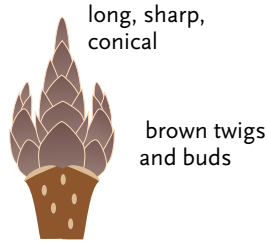


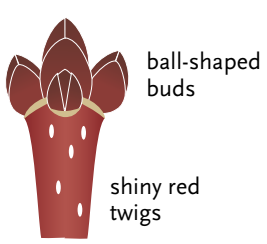
OPPOSITE BUDS

SUGAR MAPLE,  
*Acer saccharum*



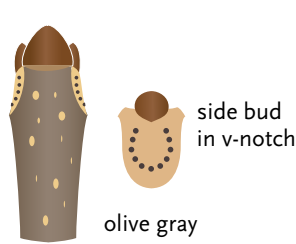
Common, woods, thickets, hedgerows, fields, roadsides.

RED MAPLE,  
*Acer rubrum*



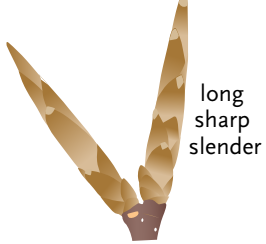
Common, woods, thickets, swamps, shores. Silver maple, *Acer saccharinum*, is browner but not safely distinguishable.

WHITE ASH,  
*Fraxinus americana*



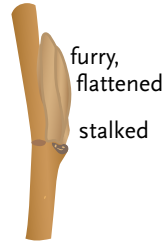
Common in upland woods. Twigs are never hairy.

BEECH,  
*Fagus grandifolia*



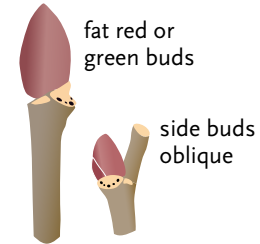
Common, especially in primary hardwood forests, low to moderate elevations.

WITCH HAZEL,  
*Hamamelis virginiana*



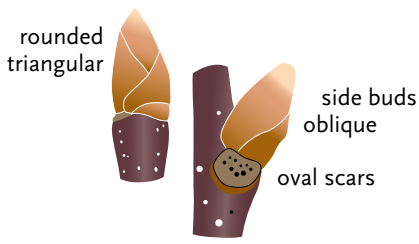
Common shrub or small tree of deciduous forests, swamps, and river shores at low elevations.

BASSWOOD,  
*Tilia americana*



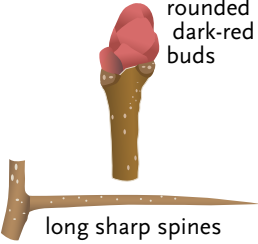
Common in moist, fertile upland and rivershore forests.

CHESTNUT,  
*Castanea dentata*



Formerly common in oak woods; reduced by the chestnut blight and rare or occasional from N.Y. east.

HAWTHORNS,  
*Crataegus spp.*

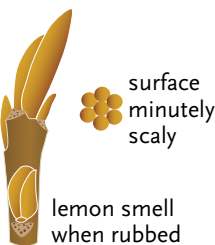


Common in fields, hedgerows and young woods; species not distinguishable in winter.

ALTERNATE BUDS, DISTINCTIVE SHAPES

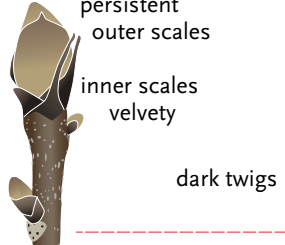
ALTERNATE BUDS, WALNUT FAMILY

BITTERNUT HICKORY,  
*Carya cordiformis*



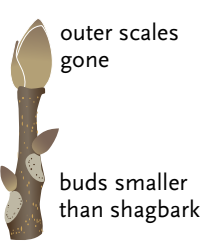
Common in fertile hardwood forests, especially with red oak and maple, in southern parts of the NFR.

SHAGBARK HICKORY,  
*Carya ovata*



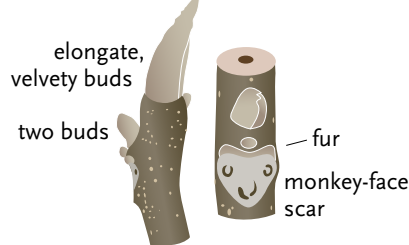
Common in hardwood forests with red and white oaks, often on fertile sites, in southern parts of the NFR.

PIGNET HICKORY,  
*Carya glabra*



Occasional in dry sandy or rocky oak forests, near the southern edge of the NFR.

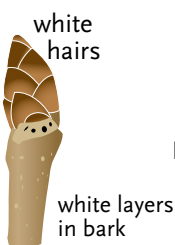
BUTTERNUT,  
*Juglans cinerea*



Formerly common in fertile hardwoods, now much reduced by a fungus disease.

