

Winter Twigs of Maine



Maine Association of Wetland Scientists
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Stantec Consulting

Agenda

- **Introductions (9:00–9:10)**
- **Presentation on winter ID and key terminology (9:10–10:00ish)**
- **Specimen introductions and group keying of specimens (10:00–12:00ish)**
- **Lunch (12:00–1:00ish)**
- **Field practice (1:00–3:00ish)**
- **Wrap-up**

Course Objectives

- To introduce techniques and terminology needed to identify plants during winter months with the typical absence of leaves, flowers, and fruits
- To familiarize students with commonly encountered deciduous woody plants in Maine during winter through the use of dichotomous keys and field exercises
- To emphasize species associated with wetland habitats and adjacent areas
- To build appreciation for field botany and encourage further independent study

Benefits of Twig Study

- Year-round identification
 - Characters applicable in winter and throughout most of year (e.g., pith color shape, bud characteristics, tomentum, etc.)
- Improved off-season resource characterizations
- Increased appreciation of the winter landscape
- Impressing friends and family



How to Study



- Noting several characteristics:
 - Growth form (e.g., tree, multi-stemmed shrub)
 - Habitat, landscape position
 - Remnant fruit, reproductive structures, leaves
 - Be wary of stump sprouts, juveniles, shade growth forms: may show atypical characters
 - Observing bud size, shape, and texture; bud scales; leaf scars; branch orientation; presence of hairs; color; bark; armature; etc. (hand lens is important)
 - Smell the twig!
 - Look at several examples

The key terminology



Bud and Branch Orientation

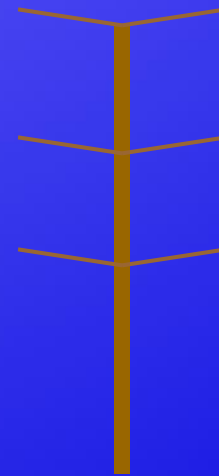
Alternate

- Common for many families and genera



Opposite

- Fewer genera and families
 - Ashes, maples, most dogwoods, viburnums, elderberries, honeysuckles



Sub-opposite

- Branching pattern appears opposite, but upon further inspection they're slightly offset



*Characteristic for *Rhamnus cathartica* and *Salix purpurea*!

Beware of stump sprouts which may show sub-opposite or alternate orientation for normally opposite-branched species

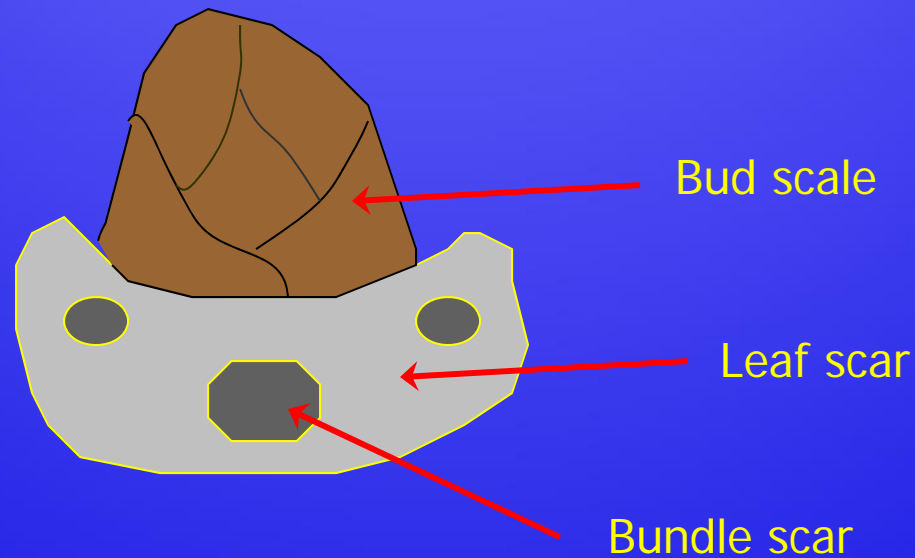
Leaf Scar

- The scar left behind from an abscised leaf
 - “A leaf scar is a scar that a leaf leaves when the leaf falls off in the fall” - Unknown
- Usually located below a bud
- Contains *bundle scars*



