

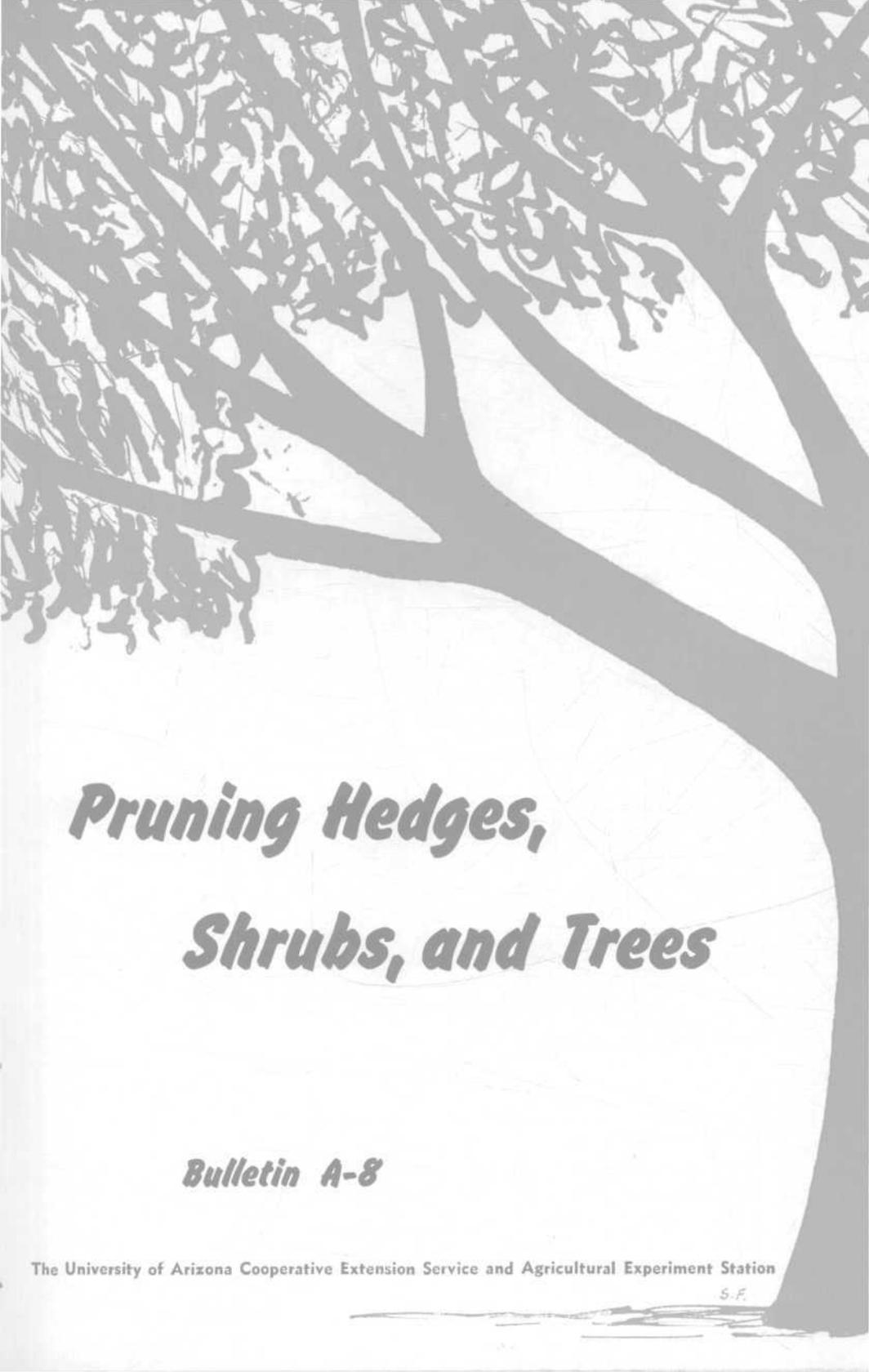
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***Pruning Hedges,
Shrubs, and Trees***

Bulletin A-8

The University of Arizona Cooperative Extension Service and Agricultural Experiment Station

S.F.



Prune to Maintain Natural Characteristics of Trees and Shrubs.

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Pruning Hedges, Shrubs, and Trees

**By Steve Fazio
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Why Prune?

Pruning plants for definite growth responses has been practiced for centuries in all countries of the world. The formal gardens of Europe were masterpieces by trained gardeners who achieved desired effects through careful pruning and selection of plants. The Japanese mastered the art of pruning to achieve a dwarfing effect on plants.

Nurserymen prune to obtain sturdy, well-shaped plants. Pruning, therefore, is beneficial when the method is correct for a given plant. Pruning is harmful when done incorrectly.

Individual plants respond differently to pruning practices. Bear this in mind when selecting plants for a given area.

A vigorous growing shrub placed under a window cannot be pruned

indefinitely to maintain low height. Such plants may not develop new growth, thus exposing large woody branches to view.

Basically, the purpose for pruning the following types of plants is as follows:

Hedges

Hedges are generally used for screening purposes in connection with patios. An ideal hedge should be dense from top to bottom. This can be accomplished by shearing to formal shape, usually box-shaped.

Shrubs

Shrubs used for foundation plants around the home are seldom pruned to formal shape. Pruning to maintain natural shape gives a more pleasing effect and is easier to maintain. Vigorous branches are headed back if they outgrow the natural shape of the shrub.

Shade Trees

Deciduous and evergreen shade trees are seldom pruned to formal shape. Pruning generally consists of developing strong scaffold branches and thinning out excessive growth and crossed branches. A deciduous shade tree, when devoid of leaves, should have a graceful appearance.

Improperly pruned trees have a gnarled look with excessive branches showing during the winter months. Severe annual pruning is unnecessary and shortens the life of the trees and also entails considerable expense and labor.

When to Prune

Plants are classified into two large groups: evergreen and deciduous. Evergreen plants remain green throughout the entire year although the shedding of older leaves is a continuous process. Deciduous plants shed all their leaves during the winter months and remain in a dormant condition until early spring.

Deciduous plants are pruned during their dormant period which varies according to the elevation. In southern Arizona the pruning season begins in early December and extends to the latter part of January.