ALTERNATE BUDS, ELM GROUP

AMERICAN ELM,  
*Ulmus americana*



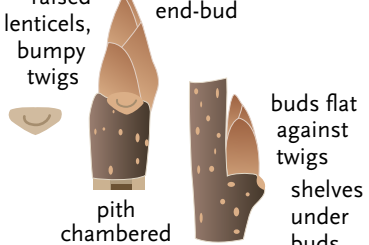
Common, river shores, floodplain swamps, fertile upland woods, successional habitats.

SLIPPERY ELM,  
*Ulmus rubra*



Occasional, rich woods, river shores, rocky calcareous hills, mostly in southern half of the NFR.

HACKBERRY,  
*Celtis laevigata*



Frequent in southern parts of NFR, river banks, limy talus slopes, fertile rocky woods.

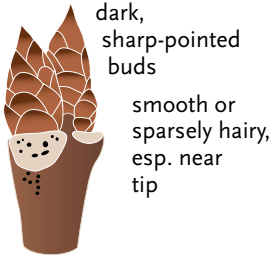
RED MULBERRY,  
*Morus rubra*



Shrub or small tree, rare on fertile rocky slopes and in floodplain forests near the southern edge of the NFR.

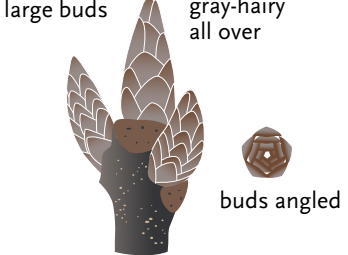
ALTERNATE BUDS, OAKS

RED OAK,  
*Quercus rubra*



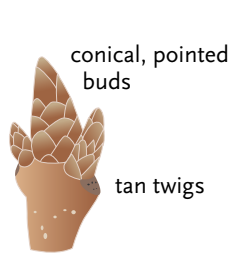
Common in hardwood forests on moderately fertile soils, dropping out where soils are cold, wet, or acid.

BLACK OAK,  
*Quercus velutina*



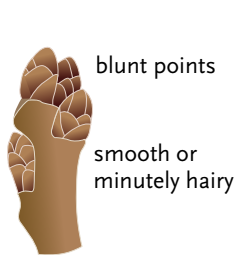
Common on dry sandy or rocky soils at the southern edge of the NFR.

CHESTNUT OAK,  
*Quercus montana*



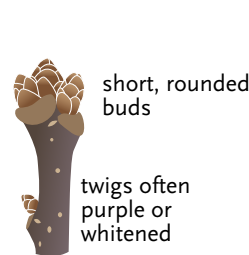
An Appalachian species, frequent on dry rocky hills in the southern parts of the NFR from N.Y. east.

YELLOW OAK,  
*Quercus muehlenbergii*



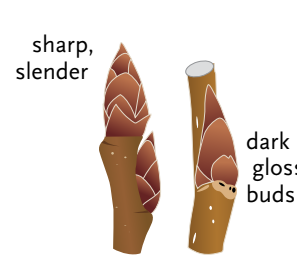
Uncommon species of dry calcareous ledges and fertile soils; southern edge of NFR only.

WHITE OAK,  
*Quercus alba*



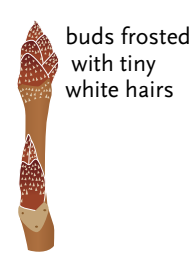
Common in dry hardwood forests on both sandy and rocky soils, southern half of the NFR.

QUAKING ASPEN,  
*Populus tremuloides*



Common, esp. northward, in many settings: young woods, forest gaps, barrens, wetlands, mountain slopes.

BIG-TOOTHED ASPEN,  
*Populus grandidentata*



Common, fields, fertile woods, sand plains, savannahs; less common in the boreal than quaking aspen.

The ASPENS, BIRCHES AND RELATIVES, CHERRIES, and SHADS all have relatively slender, usually sharp-pointed buds. The aspens have the lowest scale centered over the leaf scar. The birch family has rounded triangular scars and false end buds. The cherries smell like cherries and have true end buds. And the shads have sharp, slender, often curved buds and very slender, rose-like scars.

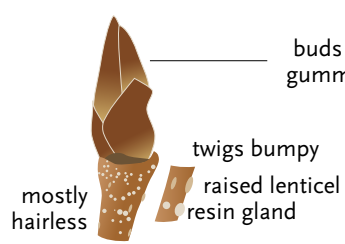
FAMILY

triangular or oval leaf scars

aborted tip false end buds

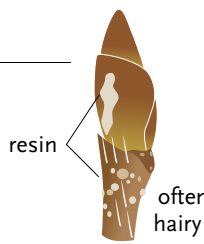
ALTERNATE BUDS, BIRCH

GRAY BIRCH,  
*Betula populifolia*



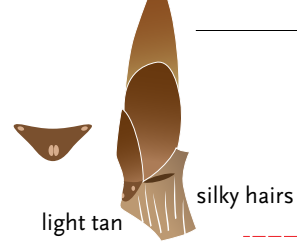
Common, old fields, wetlands, young woods, mostly at low elevations, Appalachians and N.Y. east.

