

Leaf Identification by Ruth Rode June 22, 2019

I. Look around at trees, divide them into TWO GROUPS - each group has to have something alike

A. Conifers (evergreens)

1. needles or scale-like

- a. needles in bundles with sheath at base - pine trees - 5 white pine (5 letters in white), 3 pitch pine, 2 long needles red pine, 2 shorter needles Virginia pine
- b. needles in tufts/rosettes - larch (lose all needles in autumn)
- c. flat needles with small stalks (attaches needle to twig) - hemlock
- d. sharp-pointed needles - spruce
- e. scale-like - cedar with berry-like cones

2. cones (separate male & female cones)

3. broadleaf evergreens - Mountain Laurel, Rhododendron

B. Deciduous (leaves broad and flat, lose all leaves in autumn)

1. arrangement on twig

- a. opposite (MAD Horse - maple - ash - dogwood and horse chestnut)
- b. alternate
- c. whorled (catalpa)

2. kind of leaf

- a. leaves simple (one flat leaf)
- b. leaves compound (leaf made up of leaflets)

3. leaf shape, edge of leaf (entire/smooth, dentate/toothed, serrate or double serrate/many teeth, lobed)

Aspen leaves flutter with slightest breeze due to flat petiole (leaf stalk). Notice next year's leaf bud where this year's leaf petiole connects to twig. Red/White Oak (Red man's arrows, white man's bullets.)
Red maple - V & 3-lobed r-e-d, Sugar maple - U & 5-lobed s-u-g-a-r, 2nd letter is U

II. Tree cones and flowers to produce seeds

A. Conifers - trees with cones, seeds are not protected with an ovary

1. male cones

- a. release pollen
- b. shed from tree after releasing pollen grains - wind, bees, etc.

2. female cones

- a. small and contain seeds
- b. need pollen from male cones to fertilize seeds in female cones
- c. stay on tree to mature and release seeds the next year or more
- d. notice outline of two wings, each from two seeds in one scale of mature cone
- e. fertilized mature seed will grow a new tree

B. Deciduous - trees with flowers or catkins, seeds are protected with an ovary

1. complete flowers or catkins have male and female flower parts within same flower or catkin (Easter lily with pistil & stamens.) Tuliptree, dogwood, serviceberry, cucumber/magnolia, basswood/ linden, cherry, locust, witch-hazel, birches, etc.

2. separate male and female flowers

- a. male flowers or catkins with only stamens that produce pollen, are shed from tree after releasing pollen grains - maples, nut producing trees, aspens, oaks, etc.
- b. female flowers have pistil & ovary for seeds - pistil catches pollen grains that fertilize the seeds in ovary

4. examples of separate male & female flowers of flower and vegetable plants - wax begonias, corn (cob/silk & tassel), all squash, zucchini, cucumber, pumpkin type plants, etc.