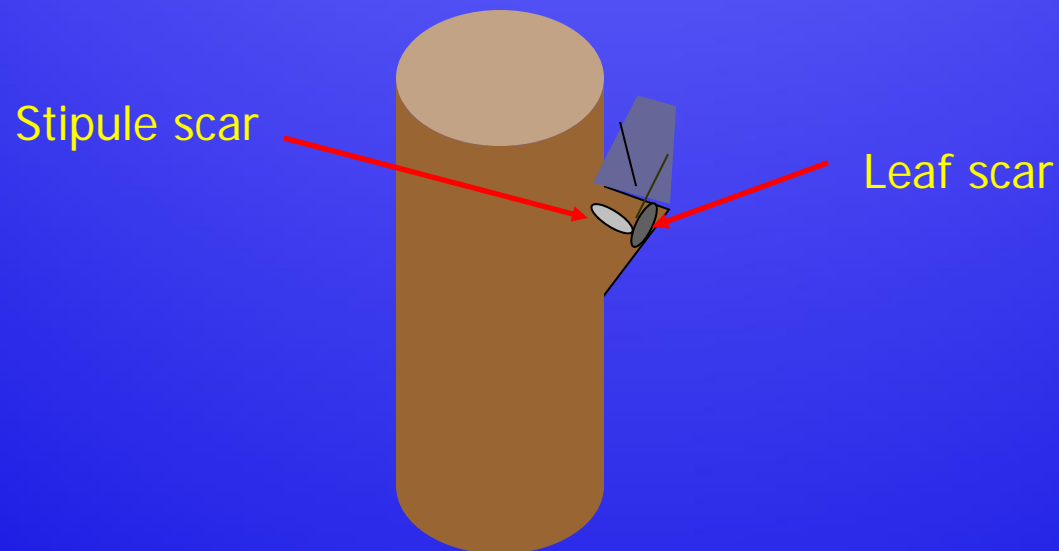
Bundle Scar

- Scars of vascular bundles
- Located within a leaf scar
- Typically 1, 3, or more



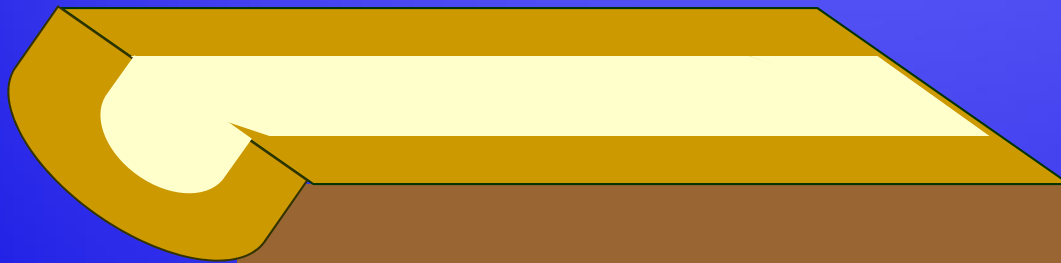
Stipule Scar

- Scars left by stipules (small leafy or scaly appendages)
- Usually 1 on each side of leaf scar
- Shriveled remnants of stipules are often visible

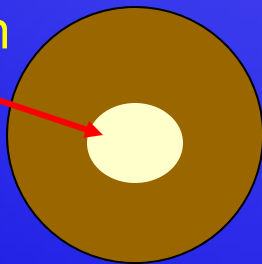


Pith

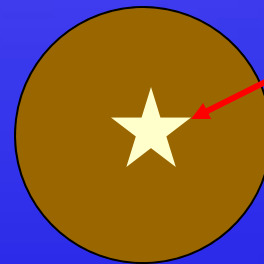
- The central cavity of the stem
- Usually with a spongy texture and color that contrasts with surrounding tissue
- Color and shape are important field and key characters



