturally growing wild in south-east Asian jungles. Many hundreds of species make up this large tree family.

The tiny flowers are completely enclosed in the developing fruits which are borne in the leaf axils and are

produced each year. You may find that as a bonsai, however, fruiting is not very common. Figs prefer full sun to part-shade and humus-rich, moist, but well drained soil and shelter from cold winds.

Most rainforest figs produce aerial roots from the branches and trunk. Whether to leave these on or not and incorporate them into the design is a controversial issue for bonsai enthusiasts, although it does matter on the overall design of the tree.

The roots are brittle at first, but strengthen and turn into a very strong part of the tree once they reach nutrients. The striking aerial roots of the banyan fig are often featured in clasped-to-rock styles. The striking aerial roots of the banyan fig are often featured in clasped-to-rock styles.

### Japanese Black Pine

Japanese black pine is the epitome of bonsai. Few trees can convey the stoic power or the subtle profundity of bonsai to the degree that a black pine can. Black pine is a tree that takes many years to achieve the mature look of a superior specimen bonsai. For this reason, it is important that those who would choose to grow them be steadfast in their attentive and uncompromising care of the tree. Growing black pine for bonsai carries with it a healthy responsibility to prepare and maintain good material for future generations to work with.

Black pine is a strong tree that responds well to the techniques used in the creation of bonsai. Working with black pine is a balancing act and its growth characteristic is such that it needs ongoing and careful maintenance in order to stay in bonsai trim.

Left on its own, a black pine will develop long, leggy branches that emerge in whorls from a leggy trunk. The branches will have lollypops of foliage at the branch tips. As pines are atypically dominant like most trees, the upper

branches will get most of the tree's energy, leaving the lower branches weaker in comparison. All of these characteristics run counter to the bonsai aesthetic.

There are, of course, other varieties of trees that would work well with bonsai, but this list gives you a starting point. It is important that your trees have certain qualities to make a good bonsai.

## **WHAT TO LOOK FOR**

In general there are five things that you should look for in nursery stock.

First, look at the roots and check to see if they give the appearance of a strong foundation. The roots, at the base of the trunk, should appear to gently spread out in a radial pattern (this will be less apparent on junipers) and should both provide a sense of stability and invite you to follow the line of the tree, focusing your attention on the trunk. Good roots invite you to examine the tree from the ground up!

If the roots look good, begin to examine the trunk. The qualities you are looking for in the trunk depend somewhat on the style of the tree.

In almost all cases, however, a thick base which tapers gradually and gently to a thin apex will make for a nice tree. If you are thinking about a formal upright design, you will want a very straight trunk, with little or no curvature. If you are considering other styles, you will want to examine how the trunk "moves."

Try to find a trunk that curves in interesting or unusual ways, that has some sense of movement, which invites you to examine it further. Follow the main trunk line to its highest point (that will, most likely, be the apex). Does it

suggest a design to you? Does it look tree-like? Can you begin to see the tree within the plant?

Then look at the branching pattern. While most nursery stock will not be trained as bonsai, you should be looking for thick low branches and thinner higher ones. These branches will form the main structure of your tree. Try to imagine how the fit with and balance out the movement of the trunk.

At this point, a style should be suggesting itself to you. Does the tree fit any particular style? Can you see it as a windswept design, as a cascade? What kind of growth and shaping will be required in order for the tree to emerge? Do you see something in that mass of branches, twigs, needles or leaves that others might not? How can you bring it out?

Finally, examine the plant to make sure it is healthy. Pull it out of its container and look to see if there are white fibrous roots (a sign of good health and growth) around the perimeter of the soil. Are the leaves colorful and vibrant? Is there new growth? Does the plant look healthy?

As you experiment more and more, signs of growth and health will become more apparent to you. If you suspect the tree is unhealthy, pass on it. For your first (or one of your first) time out, try to pick something that will be able to withstand the process of pruning, wiring and potting that you are going to undertake.

Plants chosen for bonsai should have attractive bark, and the trunk must give the illusion of maturity. The trunk should have girth, but must remain in proportion to the entire tree and should taper gradually toward the top of the tree. Sometimes, one or two of the main branches must be shortened to emphasize the vertical line of the trunk and give the trunk a balanced appearance.

To give the appearance of age, the upper one-third of the root structure of a mature bonsai is often exposed. Everywhere on the tree, but mostly from the front, the

branches should look balanced and appear to be floating in space; they should not appear lopsided or top heavy. The branches should not be opposite one another with their lines cutting horizontally across the trunk. The branches give the bonsai dimension and establish the tree's basic form.