III. Seed dispersal

A. Wind - fluff, wings, animals - stickers, taken and buried (nuts), eaten and released, explode (witch-hazel)

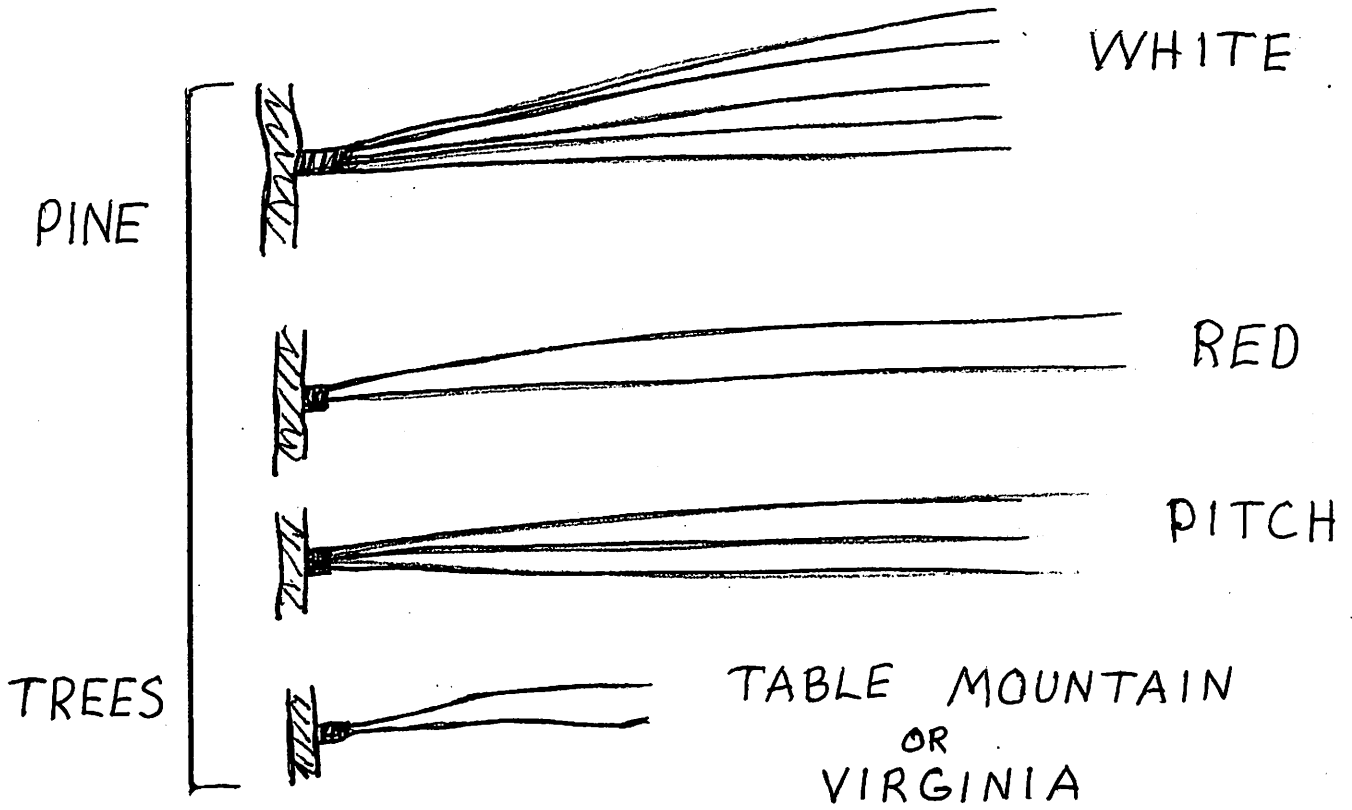
B. Why seeds need to get away from their mother tree? - sunlight, water, etc.

IV. What can GREEN plants do that animals and humans CANNOT do? MAKE FOOD & OXYGEN

A. Photosynthesis - green plants have chloroplasts in leaves, capture sun's energy, use carbon dioxide and make food (sugars to starch), release water and oxygen - cycle needed for life

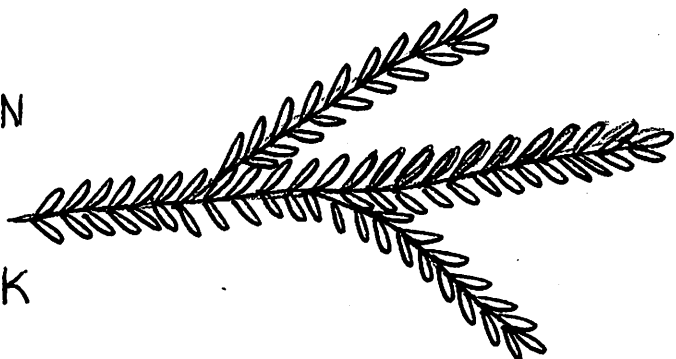
B. Where do food chains start - with any part of PLANTS - roots, seeds, nuts, fruit, ovary, etc., leaves, stems