Terete: common



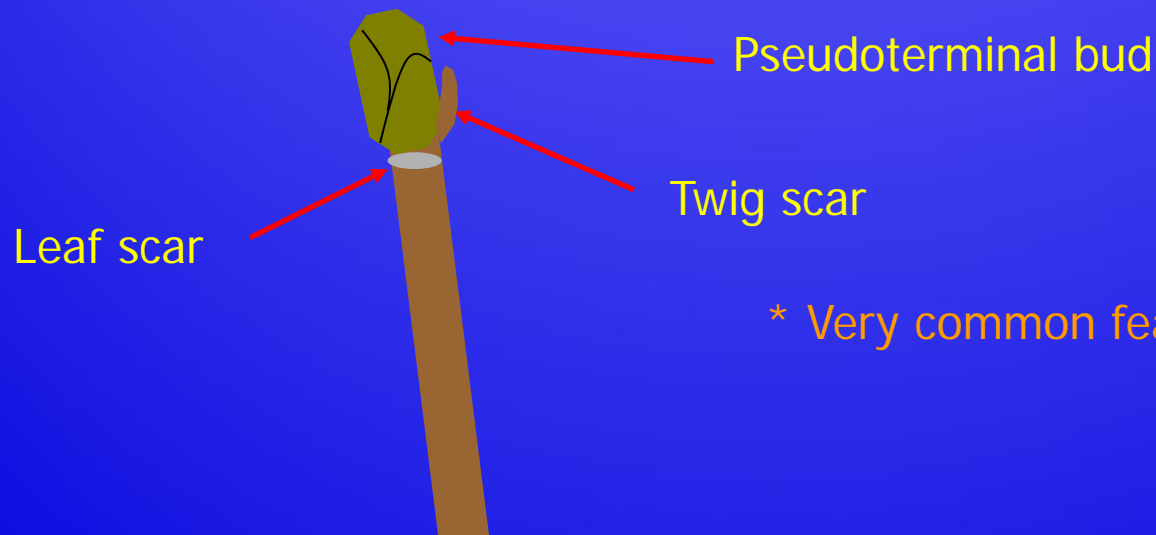
Stellate: found in
Populus, Quercus



* Pith is chambered in *Nyssa sylvatica* and *Juglans cinerea*

Pseudoterminal Bud and Twig Scar

- A bud that falsely appears terminal (i.e., at end of a twig).
- Situated between a leaf scar and a *twig scar*.
 - *Remnant portion of twig due to indeterminate growth*
- Hint: Look very closely and at several buds!



* Very common feature!

Naked Bud

- A bud not enclosed by scales
- Leaf venation is evident

*Examples: *Hamamelis virginiana*, *Frangula alnus*

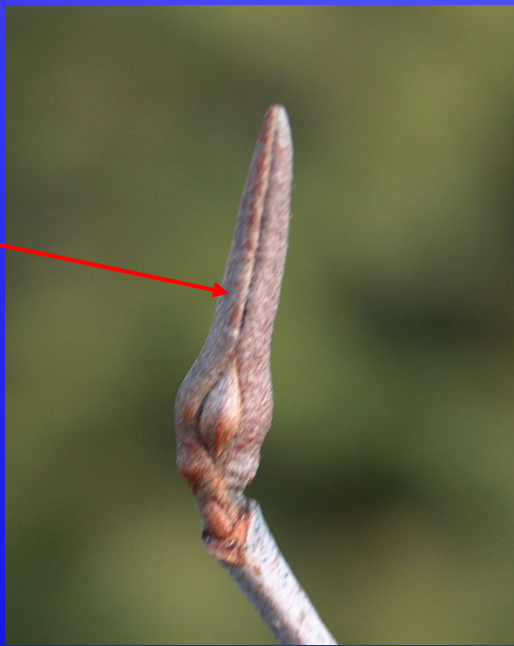


Naked bud in hobblebush
(*Viburnum lantanoides*);
note leaf venation

Valvate vs. Imbricate bud

- Valvate = Bud scales that are often touching, but not overlapping
- Imbricate = Bud scales that overlap

Valvate



Imbricate



Armature

- Presence of spines, thorns, barbs, or spine-like branches (spinescent)



Now, some examples...

