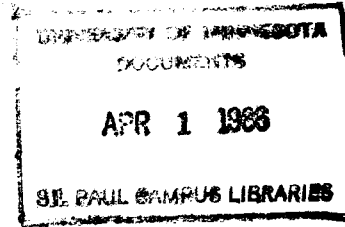


Pruning Trees and Shrubs

MERVIN C. EISEL
Extension Horticulturist



Pruning is a horticultural practice based on aesthetics and science that alters the growth of a plant. The purpose of this folder is to explain some reasons for pruning. There are many reasons for pruning, and all pruning should be based on reason.

REASONS FOR PRUNING

Pruning often begins at planting time for bare root nursery stock. However, recent research indicates that it is better to do only minimal corrective pruning then. Below are some guidelines.

1. Broken and damaged roots should be pruned back to sound wood.
2. Broken and damaged branches should be removed.
3. Young trees can be shaped. (See reasons for pruning below.) It is usually not advisable to cut back the leader of a young tree.
4. The stems of shrubs can be thinned and partially cut back.
5. Plants to be grown as hedges should be cut to within 6" of the ground at planting time.

It is usually not necessary to prune plants that are dug with a ball of soil attached to their roots.

Pruning can maintain the health and quality of established plants. Pruning for the following reasons will help prolong the plant's life (fig. 1) by:

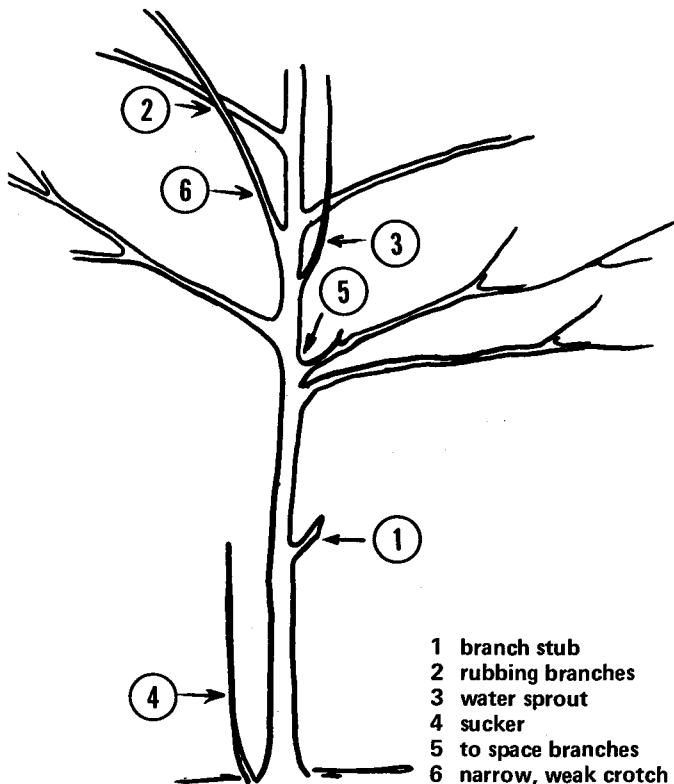


Fig. 1 Pruning that should be done on this young tree.
(see numbers for reasons)

1. removing dead or dying portions of plant with disease problems or insect injury;
2. removing portions of plant injured or killed by the winter;
3. removing branches injured by storms;
4. removing existing branch stubs;
5. removing rubbing branches;
6. removing sprouts or suckers at the base of grafted plants (including roses, apples, crabapples, honeylocust, flowering plums, etc);
7. removing watersprouts (succulent vigorous shoots on the inside of the tree near the trunk);
8. removing surplus branches so the remaining ones are spaced at least 1 foot apart on trees;
9. branches normally should be left so they come out from all sides of the tree;
10. leaving a low branch on the southwest side to provide shade to help prevent sunscald; and
11. removing narrow-angled branches from the main trunk.