C. Direct energy for animals and humans comes from eating vegetables, fruits, seeds, nuts, etc.



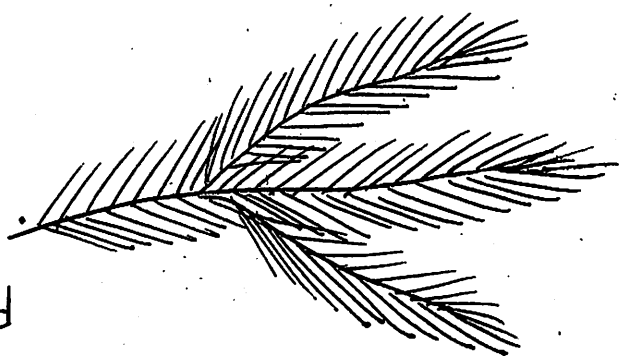
EASTERN

HEMLOCK

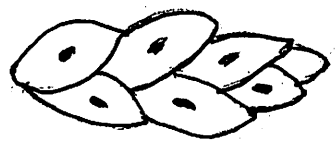


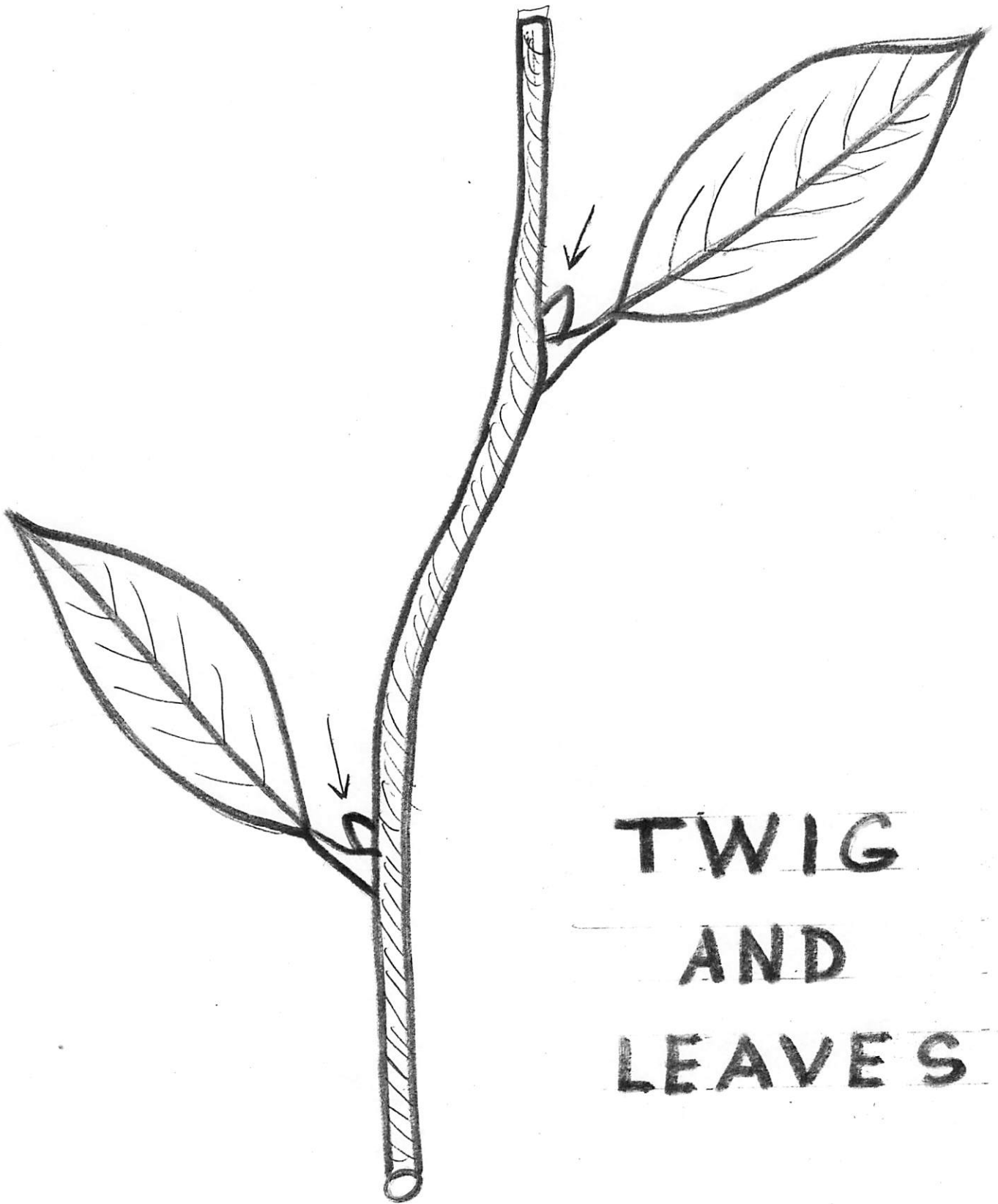
SPRUCE

Introduced Species



CEDAR

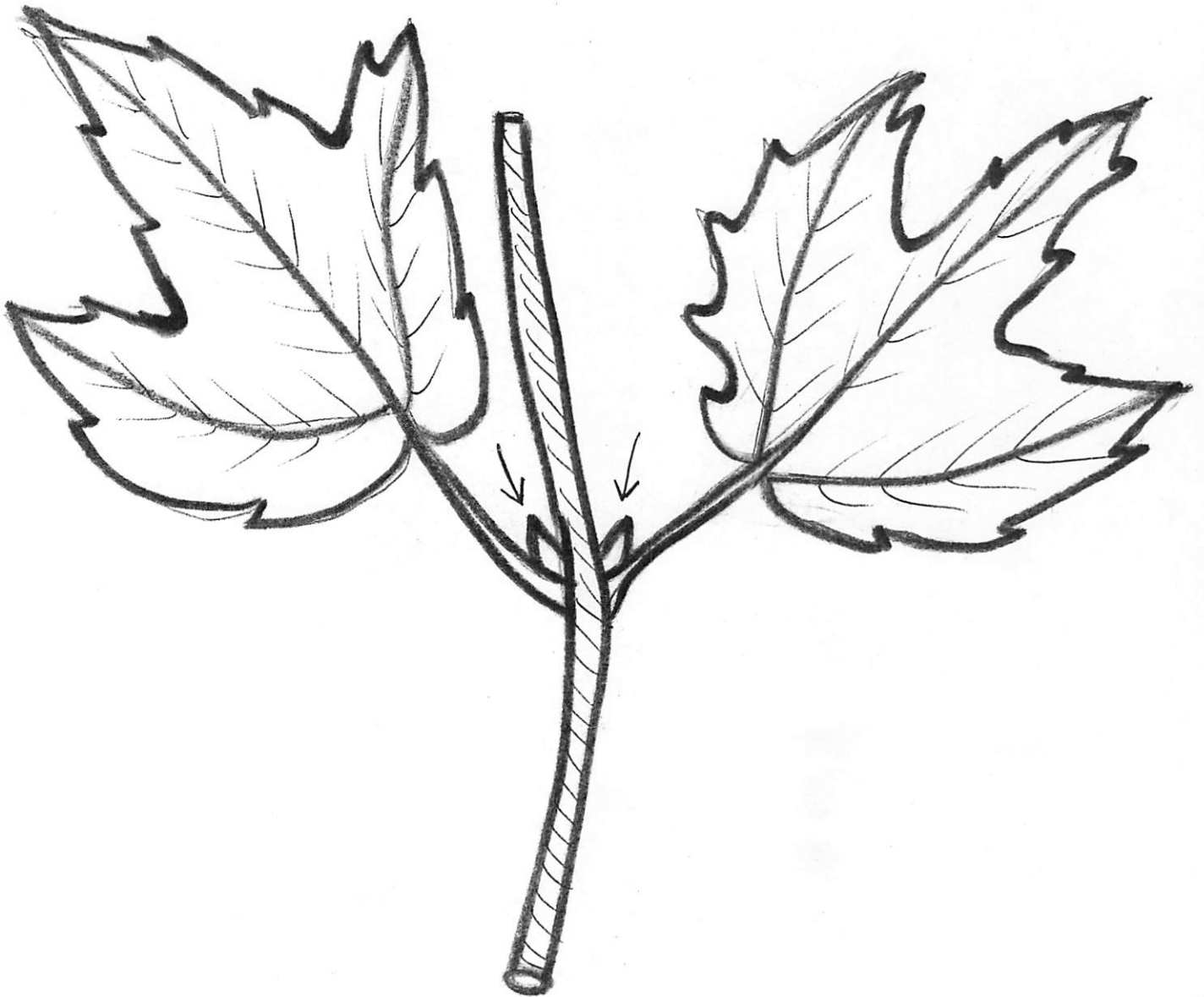




TWIG
AND
LEAVES

MAD

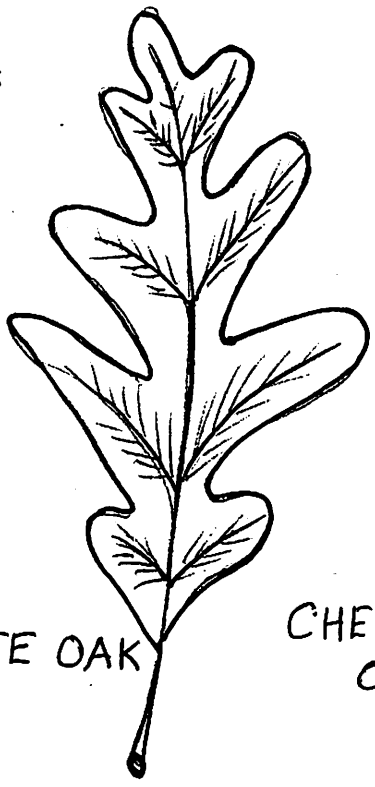
HORSE



