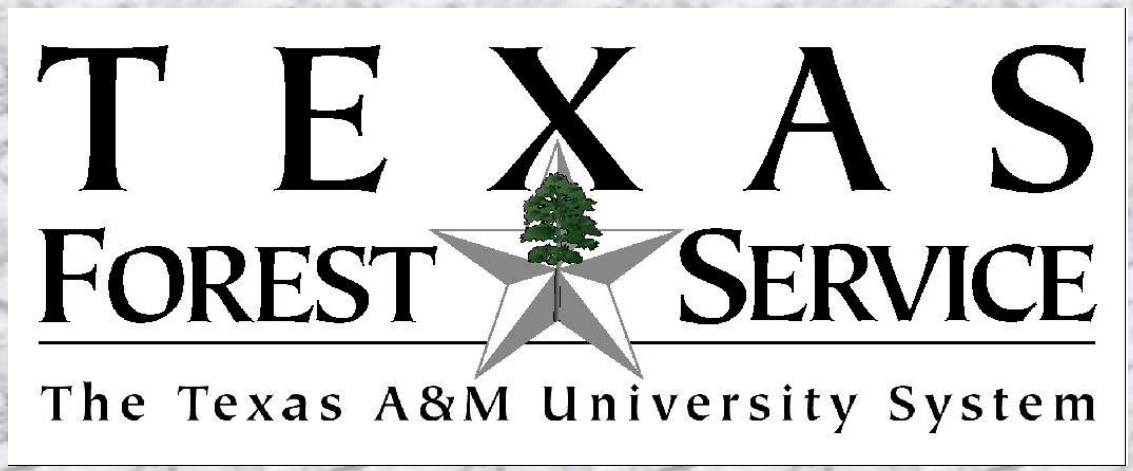
Pruning Basics



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Why Prune?

The objective of pruning is to produce *strong, healthy, attractive plants*. By understanding how, when and why to prune, and by following a few simple principles, this objective can be achieved.

Pruning for *safety* involves removing branches that could fall and cause injury or property damage, trimming branches that interfere with lines of sight on streets or driveways, and removing branches that grow into utility lines.

Safety pruning can be largely avoided by carefully choosing species that will not grow beyond the space available to them, and have strength and form characteristics that are suited to the site. In addition, pruning can be used to stimulate fruit production and increase the value of timber.

***To encourage the development of a strong, healthy tree, consider the following guidelines when pruning*.**

- **Prune first for ***safety***, next for ***health***, and finally for ***aesthetics.***
- ***Never*** **prune trees that are touching or near utility lines; instead consult your local utility company.**
- **Avoid pruning trees when you might increase susceptibility to important pests (e.g. in areas where oak wilt exists, avoid pruning oaks in the spring and early summer; prune trees susceptible to fire blight only during the dormant season).**

Responses to Pruning

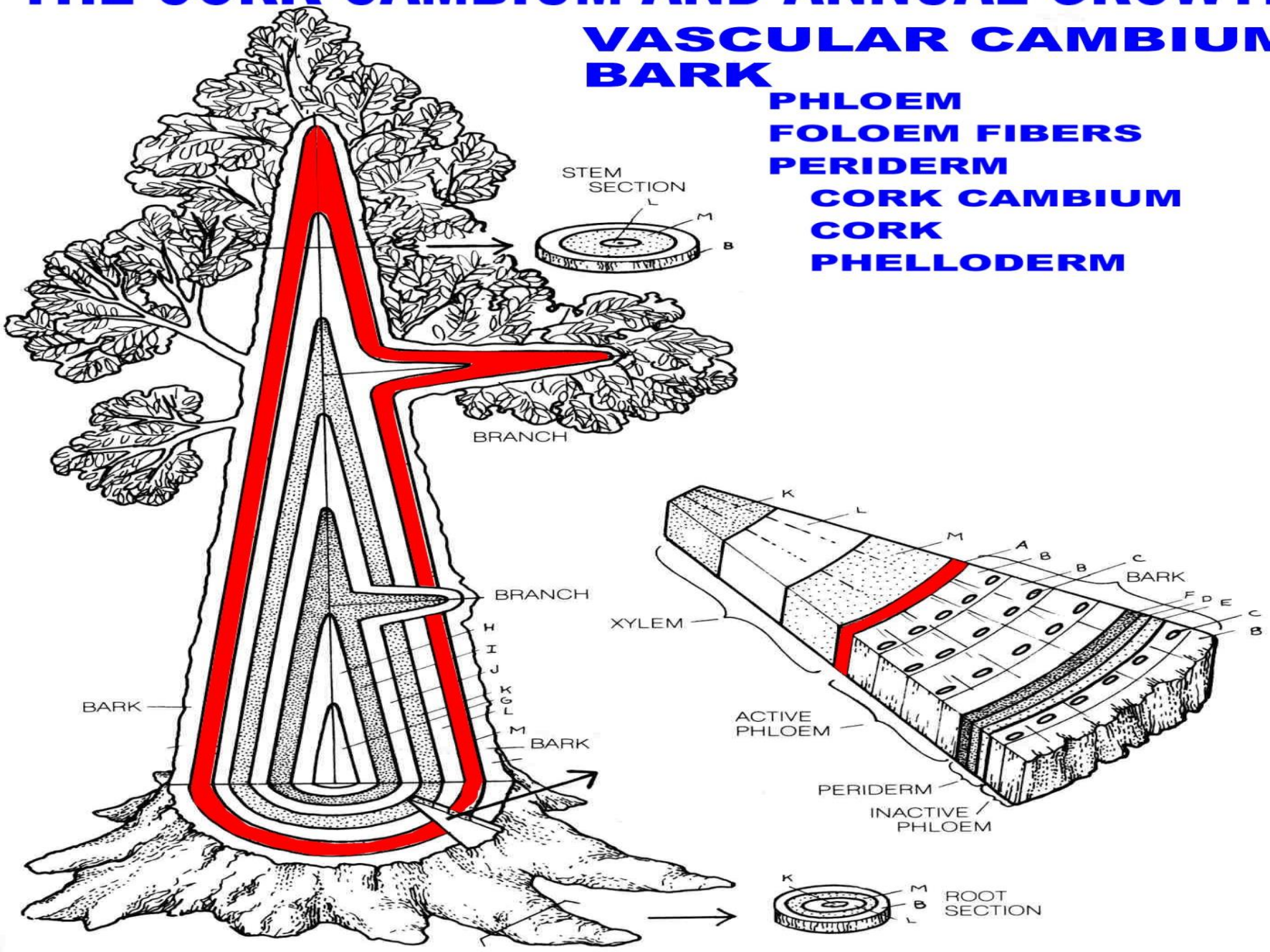
- Increases Shoot Growth
- Dwarfs Young Plants
- Stimulates Growth on Spring Flowering Plants
- Reduces Food Supply to Roots
- Stops Root Growth