At elevations above 4,000 feet begin pruning in December and continue until about March. Light pruning during the active growing period to remove suckers or water sprouts can be done without harming the plant.

Evergreen plants can be pruned or sheared lightly during the sum-

mer or winter months to maintain proper shape. If it becomes necessary to head back a plant severely, this should be done shortly before the active growing period begins in the spring.

Pruning severely in the winter exposes tender, inside growth to cold damage. Bareness of the pruned plant during the winter destroys its natural beauty. Pruning shortly before the active growing period allows the plant to leaf out immediately before warm weather and shade the exposed bark.

Plants that bloom in spring are usually pruned after the flowering period which may vary from early spring to early summer. Plants of this type include flowering peach, almonds and quince, buddleia, crepe myrtle, honeysuckle, Persian lilac, pomegranate redbud, jasmine and oleander.

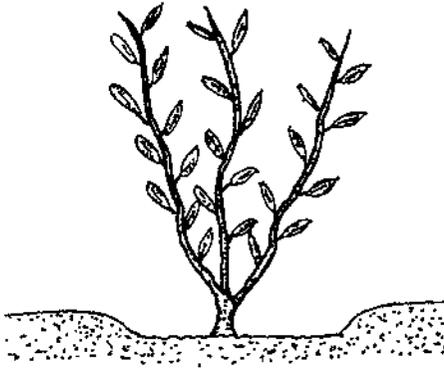
Equipment for Pruning

Equipment needed for pruning generally consists of a pair of hand pruning shears, small hand saw (specifically designed for pruning), a pair of loppers, and hedge shears.

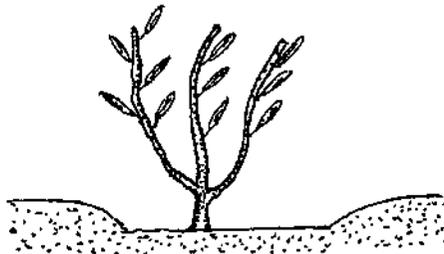
Each piece of equipment is designed for a special purpose and should be used only for the purpose intended. Hand shears are used for small limbs up to one-half inch in diameter and attempts to cut large branches may cause twisting of the cutting blades.

Loppers are intended for medium-sized branches. They, too, can be damaged if used on large branches.

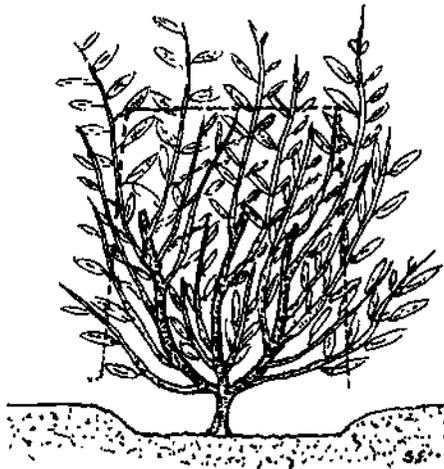
A pruning saw is used on branches too large for loppers. When a saw is used to cut small branches



Top—Hedge plant set in place and ready to be headed back.



Center—One-half of the top removed to encourage development of new growth near the base of the plant.



less than one inch in diameter, splitting and fraying of the cut often occurs.

Hedge shears are used for trimming hedges, as wood of this type is usually soft and can be cut easily.

All pruning equipment should be kept sharp and coated with light oil to prevent rusting when not in use.

Pruning Newly Planted Hedges

Hedges used for screening purposes should have good leaf coverage from the base to the very top of the plants. In many instances, the bottom portion of such plants are devoid of leaves and are not serving the purpose for which they were intended. This lack of foliage is often the result of improper pruning in the early stages of the plant growth.



Bottom—(1.) New growth allowed to grow one foot and cut back to 4 or 6 inches. Dotted line shows general shape after shearing. (2.) After heading back, new growth develops rapidly, filling in the lower portion of the plant. Dotted line shows general shape after shearing.

Hedge plants purchased from nurseries are seldom pruned, since they are often used for foundation plantings or trained into small trees. It is therefore the responsibility of the gardener to prune the plants for a definite growth behavior.

After the hedge plants have been planted, prune them immediately to force new growth at the base of each plant.

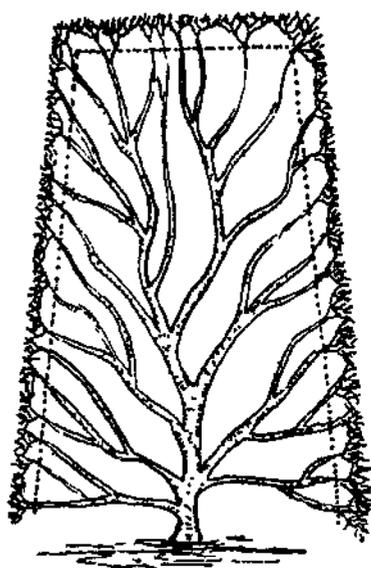
As an example, let us assume that hedge plants two feet high have been planted. You should then cut off the top portion so that one foot of the plant remains. This drastic pruning forces new branches close to ground level and density of foliage will be increased.

After the initial heading back, allow new growth to measure at least one foot before pruning again. After growth of one foot, prune off 4 to 6 inches of the new growth. Repeat this same pruning technique until the desired height of the hedge is attained.

Thereafter, prune at approximately the same height, but prune often as the soft, tender stems are much easier to cut off, and compactness of foliage will be maintained. After several years, it may be necessary to cut several inches below the top and side portion of the hedge to remove the knotty head which forms from pruning at a constant height.

Increasing Density of Established Hedges

Shedding of leaves near the base of hedge plants is the result of age, lack of nitrogen fertilizer, and

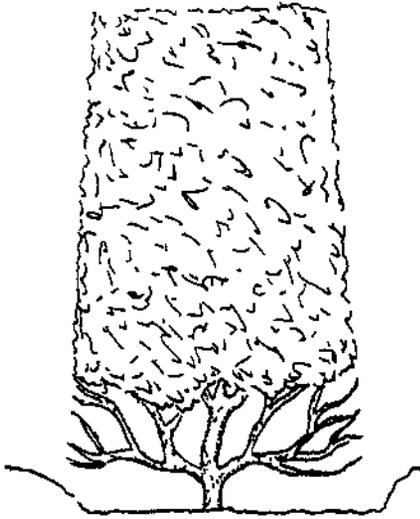


Knotty growth develops from pruning at the same area year after year. Dotted line indicates the approximate cutting zone where growth should be removed.

water. Once the leaves have been shed, it is extremely difficult to encourage new growth without resorting to corrective pruning.

