Pine Management Theory

Part 10

By Greg Cloyd

Bare Internodes Produced By Staminate Cones

No needles or buds will form on the bare areas at the base of the shoot where male cones were previously found. These long bare internode shoots are removed above a strong bud as part of the fall technique.

Peg Removal

If the Kathy Shaner peg technique, described earlier in this article, is used the bare pegs are removed during summer thinning or as part of the autumn technique.

Japanese Black Pine Autumn Technique

Removal of strong branchlets and casual needle thinning are the two primary autumn techniques used with "strong" trees such as Japanese black pines, Scots pines and Monterey pines.

Japanese White Pine Autumn Technique

Japanese white pine autumn technique differs only by added removal of the broken off shoots that failed to produce buds. A broken off shoot that did not produce new buds will die, so it is removed. By fall (September), new buds will have emerged at the point where the spring candle was broken off or among the needles of the new shoot, or in the interior of the branchlet. If buds have been produced among the new needles, the new shoot may be retained if it is within the branch silhouette. Additionally, the shoots that were left outside the silhouette are examined for interior budding. If interior buds were produced, the shoot is removed above a strong bud to maintain the silhouette.

The rest of the branchlet balancing cuts are as described for Japanese black pines. The previously described autumn bud removal techniques are used with Japanese white pines. Casual needle removal may also be done in autumn. Needle removal techniques are discussed more fully in the winter techniques section.

Ponderosa Pine Autumn Technique

Ponderosa pines are best managed with autumn vigor balancing techniques. Whether removing branchlets, buds or using needle thinning; Ponderosa pines should be approached conservatively. Remove a smaller percentage of the tree when pruning (usually no more than 25%). Branch reduction also should occur in a gradually staged manner or "whittle down" approach. Careful observation for return of vigor is then necessary before further insults are contemplated.

A favorite Ponderosa pine technique, used in late summer and fall, is to combine casual needle thinning (described in the winter needle thinning section) with removal of dominant terminal buds from strong branch tips. In addition needles may be cut to half their length to further stimulate interior budding. Tips of cut needles invariably turn brown, therefore this technique should not be used if exhibition is planned in the subsequent year. Weak areas of the tree are left untouched. In healthy, well-established Ponderosa pines, autumn needle cutting and terminal bud removal can produce marked interior adventitious budding over the subsequent fall and winter.

Other variations of this technique have been described by the late Bob Kataoka and Larry Jackel. It is important to note that this is a significant insult for a Ponderosa pine and should only be used on well-nourished, discerningly watered and very well-established plants.

My own experience indicates that it is hard to get a full return of vigor in less than five years after this technique is used. Because ramifying the lion's tail natural growth of collected Ponderosa pine is difficult, the extra time involved with this technique is worthwhile.

A healthy well-established Ponderosa pine can produce adventitious buds several inches closer to the trunk than the closest existing buds. Latent bud primordia are frequently activated in retained needle fascicles using the above described technique. Additional interior buds are produced at old terminal bud scars.

It is also useful to note these terminal bud scars when attempting to gauge the age of a branchlet. Most pines show a whorl of branches at each node making it easy to determine branch age by counting internodes. Ponderosa pines do not usually have branchlets at each annual whorl. Frequently there are no side branchlets. Instead only a circumferential depression or terminal bud scar marks the end of each annual growth increment.

In examining old dwarfed Ponderosa pines it is not unusual for each inch of branch to show up to ten terminal bud scars. A ten inch branch may be upwards of a century old bearing no secondary branchlets and only a terminal tuft of needles, yet still flexible enough to tie in a knot!

Cork Bark Black Pine Autumn Technique

Like Ponderosa pines, Cork bark black pines are slower growing and less vigorous than Japanese black pines. Cork bark pines should receive only one insult per year and if decandled they should only be decandled in the strongest vigor zone. Branch removal should also occur in a staged fashion. Cork bark pine branches are very brittle and thus are kept shorter to lessen the chance of wind or bird related breakage. Artistically, shorter branches help to emphasize the cork plates

that are the essence of the plant. Because of the fragile cork and brittle branches, Cork bark pines are not wired except when the branchlets are young, corkless and flexible.

