Pruning

If the right plant species is selected for the right spot and purpose in the landscape, it is usually unnecessary to prune mature, well-established trees and shrubs. When done improperly, pruning can be one of the most destructive horticultural practices, destroying the shape and structure of a tree and predisposing it to severe future problems. Topping mature trees (heading back the main leader) is not usually recommended because it seriously injures trees and disfigures them. When proper techniques are used, however, judicious pruning of woody plants serves several useful functions. Pruning can be used to train young plants, groom for appearance, control shape and size, influence flowering and fruiting, invigorate stagnant growth, and remove damaged or pest-infested growth.

Types of Pruning Cuts

The two main types of pruning cuts are head, or heading back, and thin, or thinning out, and a woody plant responds differently to each type of cut. Heading back is cutting the plant back to a stub, lateral bud, or small lateral branch (fig. 13.4). Depending on the severity of pruning, heading back results in a flush of vigorous, upright, and dense new growth from just below the cut. New shoots formed on older, larger limbs are weakly attached and split out easily (figs. 13.5 and 13.6). Thinning (fig. 13.7) is removing a lateral branch at its origin or shortening a branch's length by cutting to a lateral large enough to assume the terminal role. A woody plant responds to thinning by becoming more open but retaining its natural growth habit and does not usually produce a flush of new vigorous growth from the cut. Foliage grows more deeply into the tree because more light can penetrate the canopy.

Fig. 13.4

Heading back is cutting to a stub, small lateral, or bud. Source: After Harris et al. 1981, p. 3.

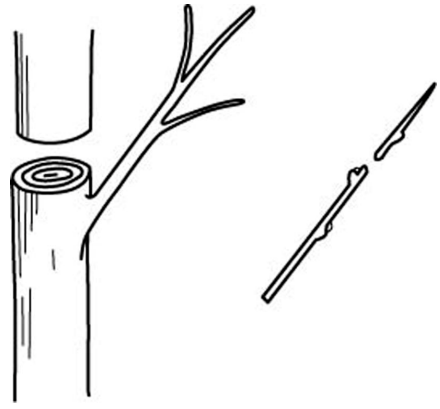


Fig. 13.5

Vigorous upright growth stimulated by heading. Source: After Harris et al.1981, p. 4.

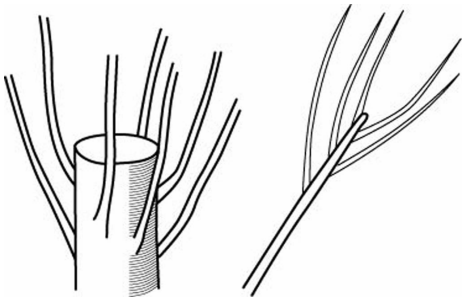


Fig. 13.6

New shoots forced on older limbs are weakly attached and split out easily. Source: After Harris et al. 1981, p.4.

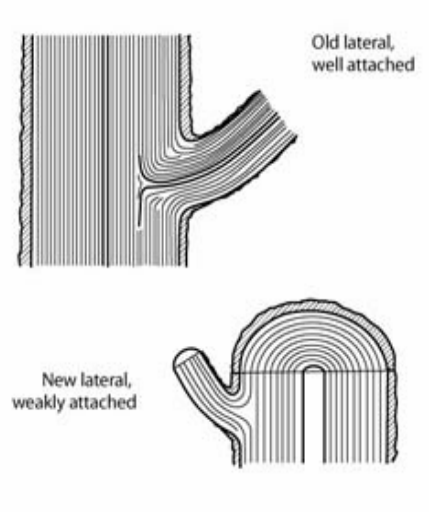
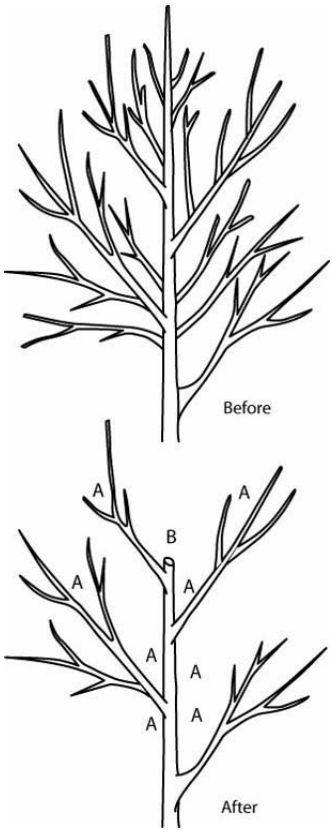


Fig. 13.7

Thinning removes a branch (A) or cuts to a larger one (B). Source: After Harris et al. 1981, p.4.



