



**Scientific name
or
Common Name
?**





COMMON NAME:

American Hornbeam

Blue-beech

Water-beech

Muscle-wood

Iron-wood



Which is it?

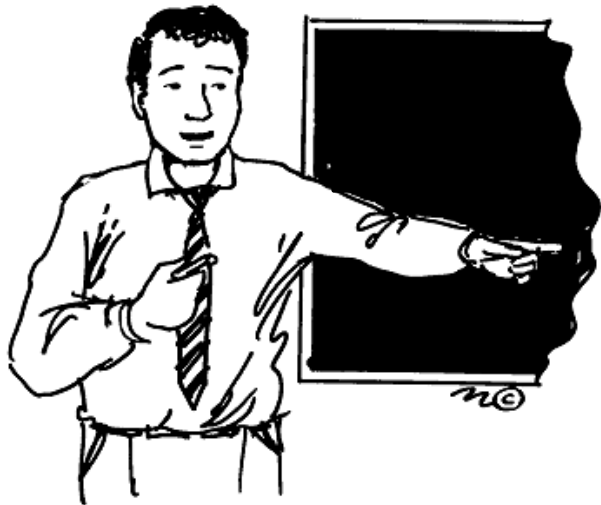


Which is correct?



Scientific name:

Carpinus caroliniana



Hint:

**The Envirothon Forestry Committee
LOVES Scientific names!!!**

TREE vs SHRUB



One is Big, the other is Small - right???

TREE vs SHRUB



TREE:

- Single main trunk
- Well-defined crown
- At least 20-25 ft. tall

Shrub:

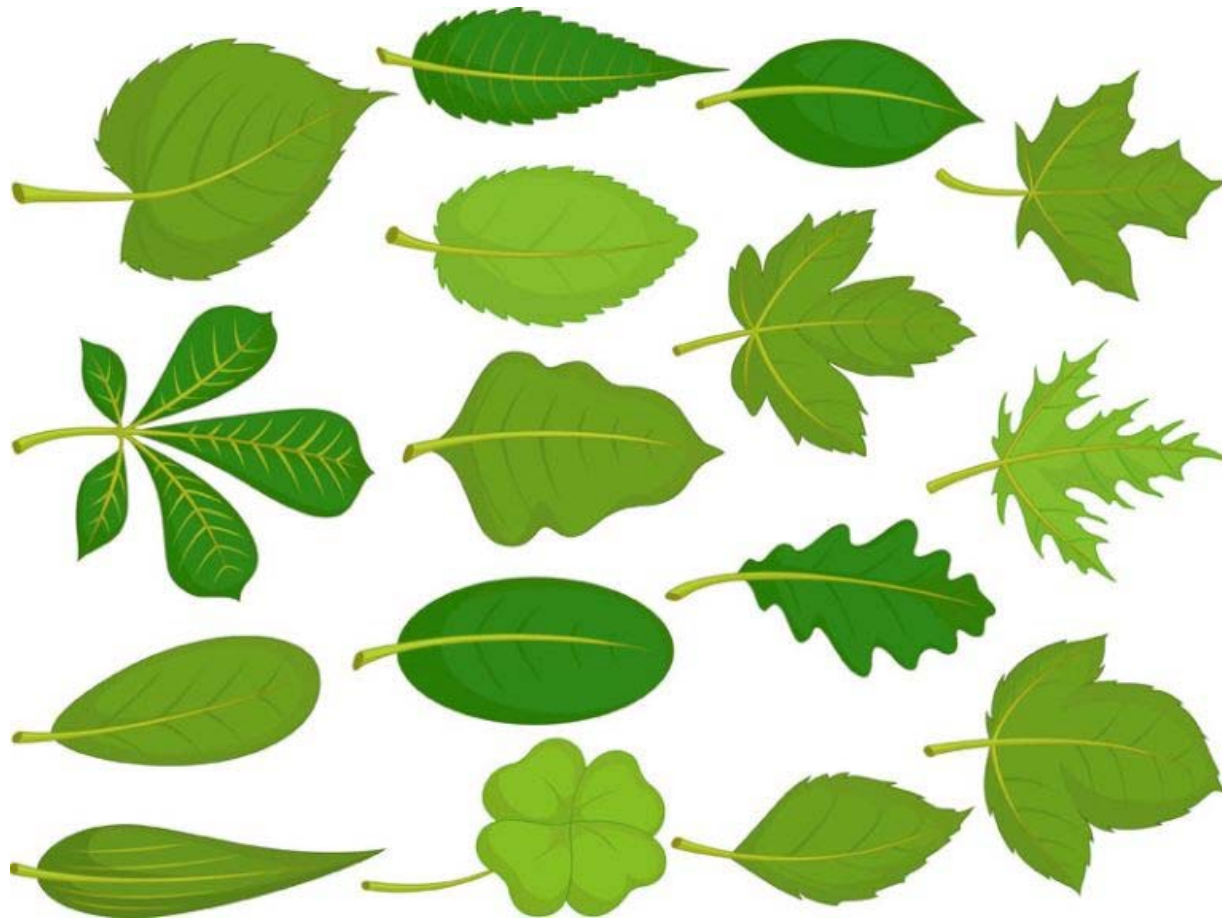
- Multiple branching at base
- No real crown
- Less than 20-25 ft. tall

(!!! Generally !!!)

But be careful!



What is a LEAF?



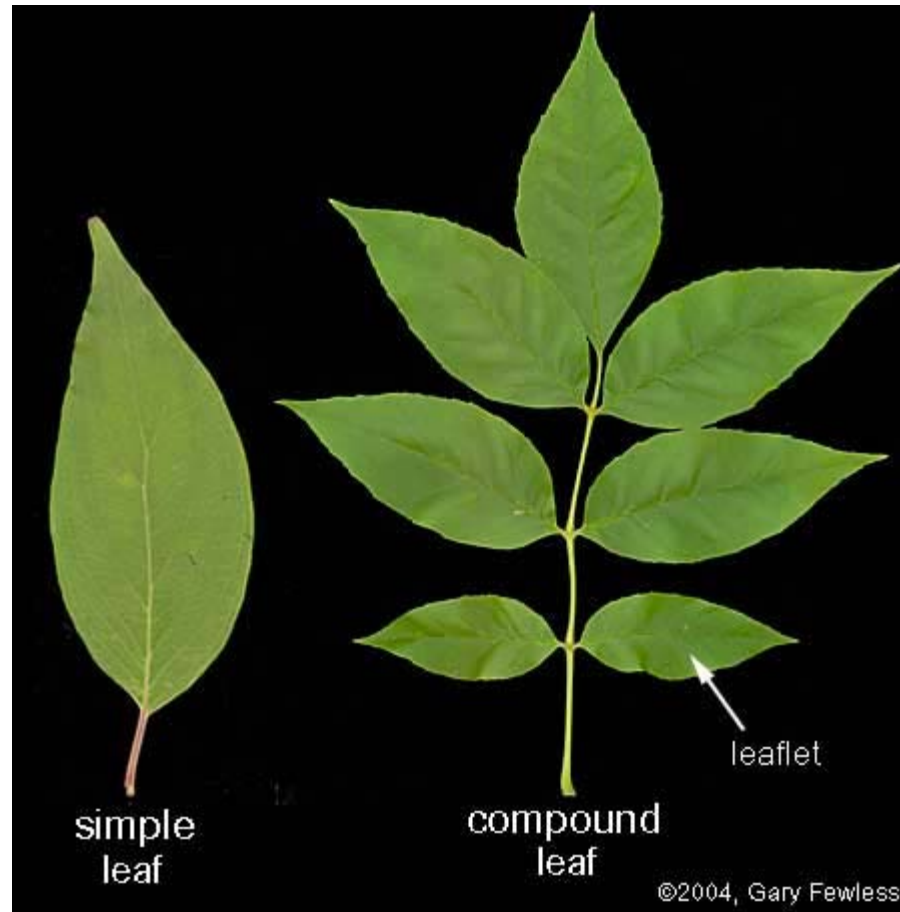
Where does a leaf “begin”?

