TREE STRUCTURE

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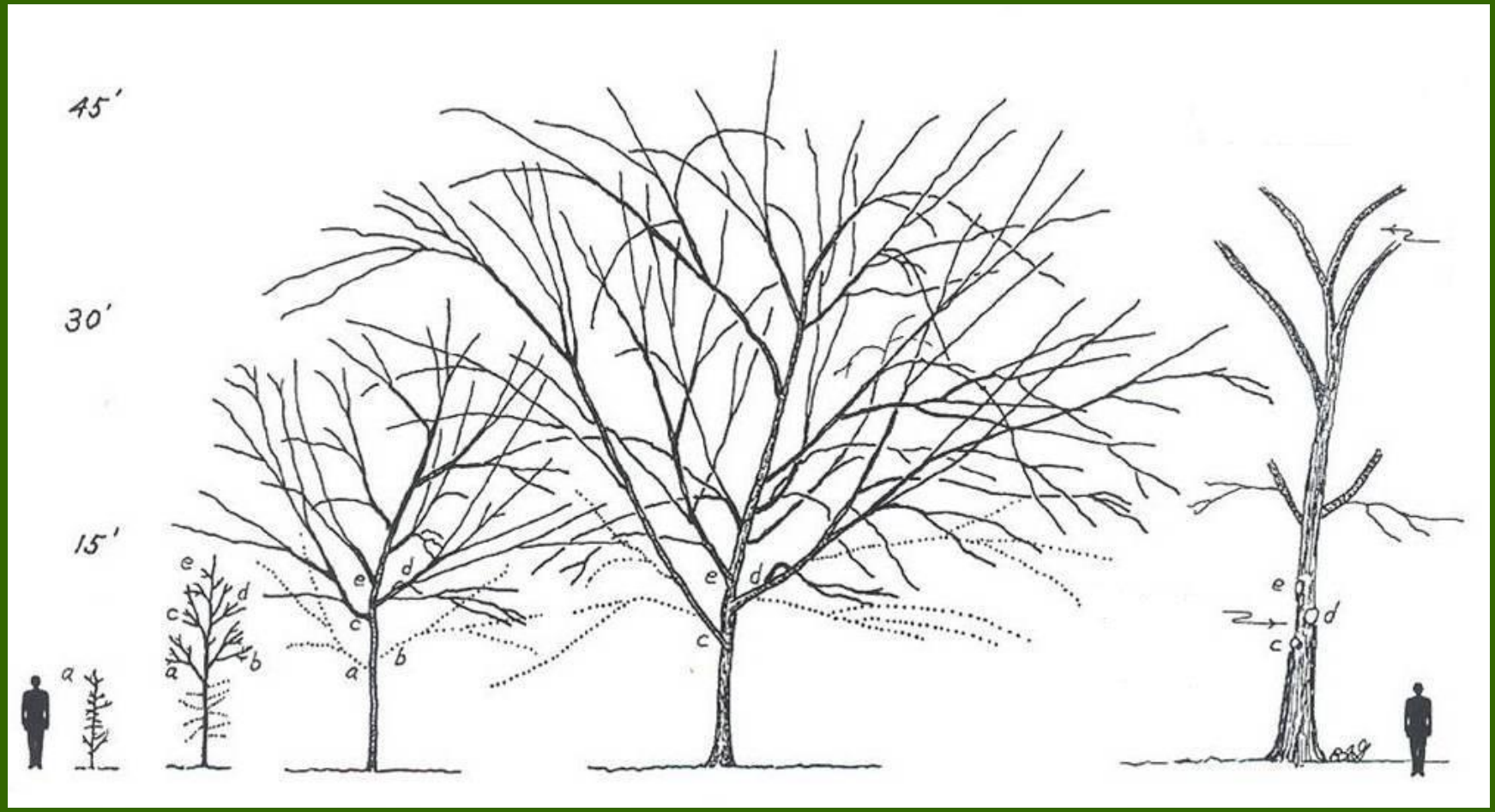
What is a good structure?

- how trees develop if left to themselves
- elements of poor structure vs. good structure – how to recognize them
- structurally sound tree