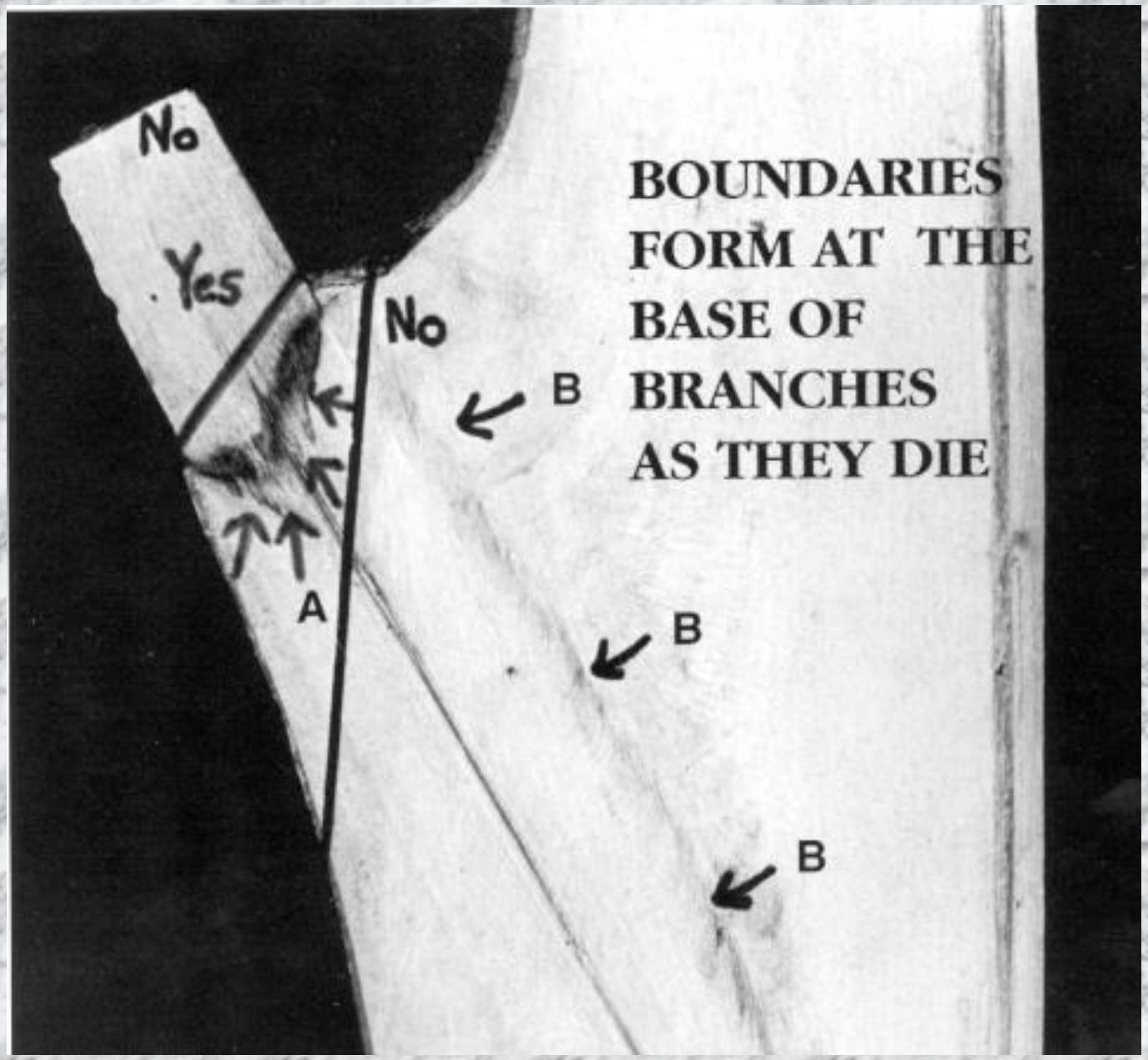
THE CORK CAMBIUM AND ANNUAL GROWTH

VASCULAR CAMBIUM

BARK

- PHLOEM
- FOLOEM FIBERS
- PERIDERM
  - CORK CAMBIUM
  - CORK
  - PHELLODERM




No
Yes
No
B
A
B
B
BOUNDARIES
FORM AT THE
BASE OF
BRANCHES
AS THEY DIE

C.O.D.I.T

Pruning - Proper pruning can reduce future problems

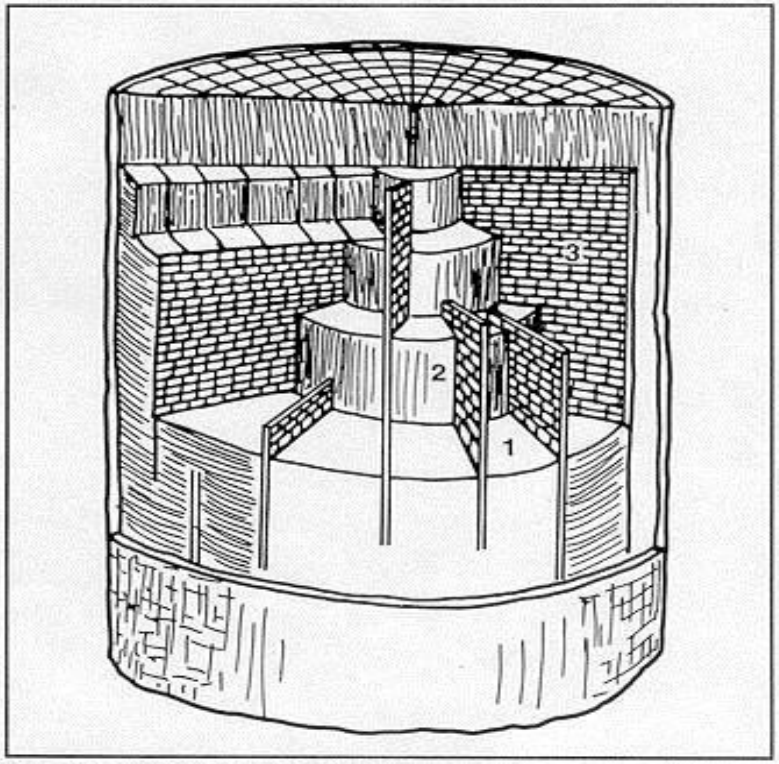


Fig. 1.16 CODIT. Wall 1 is formed when the tree responds to wounding by "plugging" the upper and lower vascular elements to limit vertical spread of decay. Wall 2 is formed by the last cells of the growth ring limiting inward spread. Wall 3 is the ray cells that compartmentalize decay by limiting lateral spread. Wall 4 (not shown), the strongest wall, is the new growth ring that forms