Another reason for pruning is to improve the appearance of the foliage and flower and stem quality as well as to:

1. shape or form and increase the usefulness of function of the plant, such as hedges, espalier, etc.;
2. remove lower branches to train to tree form;
3. remove multiple leaders on these plants where a single leader is desired, such as evergreen or shade trees;
4. control plant size; and
5. improve fruit quality and increase production, open plant up, and promote flowering, ease of spraying, and harvesting.

Pruning is sometimes done to protect people and property rather than to benefit the plants. For example, pruning is done to:

1. eliminate weak tree branches that overhang homes, parking areas, and other areas that are frequented by people;
2. eliminate branches that interfere with street lights and traffic signals;
3. remove branches that interfere with overhead wires;
4. remove lower branches that are a safety hazard or interfere with individual or vehicular movement; and
5. prevent encroachment on others' property.

PRUNE AT THE PROPER TIME

Some plants are susceptible to disease invasion if pruned at the wrong time. These plants should be pruned when they are least likely to become infected.

1. Oaks should be pruned during December, January, or February to minimize the chance of oak wilt infection, a fungus disease. (Any summer pruning necessitated by storm damage should be covered immediately by a wound dressing.)
2. Apples, flowering crabapples, pears, mountain ash, hawthorns, and cotoneasters should be pruned between the time they go dormant in the fall and the time growth starts in the spring to minimize the spread and chance of infection by a bacterial disease called fireblight.

Some trees have a free flowing sap and will "bleed" if pruned in late winter or early spring. Although this "bleeding" causes little or no harm to the plant, it causes major concern for

many homeowners. To prevent "bleeding," this group of plants can be pruned anytime they are actively growing; early in the growing season is best. The "bleeding" trees include:

1. all maples, including the boxelder;
2. honeylocusts (prune during dry periods in the summer);
3. butternuts and walnuts;
4. birch, ironwood, and blue beech; and
5. elm.

Trees and shrubs that bloom early in the growing season on old wood should be pruned immediately after they finish blooming. Any winter injury should be eliminated as soon as the following plants come into leaf:

apricots,	Juneberries,
azaleas,	lilacs,
chokeberries,	magnolias,
chokecherries,	Mayday tree,
clove currants,	flowering plums and cherries, and
deutzias,	early blooming spireas.
forsythias,	

Shrubs that bloom late but on old wood should be pruned either early in the spring before growth starts or immediately after bloom:

mockoranges,	shrub or old roses, and
potentillas,	weigela.

Shrubs grown primarily for their foliage, fruit, or other reasons should be pruned in the spring before growth starts. Any wood injured by the winter should be removed as soon as the plant comes into leaf:

barberries,	alpine currants,
buckthorns,	honeysuckles,
buffaloberries,	sumacs,
caraganas,	Cistena sandcherries,
cranberries,	smokebushes,
dogwoods,	Royal Purple smokebushes,
euonymuses,	viburnums, and
ninebarks,	winterberries.

Shrubs that bloom on the current season's growth should be pruned in the spring before growth starts. Most of these should be pruned to the first pair of buds from the ground:

most clematis (to live wood),
Annabelle hydrangeas,
PeeGee hydrangeas
(Remove old flower heads and thin to encourage larger flowers.)
hills of snow hydrangeas,
garden roses (to live wood),
Anthony Waterer spireas, and
New Jersey teas.

The natural form of an evergreen is usually the most desirable, and pruning should be limited to correcting growth defects. Evergreens that grow continuously through the growing season can be pruned at any time, but early in the growing season is usually best:

junipers,
white cedar or arborvitae,
yews, and
hemlocks.

Although spruces, firs, and douglas firs don't grow continuously, the time for pruning them is not critical. Pruning in late winter or before growth starts is probably best. However, some spring pruning is not harmful.

Pines put on a single flush of growth and stop. They must be pruned at the candle stage of growth before the candles become woody. Pruning at other times will cause dead stubs.