A forest tree shown at different ages

http://hort.ufl.edu/woody/powerpoints.shtml

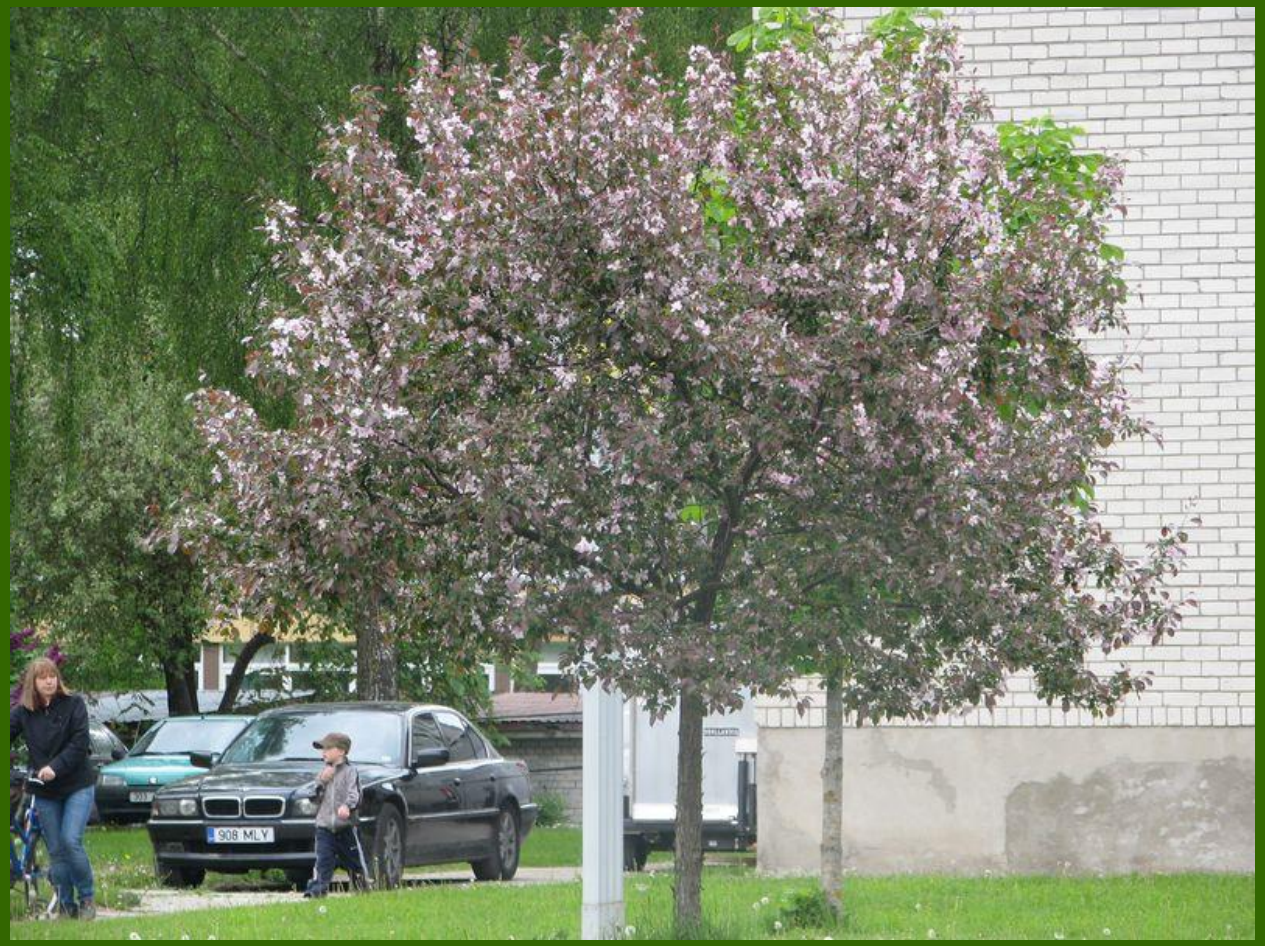
A landscape tree at different ages



http://hort.ufl.edu/woody/powerpoints.shtml

CROWN

London
2010



Põltsamaa 2012

CROWN

Keila-Joa 2013

The canopy is usually wider or as wide as it is tall

2009

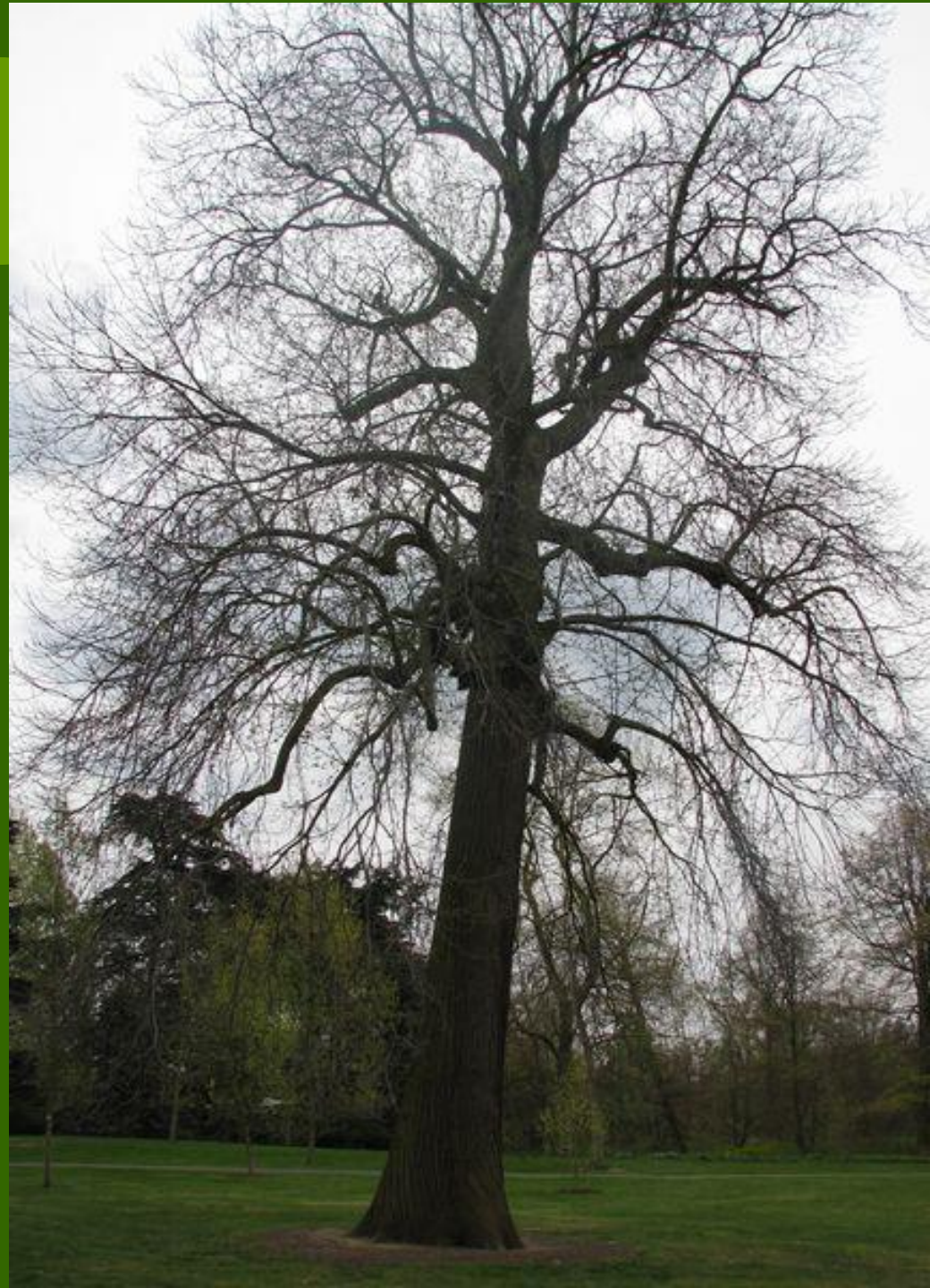
2010

Photos made in the Osborne House, Isle of Wight