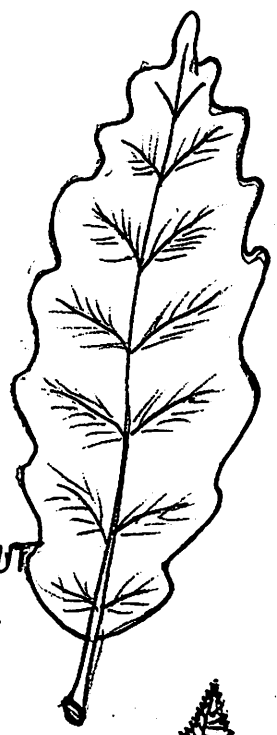
Leaves
simple



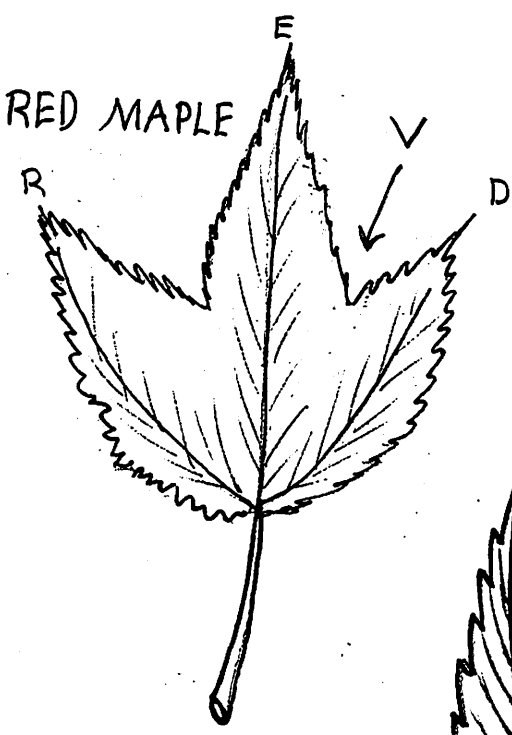
RED OAK



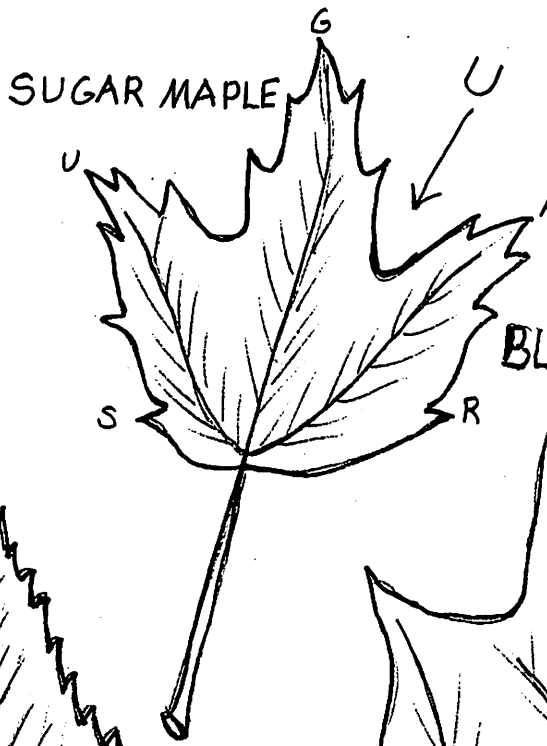
WHITE OAK



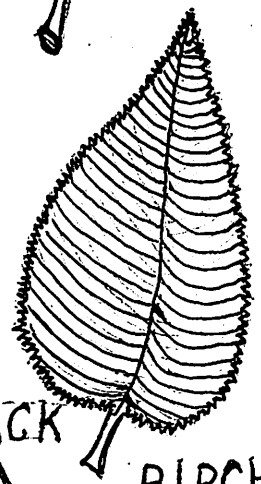