Leaf with bud in leaf axial



© 2008 Arbor Day Foundation







Venation:

How the veins of the leaf are arranged



Pinnate



Palmate



Parallel



Simple (pinnate leaf)



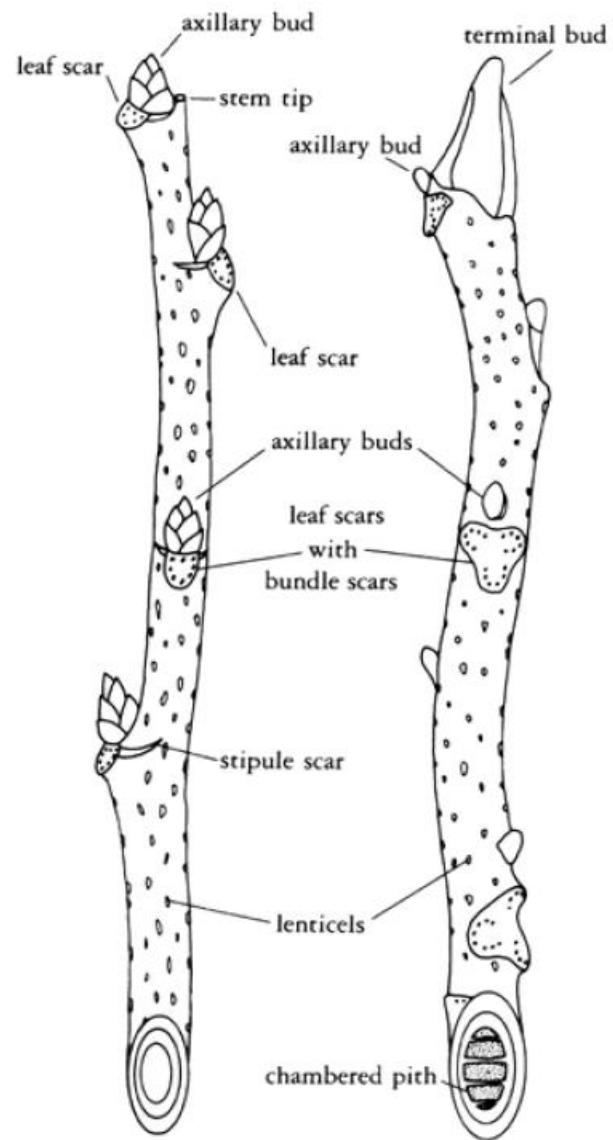
Simple (palmate leaf)



Compound (pinnate compound)



Compound (palmate compound)



continuous,
diaphragmed



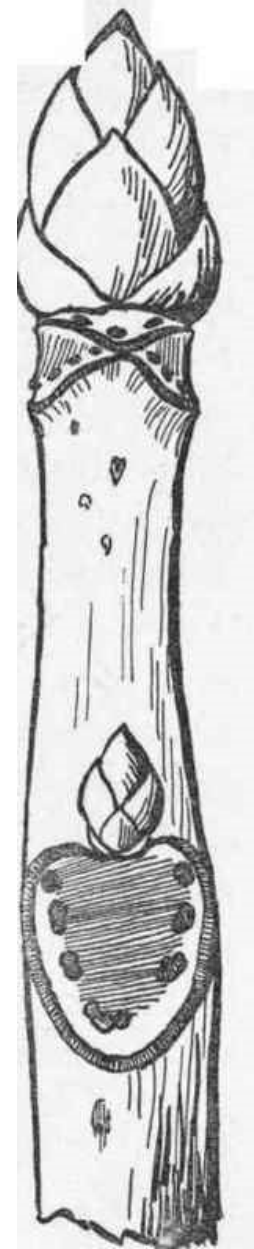
5-angled



triangled



circular



#1

**DOES THE TREE HAVE
EVERGREEN OR DECIDUOUS
LEAVES?**





EVERGREEN

Leaves and Needles are persistent: at least for several years.



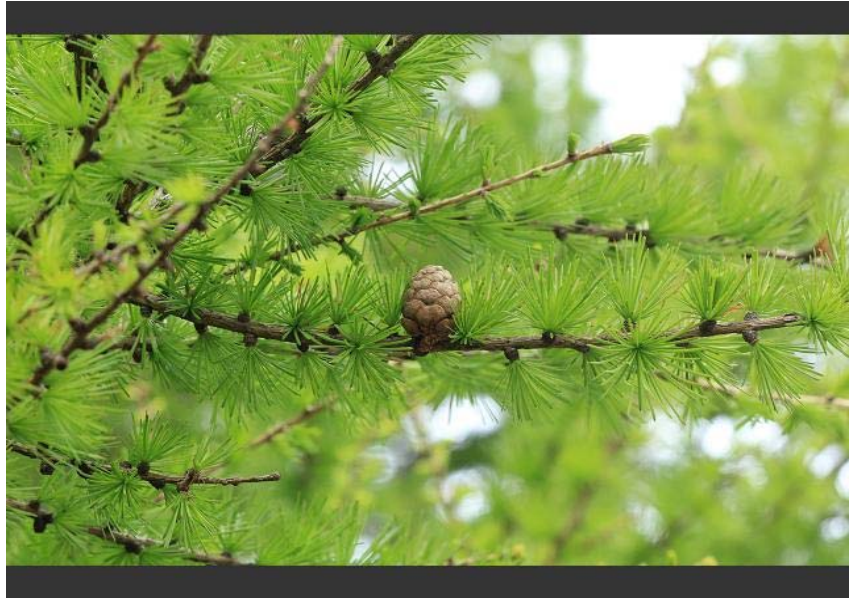


DECIDUOUS

Trees with leaves that generally tend to fall off at the end of the current growing season.



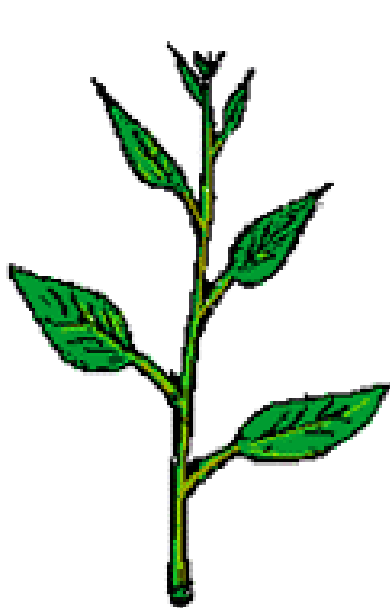
Exceptions: Be careful!