A bonsai should have a harmonious arrangement of branches without unsightly gaps. Flaws can be spotted by looking down on a bonsai. Upper branches should not overshadow lower branches.

Not all plants are equally effective as bonsai. To produce a realistic illusion of a mature tree, all parts of the ideal bonsai - trunk, branches, twigs, leaves, flowers, fruits, buds, roots - should be in perfect scale with the size of the tree.

Plants used for bonsai should have small leaves or leaves that become small under bonsai culture. Plants with overly large leaves will look out of proportion if chosen for bonsai.

Now that you've got your tree, what do you do next? Plant it, of course!

## **PLANTING YOUR BONSAI**

Since bonsai trees are meant to be grown in a container, you'll want to select an appropriate one to foster the growth of your tree.

The bonsai with its container and soil are physically independent of the earth since its roots are not planted in it. It is a separate entity, complete in itself, yet part of nature. This is what is meant by the expression "heaven and earth in one container".

A bonsai tree should always be positioned off-center in its container, for not only is asymmetry vital to the visual

effect, but the center point is symbolically where heaven and earth meet, and nothing should occupy this place.

Another aesthetic principle is the triangular pattern necessary for visual balance and for expression of the relationship shared by a universal principle (life-giving energy or deity), the artist and the tree together. Tradition holds that three basic virtues are necessary to create a bonsai: truth, goodness and beauty. These three form the triangle that represents bonsai.

Since roots must be pruned on plants for bonsai, the initial containers are different from the traditional containers used later in the plant's development. The beginning containers are called training pots.

Just about anything will do that will hold the heavy roots, but it is a good idea to choose something similar to the sort of pot the plant will be placed in once the roots are small and fibrous.

Cascading plants should be trained in deep pots, while tall specimens that will end up in shallow pots need to begin in fairly shallow containers. Make sure that the drain holes in all training pots are at least one half inch in diameter.

Traditional bonsai pots, available from large nurseries and some import stores, are round, oval, square, rectangular, and hexagonal. Cascade and semi-cascade styles of bonsai look good in round or rectangular pots.

You should place the plant in the center of the pot with the branches sweeping over the sides. Upright trees should be placed off center (about one third the distance from the edge) in rectangular or oval pots.

The pot needs to complement the tree and not be very big - usually the depth of the pot should equal the thickness of the trunk of the plant - but this law doesn't always have to be obeyed.

Select a wide and shallow pot to keep the attention on the planting itself. The wide, flat planting gives the feeling of calm serenity found in the deep forest. Find a container whose length is about two-thirds the height of the tree.

If the tree is wider than it is tall, use the width as your gauge for the pot size. Find a planter with a width two-thirds the height of the tree and a depth of approximately 1 1/2 times the trunk diameter.

Use colors that complement the tree - a brightly colored pot for a flowering tree or for a deciduous tree that has stunning fall leaves or more muted and solemn colors for a pine or cedar. Look at the bark of your tree. If it has a rough texture, a bit of texture on the pot itself works well.

Remember that no pot is permanent. Your tree will require repotting over the course of time to keep it from becoming root bound. We'll address re-potting in another chapter.

After the bonsai has been potted you can now add moss or other small plants around it to give the impression of a fully sized tree in nature.

You've got your tree, you've got its container, now let's look at how to prune and shape your bonsai.

## **PRUNING AND TRIMMING YOUR BONSAI**

A great deal of pruning is often necessary if starting with a nursery plant. Only excess foliage and undesirable limbs should be removed. Make all cuts above a bud, a side branch, or a main fork of the tree. Remove all buds except those on the outside of the trunk to force growth outward

and upward. Leave stubs flush with the stems. Avoid cutting back so far that the main branches are weakened.

Do not shear bonsai as you would a hedge; the objective is to make the plant look like a replica of a mature tree. Keep branches growing toward open space and away from each other. Do not prune too zealously; plants must have sufficient leaves for photosynthesis.

Heavy pruning usually only takes place once in the life of the bonsai. Once the basic form is established, shaping is done by nipping or pinching back. This procedure controls new growth. Nipping is done to shape the plant and to develop luxurious foliage. Nip off tiny spurs that appear on the trunk before they are large enough to leave scars when removed.

Roots must also be trimmed. Try to keep all fibrous roots and maintain a balance of one branch for one root if at all possible. Remove any roots that were damaged in digging. Leave surface roots intact. Prune the roots with sharp, sloping cuts to avoid damaging them.

Pruning is necessary to maintain the right shape of a bonsai and encourage new growth. Some plants naturally respond well to pruning, regardless of how intense, while other plants can find it hard to recover, especially when pruned at the wrong time of the year.