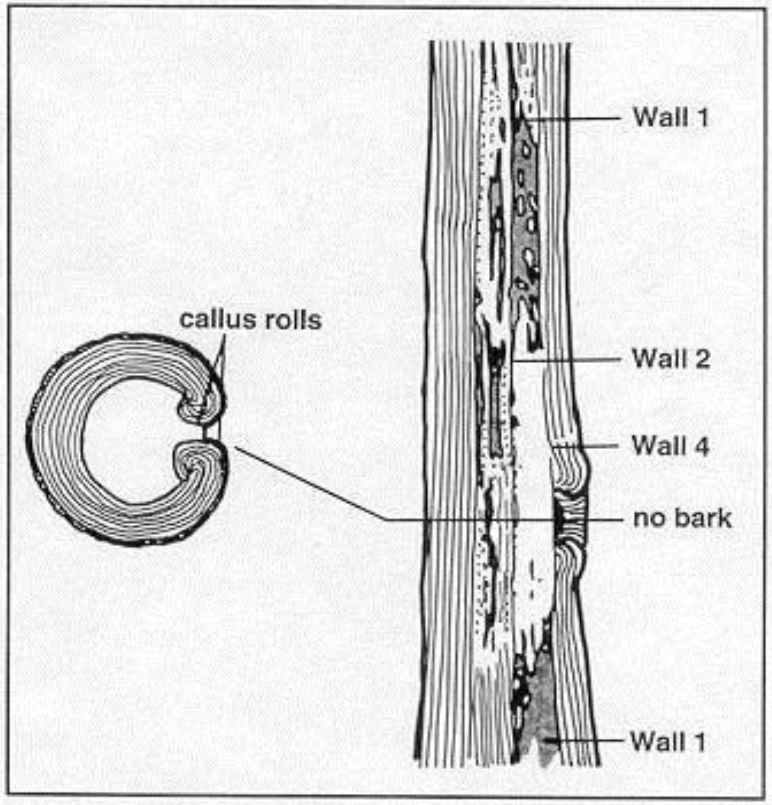


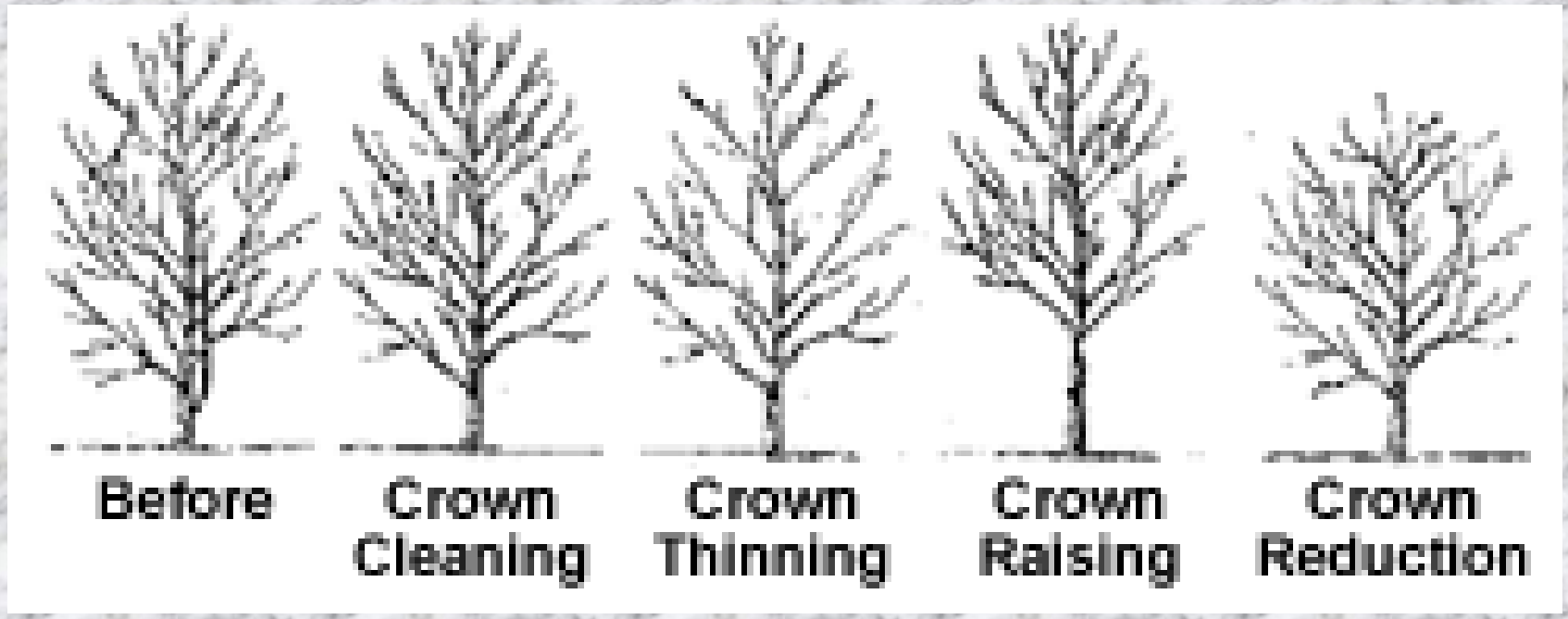
Fig. 1.17 Compartmentalization of decay. Wall 4 prevents decay from entering new wood. Wall 3, not shown, and Wall 2 have failed to prevent the decay from spreading laterally and internally.