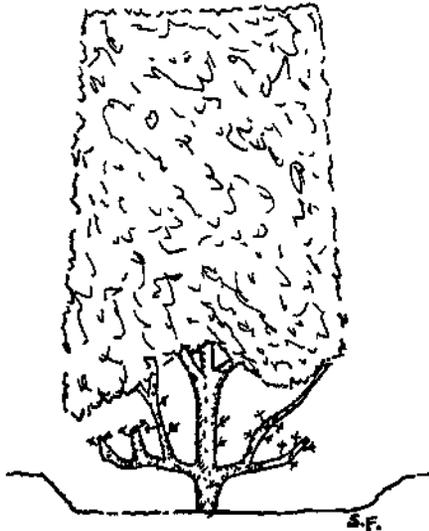
Oleanders, Japanese privet, California privet, pomegranate, Euonymus and other hedge-type plants produce numerous branches near ground level. In order to increase density near the base of old hedges, cut two or three of the branches approximately one foot above ground level. New growth will form below the cut areas and eventually fill in at the base.

If the density is not sufficient to fill the entire area, cut several more branches at the one-foot height after growth has taken place on the



Top—Established hedge showing lack of leaves at the base of the plant.

Bottom—Lower branches are pruned to force development of new shoots to increase the density of the leaves. In older hedges, it is often necessary to head back the top portion to force growth on the bottom.



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previously cut branches. If the cut branches do not produce new growth in a short time, head back the top portion of the hedge one to two feet.

A family often will purchase a home with a hedge that is taller than desired. If such is the case, prune back the branches to the proper height, but this type of pruning should not be done until about March or just prior to the appearance of new spring growth.

The sheared leaves should always be removed from the hedge. Accumulation of leaves in the inside of the plants may be a fire hazard and also retard new growth.

Hedges allowed to grow without shearing are attractive but the spread of branches takes up more space than those which have been sheared. Density of foliage at the bottom half of the plants can be increased by pruning back one or two branches near the base and new growth will generally form rapidly.

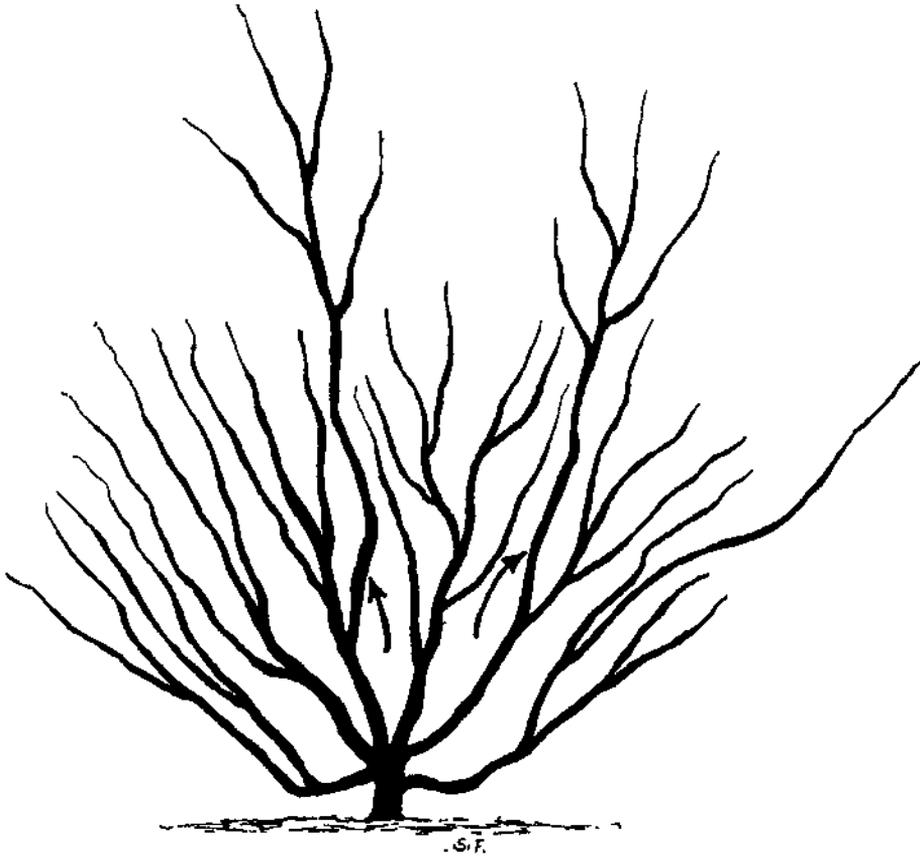
Methods of Shearing Hedges

Hedges can be sheared into many interesting shapes but the standard types are generally box-shaped. The bottom portion of the hedge should be slightly wider than the top half, as this allows for more branch development and greater density of leaves. To maintain density, it is necessary to shear often to continually force new growth.

Pruning Shrubs

Foundation or specimen shrubs often need corrective pruning to maintain a well-balanced, natural shape. Occasionally one branch will outgrow the remaining portion of the shrub and a lopsided condition will exist. Heading back branches during the active growing period will not be harmful if only a few are removed at any one time.

If the heading back of individual branches is necessary, always make the cut in the inside of the plant rather than at a point even with the outside branches. It is not necessary to cut back to a lateral branch with this type of plant as new growth will develop from within the inside portion of the plant and give it more density. Cuts made on the outer portion of the plant will



Development of vigorous shoots often destroys the natural shape of the shrub.

Arrows indicate the approximate area where cuts should be made to head back these branches.

cause growth to develop too high and the individual branch will become top-heavy.

It is best to head back the branches before they grow too large. Removal of branches in the early stages of growth will not leave noticeable vacant spots and new growth on the cut limbs will begin in a shorter time.

An informal type of landscaping makes use of shrubs growing in their natural shapes which lends a pleasing effect to the landscape design. In pruning, attempt to maintain this natural shape, as the beauty of shrubs is often destroyed by shearing them to formal shapes. Maintenance of sheared shrubs is more time consuming than those which are pruned occasionally to maintain natural shape.