To prune correctly you must find out the type of plant your bonsai is and research when the best times are to prune old and new season growth. Generally, new growth is pruned during the growing season to maintain the shape of the bonsai, while pruning of hard wood (old season growth) is done in mid-autumn.

One of the main forms of pruning for bonsai, especially evergreen coniferous bonsai such as junipers and cedars is 'finger pruning'. This involves pinching back new growth which does not come within the general shape of the bonsai

or is at the top of the bonsai - helping to encourage bushy foliage and a more tree-like looking bonsai.

To do this, take the growth between your thumb and forefinger while holding the branch with your other hand and remove with a twisting movement. This is better than trimming the growth with scissors. Using scissors leaves an unnatural look and leaves the foliage an unsightly brown.

For deciduous trees such as maples, the Chinese elm and cotoneaster, scissor tip pruning is best. When trimming outward or 'overenthusiastic' growth, trim shoots back to just after the next series of leaves, but don't cut the foliage as such.

Leaf pruning (also known as defoliation) in bonsai is used for several deciduous and tropical plants such as ficus or maples to reduce leaf size, remove unsightly leaves and speed-up growth by causing two seasons' growth in one. For deciduous trees such as maples it also means that their autumn country is brighter. This is done in mid-summer, by cutting 60-90% of the leaves off the tree, only leaving a few to ensure that the tree keeps its energy.

Remove leaves with fine scissors, cutting them from directly behind the leaf. In the next few weeks make sure that you keep the plant in a hospitable position and climate and supply it adequate water. Remember however, that this form of pruning is only applicable to certain types of plants.

Scaffold branches are selected early on as the only branches to be allowed to prosper, while the excess branches are mercilessly pruned off.

Be careful that you really consider which branches need to go and stay so the plant can keep in balance and be pleasant to the eye. Try to prune the plant into a tree like form - or a form that is commonly seen in nature - to keep with the principles of bonsai.

Trimming and pruning are the means by which a bonsai is kept miniature. This involves the systematic removal of vigorous growth in the spring. It is important however, to understand that for the health of the tree one should never remove all the new growth at one time. The roots are trimmed and so is the foliage on the plant.

You do not need to prune your bonsai every day as many people think. Two or three times a year is enough - usually at the start of spring, end of summer and sometimes during late autumn or winter.

When the plant has been pruned to your satisfaction, it can then be wired.

## **WIRING THE BONSAI**

Wiring is an important part of the process of styling your bonsai and nearly all well designed bonsai have been wired at some point in their development. Though at first a daunting technique to master, it gives the bonsai enthusiast better control and manipulation of the trunk and branches of his/her bonsai.

By coiling wire around the limbs of the bonsai, the enthusiast is able to bend the tree into a desired position upon which it is held by the wire. In a matter of weeks or months, the branch or trunk 'learns' and stays in position even after the wire is removed.

With the use of wire, straight trunks or branches can

be given more realistic movement. Young branches can be wired into a horizontal or downward position to create the illusion of maturity. Foliage or branching can be moved to 'fill in' bare areas of the trees silhouette.

Without wiring, the enthusiast would otherwise have to wait for shoots to grow in the desired direction. With wiring, existing growth can be manipulated there instead.

You will use the wire to shape your bonsai into the style that most fits it. As we have addressed before, deciding on the shape of your bonsai, study the tree carefully and take into account the natural form of the species. Observe the way mature trees of the same kind grow in their natural setting to achieve an impression of age and reality. Decide on the final shape and size of your bonsai before starting. Make a rough sketch of what you wish to create, and use it as a guide.

Aluminum wire is perhaps best to use for beginners. Copper wire has more holding power but is a bit more difficult to maneuver. Typically, you will need a wire thickness a 1/3 that of the trunk or branch you are trying to bend. The wire you use must be thick enough to bend the branch effectively and for it to remain in position but thin enough for the wired branch to be manipulated and for neatness.

To make the branches flexible before wiring, do not water the plant the day before you wire it. Begin at the bottom of the tree when wiring and shaping, and work upward. Anchor the end of the wire at the base of the tree by pushing it into the soil. Use foam pads under the wire to protect the branches.

The process of wiring and bending causes a series of minute splits and fractures in the layers underneath the bark of the branch; as the cambium layer repairs and heals this damage, the new position is 'learnt' by the branch. The faster the branch is growing the faster it heals, the sooner

the wire can be removed without a return to its original position.