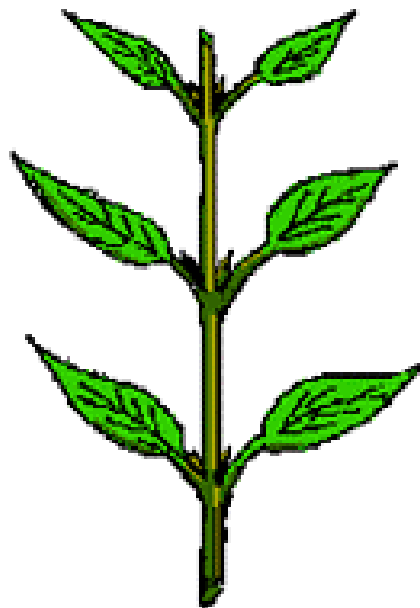
#2

**IF
DECIDUOUS:**

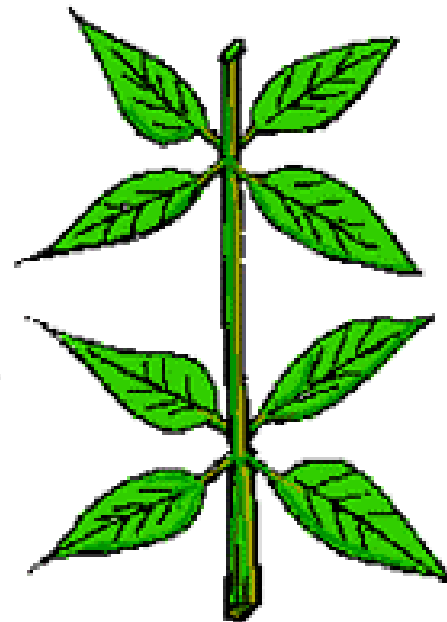
**WHAT IS THE LEAF AND
STEM ARRANGEMENT?**



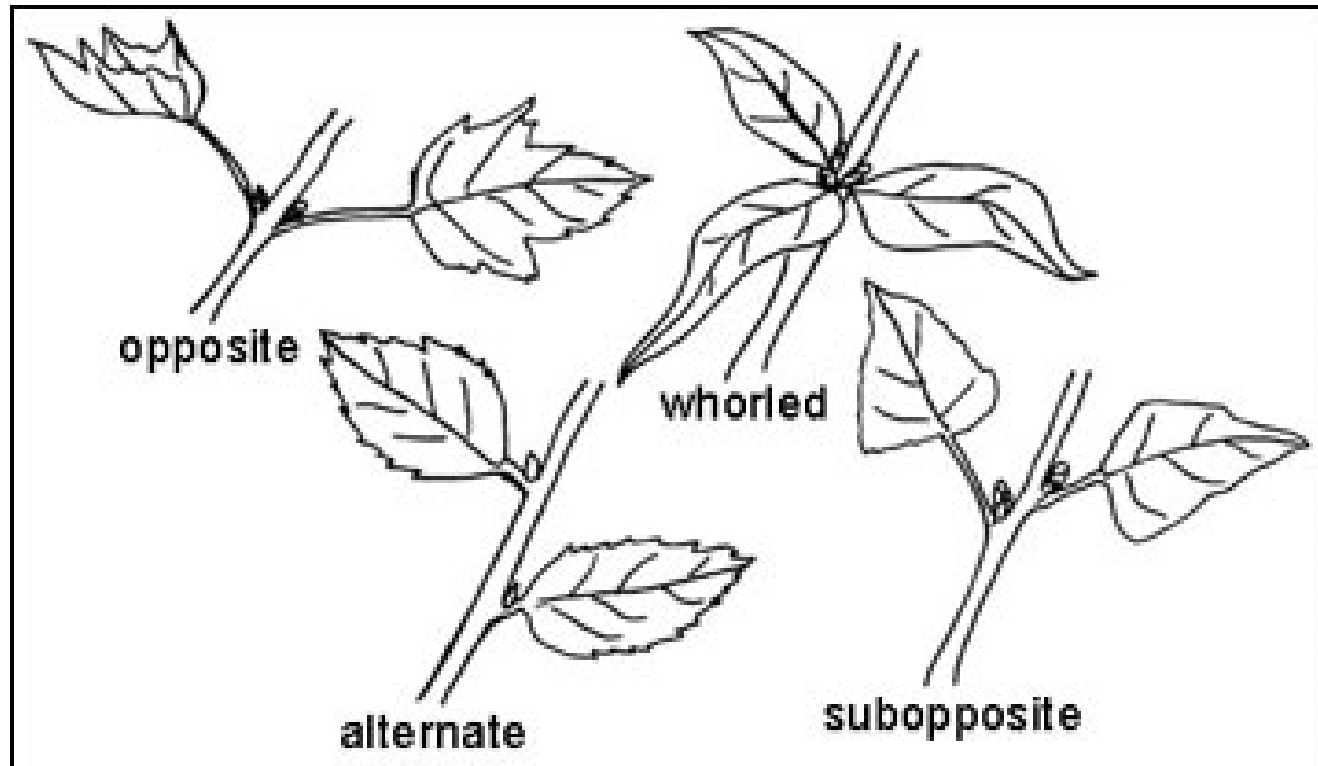
Alternate



Opposite



Whorled





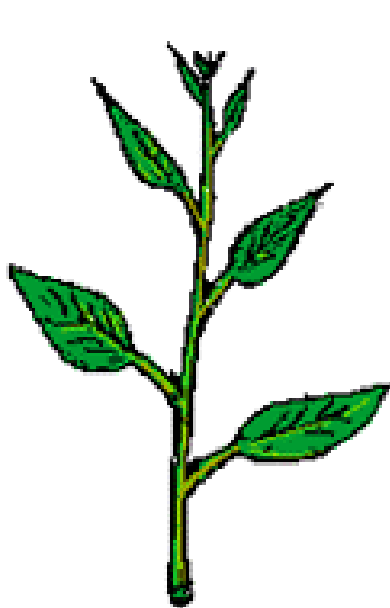
Example of “Whorled” branching

Catalpa

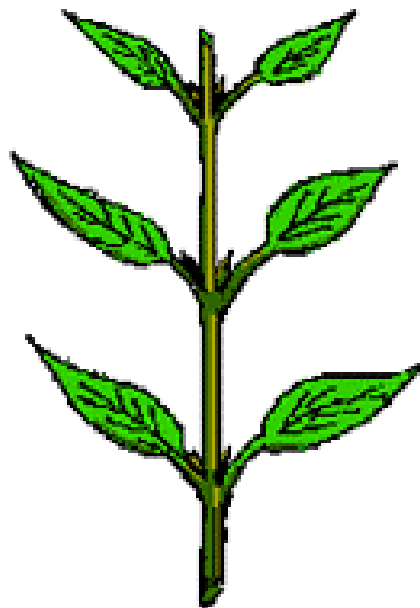
#2

**IF
DECIDUOUS:**

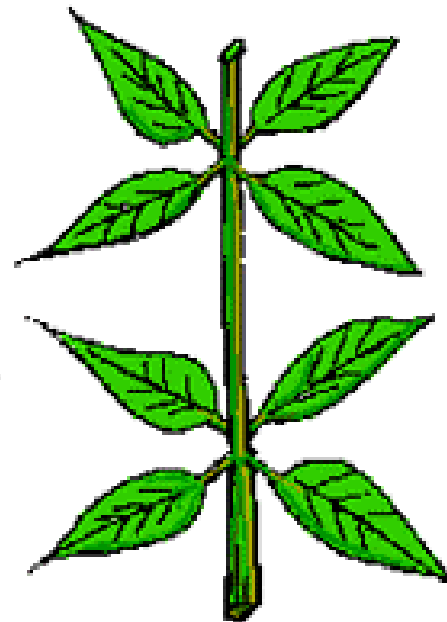
**WHAT IS THE LEAF AND
STEM ARRANGEMENT?**



Alternate



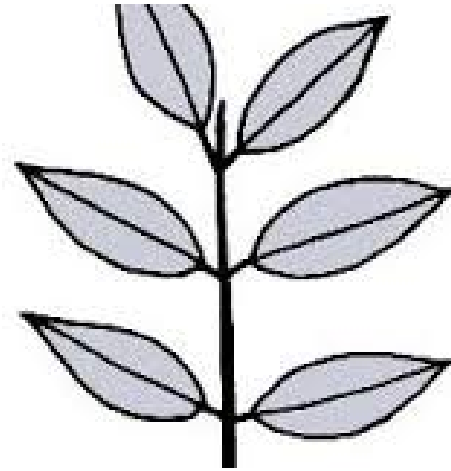
Opposite



Whorled

If opposite then:

“M A D Cat Horse”