Quercus suber

Acer palmatum

Tree with bad structure



Codominant stems

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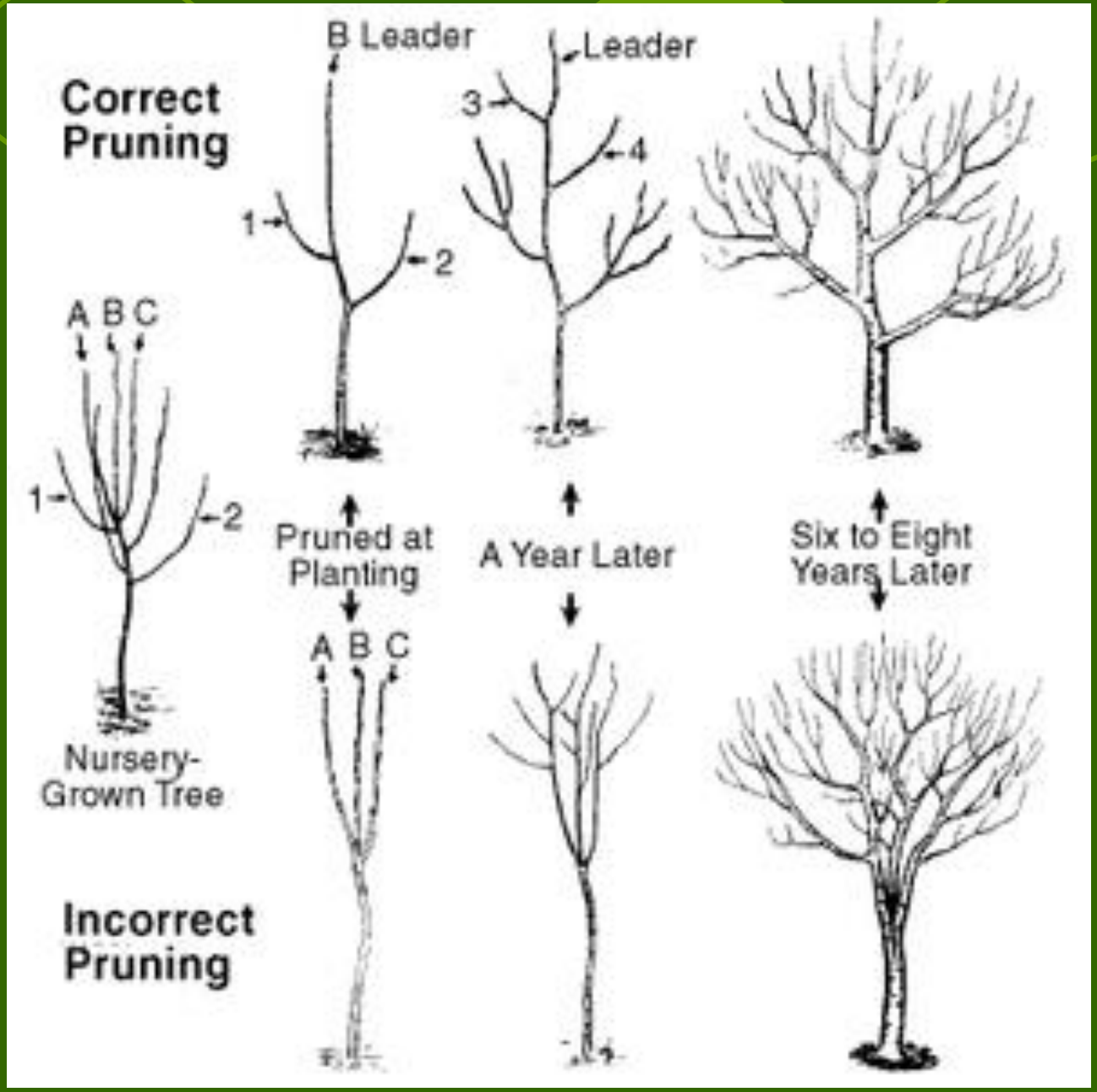
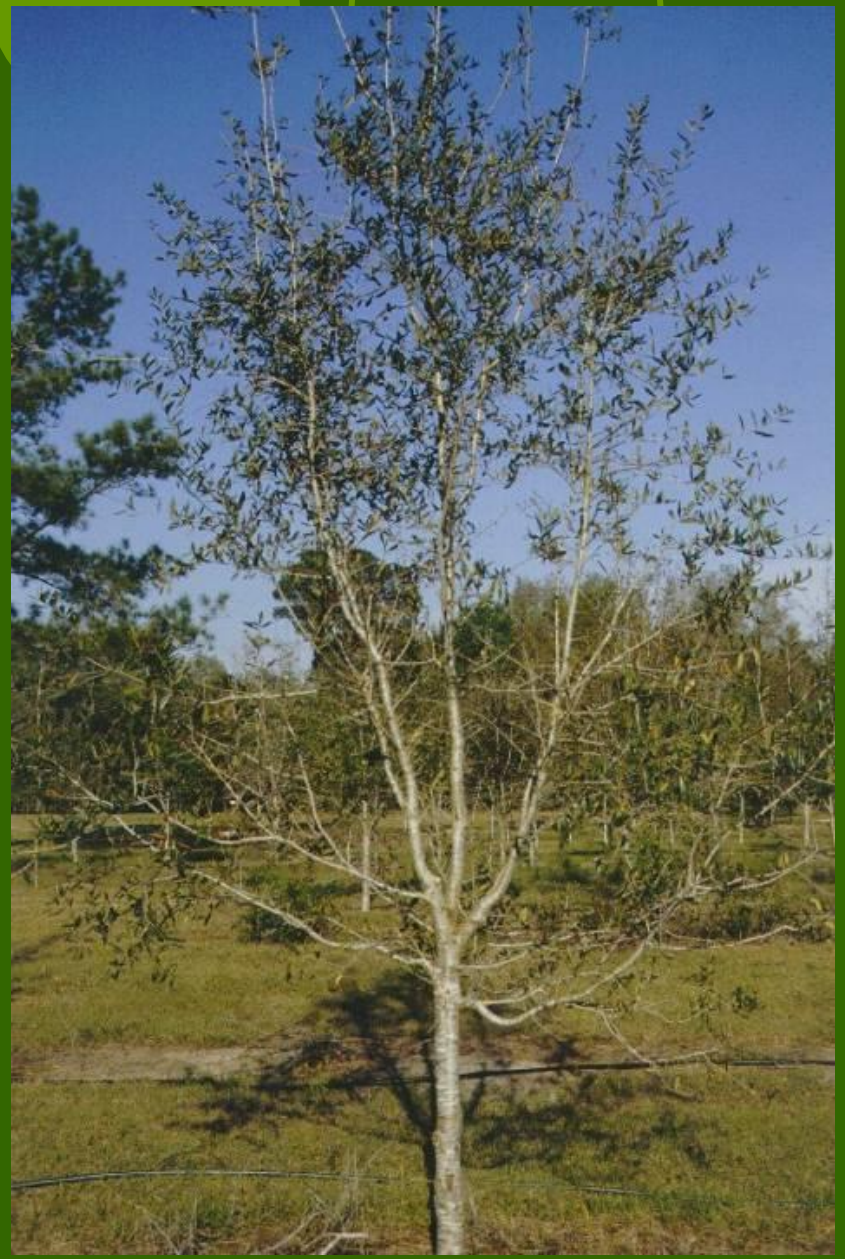
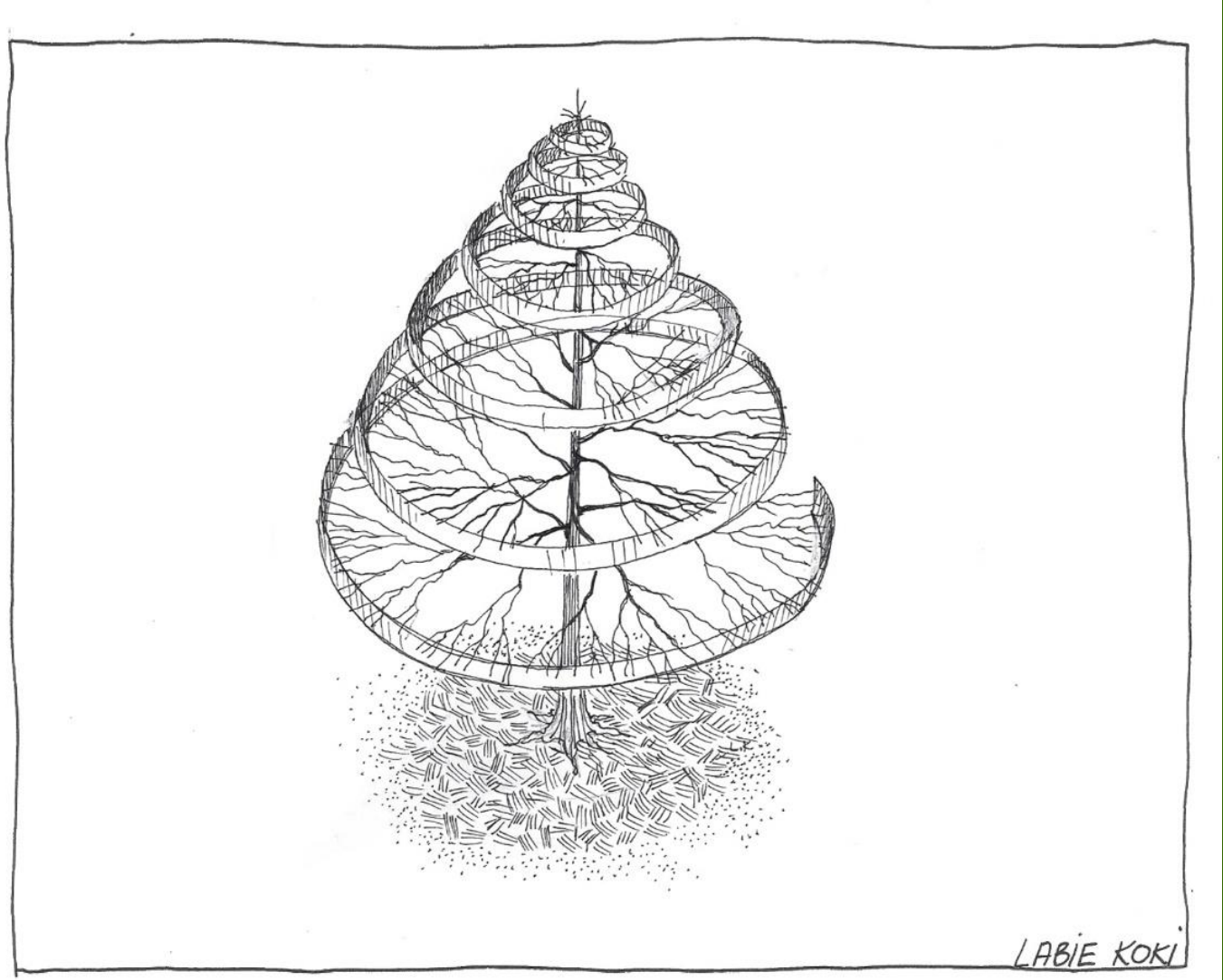

Correct Pruning
B Leader
Leader
3
4
1
2
A B C
1
2
Pruned at Planting
A Year Later
Six to Eight Years Later
A B C
Nursery-Grown Tree
Incorrect Pruning