Where possible the wire should be applied at a 45° to the direction of the branch that is to be wired. Hold the beginning of the wire/anchor point firmly with your left hand at all times; as you coil the wire further down the branch, you can also move the position that you secure using this hand. At all times, the wire that has already been applied should not be able to move while you continue to wire the remainder of the branch.

With the wire in your right hand, feed the wire through your thumb and first finger as you make a circling motion with your wrist around the branch; carefully work down the branch towards your body.

You can either cut a length of wire approximately 1/3 longer than the branch you are wiring or as I prefer, you can keep the reel of wire in the palm of your hand and cut to length when you have reached the tip of the branch. Always wire from the base of the branch to the very tip.

The last turn of the wire should be at 90° to the direction of the branch to secure the end of the wire at the very tip.

On fast growing species it can be worth wiring more loosely to reduce the risk of the wire cutting into the trunk. When wiring an entire tree, always start with the trunk, wire the primary branches and then the secondary branches.

Bend branches slowly and steadily. Listen and watch for signs of the branch cracking and splitting. If it does, STOP! The thicker the branch, the more force that will be needed to bend and the less 'elastic' the wood. The branches of certain tree species are especially prone to splitting or snapping whatever their size.

You should learn which tree species have branches that are likely to snap rather than bend comes with experience. When wiring an unfamiliar species for the first time, test the tension of the branch with your finger prior to coiling the wire.

Some species are virtually impossible to bend to any real degree without the branches splitting. These can only be wired when branches are very young and haven't 'hardened off'.

If possible, use your hands as a clamp holding the outside of the branch with your fingers, push and bend the branch from the inside of the curve with your thumbs. This gives firmer control while spreading the force of the bend around the outside of the branch where it is most likely to split.

Bending branches at the point where they grow from the trunk can be hazardous; some species can be prone to ripping out of the trunk completely. Proceed with care.

Allow the soil of trees to be wired to dry out slightly. With less water, the tree will be less turgid and more pliable.

Above all, be decisive. When a branch is bent into position do not keep returning to it and moving it, repeated bending can cause an unnecessary number of fractures in the branch, and so weakening it.

Make sharp bends at leaf joints and where secondary branches grow; this is where tree branches naturally have a change in direction. Bends made in the internodes don't look as natural.

Add movement so that secondary/sub branches are on the outside of the bend, not the inside. On deciduous species in particular, make sure you add movement to all straight sections of the branch. Don't just create movement

from left to right; make sure the branch also moves up and down as well.

If allowed time to recover without any further work being carried out, all bonsai respond well to wiring. Don't wire unhealthy or weak trees as it will delay recovery.

Some will advise that when wiring the trunk of a tree, the start of the coil is anchored into the soil and roots of the tree. This isn't necessarily the best technique as the anchorage is poor and the wire will often move and disturb the roots as the coil around the upper trunk is made. Unless movement is absolutely necessary in the first few inches of the trunk, a good suggestion is to keep the entire coil of wire above soil level.

When is the best time to wire your tree? That depends!

## **WHEN TO WIRE**

With the large number of tree species commonly used for bonsai and the wide variation of climates in which readers will be wiring, it is impossible to state exactly when your tree should be wired. There are also pros and cons of wiring at any particular time of the year with any particular type of bonsai. Theoretically, most tree species can be wired at most times of the year though trees wired during the winter may need frost protection in certain climates.

The only time that wiring can negatively impact the health of your tree to a large degree is during winter, in areas where temperatures regularly drop below 15°F. In temperatures this cold, any fractures that have not healed

will be exposed to the cold and possible future dieback of the branch.

In warmer climates, the best time to wire deciduous trees is just as the leaves fall in autumn. With the branches bare it is much easier to wire and adjust the branches with a complete view of the tree. The branches should heal all but the largest cracks or severe bends before the tree becomes completely dormant for the winter.

Deciduous trees can be wired in spring before the leaves open but great care must be taken that the new leaf or flower buds are not dislodged. Deciduous and broadleaf trees can be wired any time through the growing season but when in leaf it is more difficult to study the structure of the tree and wiring around the leaves is more difficult. Branches wired at this time; particularly new shoots, will heal very quickly. On fast growing species, keep checking every few days that the wire is not beginning to dig in.

The second best time to wire deciduous trees is at midsummer after defoliating the tree. Again with the branches bare, wiring is clear and easy; the branches should take to their new positions before the end of autumn.

Coniferous species can be wired at any time from spring through to autumn. Coniferous species will continue to heal over winter so they can still be wired in autumn. As the wire on Coniferous species needs to be on the branches for a longer period of time; often over winter, frost protection is needed if temperatures drop below 15°F.