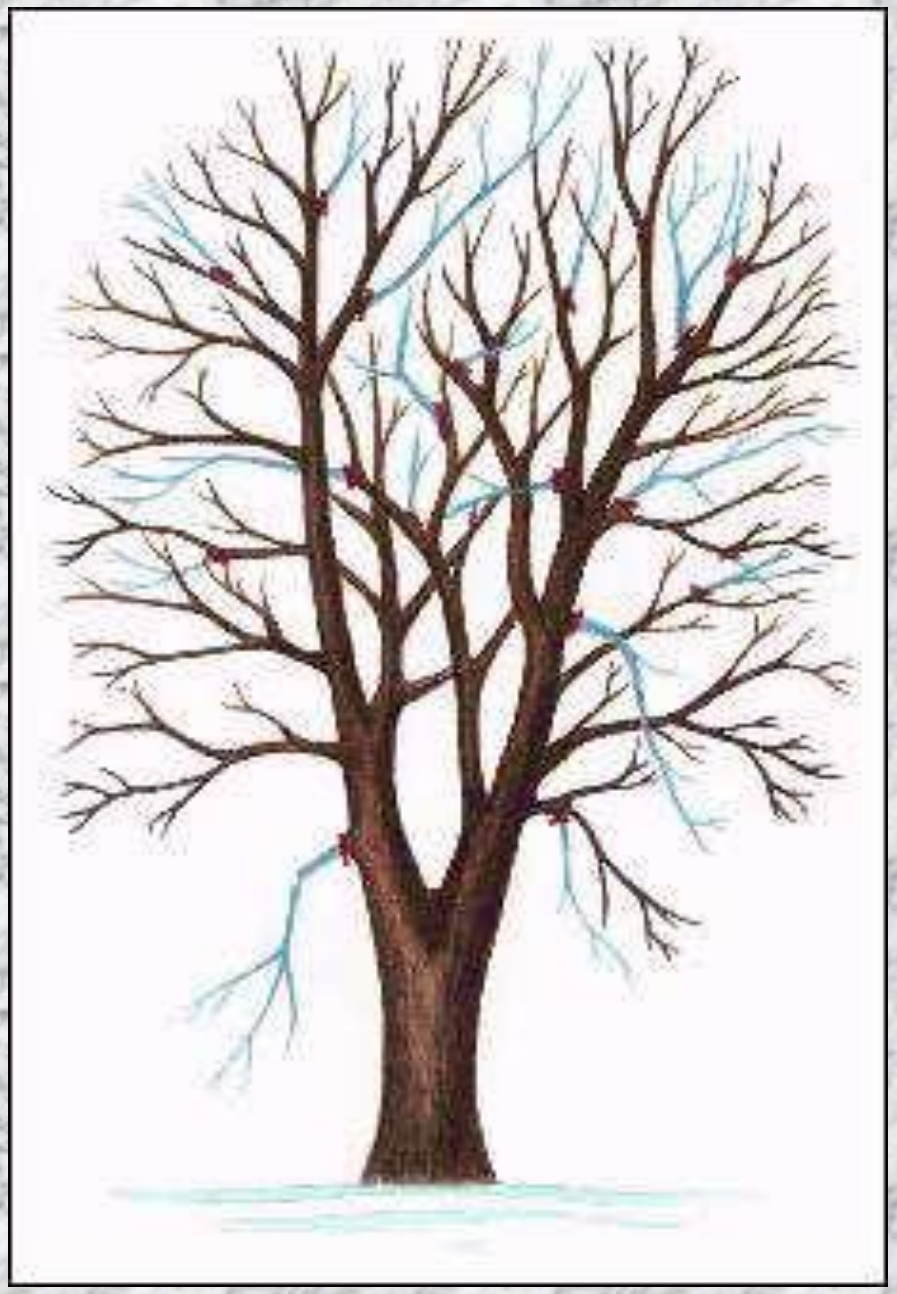
Compartmentalization

Pruning - continued

Compart-mentaliza tion **helps contain the spread of decay within a tree**

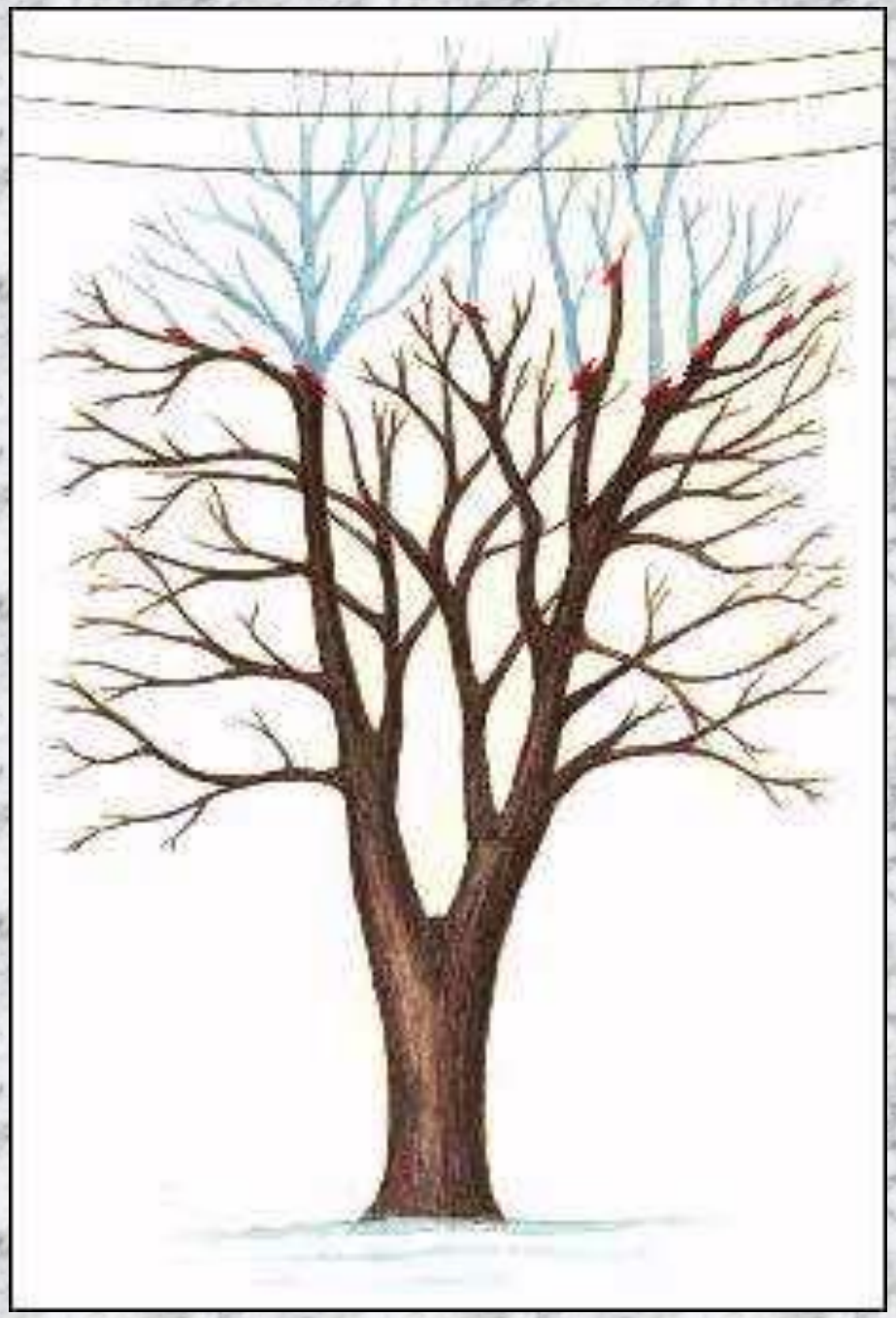
Pruning Techniques





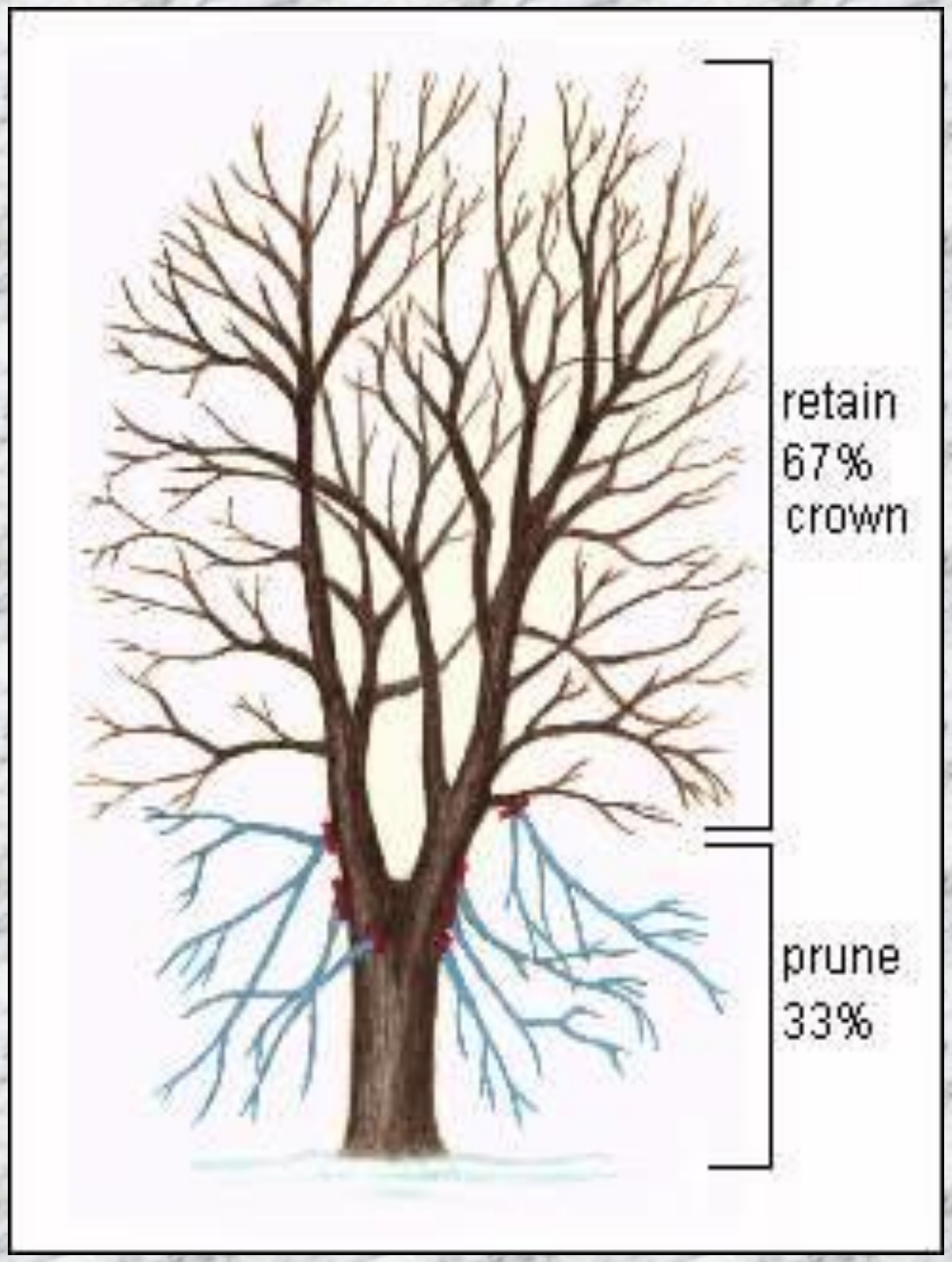
Crown Thinning

- Favor branches with strong, U-shaped angles of attachment. Remove branches with weak, V-shaped angles of attachment and/or included bark.
- Ideally, lateral branches should be evenly spaced on the main stem of young trees.
- Remove any branches that rub or cross another branch.
- Make sure that lateral branches are no more than one-half to three-quarters of the diameter of the stem to discourage the development of co-dominant stems.
- Do not remove more than one-quarter of the living crown of a tree at one time. If it is necessary to remove more, do it over successive years.