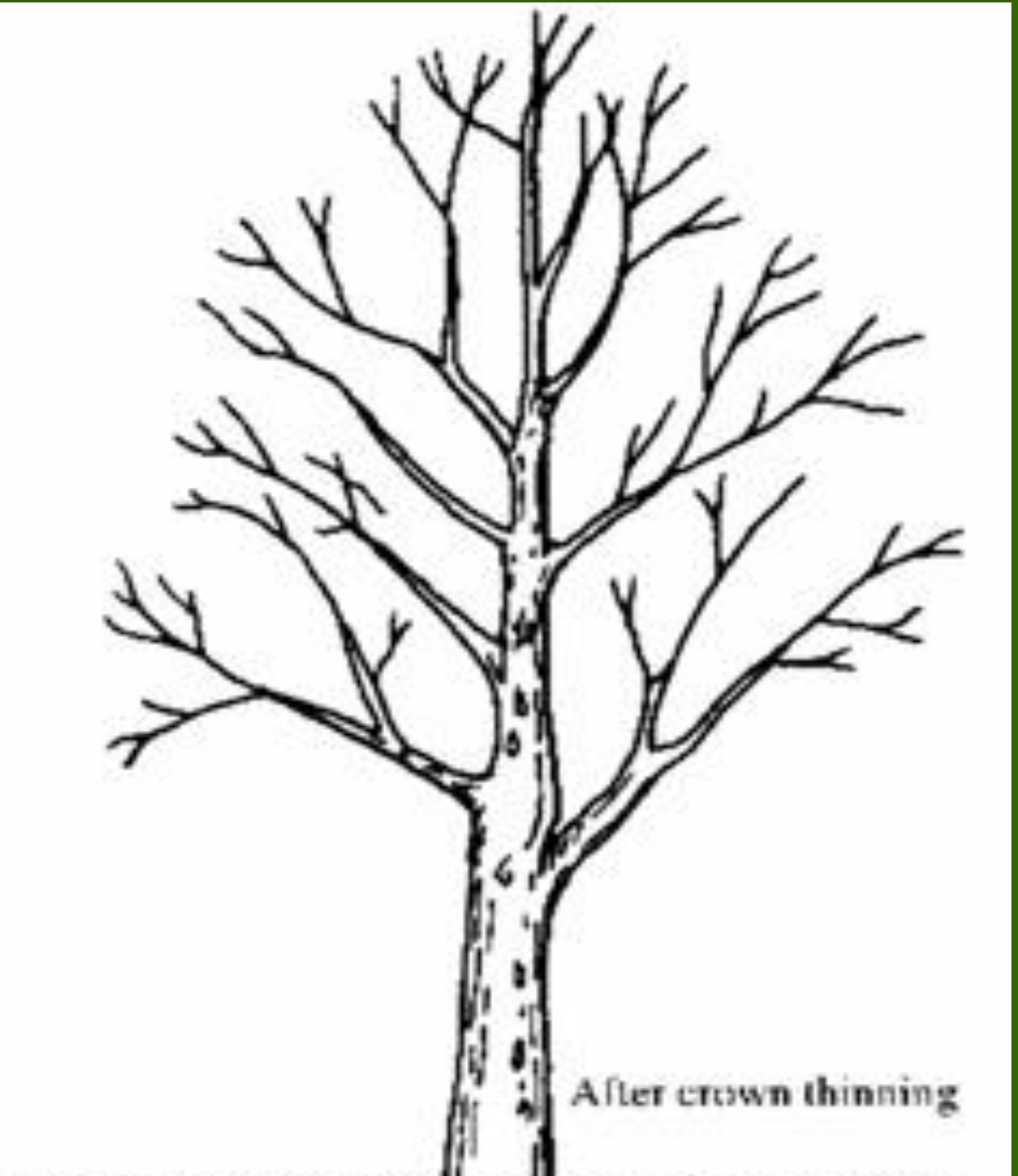
Structural pruning



Main branches



- spiral
- 3...4 branches for one turn (360 degrees)
- two branches shouldn’t lay on each other

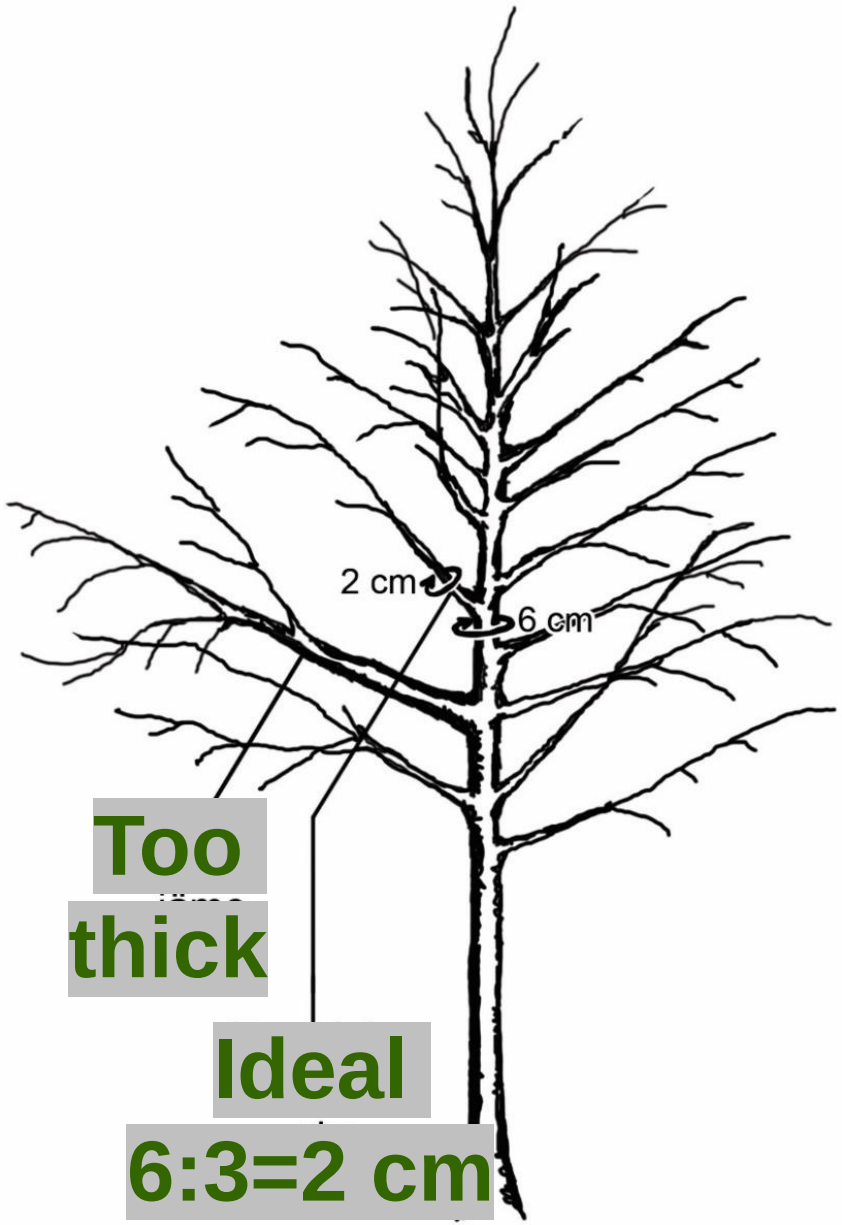


Main branches

- exit angle 45-60°
- Vertical distance ca 3% from future height:
  - Tree with height 15m - distance 30...50 cm