Pruning Deciduous Shade Trees

Deciduous fruit trees are usually pruned severely each year for very definite reasons. These include ease of harvesting, an increase of fruiting wood, and a thinning of branches to allow sunlight to color the fruit.

For unknown reasons, this type of severe pruning has been practiced on deciduous shade trees and the results are very disappointing. A deciduous shade tree, when devoid of leaves, should have a graceful appearance.

The well-spaced branches and numerous twigs of a properly pruned shade tree are quite a contrast to one which has a mass

of gnarled stubs and numerous branches arising from cuts made the previous year.

A severely pruned tree can be pruned to correct shape, but it takes patience and many years to achieve this goal. It is more economical to practice corrective training and pruning than to severely prune each year and the results will be more gratifying.

Correct pruning begins when the tree is first planted. Select four or five well-spaced branches for the main scaffold branches and remove all others.

The scaffold branches are extremely important as they will support tremendous weight as the tree develops new limbs. The importance of selecting and spacing these main branches cannot be overemphasized.

Trees purchased from nurseries are of two types: (1) scaffold branches present, and (2) "whips" with no scaffold branches.

If you are starting trees in group (1), you need only select four or five well-shaped branches and remove all others.

Group (2) requires special treatment as no scaffold branches are present.

1. Cut the "whip" back to a height of five to six feet.

2. During the growing period, buds on the trunk will open and form branches.

3. Allow the new branches to grow to one to two feet in length.

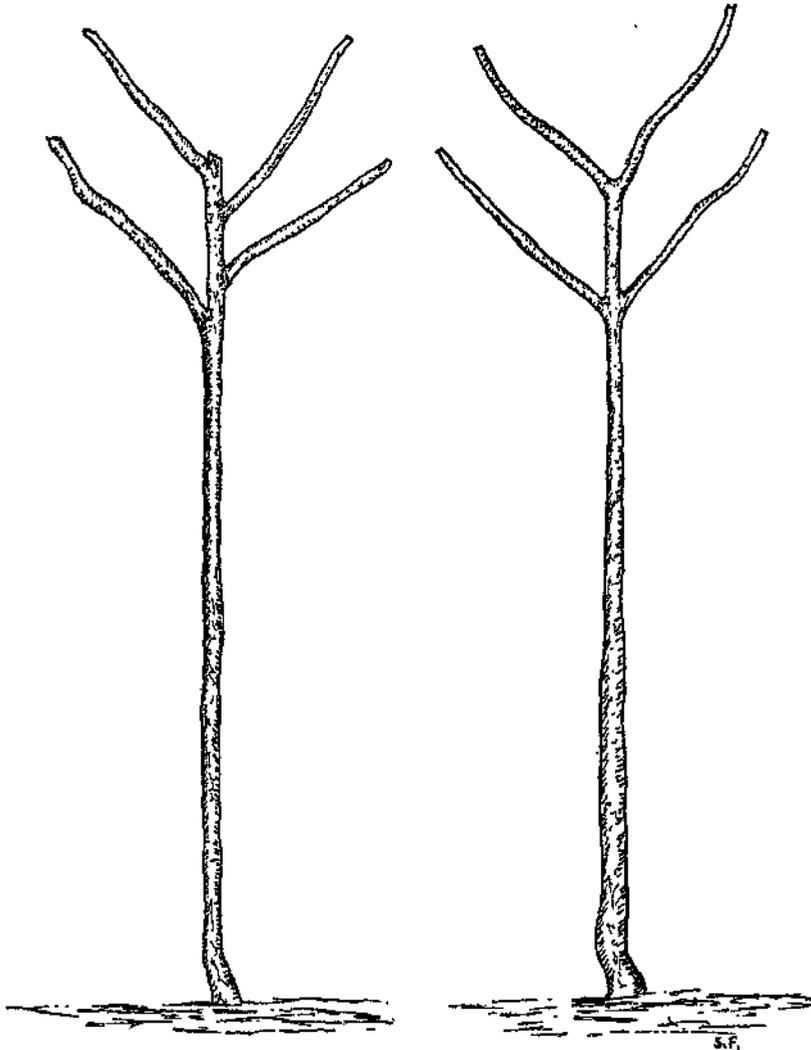
4. Select four or five branches near the top of the "whip" and remove all others.

5. Allow the remaining branches to grow unpruned all during the growing season.

6. During the next dormant period, cut back the branches to a length of eighteen inches.

7. When growth resumes in the spring, pinch out new growth developing on the main trunk and on scaffold branches near the main trunk.

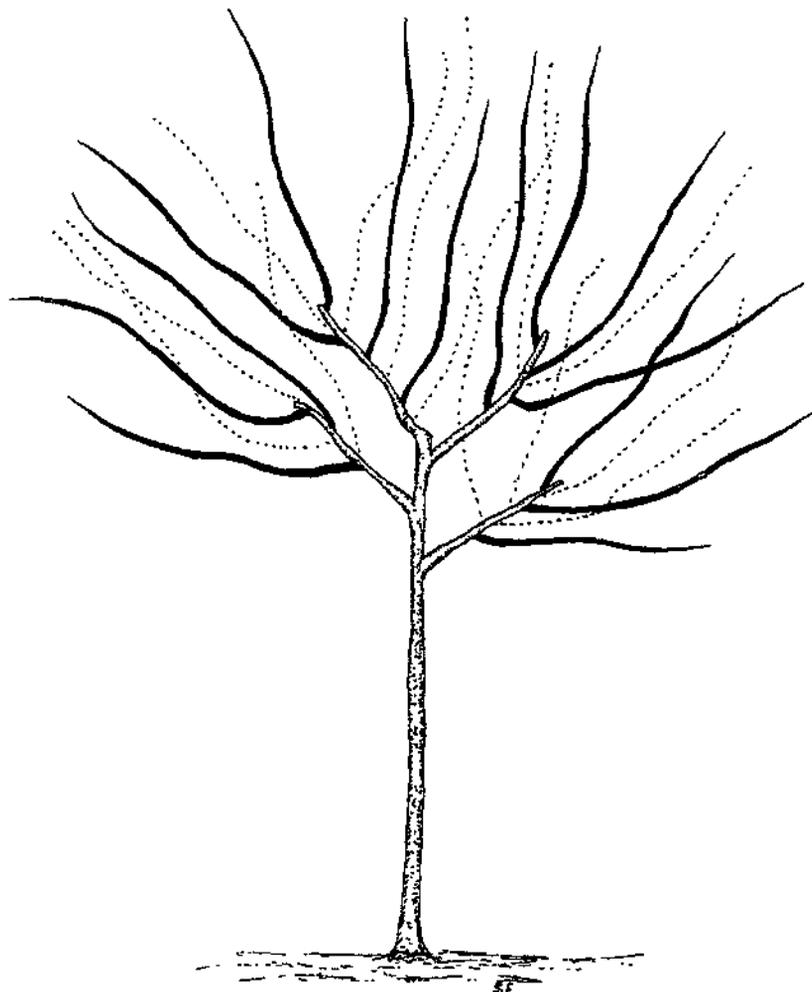
Pruning a tree in group (1) or (2) after establishing the scaffold



