



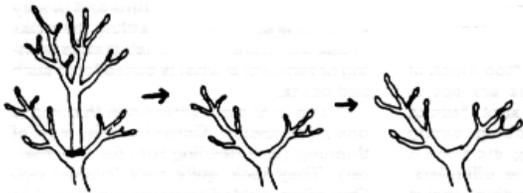
Basic Cuts

by Cass Turnbull

Pruning for beginners is often made more confusing by the fact that the experts disagree on the definitions of types of pruning cuts. The following is the system used here at Plant Amnesty.

HEADING: Heading cuts are cuts that shorten branches, trunks or twigs. There are two types of heading cuts, Selective and Non-Selective.

A **SELECTIVE HEADING** cut reduces the length of a branch by cutting back to a side branch or bud which is sufficiently large enough to take over as the branch's end. The International Society of Arboriculture (Western Chapter Standards) says the same thing as follows: "large enough to assume the terminal role". In plain English this means that the cut branch will NOT respond by producing watersprouts. Selective heading is the "right way" to shorten a branch. It reduces the amount regrowth, looks



SELECTIVE HEADING

more natural, and is easier on the health of the plant (all heading is somewhat of a stress for plants.) But how big of a side branch is "big enough"? Well, it depends. The rule of thumb is that the remaining side branch should be at least half the diameter of the parent stem. Others say that no more than a third of the foliage of the branch should be removed. It is however a sliding scale with many exceptions based mostly on the requirements of the species in question. The downside risks in any situation are "will it rot the branch?", "will it cause unsightly regrowth?", or "will it eventually starve the branch, causing it to die?" If the answer to your questions is no, cut away. Selective heading is called "thinning" by some horticulturists because it is better for the health of a plant than non-selective heading and it makes the plant sort of "see-through" as do true thinning cuts described below.

In general one could say that heading is harder on the health of the plant, the bigger, older and woodier it is. Heading back privet, a spirea or a Japanese holly is no big deal. But when it comes to trees, we run into trouble again. Selective heading of trees is also called "dropcrotching" or "crown reduction" or "de-horning". It is not the magic solution to the "too big" tree because, although not as bad as topping, it does pose severe downside risks such as the introduction of decay into the trunk or main branches and general drain on the vigor of the tree. Dropcrotching should probably be limited to a relatively few branches of a mature tree, (for example the one hanging over the chimney or blocking the window). There would be no size reduction of trees in the best of all possible worlds. Many people feel that dropcrotching is an acceptable "heroic measure" to save certain special trees growing under power lines. Directional pruning ala Shigo is more the way things are going. (That's sort of v-shaped pruning for trees directly under wires).

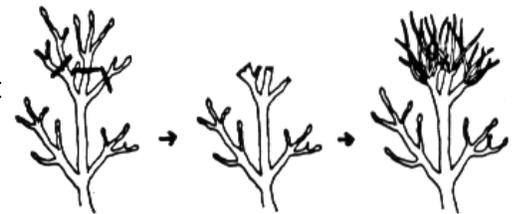
Arborists estimate that an average tree's height can be reduced about 5%-10% without doing significant damage to the tree's health or natural beauty (depending on the age, species and health of course). This is rarely enough to satisfy the average view monger. Dropcrotch pruning

will always leave a bad taste in the mouth of an arborist who sees no good reason to cut other than the public's ever present arborphobia (fear of large trees) and society's increasing obsession for water views. It's just not a nice thing to do.

On the other hand, dropcrotching does little physical harm to young trees, which can easily wall off and rapidly outgrow the damage (invading rot organisms) done by such cuts. But rarely do such prunings restrict the eventual size of trees. One is hard pressed to find a tree (outside of a Japanese garden or an apple tree) which has been kept small by ongoing pruning. Trees are genetically programmed to reach a certain size and unless you want to make it your life's work, you'd better plan on them getting to that size a lot sooner than you think. In places where trees are annually pruned for size control, using many small selective heading cuts, (in Japan for example, or where beech trees or hemlocks are used as hedges) you will find that the natural, characteristic branch pattern of the trees has been eliminated. The tree pruning budget in such cases is vastly larger than that of the average homeowner.

NON-SELECTIVE HEADING: Non-selective heading means basically whacking back a branch to no place in particular. This sort of a cut is good for making things bushy, though not particularly good for general height reduction (unless you are doing a radical renovation or a hedge). It is the non-selective heading cut that gets most people into trouble. Where ever a cut is made, hidden dormant buds are stimulated into

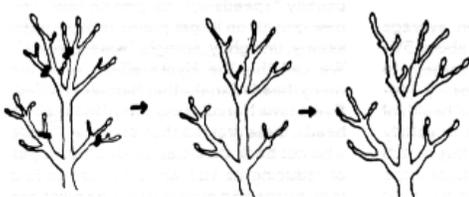
growing out into new branches. The buds are located directly below the cut end. Furthermore, the shrub or tree usually "speeds-up" its growth rate. The new growth on larger plants is most often skinny, unsightly, straight "watersprouts". We call this the Hydra-effect, after the many-headed snake that Hercules battled. Every time Hercules cut one of the snake's heads, three grew back in its place. People who cut back their tree or shrub in hopes of reducing its size are surprised to find that, by the end of next year, the plant has grown back vigorously and thickly. Worst of all, for every one cut made before the pruner is now faced with making five or six cuts. An exception is when one cuts back into the dead looking wood of most needed evergreens, like junipers and firs. They can't force new buds or regrow at all! One is left looking at ugly brown branches for eternity. OOPS!