White ash
(*Fraxinus americana*)

Rounded terminal
bud

Leaf scar notched

Many bundle
scars; U-
shaped

Bluish hue
to twigs



Speckled alder
(*Alnus incana*)

Purple, scurfy
bud

Stalked



Slender willow (*Salix petiolaris*)

Single bud scale

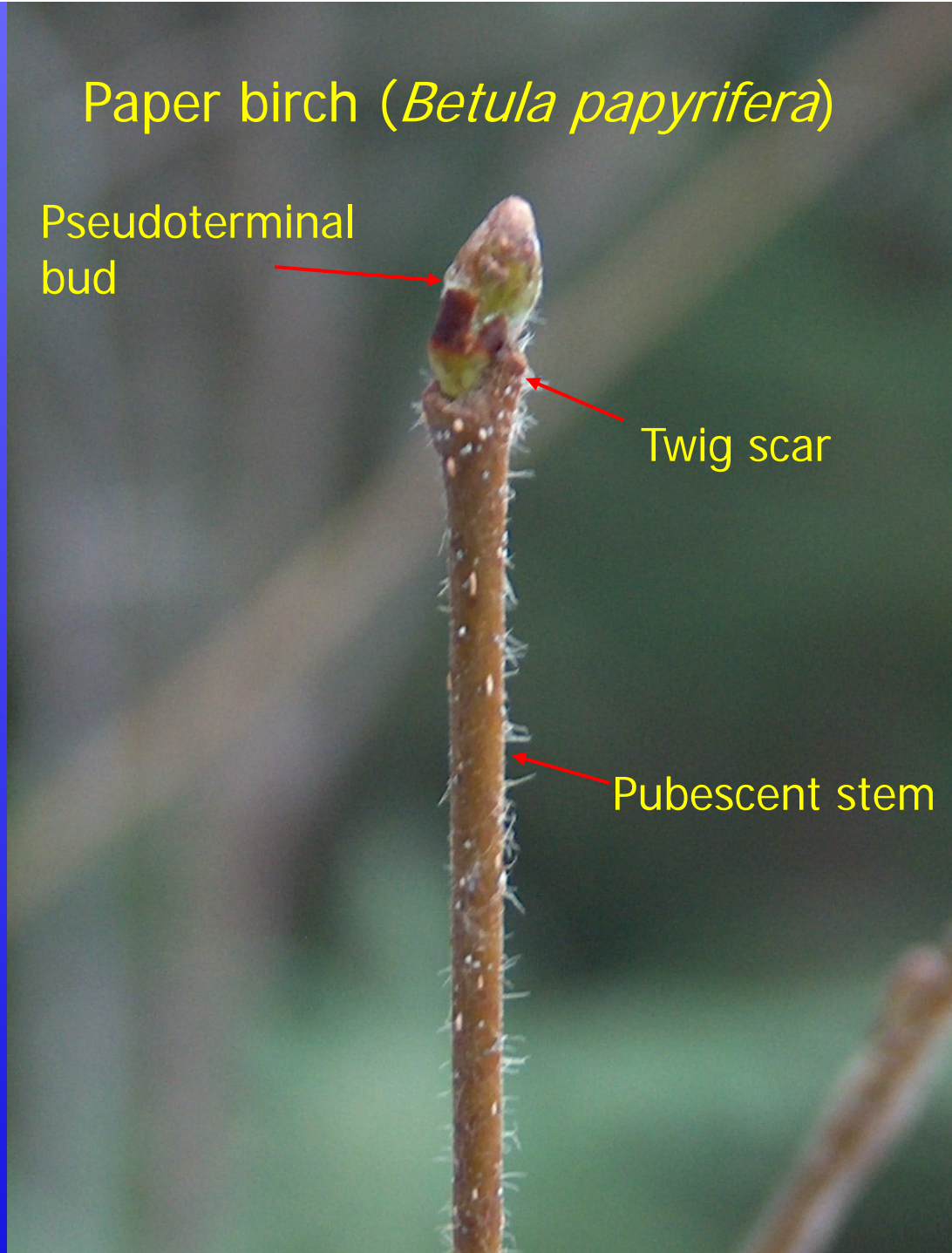


Paper birch (*Betula papyrifera*)

Pseudoterminal
bud

Twig scar

Pubescent stem



Brown ash (*Fraxinus nigra*)



Globose
lateral
buds

"Stalked"
terminal bud

Black cherry (*Prunus serotina*)

Laterally compressed,
greenish red buds



Pungent odor!



Wild raisin (*Viburnum nudum* var. *cassinoides*)