CHESTNUT
OAK



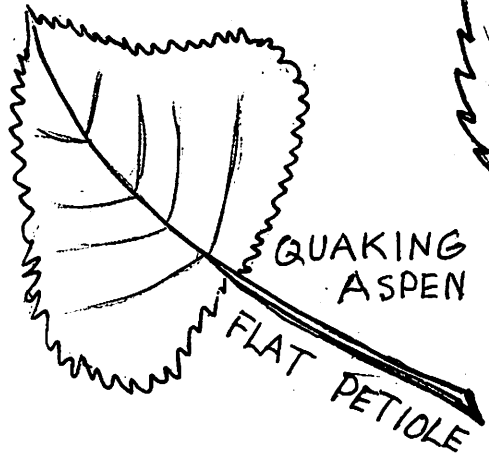
RED MAPLE



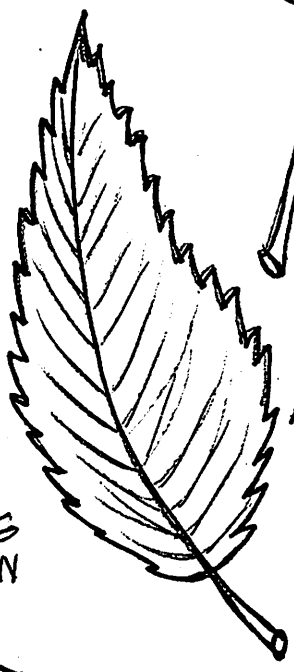
SUGAR MAPLE



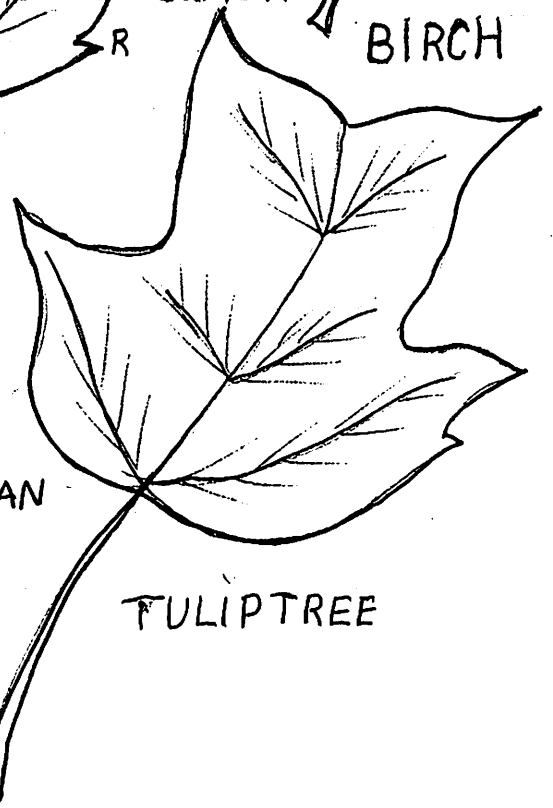
BLACK
BIRCH



QUAKING