Coniferous species need wiring annually and need at least one complete wiring of the entire tree for a successful design. They are best wired (particularly if heavy bends are to be made) from late midsummer through to early autumn.

By late midsummer, new growth will start to need wiring and will heal faster than at most other times of the

year. Many species such as Pines will have also made most of their annual increase in branch thickness by August; wiring after this time will allow the wire to stay on the tree until the following year without cutting in and scarring the bark.

Coniferous species can be wired in the spring and this growth will set into position relatively quickly but will need reapplying as the years new growth appears. Any wire still on the tree by midsummer should be checked regularly to avoid wire scarring; particularly on Pines that swell suddenly around this time.

Tropical species can be wired at virtually any time of the year as they are protected from frost and have little or no dormant period. The wire can cut in fast due to the typically vigorous growth of tropical species and must be checked very often.

The wire should be removed after 6 months. Usually the branch should then stay in that position on its own. Wire should be carefully cut from the branches. Do not unwind wires as this could break the branch. Use your wire cutters for best results. If you try to unwind, you could conceivably, snap a branch.

If a branch should snap, the ends can be rejoined if they are not completely broken. Wind some garden tape around the break. If a branch snaps off, prune it back at the first side branch.

After spending so much time making your bonsai look the way you want it to, you must, of course, take care of it!

## **WATERING AND FERTILIZING**

Watering might seem like an easy technique, but it is the second most common cause of Bonsai-related problems.

Under watering or allowing the compost to dry out completely will instantly kill or badly damage most trees; however over watering can just as equally cause ill-health and eventual death from root rot and disease.

The most important rule to remember is that trees should be checked for their water requirement daily but should only be watered as required. You should never water to a routine. This can lead to continually sodden compost which literally suffocates the roots.

The surface of the compost must be starting to dry out between watering. Then the tree can be thoroughly watered again. The time between watering can vary from 12 hours to 7 days depending on factors such as prevailing temperatures, wind and humidity levels.

Because of limited space in the confines of a bonsai pot, bonsai care can be quite difficult. The shallow containers limit the expanse of the root system and make proper watering practically an art in itself.

While some species can handle periods of relative dryness, others require near-constant moisture. Watering too frequently or allowing the soil to remain soggy can promote fungal infections and "root rot".

Sun, heat and wind exposure can quickly dry a bonsai tree to the point of drought, so the soil moisture should be monitored daily and water given copiously when needed. The soil should not be allowed to become "bone dry" even for brief periods.

The foliage of some plants cultivated for bonsai, including the common Juniper do not display signs of drying and damage until long after the damage is done, and may even appear green and healthy despite having an entirely dead root system.

When fertilizing bonsai you should do so with a water-soluble fertilizer once or twice per month during the growing season. Your choice of fertilizer may vary depending on the species you've chosen to miniaturize.

Apply fertilizer when the soil is wet and only before and during active growth. A houseplant fertilizer diluted from one quarter to one half strength will suffice.

Another area of bonsai that needs to be addressed by the beginner is repotting; a very straightforward technique if carried out correctly and at the right time. Most trees need to be repotted annually or at very least bi-annually in spring as the years new growth starts to appear. Trees that are not repotted will eventually lose their health and vigor.

## **REPOTTING YOUR BONSAI**

Bonsai are generally re-potted and re-pruned every few years. Re-potting prevents them from being pot-bound and encourages the growth of new feeder roots allowing the tree to absorb moisture more efficiently. You will also need to change the soil to prevent it from becoming stale and hindering growth.

You can tell that a bonsai needs repotting if water takes a long time to drain through the soil or if the roots are crowding around the sides.

To repot, carefully lift the tree out of its current pot by tilting it to one side and trying to move it by the base of the trunk. You can not pull too hard on the trunk - so if this does not work, try tapping the pot with the side of your hand to loosen the root ball or poke a stick through the drainage holes and 'push' the root ball out.

Next, using a chopstick, knitting needle, metal hook or similar, remove any moss or accent plants and carefully try to brush and untangle the roots. Start at the edge and

gradually work around. Try to 'comb' and 'tug' rather than to 'pull' at the roots - for risk of damaging or tearing some very important main roots.

After this has been done - continue to shake and brush off the soil until about one third to half of the original soil has been removed from the edge and base of the root ball.

It would now be a good idea to spray the roots with water to ensure that they do not dry out and so that they will not have too much soil on them when it comes time to pruning the roots.

To prune the roots, use very sharp cutters. There are bonsai root pruning scissors commercially available, however you could just use a normal pair of bonsai clippers.

If you have washed away most loose soil the scissors will stay sharp, but if they have to cut through soil as well as the roots - they will become blunt very quickly and require sharpening.