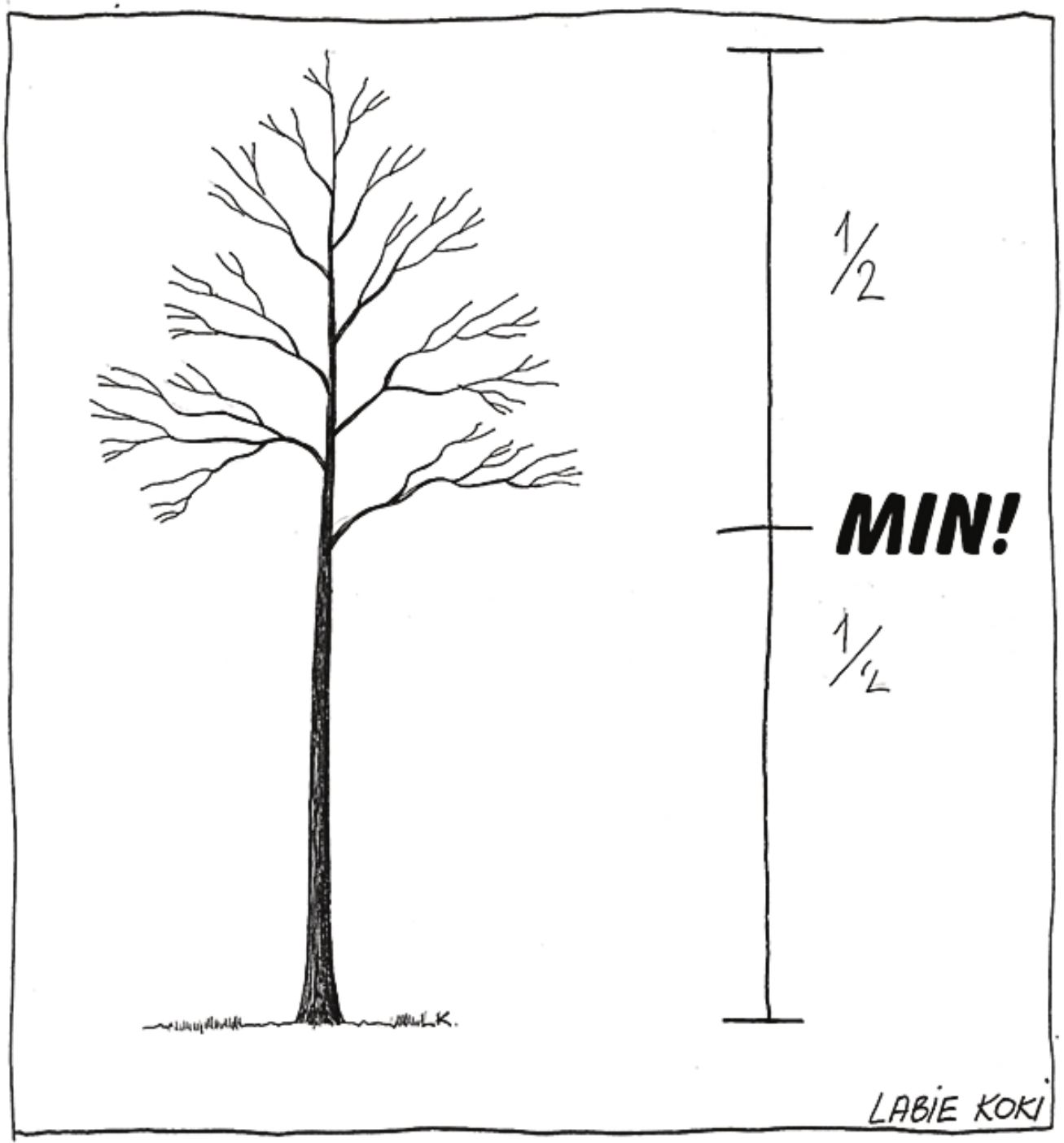
Diameter of main branches

max ½ of trunk diameter


2 cm
6 cm
Too thick
Ideal
6:3=2 cm

The more we have leaves, the quicker the branch grows thicker

“starving”