ASPEN



AMERICAN
BEECH

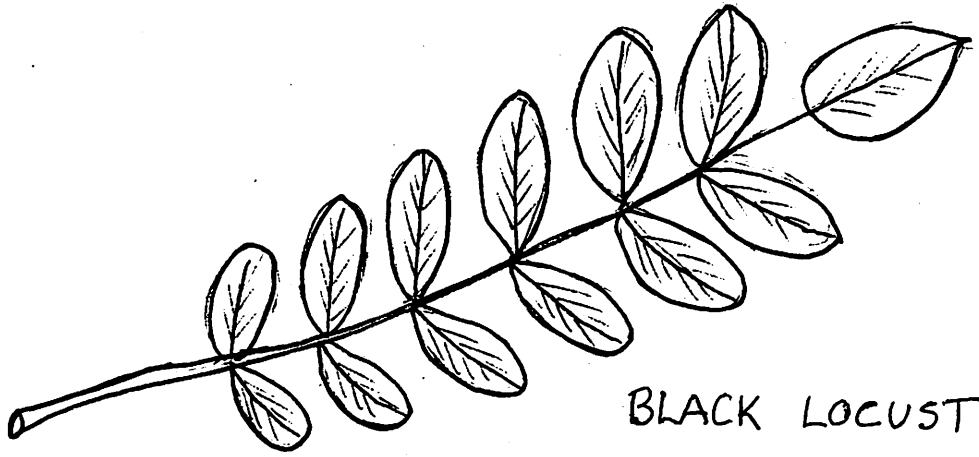


TULIPTREE

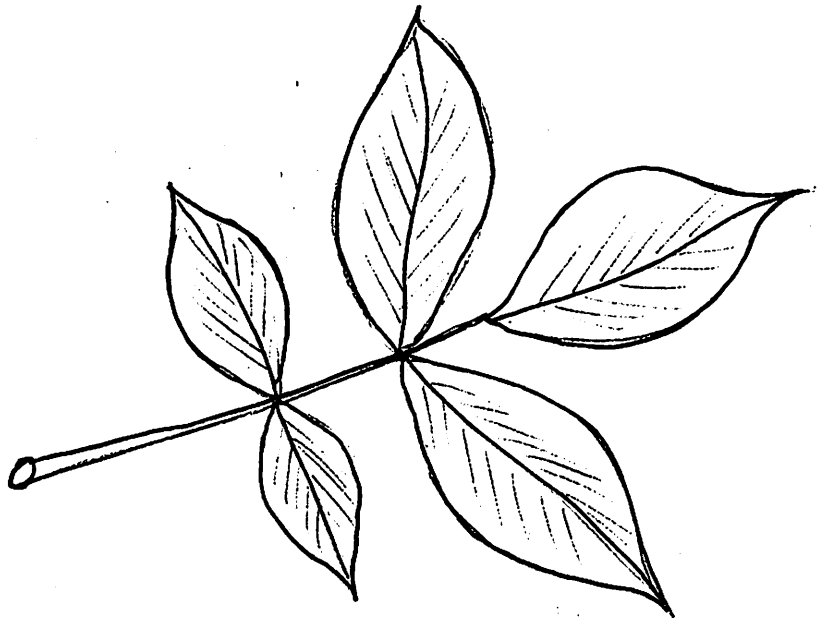
Leaves
compound



WHITE ASH



BLACK LOCUST



SHAGBARK HICKORY

**ONLY
LEAVES**