Start by cutting the thick, old brown roots that have come close to the edge of the pot and are restricting the growth of the young 'feeder roots'. Remove a third to a half of these - being careful that you do not remove too many feeder roots in the process.

Next, prune the thinner roots which hang below the depth of the pot by trimming them all into a suitable shape that the pot will accommodate. This should be a shape that fits comfortably into the pot with a 1-2 cm (1/2 to 3/4 in) space between the edges.

The demanding part of the repotting is now over - if you think that you've cut too many feeder roots off, the tree will be disadvantaged but you probably will get away with it - as new roots will grow from the cuts.

Clean the original pot thoroughly or select a new pot that is more suited to the tree and cover the drainage holes

with simple wire mesh. As the plant will now be unstable in the new pot as it has nothing to anchor it – you need to make some anchors to prevent the tree from falling over from winds or from being moved.

Thread some wire through the drainage holes or specially designed holes for anchoring and leave for later use. This wire doesn't have to be very thick.

Add a thin layer of gravel to aid drainage and then a layer of soil. Moving the tree around, decide a basic position for it (usually off-center and slightly to the back of the pot) and make a small mound that it will sit on. Now you can place your bonsai on the mound by gently nestling it in and spreading its roots out evenly throughout on top of the soil.

Once you are happy with the height and position of your tree (it is going to stay like that for 1-2 years), take the wires that you threaded and twist them together (usually with the aid of pliers) over the main root ball of the tree until it is held firmly (but not too tight) and will not rock. Because these wires are quite unsightly, you can remove them in a few months time once the tree has settled in.

Add more soil up to the base of the trunk - which should be just below the base of the pot. Tap the side of the pot with your hand to ensure that the soil becomes settled and that there are no gaps around the roots. Use your chopstick to incorporate the roots into the soil and to make sure that they are placed correctly.

Once the soil has been applied, you now have the option to add supplementary features such as rocks, moss, accent plants or gravel to enhance the design. When applying moss - be careful that most of the original soil is cut off from the bottom before you plant it and that the moss is not too big or vigorous for the pot or tree.

Now you should thoroughly water the tree - being aware that the soil level may settle further and that more soil may have to be added. Place the tree in a position where it will not receive extremes in temperature (i.e. not direct sun) and where it will be able to recuperate. Do not fertilize at this time as this can burn or cause stress to the plant. You can feed in around a month though, when the roots have recovered.

Note that in order to balance out the extensive pruning you have just done on the roots you should prune the branches of the bonsai as well so that it can recover quicker and not be disadvantaged further. Root growth usually does equal branch growth.

Since bonsai is essentially meant to be grown outdoors, you must pay attention to the care of your tree with the changing seasons.

## **SEASONAL CARE**

As the seasons change, the bonsai grower must take into consideration the circumstances and dilemmas that might affect their plants. Because the trees aren't in the ground, you need to do what you have to in order to insure your bonsai survive the seasons.

Bonsai from forest trees must live outdoors except for short periods of time when they may be brought inside for viewing. These indoor periods should only be for two or three hours and should not occur at all in summer unless the interior is well ventilated.

In the summer, bonsai need cool nights, sunny days, and mist or rain almost daily. If your climate does not offer these conditions naturally, you must supply them. Avoid any extremes in temperature, light, rain, and wind. Water the

entire plant daily, but do not let them become water logged.

Placing bonsai on a slatted stand in the garden is a good way to keep drainage conditions optimum. Bonsai should receive three to five hours of direct sunlight a day, but the site should be shaded in the afternoon if possible.

In the fall, bonsai must be prepared for the winter. Slow the growth of the plants by watering less frequently and discontinuing fertilizer application. Do not prune or cut any branches after mid-August.

Winter's low temperatures and drying winds can easily kill bonsai. If the winter temperature drops below 28F, bonsai must be protected by a greenhouse, pit, or cold frame. A cold frame is basically a box that houses your bonsai through the winter months.

If you put them in a cold frame, don't forget to water them while inside. Winter watering may be only necessary every other day. More bonsai are killed by over watering than by desiccation.

In the spring, start new bonsai, prune the old ones, and continue training measures. The remaining part of the growing season is used for the plants' adjustments to these practices.

In general, bonsai are fine being outside in temperatures above 15F. Below this point, some kind of protection from freezing is needed. You can bring them inside, but this could jeopardize the plant's health. In extreme circumstances, this may be your only option.

Just remember that woody plants must go through a period of cold dormancy to survive. If you do not give them this time, they will die.