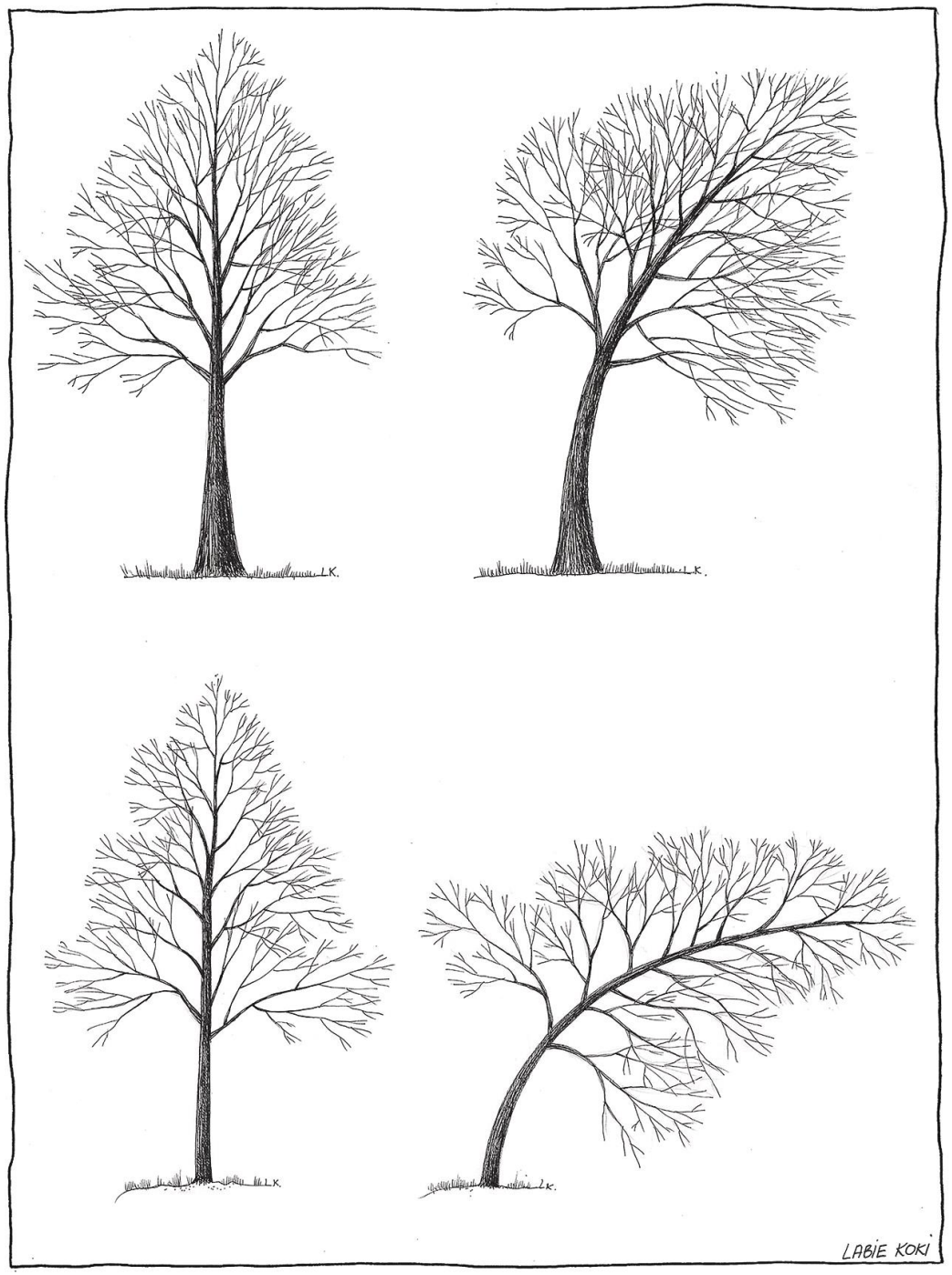


Crown height

- 60%

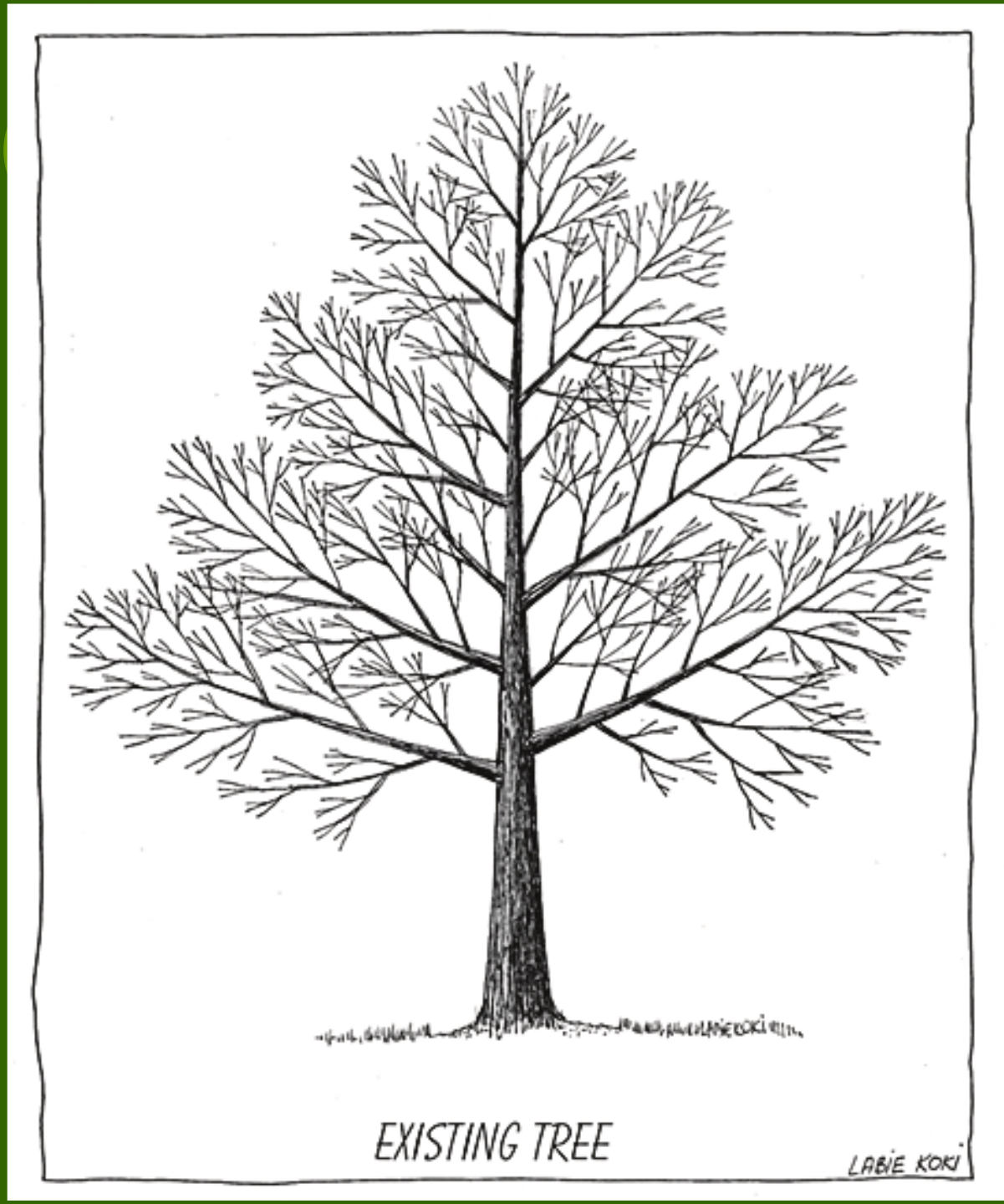
Thickening branches

- Small branches on the trunk

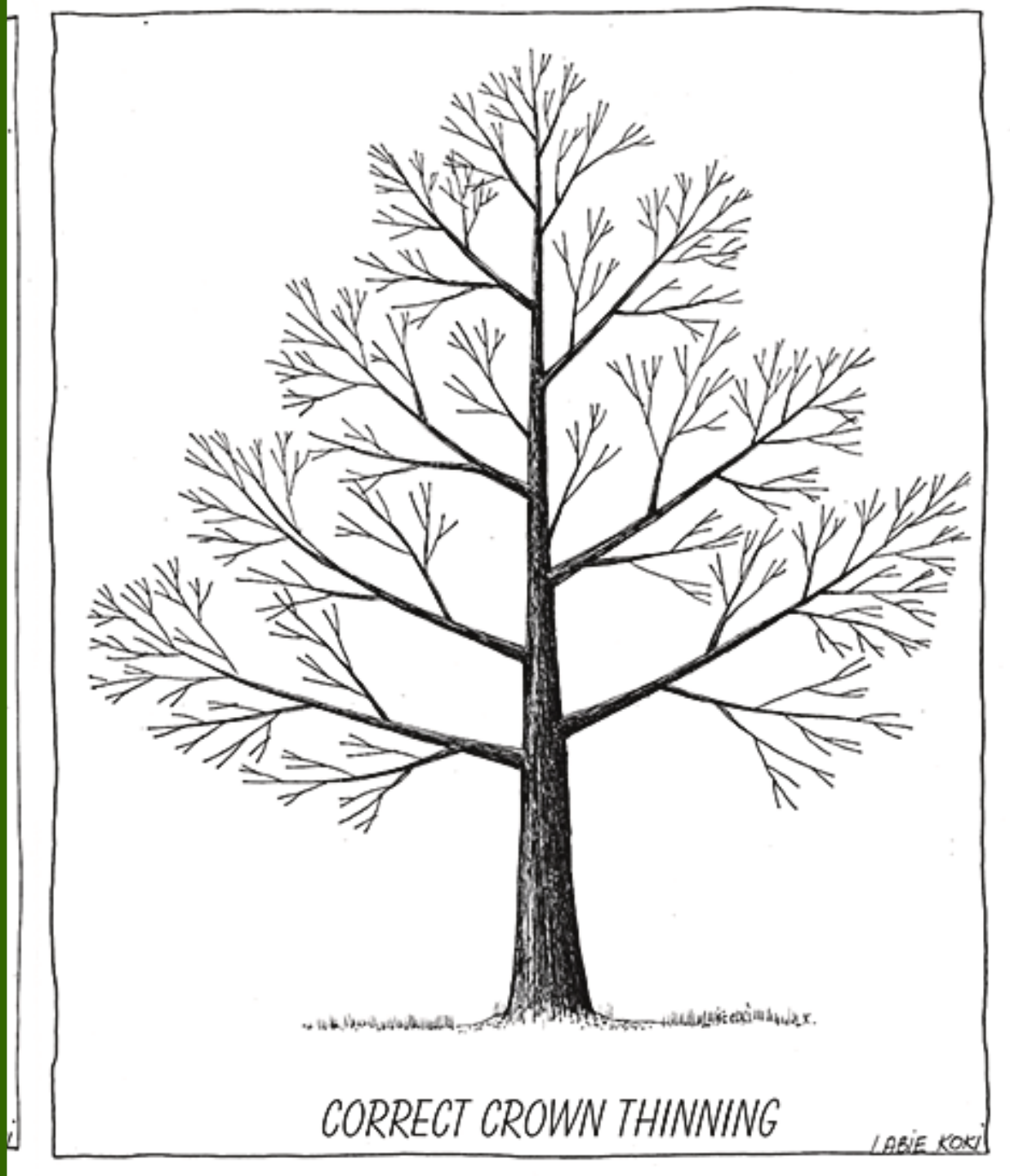


Crown volume

Half of the branches should be on 2/3 of lower part of the tree height

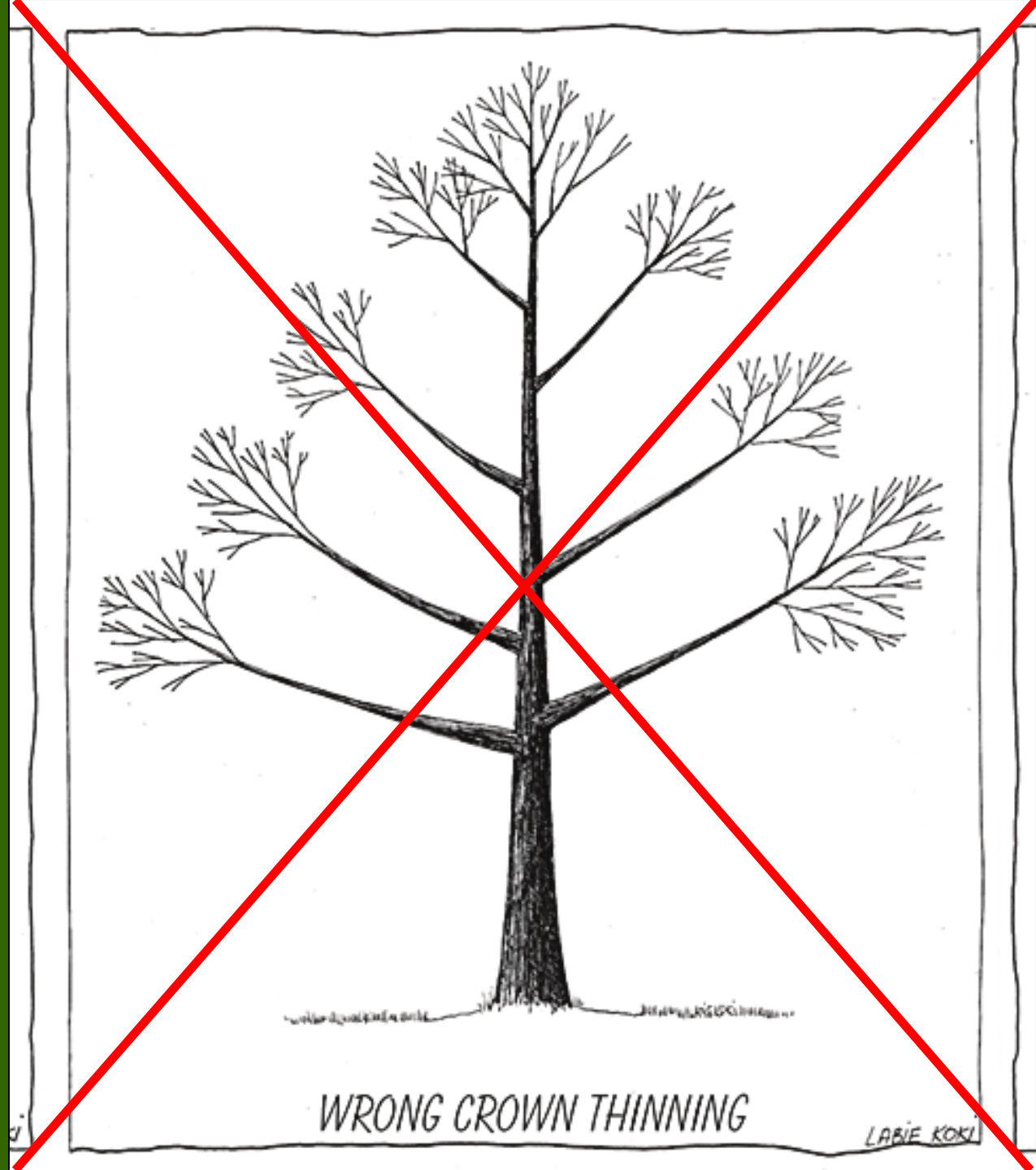