NON-SELECTIVE HEADING

Topping is non-selective heading, so is shearing. Shearing is a correct way of pruning certain plants chosen to be topiary, formal hedges, or the lower story of real Japanese gardens. In almost all cases the plants chosen have small leaves, spaced closely together and are tough enough to take repeated shearing. Because of the "hydra effect", however, a combination selective heading and thinning is the correct method for pruning the vast majority of shrubs and trees. It looks more natural, stays done longer and is easier on the health of the plants.

Some other correct uses of the non-selective heading cut are for training young trees called "whips". Sometimes they are cut to the ground to force regrowth of a straight new trunk. Sometimes the trunk is headed to force the branching that will become the tree's crown". What looks all the world like non-selective heading is often done to apples and pears to stiffen up young branches or to force spur production in espalier. This, however, is a completely different topic and deserves more than a column.

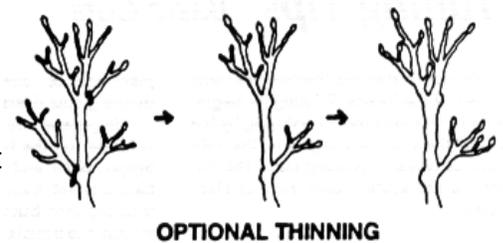


THINNING

THINNING: Thinning cuts take branches off completely. One follows the offending branch back to where it began as a bud and cuts it off there. Another way of saying this is to cut a smaller, or "side", branch off of a larger branch. Generally speaking, thinning cuts don't make things smaller overall, they just reduce the bulk and clutter of the plant, making it sort of

"see-through". Thinning out the lower, most interfering branches of a tree (called skirting, limbing up, or crown-raising) is more permanent and less harmful than crown reduction. As Dr. Shigo says, "trunk wood is different than branch wood". Trees are much better adapted to losing side branches than having their major limbs or the leader cut in half. With many shrubs, too, one takes off the lower interfering branches which lay upon, or reach into, neighboring plants. One finds the branch that stretches out most obtrusively into the pedestrian's way, follows it back to the main trunk and cuts it off there. General thinning throughout a plant, especially dead-wooding, creates definition and increases air circulation which is good for plant health. The plant just looks better (and we assume "feels" better). With those plants that resent shortening, we try to get what we want with thinning and raising.

OVER-THINNING: Like so much in life, people get into trouble with "too much of a good thing". New pruners are apt to over-thin. Once you can spot "wrong branches" (i.e. crossing, rubbing, wrong way, too straight, duplicating, etc.) one is tempted to eradicate all the offenders. However if you take out everything that is wrong, you are often left with a gutted plant or tree. Over-skirted trees and shrubs look top-heavy, and in the case of trees, can be dangerous. Similarly, when all the internal branches are "skinned-out" of a large tree all the weight is concentrated at the ends of the scaffold branches. It is preferable to distribute the weight of foliage evenly throughout the tree. Over-thinning the internal branches is called "lion's tailing", and it should be avoided.



Trees and shrubs vary in the degree to which they can be successfully thinned out. Here again the determining factors are, "will it watersprout?" and "can this branch live if I remove this much foliage?" Pines for example (most pines, anyway) can't sucker back. They can withstand an incredible amount of thinning before the overthinned branch in question dies (usually in a drought or freeze, some years later). On the other end of the scale, some trees such as ornamental cherries, plums and crabapples naturally have sort of "messy" crossing" branches; they won't thin out much. Beware! If you thin too much, and it doesn't take much, you will find a forest of watersprouts regrowing next year at the point where each cut was made. If the watersprouts are repeatedly removed every year thereafter, the tree's branches will rapidly age and crack, eventually dying back. This is not to mention the incredible amounts of time and money that one is apt to waste battling the mess of one's own creation. Rehabilitative pruning or removal is what is called for in such sad cases.

The final consideration in thinning is one of aesthetics. Camellias take a lot of thinning (and heading too, for that matter). They look quite nice thinned out. One often-quoted recommendation is to thin the shrub so "that a bird could fly through." One woman, upon seeing the results of an overzealous husband's work on their camellia, remarked "The teacher meant a sparrow, not a goose!". Be careful that thinning doesn't turn into over-thinning. Practice and observation will teach you how much is enough.

Kind pruning is not a matter of the size of the cut, or even how the plant looks soon after pruning. The true test of success is "are you retaining the long term health and beauty of the plant?" The kind of cut and the severity of the cut needs to be matched to the species. Your pruning should succeed in getting you what you want, with minimal effort and without destroying the purpose of your tree or shrub (which in most cases is its natural beauty). As the old "Sunset" pruning book says, "It's as wrong to over-prune a cherry as it is to under-prune a peach".

Selective pruning means that you think about each cut and why you are making it. Our motto, *Secare Selecte*, means prune selectively, as all good pruners do.