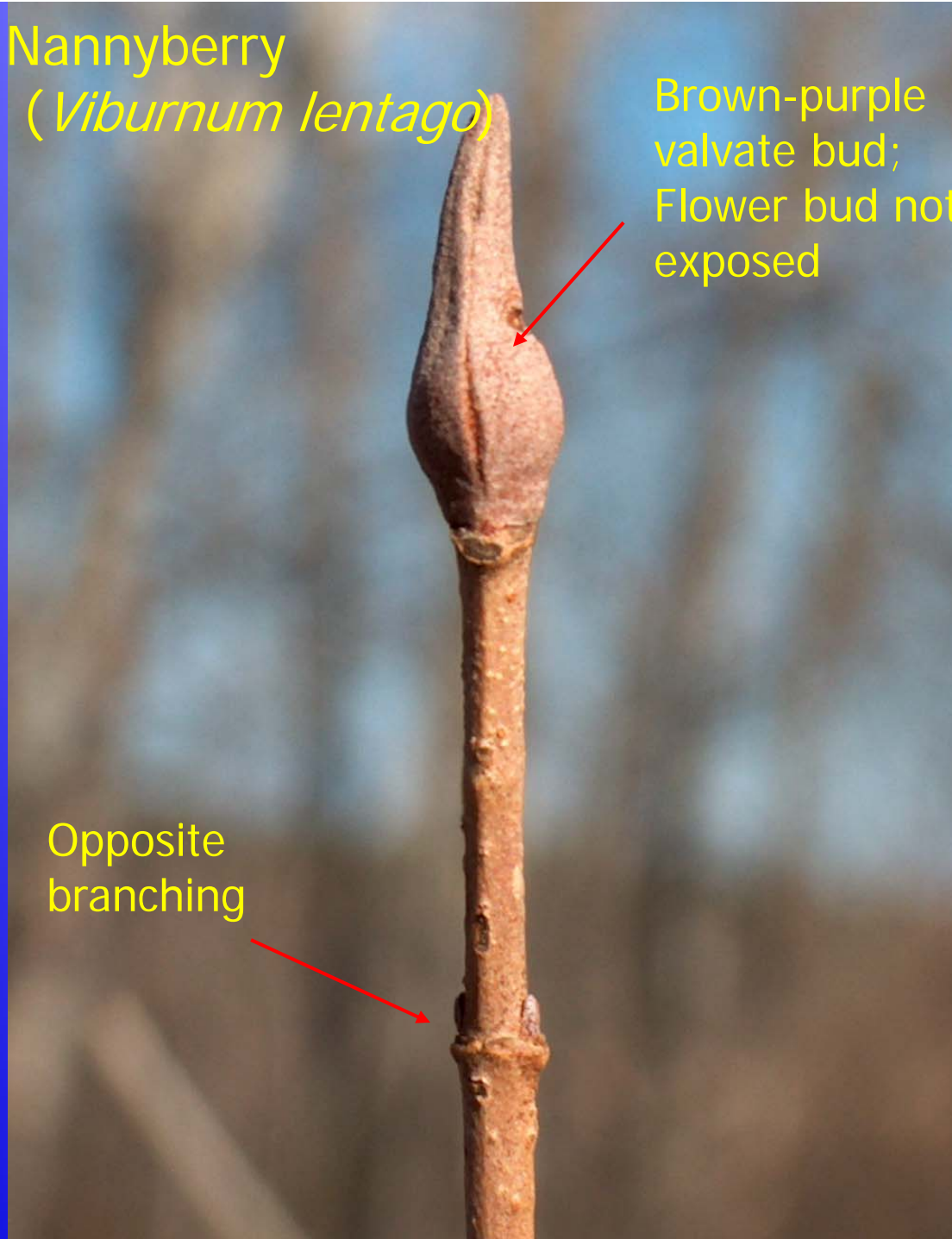
Brown,
valvate bud

Flower bud
often
exposed

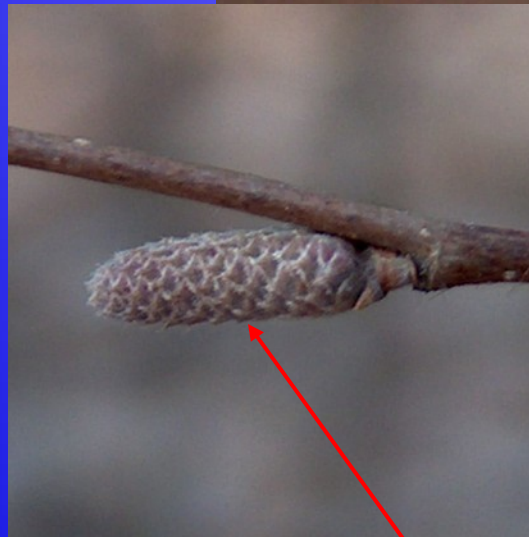
Nannyberry
(*Viburnum lentago*)

Brown-purple
valvate bud;
Flower bud not
exposed

Opposite
branching



Beaked hazelnut (*Corylus cornuta*)




Catkin



2 pairs of equal sized scales, densely pubescent inner scales

American beech (*Fagus grandifolia*)



Widely diverging,
chestnut brown,
narrow buds