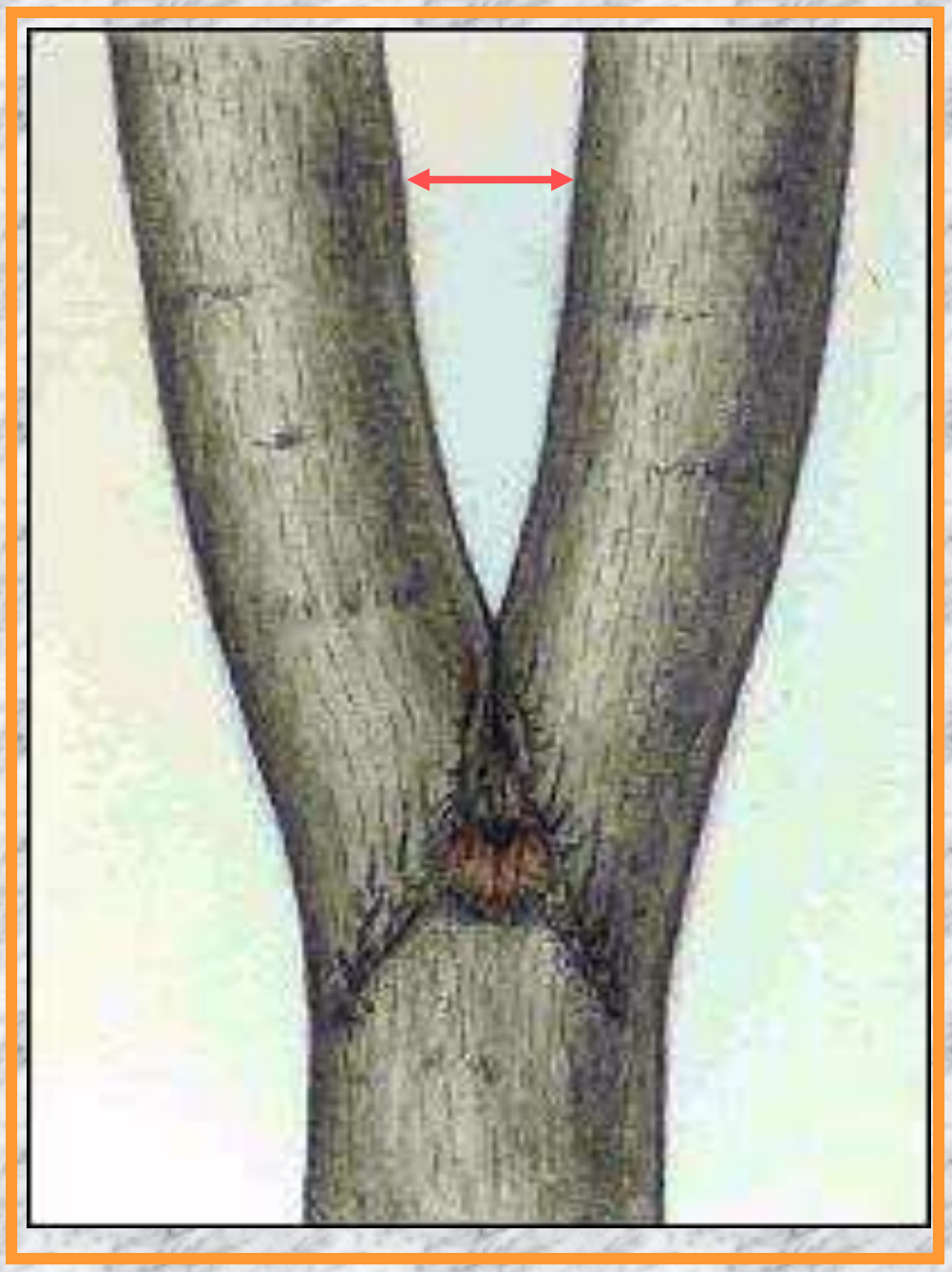
Crown Reduction

- Use crown reduction pruning only when absolutely necessary. Make the pruning cut at a lateral branch that is at least one-third the diameter of the stem to be removed.
- If it is necessary to remove more than half of the foliage from a branch, remove the entire branch.



Crown Raising

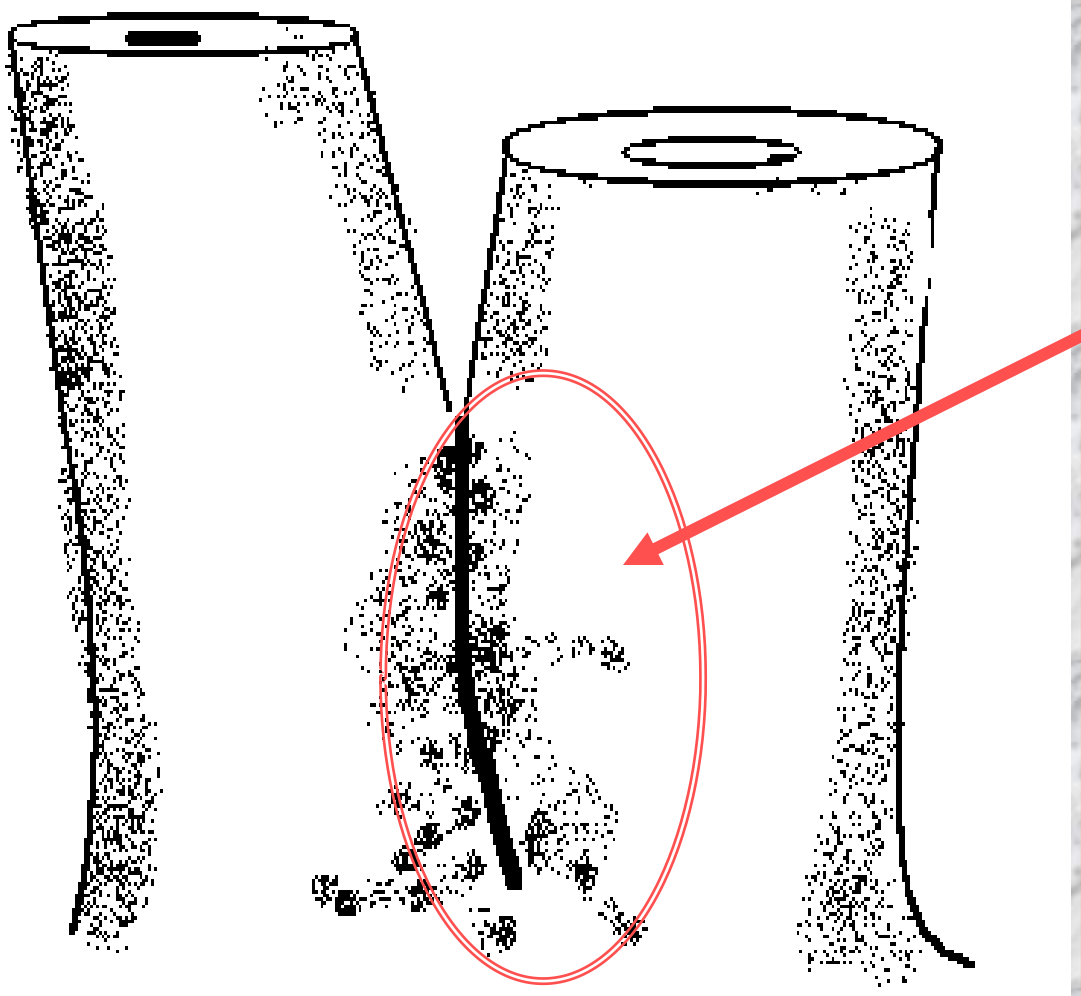
- Always maintain live branches on at least two-thirds of a tree's total height.
- Removing too many lower branches will hinder the development of a strong stem.
- Remove basal sprouts and vigorous epicormic sprouts.



Weak Branch Union

Characterized by very narrow angles of attachment (Branch Axils) and very weak unions.