“M” = Maple

“A” = Ash

“D” = Dogwood

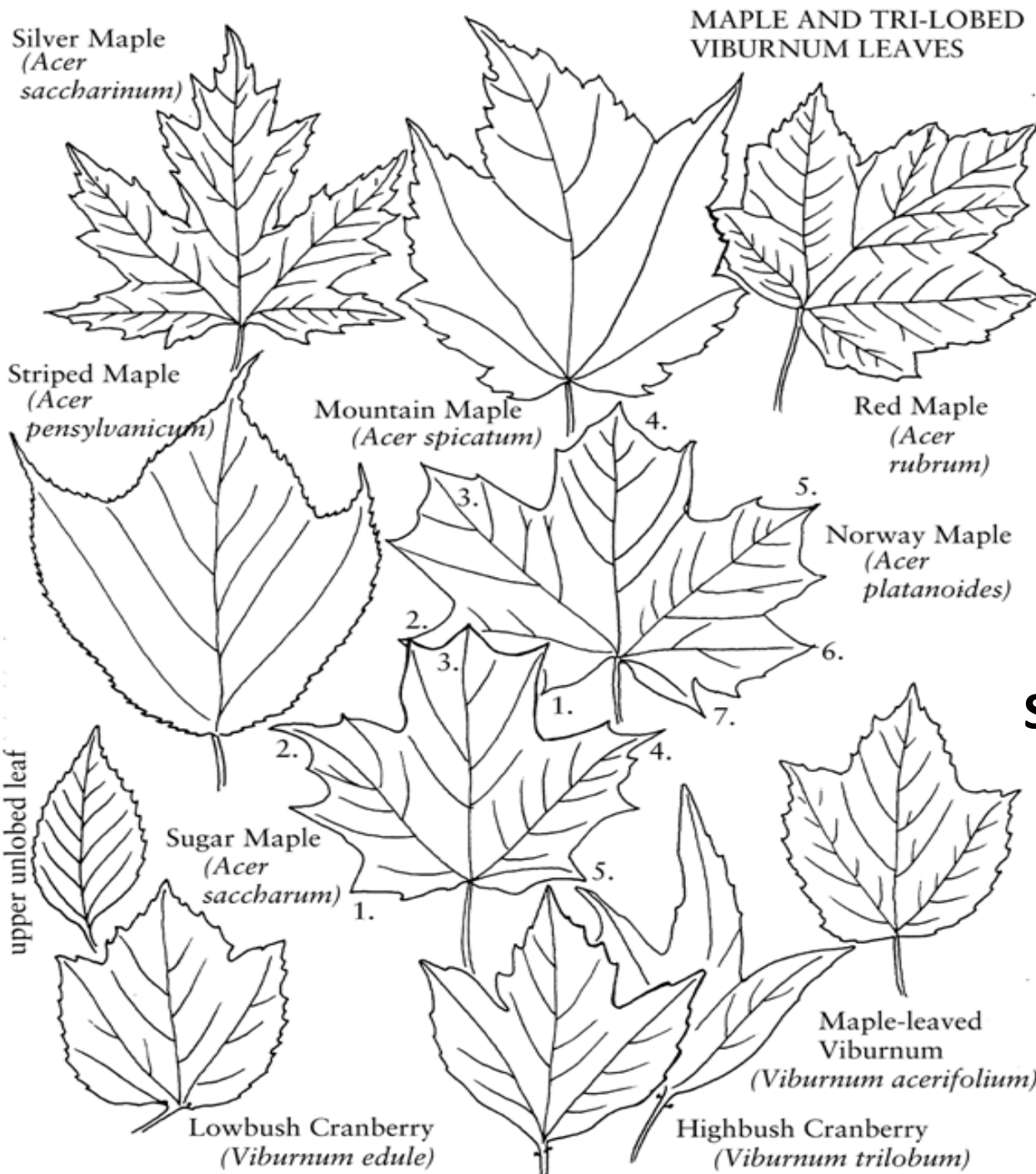
“Cat” = Catalpa

“Horse” = Horse chestnut



ALL THE REST ARE ALTERNATE*

* mostly!



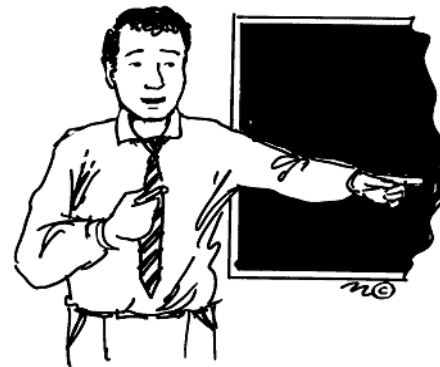
**Some Maples (*Acer* sp.)
(and others)**

But ALL opposite branching



The “exception”

Box Elder, *Acer negundo*



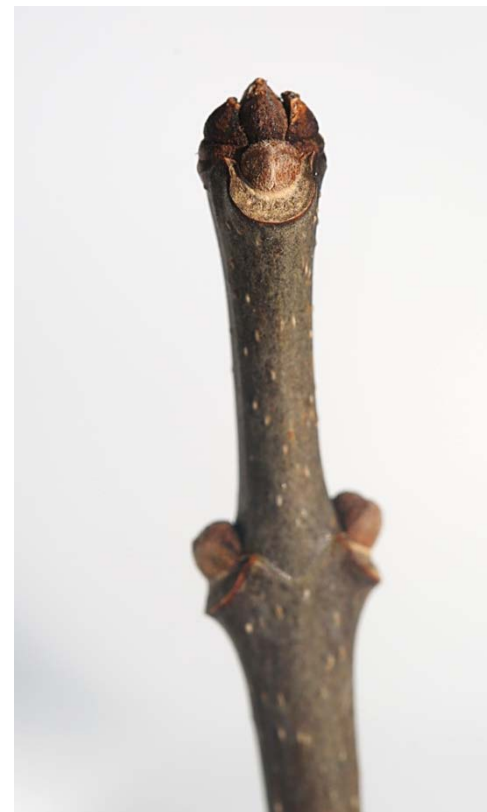
Hint:

The Envirothon Forestry Committee
has used Box Elder!!!



Ash (*Fraxinus* sp.)

**Leaves and
twig**



twig



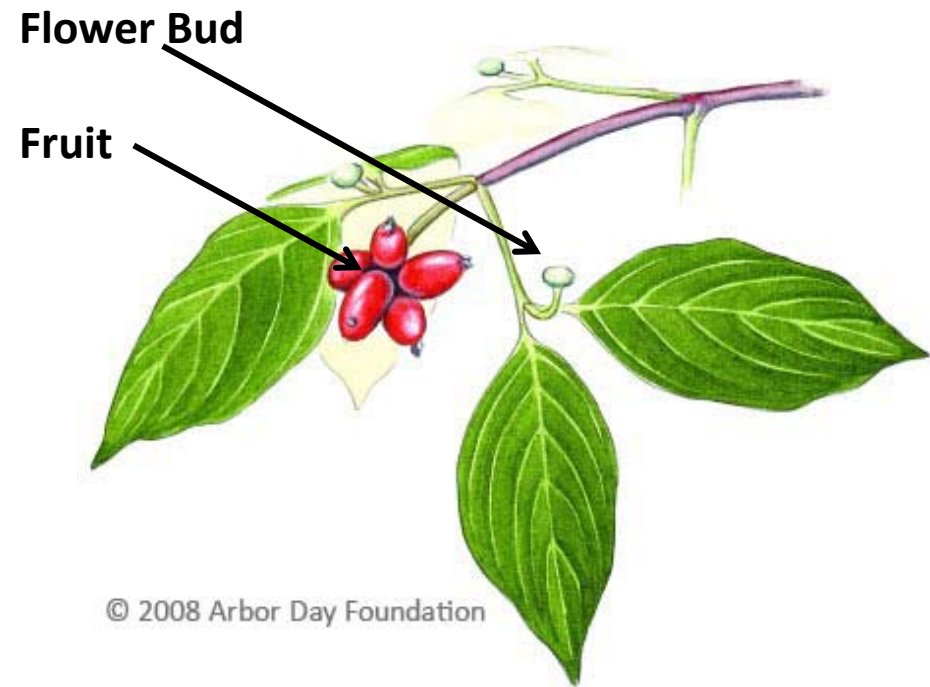
fruit



**Emerald Ash
borer**



Leaves



Dogwood, (*Cornus* sp.)