Left—Alternately spaced limbs are capable of supporting weight without the danger of splitting at the crotch.

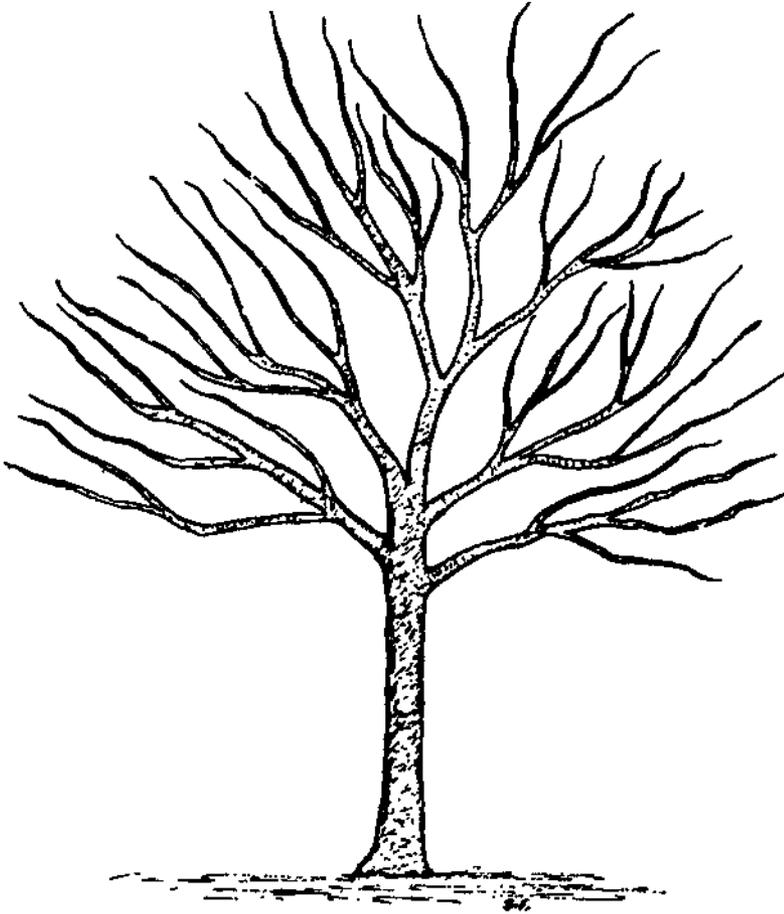
Right—Limbs spaced evenly exert pressure at one point which often results in splitting during wind storms.

branches involves the removal of as thinning is all that is required
crossed branches and an occasional throughout the life of a tree.
thinning of excess small branches.
Do not head back the remaining Proper watering and fertilizing
branches after one season's growth, will promote density and vigor.



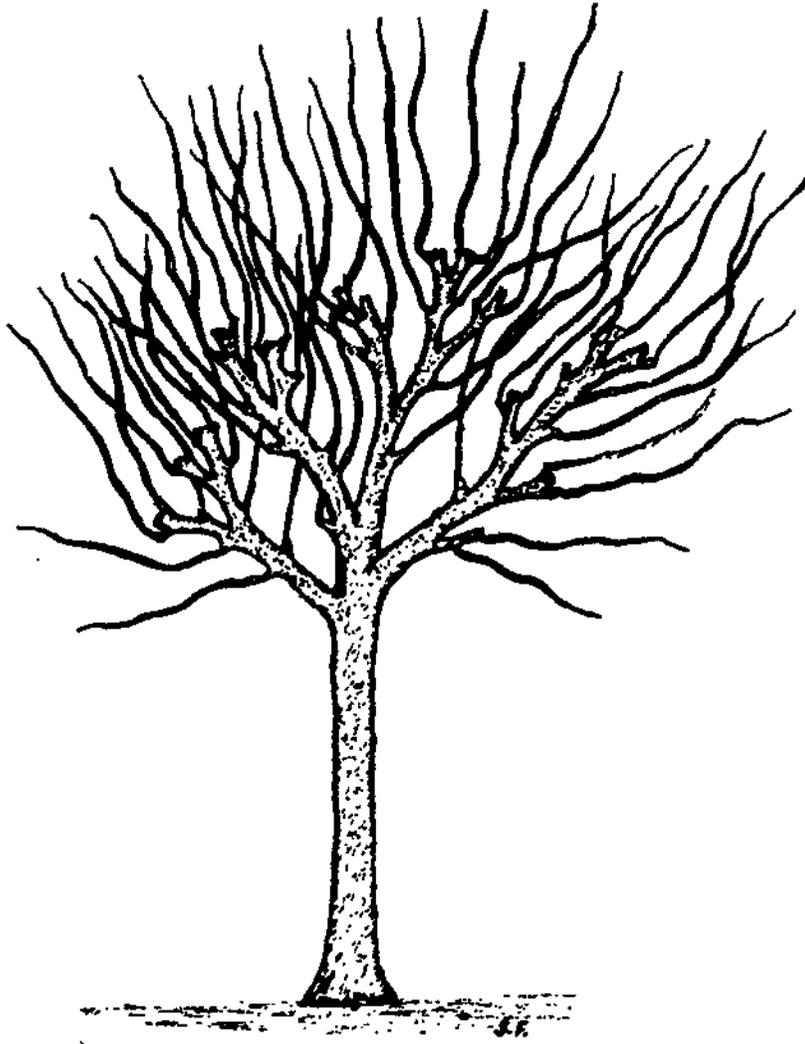
Black and dotted limbs represent new growth which developed during the first growing season. Crossed branches and excessive limbs have been pruned out (Dotted lines.)