We start to prune from the top and outer part of the crown



“liontailing”

- Forbidden!



Maximum volume for one time of pruning

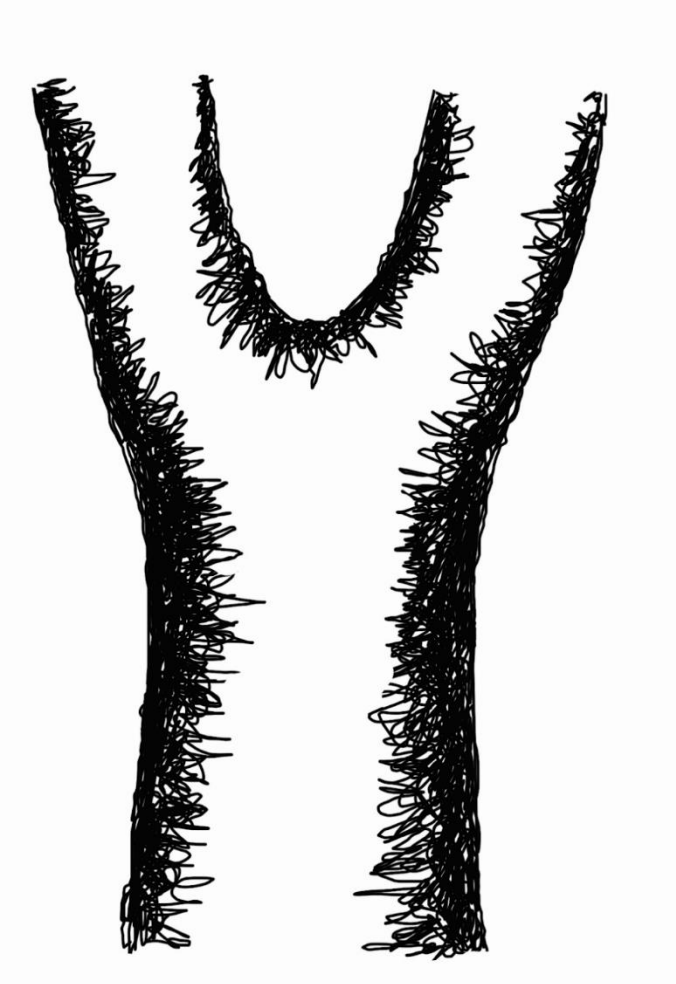
- young tree max 30%
- old tree max 20…25%

Epicormic shoots

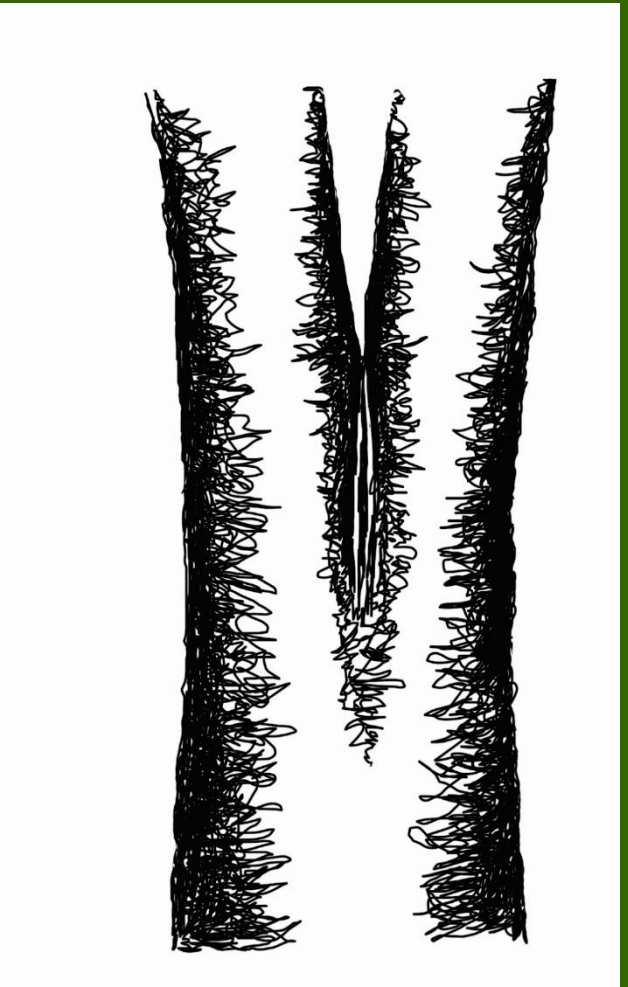
- Pruned too much
- Tear off while twigs are half-woody