Dormancy is a survival strategy that temperate climate species have evolved to stay alive over the winter. These

species have a biological clock that tells them to slow activity and prepare soft tissues for an onslaught of freezing temperatures. Species that have well developed dormancy needs cannot be tricked out of them.

You can try placing a tarp or plastic film over your bonsai in cold temperatures. Do this at night and remove it during the day.

Some people advocate wintering bonsai in the ground since the ground temperature will not get as cold as the air above it.

Experts feel the best way to accomplish that is to bury the root balls, still in their pots, in the ground up to the rim of the pot, and to cover the pots with a mulch of dead leaves. If you live in an area of abundant snowfall and a reasonably consistent snow cover, you may do without the mulch and rely on the snow for insulation.

Wintering bonsai in the ground has the advantage that they will come out of dormancy in step with outside conditions. That is often not the case with some of the other wintering methods, such as unheated garages or sheds, cold frames dug into the ground, window wells or cold rooms in basements.

While these methods are very convenient – no digging in, no mulching and no digging out – the facilities tend to warm up quickly in spring, and since resumption of growth is determined solely by warmer temperatures, the trees will start to grow and require light when outside conditions are not yet ideal.

Regardless of which method is used, the root balls should be well moistened before the trees are put away, and they should be checked regularly – say weekly – to make sure that they are not about to dry out. If so, the trees need to be watered. Also, the wintering spot should ideally be in

shade for most of the day, and preferred positions to face would be either north or east.

It is important to note, that the trees will not be able to withstand the warmer temperature once they have begun to grow. Just as trees became gradually ever more frost resistant in fall, they will get progressively less frost resistant in spring.

The closed buds, although swollen, will still be able to survive short periods of mild frosts, but once the buds have opened and the young leaves start to unfold, frost can cause serious damage, and trees should be returned to frost-free shelter when it threatens.

Also remember that full-size trees lose their leaves in the winter. Your bonsai is a miniature version of a full-size tree and it, too, will lose its leaves. This is fine and normal. They will grow back!

You've spent such time on grooming and growing your bonsai, you will, of course, want to show it off! What's the best way to display your trees?

## **DISPLAYING YOUR TREE**

When you have finished working on your tree, you will want to find a nice place to display it for all to see. The way your bonsai are displayed is as important as their pots, the types of trees and the styles of the trees. The exact secret for adding to their beauty by the setting they live in is just as elusive as the art of bonsai itself.

Ideally, your bonsai should be positioned so that the front faces forward and the tree is roughly eye level. Trees should *never* be placed directly on the ground.

As your collection grows, you will want to create a display stand of some sort. You may choose to display bonsai alone on a single stand or together on a larger bench. Most important, you should make sure that the tree is positioned so that it either gets the light it needs or is sheltered from the sun if it requires shade.

Remember that simplicity is very important in Japanese aesthetics and bonsai should be displayed in an uncluttered environment where the details of the plant can be appreciated. This is, after all, a wonder of nature -- trees and shrubs made miniature.

Gravel beds in the garden are good backgrounds for bonsai outdoors, and a simple stand or table before a blank wall makes an appropriate setting indoors.

Try your bonsai in different locations around your house - both indoors and out if the weather and space permit. A single display on a window ledge or the sunny spot on a bookshelf may be just the thing to give specific rooms elegance and a personal, lived-in touch.

Put a redwood or bamboo shelf unit in a quiet, reflective room that offers light and air for a grouped display of all your creations that can create an indoor-garden effect.

Turn the entry hall of your home into a formal walk-through of bonsai that gives a warm and yet highly stylized feel to set the tone for the whole house.

Make a patio or deck into a nature-viewing area that provides guests and family hours of pleasure and quiet serenity. Railings, benches and plant stands can be used to show off your works of living art.

Display the bonsai on all types of stands or focal points. The same rules that apply to pot textures, materials and colors also apply to possible plant stands ' wood, metal,

stone and any combination could work in different settings and with the right bonsai.

Remember that bonsai are a product of the artist and the statement you choose to make is uniquely your own just as with paints or clay or any artistic medium. Switch your bonsai positions often to change the look and feel of the space they occupy.

There are a few additional points to keep in mind when growing bonsai.

## **THE REST OF THE STORY**

Bonsai is not an art of perfection. It is an art of scope and personal preference. You will make mistakes. This is normal and occurs even with bonsai masters.

You will kill trees. This is a sad fact of the activity, especially as you start out. You are dealing with living things, and you must be respectful of that. Commit yourself to understanding why every tree dies and what can be done to prevent it. Learn from your mistakes and do your best to prevent them in the future.