Purple buds and twigs



Mountain holly
(new name:
Ilex mucronata)

Tan twigs, dull brown buds



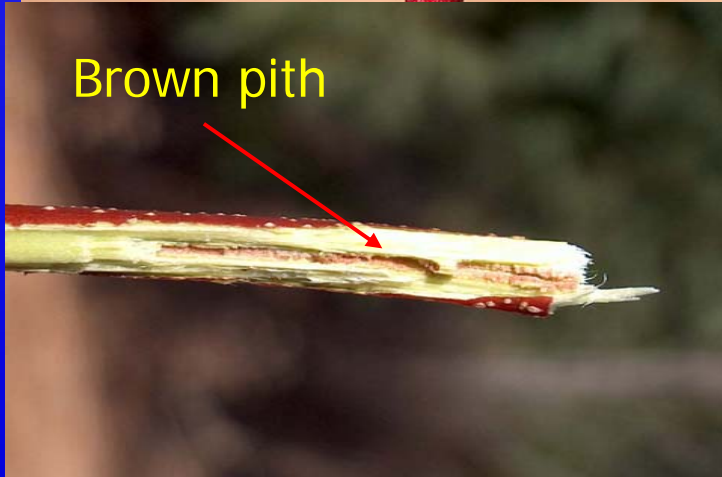
Winterberry
(*Ilex verticillata*)



Silky dogwood
(*Cornus amomum*)



Red-osier
dogwood
(*Cornus sericea*)



Brown pith



White pith

Bush honeysuckle
(*Diervilla lonicera*)

Appressed
lateral buds

Decurrent
ridge on
twig

Fly honeysuckle
(*Lonicera
canadensis*)

Diverging
lateral buds

Questions?