The above tree was allowed to grow unpruned during the summer and fall months. During the dormant period, you can observe the framework and remove excess branches or those which are rubbing against each other. If the limbs are extremely long, they can be cut back slightly to reduce weight and prevent bending.



Right Way

Properly pruned tree. Crossed branches and excessive twigs have been removed giving the tree a graceful appearance. The well-spaced branches of the above tree permit passage of wind during storm periods with a minimum loss of leaves. Sunlight filtering through to the inner portion of the tree prevents shedding of leaves caused by excessive shading. There will be a need for very light pruning each year to remove sprouts and to thin out branches.



Wrong Way

Deciduous shade tree severely pruned each year. Note stubs and excessive twig growth forming on cut ends. The above tree represents a severe form of pruning. It destroys the natural shape and the many pruning cuts make it possible for diseases to gain entrance. The numerous branches developing near the pruning cuts act as a barrier during windy periods and leaf drop will be severe.

Pruning Evergreen Trees

Coniferous evergreen trees rarely need pruning but occasionally it may be necessary to head back a vigorous branch to maintain proper shape.

Broadleaf evergreens often require pruning to remove water sprouts and suckers. If it becomes necessary to head back a branch, always cut back to a strong lateral branch to prevent excessive small twigs from forming on the cut ends.

Light pruning of evergreen trees to correct shape can be done any time of the year. It is generally best to head back branches before they become too large.

Crowded or crossed branches should be removed whenever they interfere with the proper growth of the tree. Any deadwood on the inside of the tree should be removed.

Palms are the simplest of all trees to prune as only dried fronds are removed. Removal of green fronds stunts growth and may injure the tree if they are removed year after year.

Broadleaf evergreen trees may often grow to great heights and the breaking of large limbs may present a hazard.

Topping back tall trees should not be attempted by amateurs but should be done **only** by qualified tree pruning specialists. Removing large branches necessitates the use of cables, ropes, and equipment generally not at the disposal of homeowners.

Pruning Wind-Damaged Trees

Limbs broken by wind can be removed if a few precautions are observed. (1) Lighten the weight of the broken limb by sawing off small sections starting from the end of the limb. (2) Cut limb flush with the main trunk.

Removal of wind damaged branches may cause an unbalanced look to a tree. If such is the case, it may be necessary to reduce the length of other branches to obtain a more even balance in the shape of the tree.

Pruning Frost-Injured Plants

Evergreen and deciduous plants are often damaged by sub-freezing temperatures. The degree of damage is evident by the following symptoms:

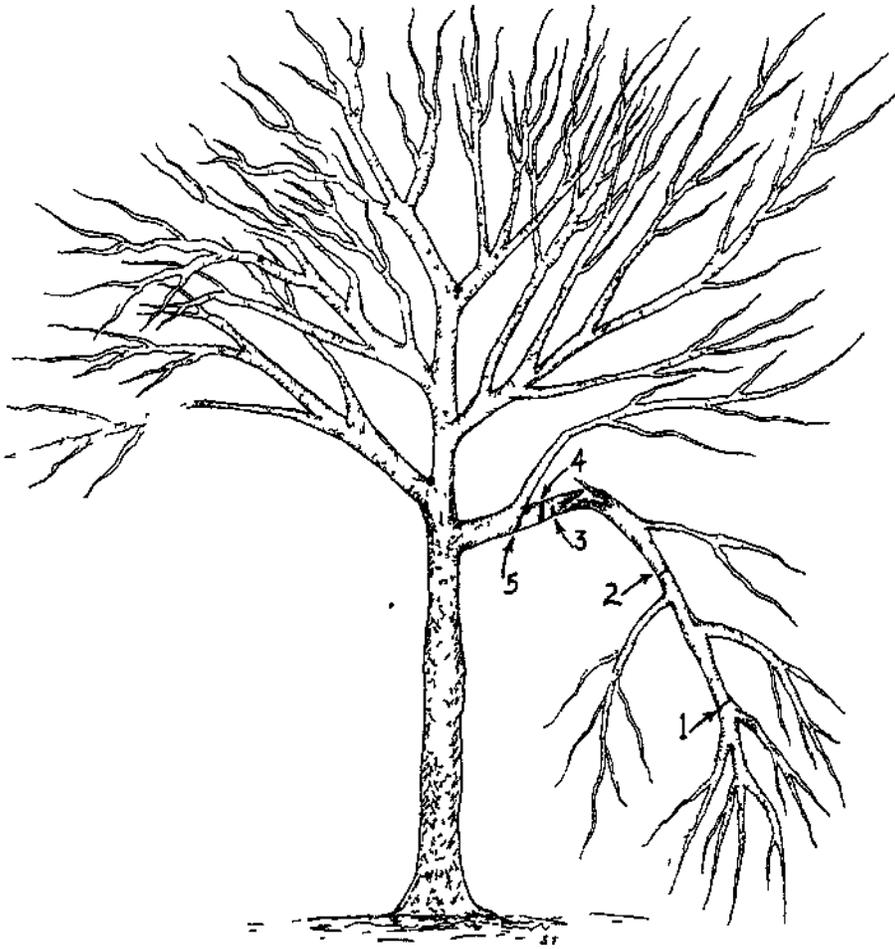
1. **Light damage** — burning of leaves and twigs near the ends of branches.

2. **Moderate damage** — burning of leaves and branches from one to two feet back from the end of the branch.

3. **Severe damage** — burning of leaves and stems back to and including the main trunk accompanied by splitting of the bark on the injured parts.