Perhaps most importantly, understand that when you put a tree in a pot you are committing yourself to the care of that tree. You cannot simply ignore it or it will die. Bonsai is a responsibility as well as a hobby. If you practice it with care and patience, the rewards are tremendous.

Almost nothing in bonsai is immediate. Expect your trees to develop over years, even decades. It may be ten years or longer before your plant will actually be a "bonsai." Don't be discouraged by this, but think of it as part of the experience.

Don't fiddle! The temptation for beginners is to continually fiddle with their tree(s), cutting bits off here and there, continually watering, misting, moving them around etc. Checking daily for water requirements and health problems is necessary, but otherwise leave the tree to grow and simply enjoy looking at it!

Pruning back to shape is necessary but don't continually jump onto every out of place leaf. In order to keep the tree healthy and vigorous it needs to be able to grow freely at times.

It is also important to remember timing is very important, don't carry out jobs such as repotting or major restyling at the wrong time of the year as this can lead to poor health in the tree and lack of vigor. A tree repotted at the wrong time of year for instance may survive if you are lucky, it may even grow a bit, but, it will very rarely reward you with vigor.

It is particularly important not to stress the tree by doing several operations at the same time. Let the tree rest between for example wiring and replanting. Just as a human being needs time to recuperate from surgery, a bonsai tree needs the same treatment.

Plants are living things, and they need full recovery from one operation, before the next step is taken. A rule of thumb is to wait one to three months after a transplanting before you start working on the tree or until you see clear signs of vigorous growth.

Although bonsai is a very delicate and precise hobby in many aspects, usually the plants are very forgiving - so

don't be afraid to prune. Also be careful not to leave the wire on too long so that it cuts into the bark.

Put away any preconceived ideas that bonsai is too hard to learn, too costly or too time-consuming. It's none of these. In fact, it's fun, relaxing and beautiful. Remember that bonsai is an art form - one that uses living plants as its raw material.

Overall, bonsai trees are quite personalized and there are no strict rules to abide by if you undertake it merely as a hobby which to gain enjoyment out of. It does not have to be an expensive commitment, but it is a commitment that requires a great amount of time, patience, skill and endurance.

Although things may not always go to plan, don't give up. Remember that the Japanese bonsai masters were once beginners too and they have surely had their share of trial and error.

## **CONCLUSION**

Though the art of bonsai can be very daunting to newcomers when they first start out, in reality it is as simple as you make it. There are many species and varieties of trees available to grow; many new techniques that can be learned to improve bonsai appearance and a seemingly unfathomable quantity of do's and don'ts. The most important aspect as a beginner is to learn how to simply maintain the shape of your tree and keep it alive.

Learn to look after your first tree successfully and your confidence grows enough to widen your horizons and successfully learn more advanced techniques such as reselling and creating bonsai. But don't run before you walk. The first fundamental rules to learn when embarking on this art is that you are dealing with something living and

ever-changing; the basic rules of horticulture need be learned before you can successfully maintain your tree.

There are many bonsai techniques available for the bonsai enthusiast to use to reach the ultimate goal of a beautiful tree. Confusingly, information available on the many bonsai websites and books can often be contradictory. It should be understood that for every objective such as repotting, pruning or styling there are a 100 different techniques or viewpoints.

Some are based on horticultural fact, some are based on horticultural myth and some are based on horticultural luck! In fact many of these techniques will work to one degree or another. Unfortunately though not killing your tree, some advice and/or techniques can result in diminished vigor as your trees cope under stress. Sound advice based on simple horticultural fact can only improve the health, appearance and vigor of your tree. It is for you to learn which techniques work for you and your tree in your given situation.

Just don't get in a hurry. They say that Rome wasn't built in a day. Bonsai aren't grown in a short time either. Bonsai certainly takes time, but the rewards are great. Once it grows and is shaped to your liking, you will have formed something that is all your own. It will be something to be proud of – something to display – something to take credit for.

In the movie "The Karate Kid", Mr. Miyagi would tell Daniel that he should have patience while learning the fine points of karate. Miyagi demonstrated this concept best with his bonsai. He spent 5 years cultivating one tree – perhaps the ultimate display of patience. As a beginning bonsai artist, this should be your cardinal rule. Be patient and let nature work the magic.

Some people feel they are just not capable of growing a world-class bonsai. That's alright, you don't have to! But if you grow a bonsai tree that is beautiful to you, you can ultimately be rewarded if someone else sees the same beauty you do!

Don't get frustrated; don't feel you have to be held to steadfast rules. Just grow your tree, spend time crafting your masterpiece, and enjoy the results – along with everyone else!