Narrow forks and included bark



Included Bark

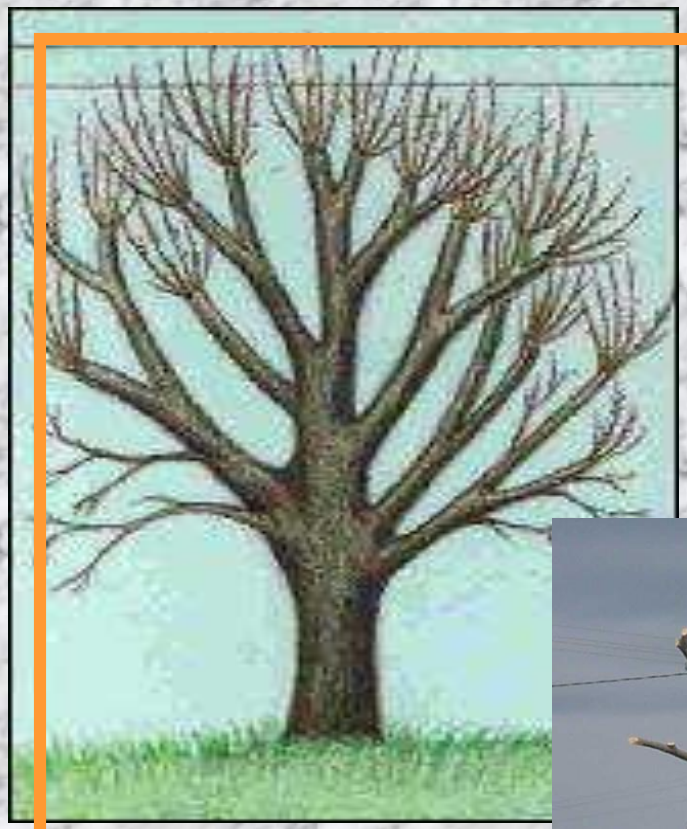
Bark enclosed between branches with narrow angles of attachment, forming a wedge between the branches and VERY weak unions.

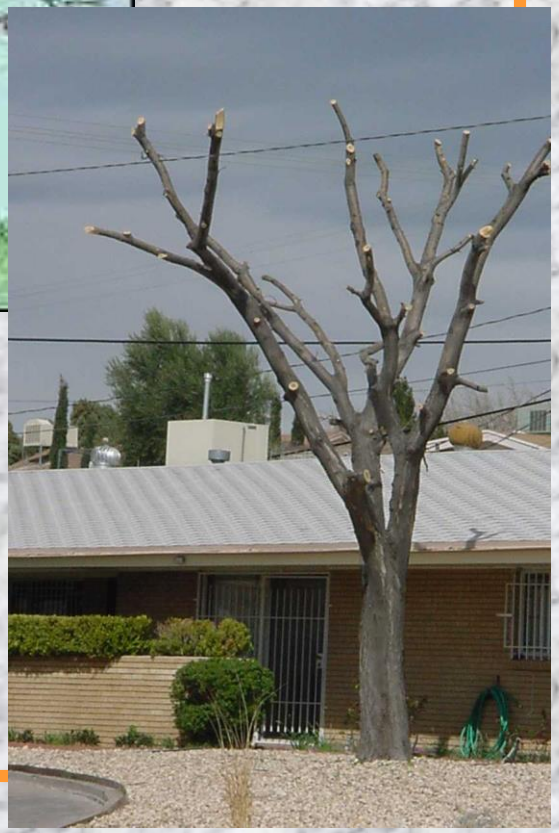
Included bark

Pruning - *WHERE to cut* the limb

- No stub cuts, NO TOPPING!

- Cut at the next lateral limb below the break, preferably a larger lateral





Topping

A poor maintenance practice often used to control the size of trees; involves the indiscriminate cutting of branches and stems at right angles leaving long stubs. Synonyms include rounding-over, heading-back, dehorning, capping and hat-racking. Topping is often improperly referred to as pollarding.

Pruning - *WHERE to cut* the limb continued

Epicormic Sprout: a shoot that arises from latent or adventitious buds; also known as water sprouts that occur on stems and branches and suckers that are produced from the base of trees. In older wood, epicormic shoots often result from severe defoliation or radical pruning.

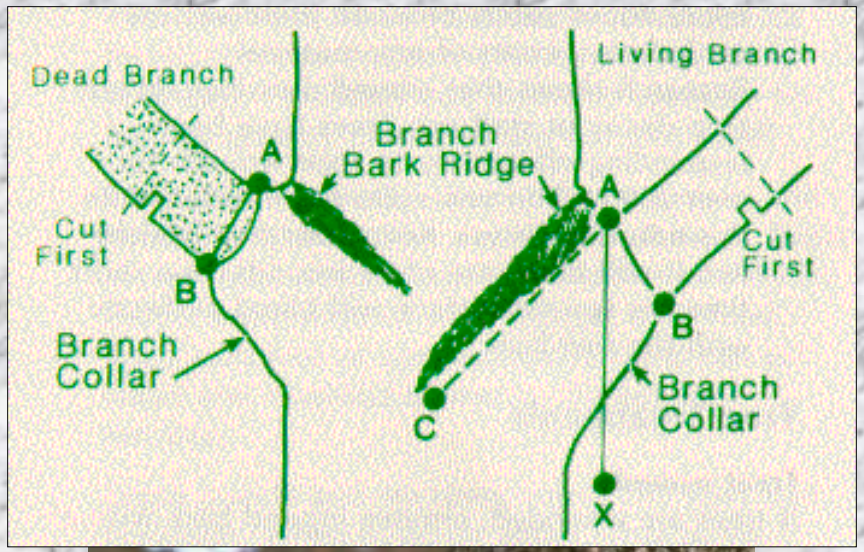
Regrowth of topped branches

Weakly attached sprouts

Pruning - *WHERE to cut* the limb continued

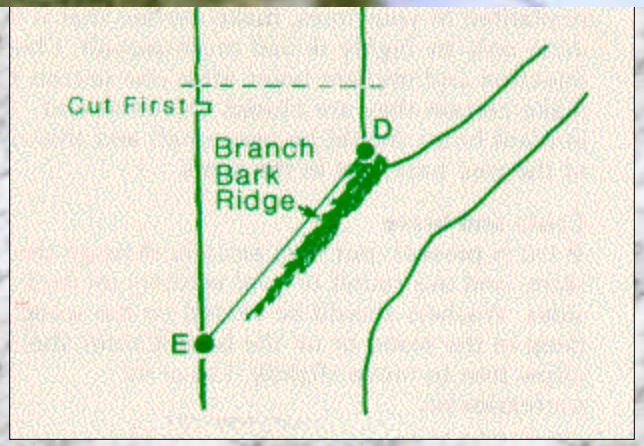
Cut *beyond* the "branch bark ridge" and collar

