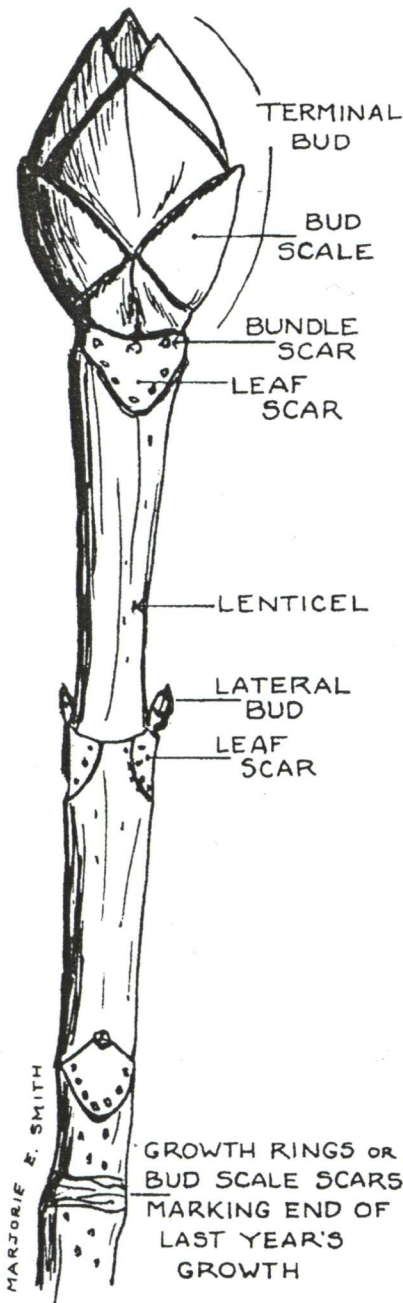


HOW TO BE A TWIG DETECTIVE

HORSE CHESTNUT TWIG



Have you explored the miracle of buds? Observing eyes quickly find them, large and small, on bushes and trees in a variety of sizes, shapes, and colors. To identify buds it is important to notice their arrangement on the twig. Are they in pairs or **opposite** each other? A few trees have their buds so arranged — maple, ash, horse chestnut, and dogwood are native eastern ones. Most buds are **alternate**, appearing first on one side of the twig, then the other: elm, oak, birch, etc. Below the bud look for a **leaf scar**, left when the leaf fell off in autumn. It differs for each kind of tree. In the leaf scar are tiny dots or **bundle scars** which are the ends of veins that transported food and water between leaf and twig. These tiny dots may form a pattern, and even resemble a face in walnut and butternut.

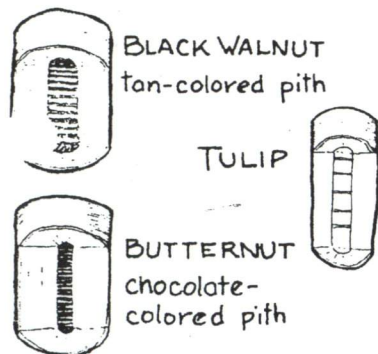
Buds are usually protected by several scales. Willow is an exception and has a single, cap-like scale that covers the bud. This is easily seen in the pussy willow. Can you find the **terminal bud** of a twig when it has one? It is the largest bud at the very end, as in the maple. Buds along the sides of the twig are called **lateral buds**. Usually the larger buds contain flowers, or leaves and flowers, while the small ones are leaf buds. Open a large bud and look for these things.

When the terminal bud is formed, that ends growth for the season. Some trees do not have terminal buds. In these cases the twig keeps growing until food supply falls off. The twig then dies back to the last lateral bud, which becomes a pseudo- (false) terminal bud with a small round scar (different from the leaf scars) at its base where the branch died back and fell off. These buds are usually set at an angle (examples: linden, elm and sycamore).

Do you have little raised dots here and there along your twig? They are **lenticels** that allow oxygen into the branch (see "Word of the Month"). The dark lines on white birch bark are the lenticels.

A few inches from the tip of your twig you may discover several lines or rings close together. These **growth rings** were left when the bud scales of last year's terminal bud fell off. They show last year's growth or how much the twig grew in one year. Now look for the next ring further down. That marked the end of the twig two years ago. Starting at the tip of the twig, count the growth rings to get the age of the twig. Be a twig detective. Marjorie E. Smith