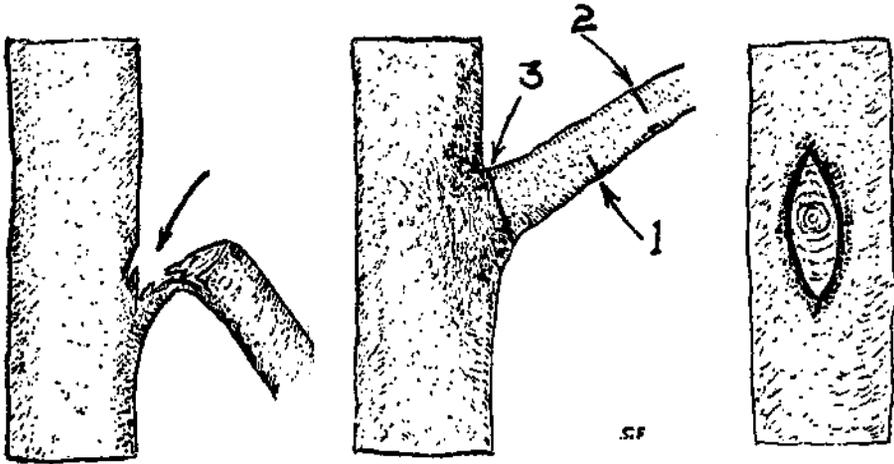
Pruning Light to Moderately Damaged Plants

Removal of frost-injured wood should **never** be attempted until new growth has emerged in the



Steps in pruning a limb broken by wind.

Lighten weight of limb by cutting off small sections starting at end and working back to main trunk (cuts 1-2). To prevent splitting of limb that is to remain, make cut No. 3 on bottom side half way through limb; Cut No. 4 on top side all the way through; Cut No. 5 flush to lateral branch.



Left—Splitting resulting from cut being made on top side of limb. Weight of limb will peel bark before cut is completed.

Center—Cut No. 1 made on bottom side approximately 12 inches from main trunk. Cut No. 2 made on top side 6 to 8 inches from first cut. If limb splits, bottom cut will prevent peeling. Cut No. 3 made flush with main trunk.

Right—Flush cut encourages rapid healing of the pruned limb.

SEE DRAWINGS next page →

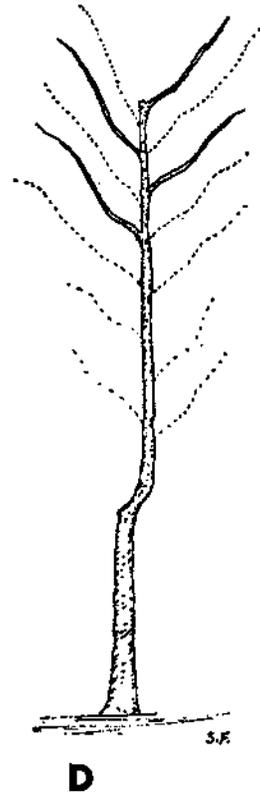
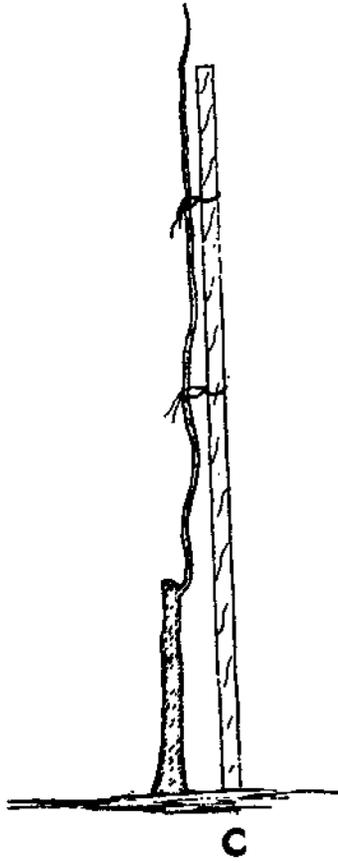
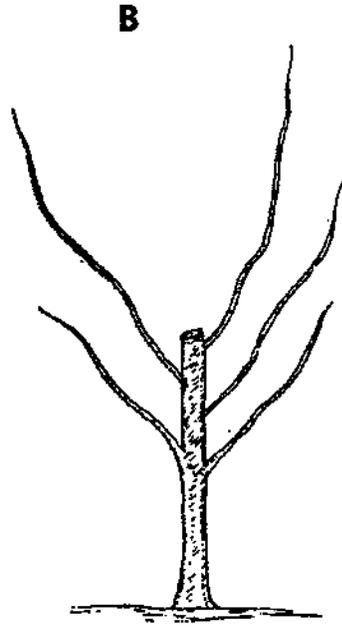
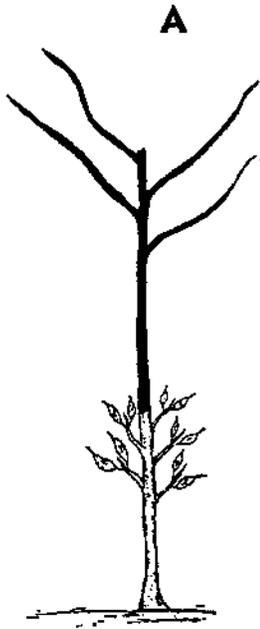
Steps in developing a new trunk and scaffold branches on severely cold-injured tree.

A—Top left — Black portion indicates dead wood. Lower portion showing development of new growth in early spring.

B—Top right — Dead wood removed, new growth thinned to 4 or 5 branches.

C—Lower left — Most vigorous shoot tied to stake, all others removed.

D—Lower right — Shoot cut back to 5 or 6 feet. Select 4 or 5 main branches, remove all others.



spring. New growth is the best indicator for determining the approximate region of dead wood.

Cuts should be made slightly below the dead wood where evidence of new growth is visible.

Pruning shortly after freeze injury or before resumption of new growth is not recommended since uninjured wood may be removed. Also, injured wood may not be removed and this necessitates further pruning after growth resumes in the spring.

Pruning Severely Damaged Plants

Severe frost damage on deciduous and evergreen trees may extend to the main trunk. In such instances it is necessary to start a new trunk and scaffold branches.

