

# Breaking the Rules

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Monday, 09 March 2009  
Last Updated Monday, 09 March 2009

Before one explores how bonsai enthusiasts are "Breaking The Rules", one must know what the "rules" are. These rules apply to trees and the correct pruning (removing) of branches from the trees.

First, as shown in the below Figure, one must understand about the branch and stem bark ridge, that is composed of rough, typically darkened, raised bark, formed in the crotch at the union of a branch collar. What is the collar? The collar is an enlarged outcropping area of the trunk at the base of the branch. This together with the crotch ridge provides guidelines for proper pruning.

One must also have an understanding of the "defense zone" of a branch. Chemicals, including phenols, resin and turpentine, which are deposited

in a narrow zone of cells called the branch defense zone, within the branch collar and inhibit the spread of organisms and decay from a branch into the trunk. The tree expends energy to build the defense zone to prevent the spread of decay. If the

collar is injured or removed during pruning, the defense zone fails thereby allowing organisms of decay to enter the trunk. If the collar and defense zone are not injured, the tree will benefit because decay will be limited to the dead branch and will not move into the trunk".

When cutting a branch off a tree, the choice of angle of the cut is determined by the location and shape of the branch collar and branch bark ridge. The below Figure indicates the proper pruning technique. Avoid cutting into the branch collar by making a cut flush with the trunk. That kind of cut (into the collar) opens the trunk to decay and increases the likelihood of canker disease infection. Flush cuts damage trees even though the wound may close faster than a cut that was made correctly.

On the other hand, you should never leave a branch stub by cutting too far beyond the collar. Branch stubs are susceptible to wood decaying organisms and if left on trees, decay in the stubs can break through the branch defense zone, move into the trunk and cause trunk rot and a weaker tree.

Trees also set up defense zones when a tree is injured, eg: the bark and cambium layer are damaged or removed. The defense zone action is

called "compartmentalization"; wherein the tissues surrounding the damage gather around the injured area to limit further damage. It is sealing off the injured area to prevent migration of harmful elements and invaders.

So, good pruning practice means we remove branches at the collar without leaving stubs or making flush cuts. What does a bonsai enthusiast do? He (she) removes the branch collar, making not just a flush cut but usually gouges deeper into the trunk so that when sealing takes place, the sealing bark will be more normally aligned with the tree trunk.

Bonsai enthusiasts also leave stubs. These stubs are usually longer and stripped of their bark (jin). This is contrary to good, healthy, normal tree pruning technique. Enthusiasts also injure the bark intentionally by cutting or tearing off sections of the bark (shari) when attempting to make the tree look old and stressed.

So, flush cuts, leaving branch stubs, and injuring the tree trunk by intentional bark removal are all "Breaking the Rules" of good tree care and pruning practices. All are methods of exposing trees to invading organisms, insects and disease; yet, bonsai enthusiasts continue to "break the rules" to try to emulate old, injured and sometimes tortured looking trees. If one breaks the rules, how does one continue to grow what are considered healthy, long-lived bonsai? This can be a subject for discussion when bonsai enthusiasts meet to discuss styling, problems and solutions for their prized trees.

Break The Rules and Enjoy The Mystery of Bonsai

(Figures and excerpts from "An Illustrated Guide to Pruning" by Edward F. Gilman 1997)