Flower head

Bark

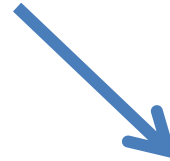




Catalpa



Horse chestnut



“M A D Cat Horse” Summary



“M” Maple



“Cat” Catalpa



“A” Ash



“D” Dogwood



“Horse” Horse chestnut

Questions

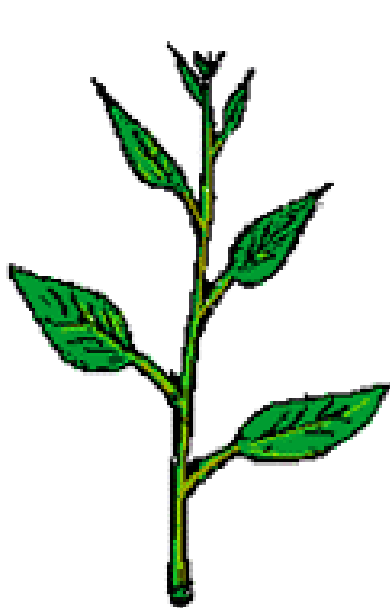
On opposites

? ? ? ? ? ? ?

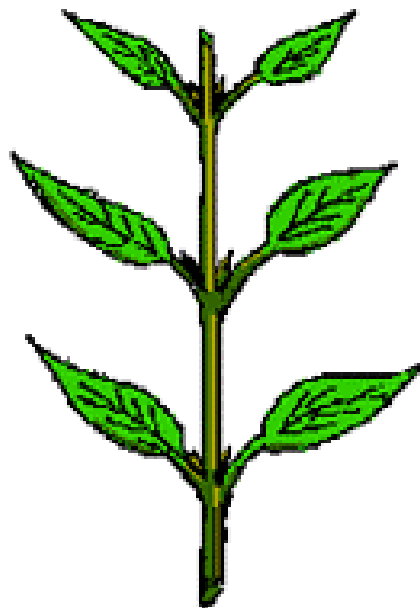
#2

**IF
DECIDUOUS:**

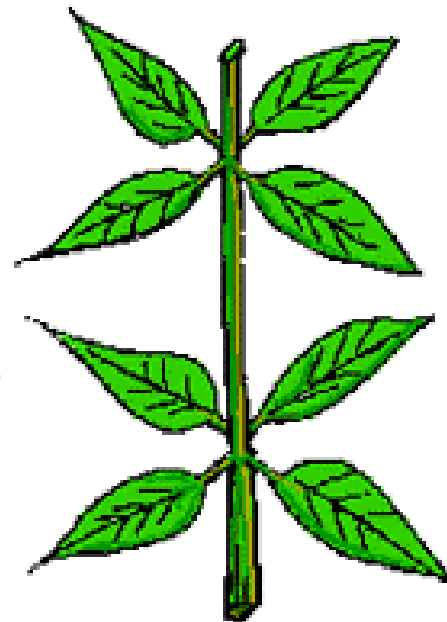
**WHAT IS THE LEAF AND
STEM ARRANGEMENT?**



Alternate



Opposite



Whorled

Alternate Branching Trees

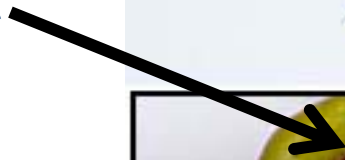
Northern Red Oak (*Quercus rubra*)
Black Oak (*Quercus velutina*)
White Oak (*Quercus alba*)
Scarlet Oak (*Quercus coccinea*)
Pin Oak (*Quercus palustris*)
Chestnut Oak (*Quercus prinus*)
Blackgum (*Nyssa sylvatica*)
Black Birch (*Betula lenta*)
White Birch (*Betula papyrifera*)
Yellow Birch (*Betula alleghaniensis*)
Gray Birch (*Betula populifolia*)
Bitternut Hickory (*Carya cordiformis*)
Pignut Hickory (*Carya glabra*)
Shagbark Hickory (*Carya ovata*)
Mockernut Hickory (*Carya tomentosa*)
American Chestnut (*Castanea dentate*)
American Beech (*Fagus grandifolia*)
Tulip Poplar (*Liriodendron tulipifera*)
Quaking Aspen (*Populus tremuloides*)
Big-Tooth Aspen (*Populus grandidentata*)
American Hornbeam (*Carpinus caroliniana*)
Eastern Hop-Hornbeam or Ironwood (*Ostrya virginiana*)
Black Cherry (*Prunus serotina*)
Sassafras (*Sassafras albidum*)

= 24 species

Oaks (*Quercus* sp.) - General Characteristics



1. Multiple terminal (end) buds



2. Fruit an Acorn



3. Five “pointed” pith



After you decide that you have an oak:

Is it in the White Oak Group or the Red/Black Oak Group?



A Cub Scout once told me....

White Oak Group



White oak
(*Q. Alba*)



Post Oak (*Q. stellata*)



Chestnut oak
(*Q. montana*)



Swamp White Oak (*Q. bicolor*)

Red/Black Oak Group



Red Oak
Q. rubra



Scarlet Oak
Q. coccinea



Black Oak *Q. velutina*



Pin Oak
Q. palustris

Questions

On Oaks

? ? ? ? ? ? ?

American Beech (*Fagus grandifolia*)



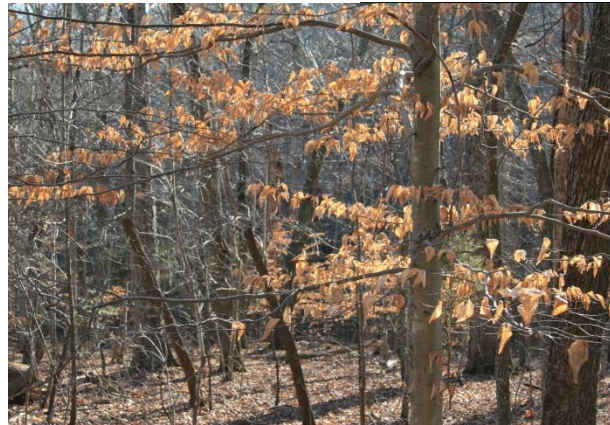
Fruit an edible nut in a bur



Smooth grey bark

Long cigar-shaped winter buds

Frequent, prolific root sprouts



American Chestnut (*Castanea dentata*)



Chestnut Blight (orange area)

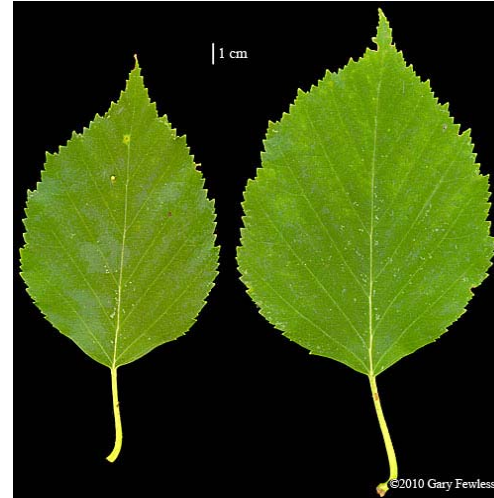


Questions

On Beech or Chestnut

? ? ? ? ? ? ?