To promote dense, compact specimens, pines should be pruned when their candles are elongated to about three-fourths their length (fig. 2). Up to two-thirds of this new growth can be removed. Pruning should not go into last year's growth.

USE THE RIGHT TOOLS FOR PRUNING

Using the right pruning tools reduces the effort in pruning and helps you do a good job.

A good pair of **pruning shears** is an important pruning tool. If the shears are used early in a plant's life, a lot of corrective pruning can be done that would require major pruning later. The two types of pruning shears are the shears type (fig. 3) and the anvil type (fig. 4). The shears type usually makes a cleaner and closer cut with less effort than does the anvil type. Because it is difficult to make clean, flush cuts with a pole pruner, they are not recommended.

Lopping shears (fig. 5) are similar to pruning shears, but with long handles, giving the greater leverage needed to cut branches up to 1½" in diameter. Lopping shears are designed to cut large stems at the ground when renewing large overgrown shrubs.

Hedge shears (fig. 6) should be used to prune hedges and no other plants. There are countless hedge shears from hand models to the cordless electric types.

Many **saws** can be used for pruning (fig. 7 & 8). Probably more important than the type of saw is how the saw is used. Saws with teeth on both sides of the blade should be avoided because it is easy to cause unintentional damage. Small hand saws and chain saws, as well as the many saws made specifically for pruning, can be used. A small bow saw is very useful for home pruning. It is difficult to make clean cuts with pole pruning saws; so if used, exercise care to make clean cuts.

Wound dressings sometimes are used to cover cuts that are 1½ inches or more in diameter. To completely protect large pruning wounds, reapply the wound dressing each year until the wound is completely healed. Because repeat applications usually are not practical, wound dressings often are not used at all. Wound dressings do make the pruning wounds less conspicuous. Many commercially prepared asphalt emulsions are available from nurseries or garden centers. Orange shellac also provides protection to a wound. Latex paints of an inconspicuous color can be used, but oil based paints will injure the plant.

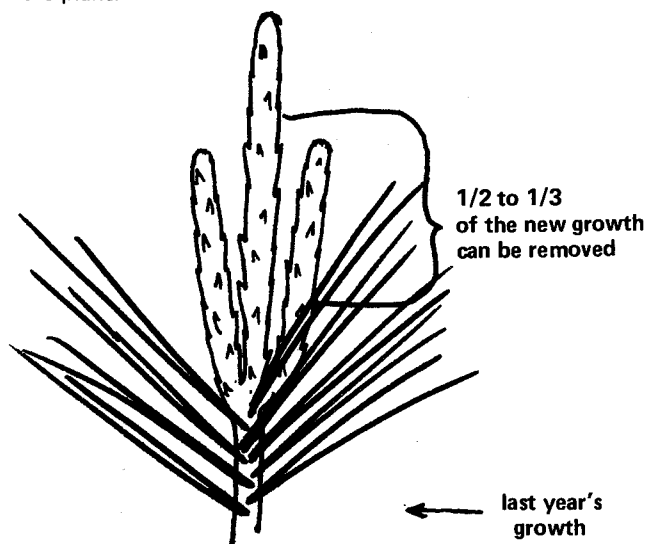


Fig. 2 Pruning pines (Candle Stage)