Protect Bark!

To prevent degrading or dislodging the bark avoid watering the bark of Cork bark varieties, as well as any other pines with mature flaking bark.

In autumn and winter, major wiring work of mature barked pines and especially Cork bark pines presents the challenge of preserving the venerable old bark. This is accomplished by anchoring wires to close by branches or branch stubs. Avoid wrapping wire around the mature bark of the trunk. Attempting to wire mature, corked branches is dangerous because Cork bark pines have very brittle cambium.

Mature bark will not begin to appear on a pine prior to twenty years of age. This may take longer if the tree has been developed in a pot. Mature bark all the way up the trunk will take forty to sixty years. Flaking mature bark extending out the branches will take 60 to 80 years and tortoise shelled "bark on bark" plates require more than a century to occur. Mature pine bark is considered the essence of the sense of power and age of pine bonsai. For this reason it is extremely important to carefully protect mature pine bark by keeping it dry and avoiding handling.

Stage Large Branch Removal

Stage large pruning cuts. That is to say, the branch to be removed, if greater than an inch in diameter, is pruned in steps rather than all at once. The response of the tree should be evaluated, then further cuts planned until the objectives are achieved. Avoid massively pruning a pine all at once. If the plant has not returned to vigor after the previous refinement technique or repotting, the usual next seasonal refinement technique is deferred. The plant is allowed to grow unchecked until it again displays two-thirds or more of the previously discussed signs of vigor.

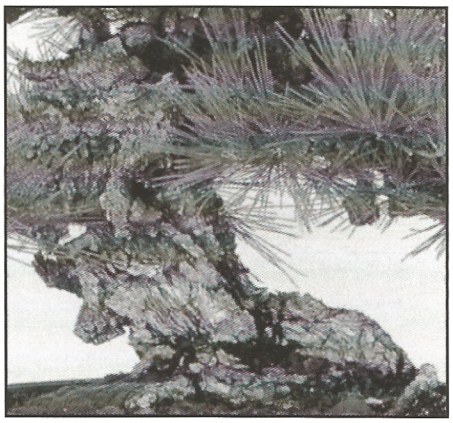
Generally no more than fifty per cent of a strong tree's "vigor" in the form of foliage or roots is removed at one time. This large a reduction is only contemplated on a very strong tree in the preferred pruning or repotting season. Remember that the top of the tree and branch tips account for a disproportionate fraction of the stored energy, hormone production and, accordingly its vigor. Removal of fifty percent of the total foliage of a pine, with all the removed parts coming from the apex and branch tips, would likely represent a seventy five percent vigor reduction and might kill even a strong young tree.

If you cannot "read" the vigor level of your pine it is fundamentally unwise to apply weakening techniques in an effort to refine it. If no other information is retained from this article allow this to be what you remember! A period of growth and recovery is essential after any insult. The Art of the Pine (bonsai) is the Art of Patience.

Cork bark Japanese black pine, Pinus thunbergi *var.* corticosa, *displayed at the 2000 Grandview Bonsai Exhibition in Kyoto, Japan. The thick corky bark must be protected.*

WM. N. VALAVANIS PHOTOS

The thick corky bark of this pine does not fall off for many years.



ABOUT THE AUTHOR
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Greg Cloyd is a serious bonsai hobbyist who has studied pines for many years. He has organized an advance bonsai study group and invited many of the top pine specialists from the country for discussions and educational programs. The search for authoritative information on pine has recently led him to Japan where he visited many of the top growers.

Dr. Cloyd is a physician and member of the Cleveland Bonsai Club. He is also interested in native collected trees. He freely shares the results of his research and study by presenting programs and writing articles for publications. He maintains an impressive bonsai collection in Hudson, Ohio.