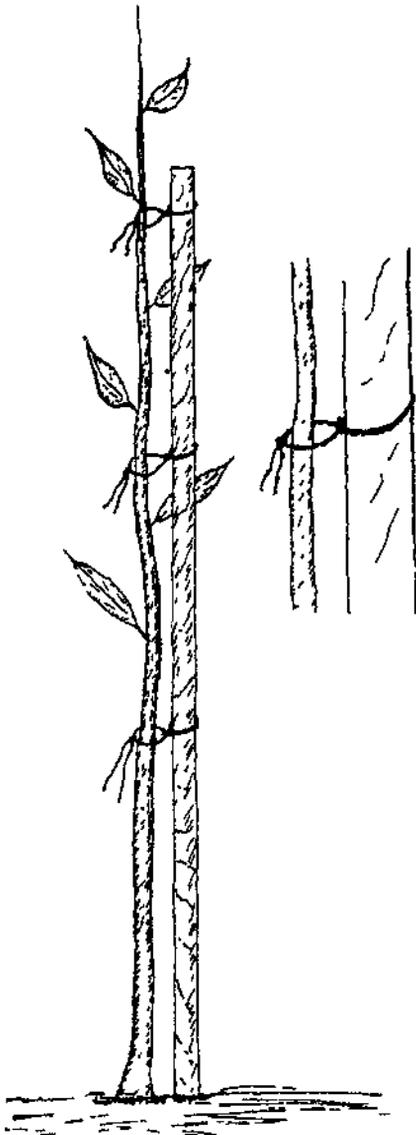
Do not begin the pruning of any dead wood until new growth is visible during the early spring. Numerous branches will develop below the cut area but only the most vigorous one should be saved and all others removed.

Place a pipe or wooden stake next to the main trunk and tie the new branch loosely to the stake to prevent the wind from snapping it off.

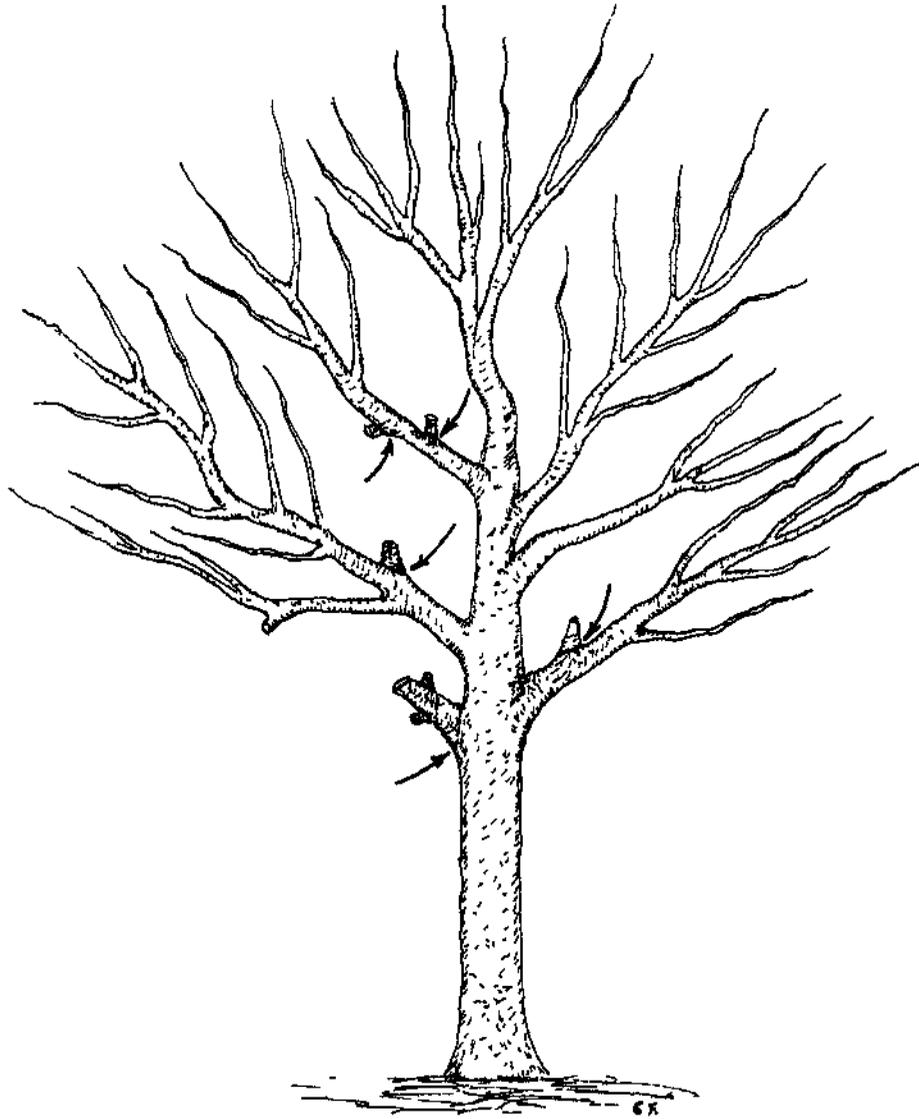
The young branch can be topped when it has grown to a height of six to eight feet. Most shade trees are topped back to five or six feet and scaffold branches are trained just below the cut area.

Fruit trees are topped back to heights varying from two to four feet to make the harvesting of fruit easier.

The selection of scaffold branches is described under "Pruning Deciduous Trees."



Proper method in staking small trees to prevent bending. Tie string or rope tightly around stake. Remainder of string is tied around trunk of plant loosely to permit slight movement during windy periods.



Make all pruning cuts flush to branch or trunk of tree. Flush cuts heal faster and are less apt to become infected with diseases or borers.

Treating Pruning Wounds

Rots infecting the woody portion of trees and shrubs usually gain entrance through pruning cuts. To prevent these organisms from entering, paint all cuts on trees susceptible to wood rots, such as China-berry and pepper, cottonwood, poplars and elderberry.

For other plants seldom affected by wood rots, paint cuts one inch in diameter or larger.

Compounds specifically prepared

for painting pruned cuts should be used as they do not retard callus formation or injure the bark surrounding the cut areas. House paints often dry out, crack and allow moisture and organisms to enter the cut areas. They may also injure the bark surrounding the pruned area.

All cuts should be made flush with a branch to promote rapid healing and also to remove unsightly stubs which may die back and allow organisms to enter and infect healthy wood.

Precautions Before Pruning

1. Each shrub or tree should be studied carefully before pruning to determine the reason for removing branches.

2. Know your plants before pruning. Certain plants do not withstand severe pruning and can be injured or stunted.

3. Prune branches before they become too large to avoid large vacant spots.

4. Prune during the proper season.

5. Use correct tools for each pruning cut.