Pruning - *WHERE to cut* the limb continued

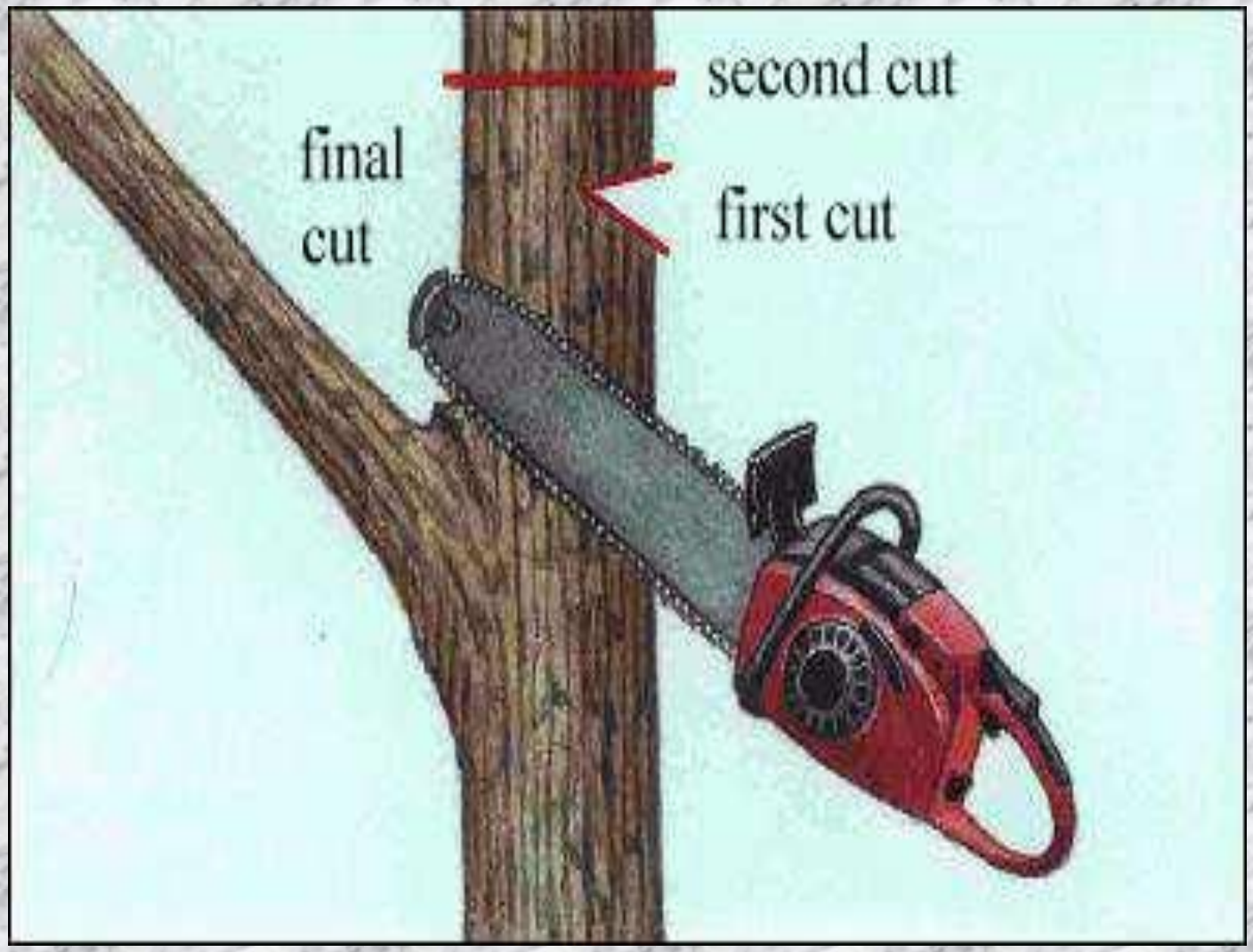


No Flush Cuts!

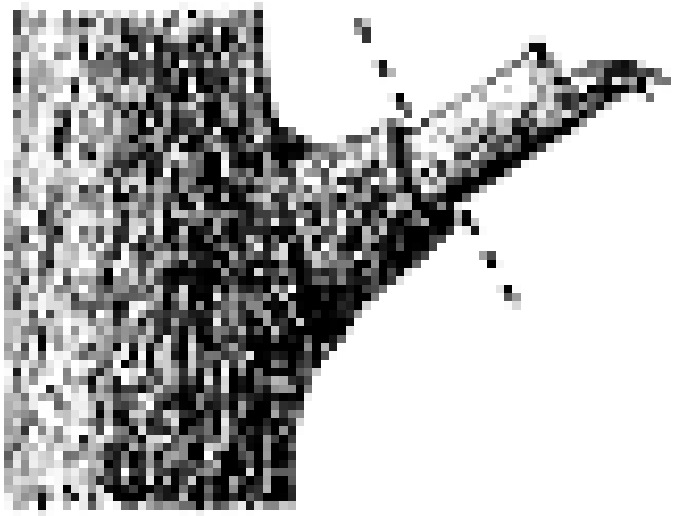
No Stubs!



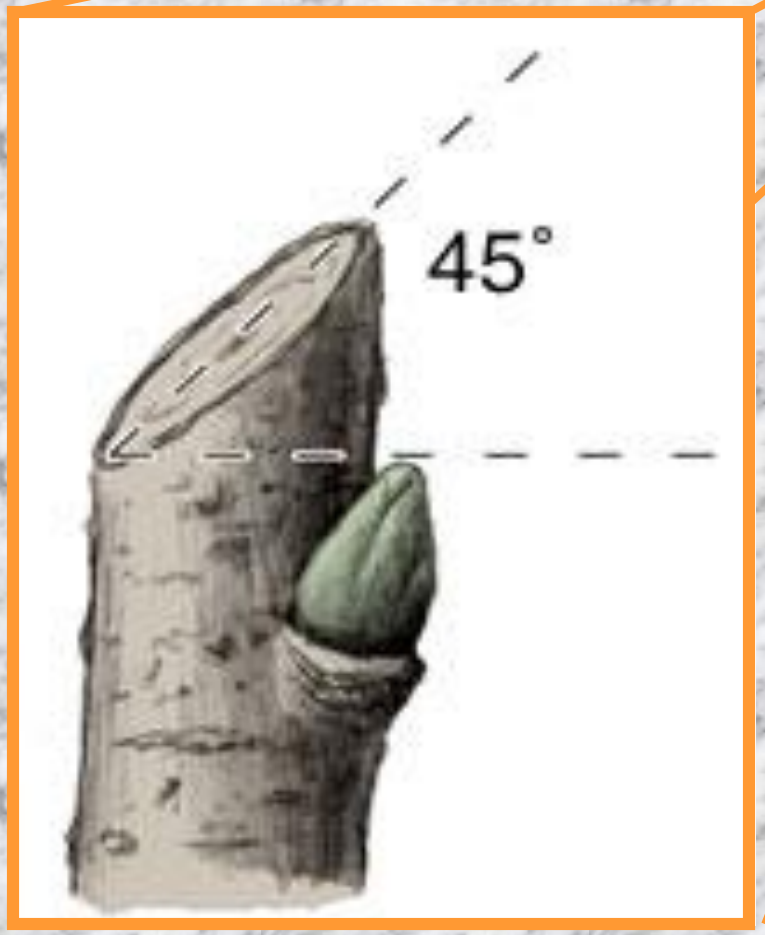
Technique for a
Crown Reduction Cut

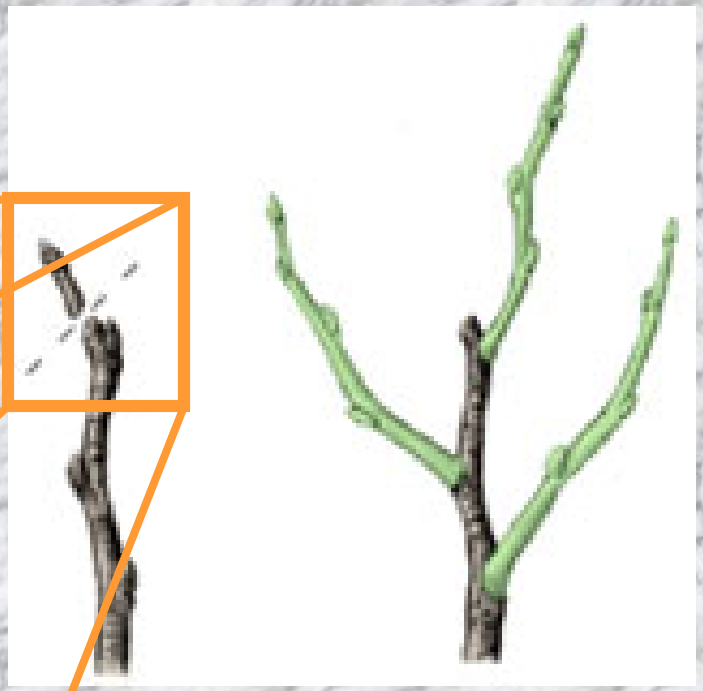


Technique for a
Dead Branch Removal



On a dead branch that has a collar of live wood, the final cut should be just beyond the outer edge of the collar.