Branch attachment

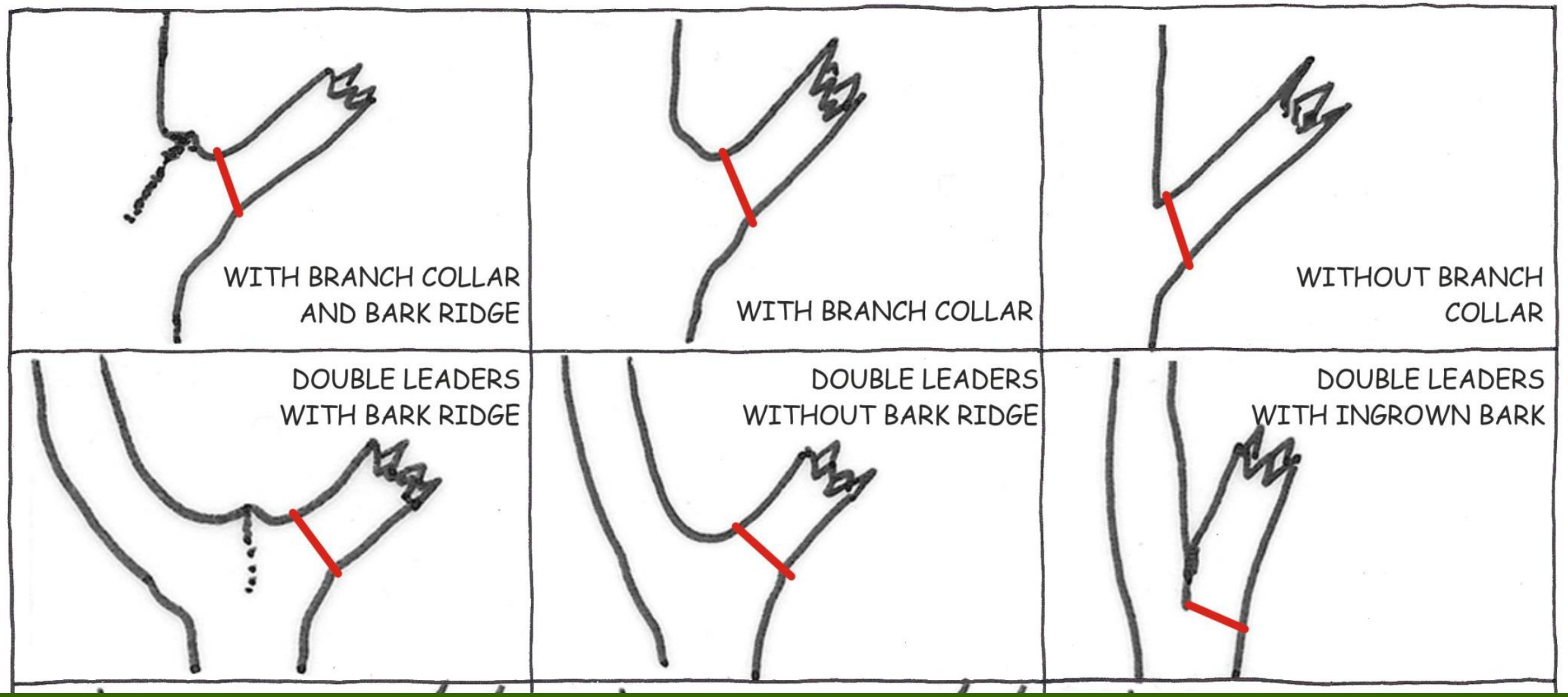
U-shape

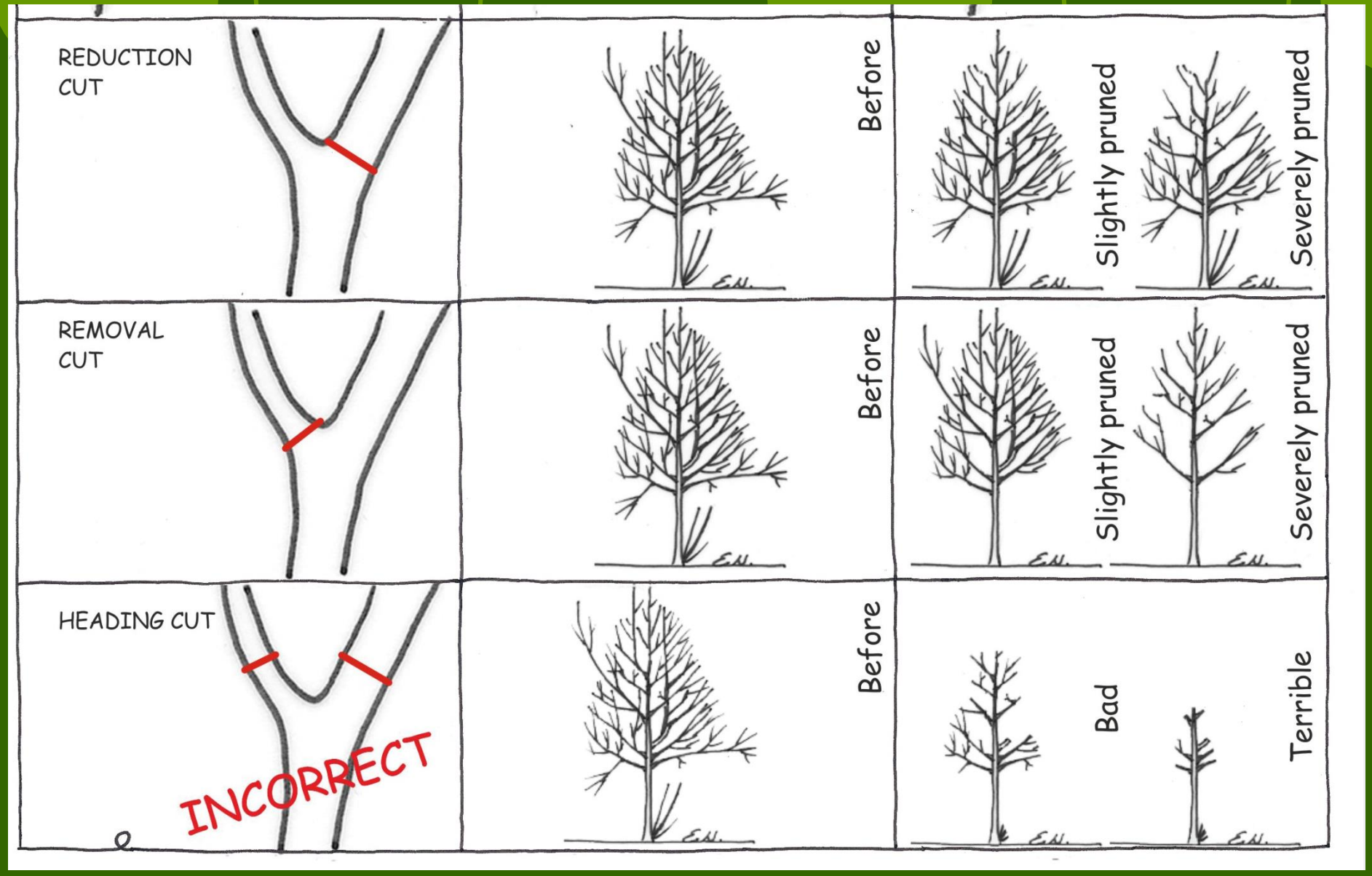


V-shape



“Elephant ears"


WITH BRANCH COLLAR AND BARK RIDGE
WITH BRANCH COLLAR
WITHOUT BRANCH COLLAR
DOUBLE LEADERS WITH BARK RIDGE
DOUBLE LEADERS WITHOUT BARK RIDGE
DOUBLE LEADERS WITH INGROWN BARK


REDUCTION CUT
Before
Slightly pruned
Severely pruned
REMOVAL CUT
Before
Slightly pruned
Severely pruned
HEADING CUT
INCORRECT
Before
Bad
Terrible