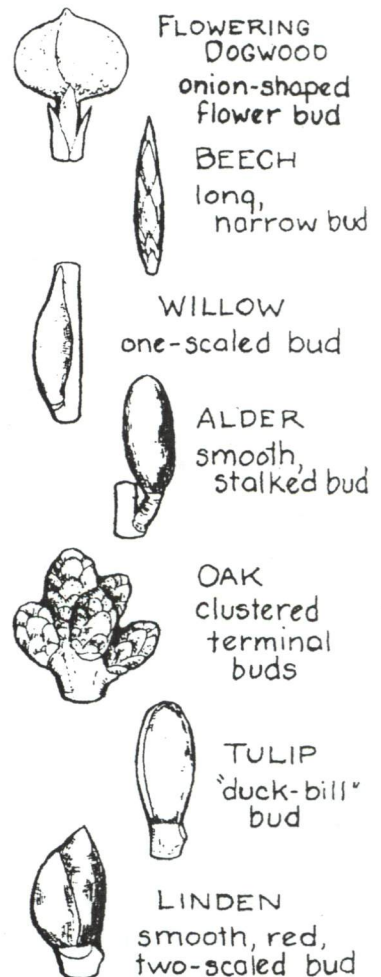
SOME TWIGS WITH "CHAMBERED" PITH



SOME DISTINCTIVE LEAF SCARS



SOME DISTINCTIVE BUDS



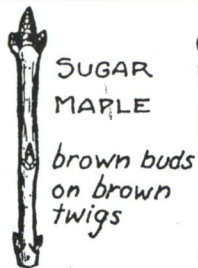
Small drawings by May T. Watts. Accompanying text adapted from her "WINTER TWIGS," a MORTON ARBORETUM BULLETIN.

SOME CLUES FOR TWIG DETECTION

Massachusetts Audubon Society
South Lincoln, Massachusetts

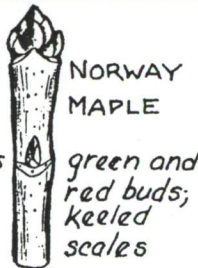
TREES WITH OPPOSITE BRANCHING

BUDS 1. Smooth buds; crescent-shaped leaf scars with 3 bundle scars



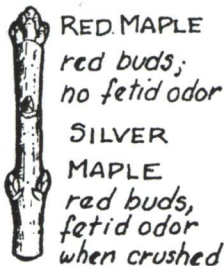
SUGAR MAPLE

brown buds on brown twigs



NORWAY MAPLE

green and red buds; keeled scales

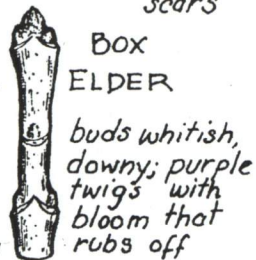


RED MAPLE

red buds; no fetid odor

SILVER MAPLE

red buds, fetid odor when crushed



BOX ELDER

buds whitish, downy; purple twigs with bloom that rubs off

2. Rough, dry buds



THE ASHES

bundle scars forming crescent

3. Large terminal bud



HORSE CHESTNUT

buds sticky

4. Onion-shaped flower bud



FLOWERING DOGWOOD

5. Often 3 buds at a node



CATALPA

TREES WITH ALTERNATE BRANCHING

BUDS 1. Single scale



WILLOW

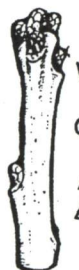
hood-like scale

2. Clustered terminal buds



BLACK OAK GROUP

sharp-pointed buds



WHITE OAK GROUP

blunt buds

3. Large end bud with loose dark outer scales



SHAGBARK HICKORY

brownish twigs with light-colored lenticels

4. Flattened, yellowish buds



BITTERNUT HICKORY

granular, mustard-yellow buds



WITCH-HAZEL

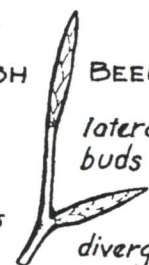
tawny, stalked, naked buds

5. Long, narrow buds



SHADBUSH

scales fringed with hairs



BEECH

lateral buds divergent

TWIGS 1. Thick twig, thick pith



TREE OF HEAVEN



STAGHORN SUMAC

leaf scar almost encircles bud

2. Line encircling twig at each node



TULIP

"duck-bill" terminal bud



SYCAMORE

leaf scar encircles bud

3. Knob-like twigs



GINKGO

twigs peeling in silky fibres

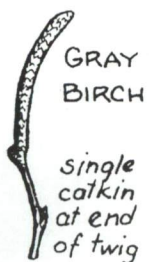
4. Green twigs



SASSAFRAS

only one bundle scar

CATKINS in winter



GRAY BIRCH

single catkin at end of twig



YELLOW BIRCH

dark, peeling bark

WHITE BIRCH

white, peeling bark



SPECKLED ALDER

mahogany-colored catkins

THORNS



HONEY LOCUST

minute winter buds; zig-zag twig



BLACK LOCUST

paired prickles; minute winter buds



HAWTHORN

round, red buds

BUNDLE-SCAR U-shaped; chambered pith



BLACK WALNUT

dull gray, with blunt terminal bud



BUTTERNUT

yellow-brown with elongated terminal bud