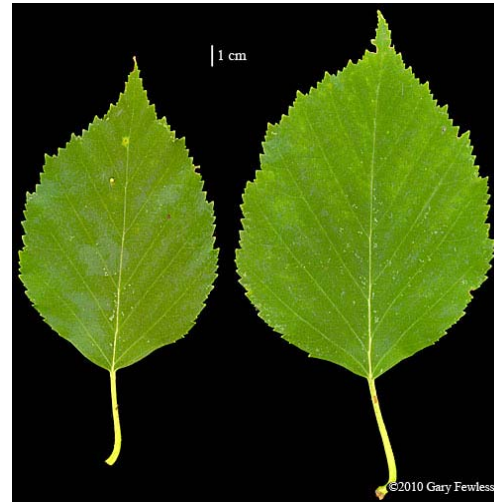
Birches - (*Betula* sp.)



Birches - (*Betula* sp.)



Yellow Birch



Paper Birch



Black Birch



Grey Birch

Black Birch (*Betula lenta*)



Smells STRONGLY of wintergreen

"Scratch and sniff tree"



Yellow Birch (*Betula alleghaniensis*)



Smells WEAKLY of wintergreen

Grey Birch (*Betula populifolia*)

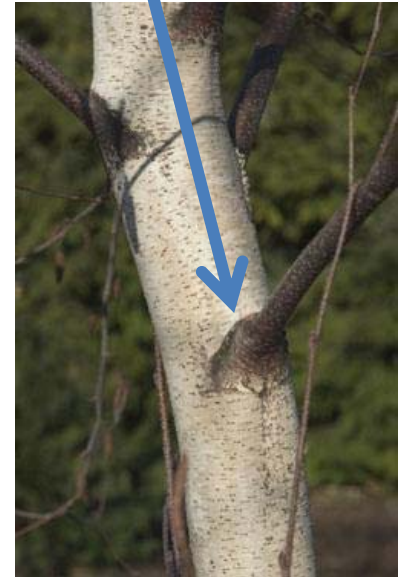


Leaves distinctly “triangular”

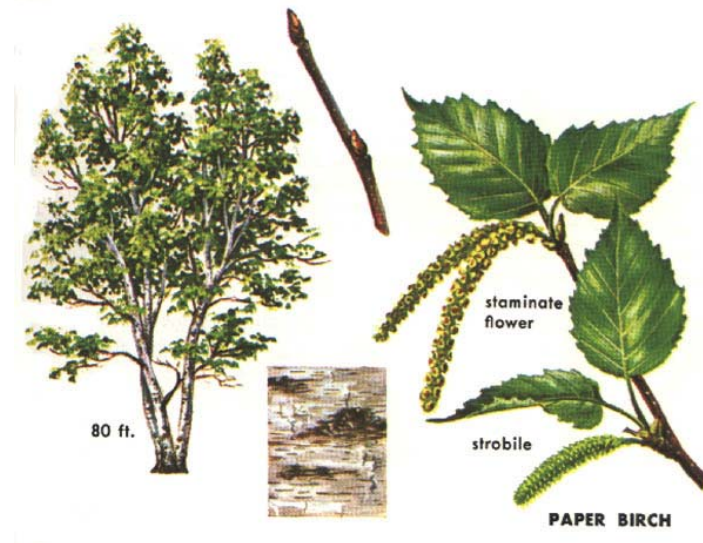
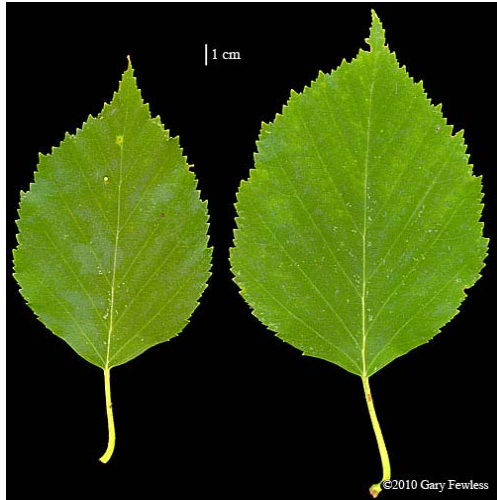
♂ Catkins born singularly



Black, triangular “chevrons” on bark



Paper birch (*Betula papyrifera*)



Questions

On Birches

? ? ? ? ? ? ?

Hickories - (*Carya* sp.)

General Characteristics

1. Pinnate Compound leaves



2. Alternate arranged toothed leaflets

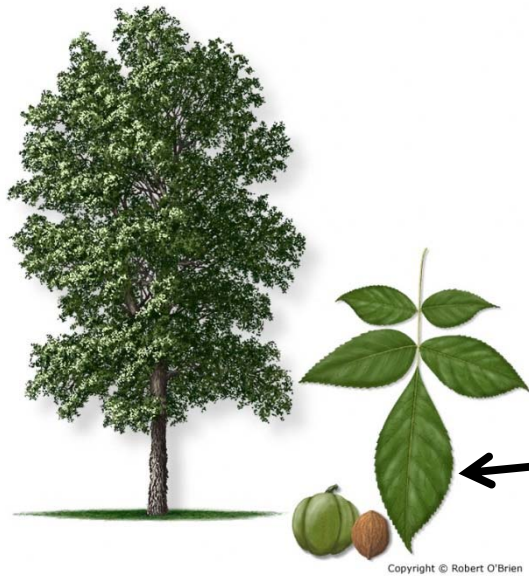


3. Generally large, conspicuous buds

4. Fruit, a nut enclosed in a husk



Shagbark Hickory (*Carya ovata*)



5-7 Leaflets, mostly 5,
end leaflet generally larger

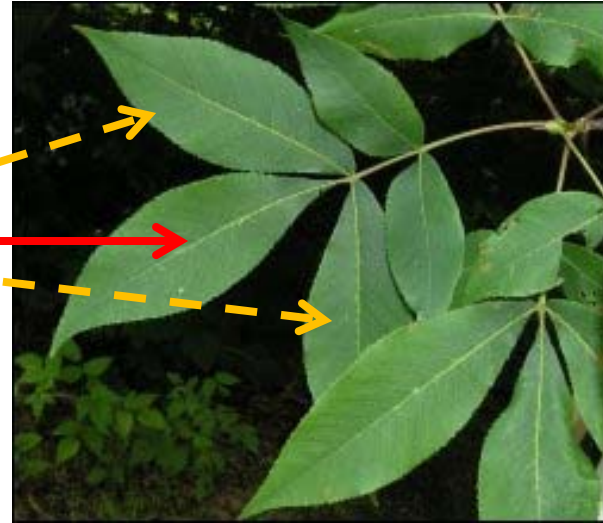


Bark of
mature tree



Pignut Hickory (*Carya glabra*)

5-7 leaflets, generally 5
End leaflet about the same size



Bark close up



Mockernut Hickory (*Carya tomentosa*)



7-9 leaflets



End bud “Hersey Kiss” shaped



www.alamy.com - EB2RBY



Twigs, buds, leafstalks with “wooly hairs”



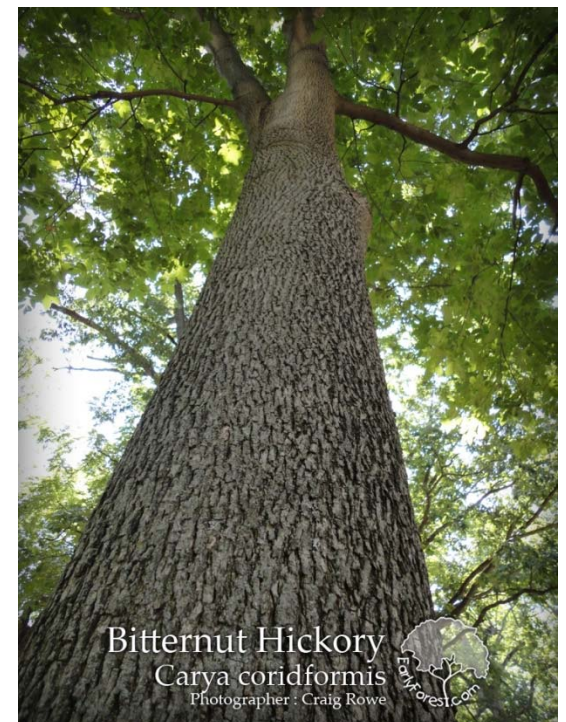
Bitternut hickory (*Carya cordiformis*)



Leaflets 5-9



Bright, sulfur-yellow bud scales



Questions

On Hickories

? ? ? ? ? ? ?