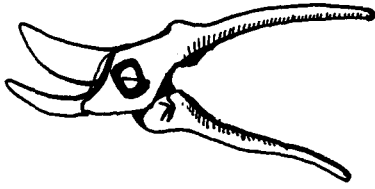


Fig. 3 Pruning shears

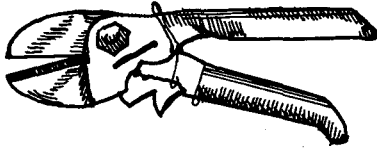


Fig. 4 Anvill-type pruning shears



Fig. 5 Lopping shears

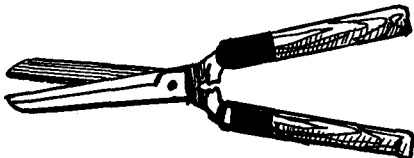


Fig. 6 Hedge shears

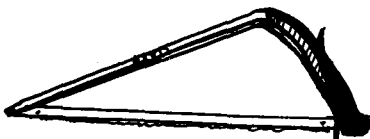


Fig. 7 Bow saw

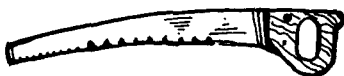


Fig. 8 Pruning saw

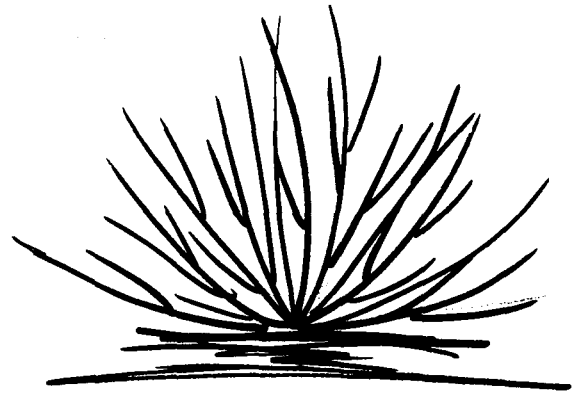
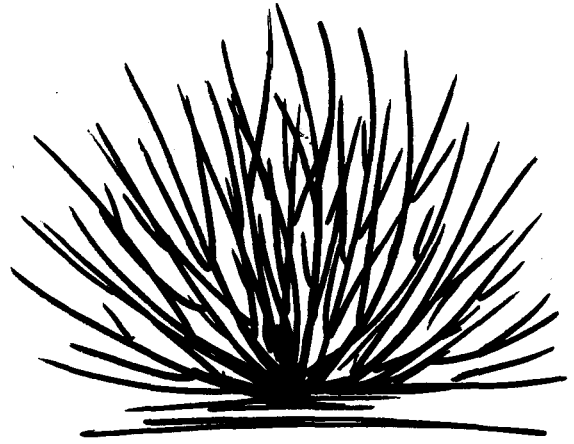


Fig. 9 Renewing shrubs

GUIDELINES TO PROPER PRUNING

Homeowners should not attempt to prune near electrical and utility wires. The utility companies should be contacted to do the work.

For most landscape effects the natural form of the plants is best, and consequently plants should not be sheared to tight geometrical forms. They should be altered only if the plant must be confined or trained to a specific purpose. After pruning, it should not be obvious that the plant has been pruned.

Never leave stubs because these serve as entryways for disease organisms to invade the plant. Heading back or topping trees is not recommended because the cut stubs never completely heal. It is often better to remove trees that have outgrown their usefulness.

Overgrown shrubs can be renewed by cutting off 1/3 of the oldest stems to the ground (fig. 9). When renewing an overgrown hedge (most shrubs will recover), cut it to the ground. Avoid cutting shrubs partway back.