Technique for

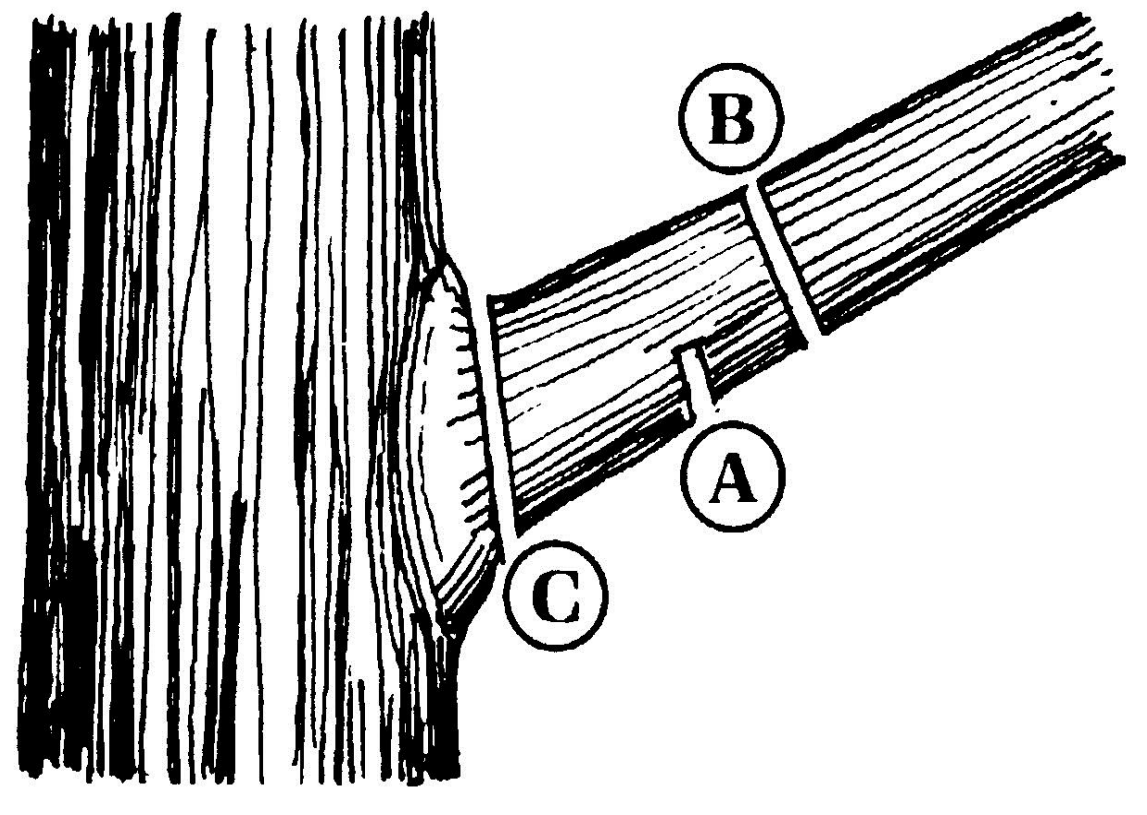
"Apical (Tip)"

or

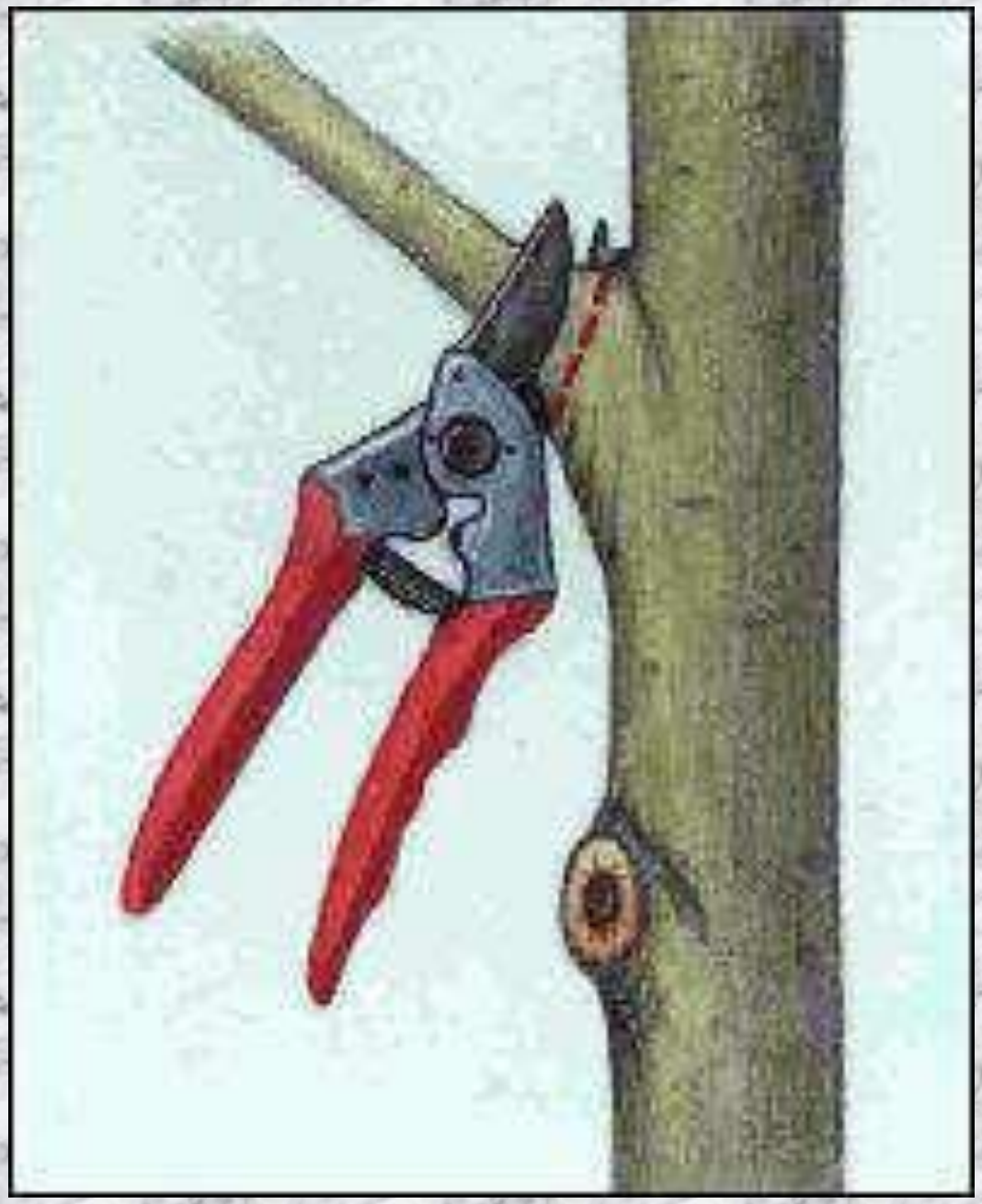
"Directional"

Pruning on Woody Shrubs

Pruning - *HOW to cut* the limb



3 cuts to prevent bark stripping and aid in compartment -alization



Technique for

Small Branch Removal

Woundwood

Lignified, differentiated tissues produced on woody plants as a response to wounding (also known as callus tissue).

You Spot the Mistakes


GRAND OP
RAINBOW
SILK FLOV

Questions ??