A few “Individual” trees...

Tulip Poplar (*Liriodendron tulipifera*)



Simple, pinnate leaves
Missing "point"

Large flowers - June



Fruit structure



Old Growth – N. Carolina

Questions

On Liriodendron

? ? ? ? ? ? ?

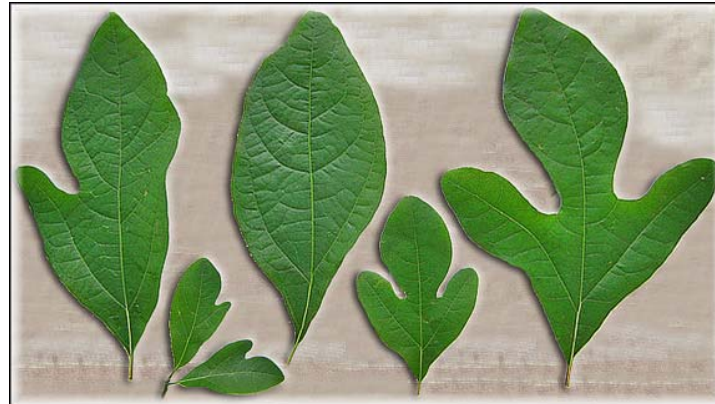
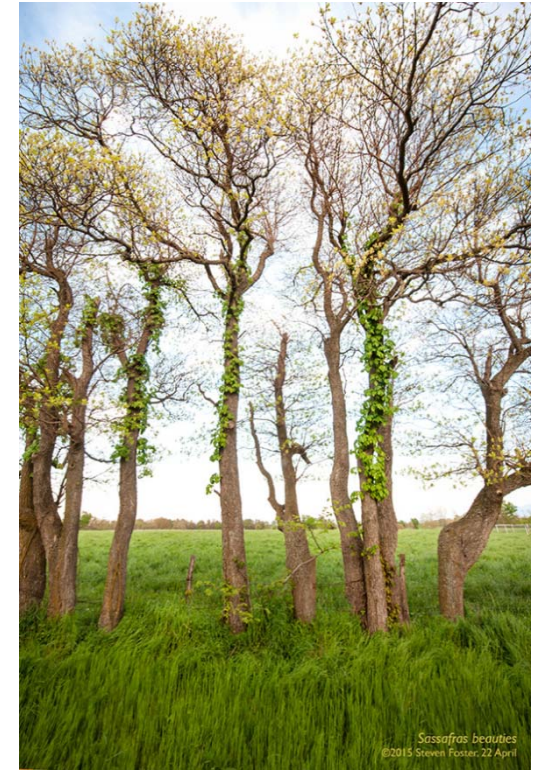
Sassafras (*Sassafras albidum*)



Leaves, 3 types -

- Glove
- Mitten
- entire

"Scratch and sniff tree"



Twigs, small branches bright green



Questions

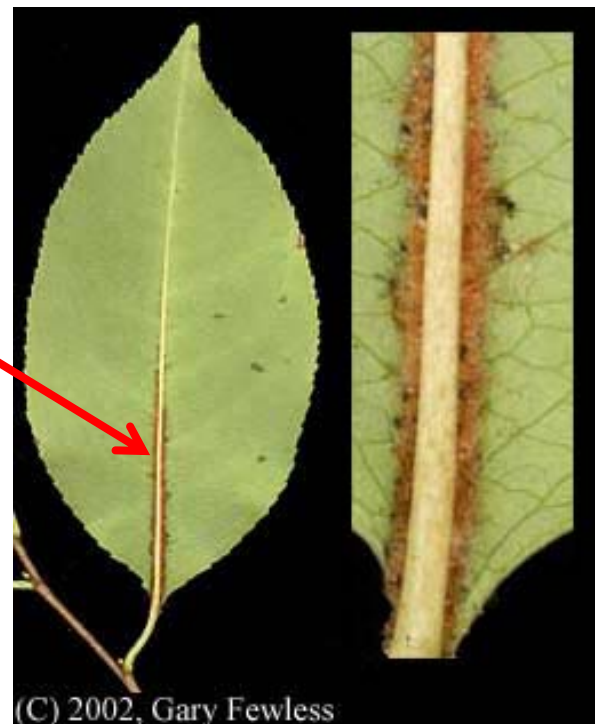
On Sassafras

? ? ? ? ? ? ?

Black Cherry (*Prunus serotina*)



Leaf underside:
Note fine, orange
hairs along midrib



(C) 2002, Gary Fewless

“Scratch and sniff tree”

Bark



older tree

©2008 Will Cook



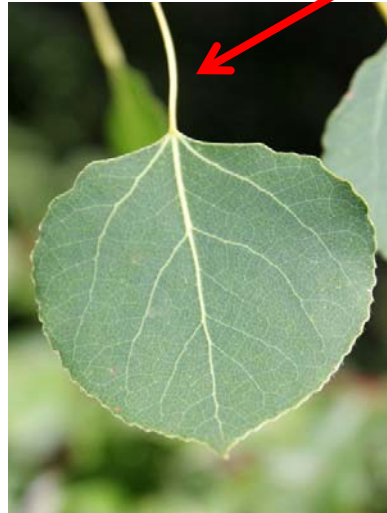
young tree

Black knot of cherry
(*Dibotryon morbosum*)



The Aspens (*Populus* sp.)

Trembling Aspen -
(*Populus tremuloides*)



Both have laterally flattened Leaf stems

Big-tooth Aspen –
(*Populus grandidentata*)



Questions

On Prunus or Populus

? ? ? ? ? ? ?

The Needle Bearing Trees - pines, spruces, hemlock, junipers, larch

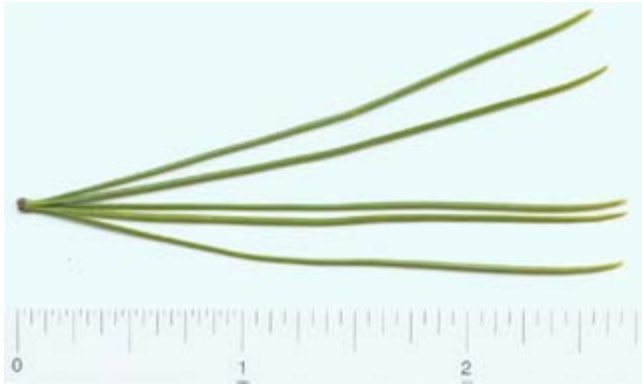


Pines (*Pinus* sp.)