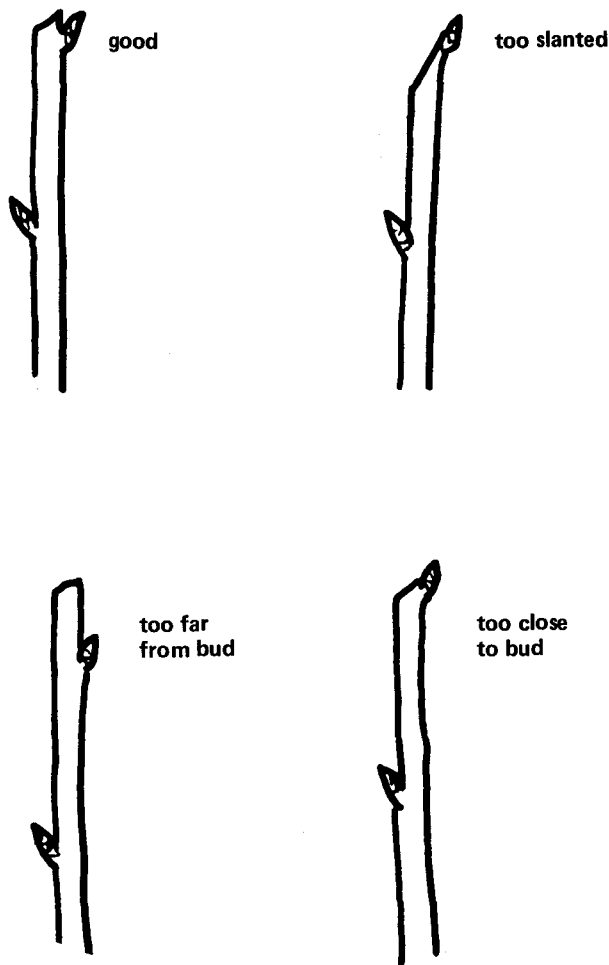


Fig. 10 PRUNING SMALL BRANCHES

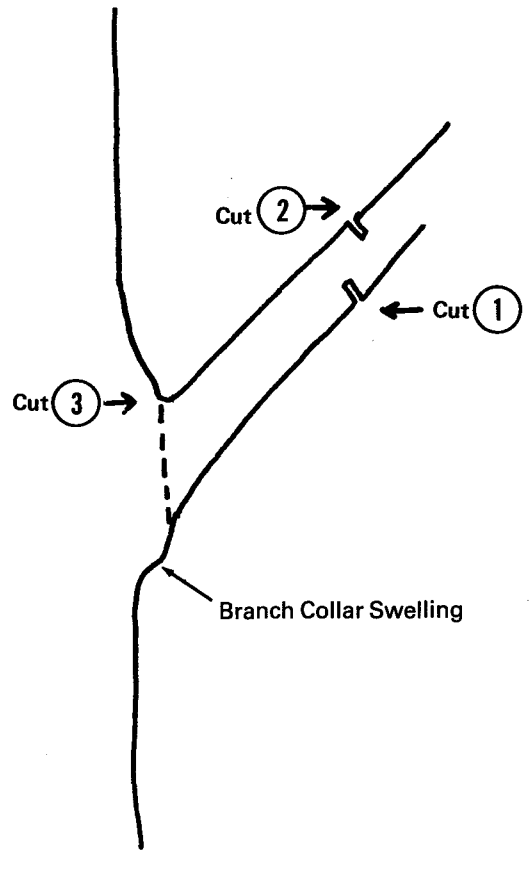


Fig. 11 REMOVING LARGE BRANCHES

In shortening a branch or twig, cut it back to a side branch or make this cut $\frac{1}{4}$ " above a dormant bud (fig. 10). Dormant buds are at the bases of all leaves.

When cutting roses, the stem should be cut to $\frac{1}{2}$ " above the bud at the base of a 5-leaflet leaf growing toward the outside of the plant. If pruned to this point, rebloom will occur more quickly than if a shorter stem were removed.

When removing large branches, three or four cuts are necessary to avoid tearing the bark (fig. 11). Make the first cut on the underside of the branch about 18" from the trunk. Undercut $\frac{1}{3}$ to $\frac{1}{2}$ way through the branch, but stop before the saw binds. The second cut should be made an inch further out on

the branch; cut until the branch breaks free. If the stub is small enough, hold it with one hand and use the other hand to cut the branch stub. The cut should be made just beyond the branch collar swelling. This collar contains chemicals that inhibit the invasion of decay organisms. If the branch is too large to be held in one hand, undercut it with the third cut, and cut it through with the fourth cut from the top down.

A newly planted hedge should be pruned to within 6" from the ground at planting time. At each succeeding pruning, it should be pruned to within 1" to 2" from the last pruning to develop a dense plant. Hedges should be pruned so they are wider at the base than at the top to allow all parts to receive sunlight.