Making the Cut

Pruning shears (or loppers) are used for cutting small limbs, and saws are used for large ones. If diseased plants are pruned, disinfect pruning equipment after each cut to prevent spreading disease. Denatured alcohol or a chlorine bleach solution can be used to do this. When pruning trees and shrubs that have been grafted, remove new shoots that start below the graft union, but be careful not to remove all of the stems that start above the graft union. Small limbs, including suckers and water sprouts, should be cut close to the trunk or branch from which they arise. Cuts are made most easily with a single, upward cut of the blade. On most kinds of trees, new shoots will be less likely to grow from remaining latent buds if small limbs are cut closely.

When heading back trees or shrubs, cut small stems back to about 1/4 inch (0.6 cm) from a lateral bud or branch. Make the cut on a slight slant away from the bud or branch. New growth will usually grow in the direction the bud or branch points (figs. 13.8 and 13.9).

Fig. 13.8

Make pruning cuts ¼ inch (6mm) above a bud and slightly angled away. Source: Caldwell et al. 1972, p. 10.

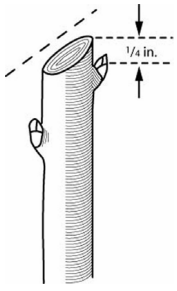
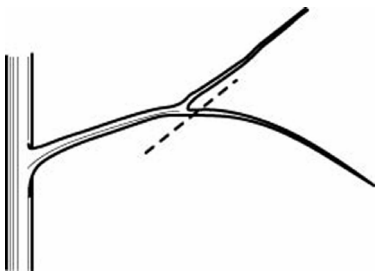


Fig. 13.9

Prune back horizontal limbs to a more upright lateral or to an upward-growing bud. Source: After Harris et al. 1981, p.



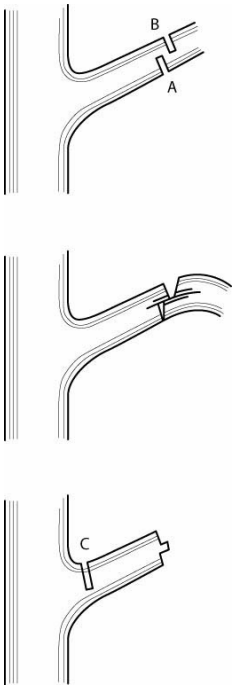
Large tree limbs must be cut with a saw. The recommended procedure is to remove a limb in two steps involving three cuts (fig. 13.10). Make the first cut on the underside of the branch 1 to 2 feet (30 to 60 cm) from the crotch and at least one-third of the diameter deep. Make the second cut, a downward one, 1 to 3 inches (2.5 to 7.5 cm) farther from the crotch than the first. The limb should then split cleanly between the two cuts without tearing the bark. The third cut to remove the remaining stub is made at the crotch, but its exact position is important to ensure rapid closure of the wound.

Most trees form ridges, called branch bark ridges (BBR) or shoulder rings, on the top and bottom of branches where they are attached to the trunk. The third cut should be made just outside the branch bark ridge (fig. 13.11). The cut will not be flush or parallel to the trunk but will be out from it slightly, with the lower edge of the cut farther away from the trunk than the top one. Such a cut will form a smaller wound than a flush cut and it will close more quickly.

Protecting pruning cuts with an asphalt emulsion or other coating material is of no value and could even be harmful to the tree. Coatings and coverings can trap moisture and increase the chances of decay and retard wound closure. The best practice is simply to let the wound dry in the air.

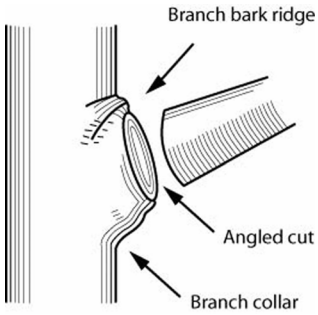
Painting water-based paint on the southwestern portions of the newly exposed trunk and branches after pruning may prevent bark injury from sunscald.

Fig. 13.10



To remove a large limb, first cut at (A), second at (B), third at branch bark ridge (C). Source: After Harris et al. 1981, p. 5.

Fig. 13.11



Pruning cuts should be made just outside the branch bark ridge (top of cut) and then the collar (bottom of cut) so that the bottom of the cut is angled slightly outward. Source: After International Society of Arboriculture 1995, p.3.

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