- Needles born in CLUSTERS - fascicles



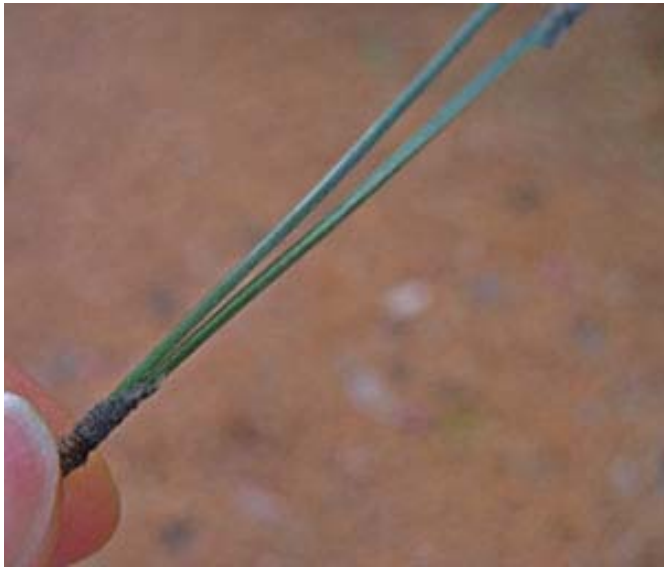
White pine (*Pinus strobus*)



“White” = 5 letters
White Pine = 5 needles



Red Pine (*Pinus resinosa*)



2 needles per cluster



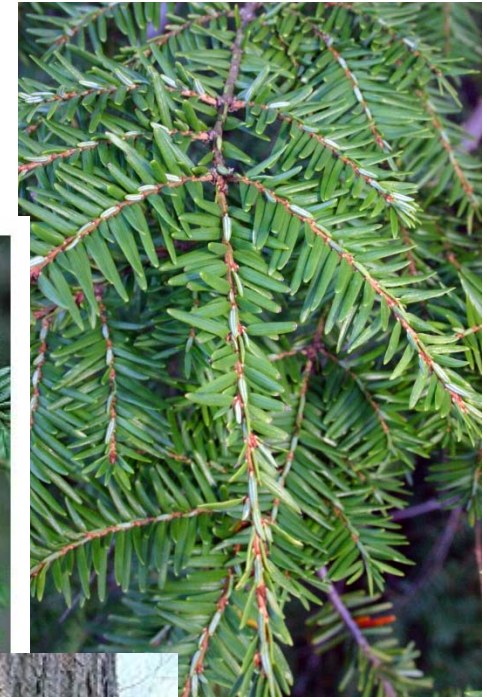
Eastern (Canadian) Hemlock (*Tsuga canadensis*)



- Needles born singly
- Needles flattened



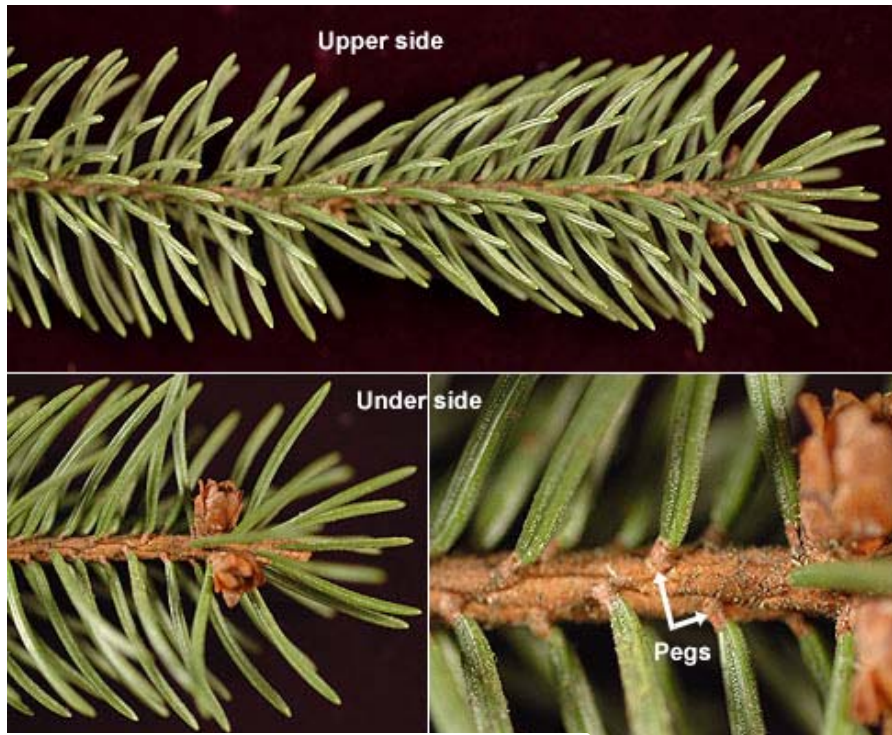
Tsuga canadensis



White lines on underside of needle



Norway Spruce (*Picea abies*)



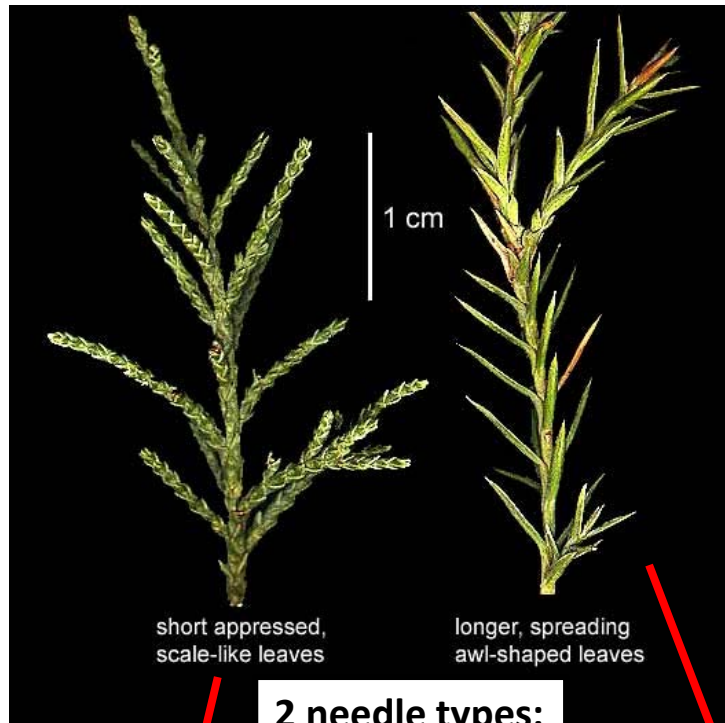
Needles born on
small Woody pegs



Needles are stiff, prickly



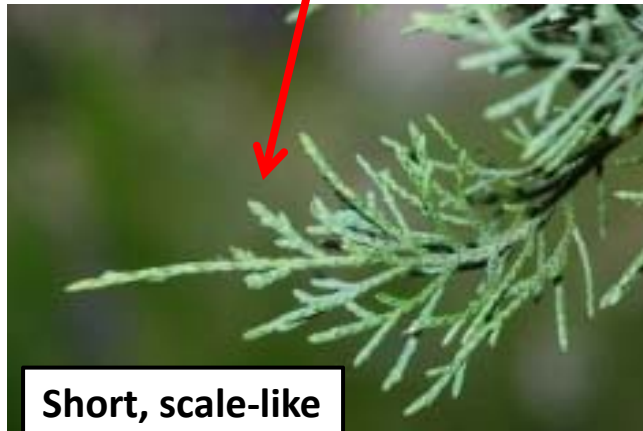
Eastern Juniper (Eastern red cedar) (*Juniperus virginiana*)



short appressed,
scale-like leaves

longer, spreading
awl-shaped leaves

2 needle types:

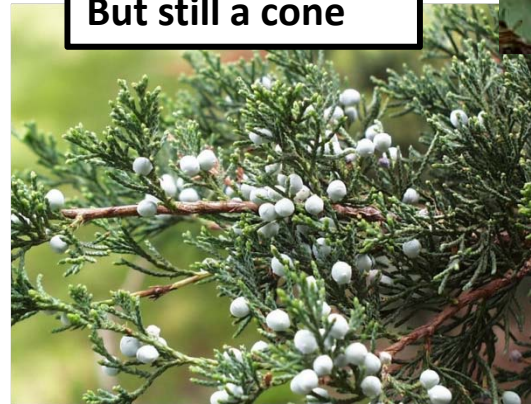


Short, scale-like



Awl-shaped

Fruit, "berry-like"
But still a cone



Wood used in
Cedar chests,
Cedar closets



Old field
Growth habit

Questions

**On needle bearing
trees**

? ? ? ? ? ? ?



THE END