PAPER BIRCH,  
*Betula papyrifera*



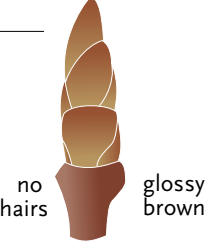
Common, cold upland and mountain woods, often mixed with conifers, also krumholz, alpine areas.

YELLOW BIRCH,  
*Betula alleghaniensis*



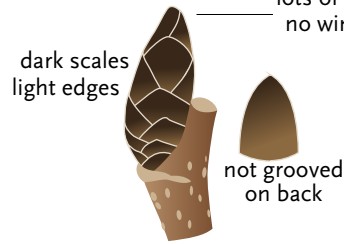
Common, upland woods, often mixed with conifers; cold swamps, boreal forest.

BLACK BIRCH,  
*Betula lenta*



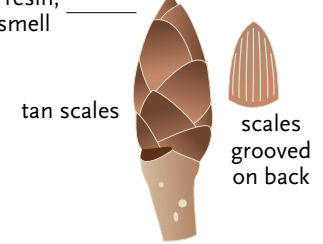
Common, successional valley woods in oak zone, rocky ridges; Appalachians and N.Y. east.

MUSCLEWOOD,  
*Carpinus caroliniana*



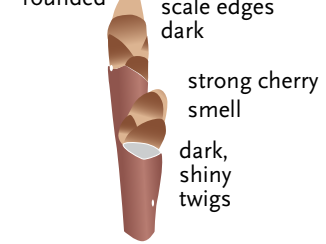
Common, with hardwoods on stream banks and moist successional woods; not in boreal forest.

HOP HORNBEAM,  
*Ostrya virginiana*



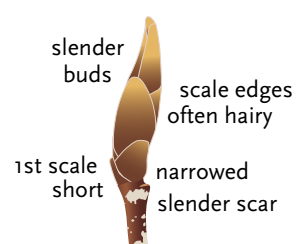
Common, fertile hardwood stands, rocky ridges with oak and pine, low and moderate elevations.

BLACK CHERRY,  
*Prunus serotina*



Common in hedgerows and young woods, and with older hardwoods on moist fertile soils.

SHADBUSHES,  
*Amelanchier arborea, canadensis, & laevis*



Common in fertile or sandy woods at low elevations; species not distinguishable in winter.

ALTERNATE BUDS, ROSE FAMILY





OPPOSITE BUDS

sharp point  
warm brown twigs

Sugar maple  
*Acer saccharum*

red buds and twigs

Red maple  
*Acer rubrum*

bud in notch

White ash  
*Fraxinus americana*

ALTERNATE BUDS

long, sharp

Beech  
*Fagus grandifolia*

stalked, flattened, furry

Witch hazel  
*Hamamelis virginiana*

red or green  
fat rounded

Basswood  
*Tilia americana*

rounded triangular  
oval scars

Chestnut  
*Castanea dentata*

low, smooth, rounded  
long thorns on branches

Hwthorn  
*Crataegus spp.*

scaly yellow  
lemon smell

Bitternut hickory  
*Carya cordiformis*

large buds  
dark outer scales

Shagbark hickory  
*Carya ovata*

smaller buds  
outer scales fall

Pignut hickory  
*Carya glabra*

monkey face, hairy eyebrows

Butternut  
*Juglans cinerea*

CLUSTERED BUDS AT TIP: OAKS

large, sharp  
hairs near tip

Red oak  
*Quercus rubra*

dense white hairs

Black oak  
*Quercus velutina*

slender, yellow-tan

Chestnut oak  
*Quercus montana*

short, rounded  
tan

Yellow oak  
*Quercus muehlenbergia*

whitened twigs

White oak  
*Quercus alba*

SCALES IN TWO ROWS

white hairs  
half-round scars, 3 bundles

American elm  
*Ulmus americana*

black buds, copper hairs

Slippery elm  
*Ulmus rubra*

buds flattened against twigs

Hackberry  
*Celtis laevigata*

large, round scars, many bundles

Red mulberry  
*Morus rubra*

dark shining buds

Quaking aspen  
*Populus tremuloides*

frosted, buds

Big-toothed aspen  
*Populus grandidentata*

ALTERNATE BUDS

bumpy twigs

Gray birch  
*Betula populifolia*

hairy twigs

Paper birch  
*Betula papyrifera*

narrowed at base

Shadbushes,  
*Amelanchier spp.*

sharp pointed buds  
wintergreen smell

Yellow birch  
*Betula alleghaniensis*

short shoots

Black birch  
*Betula lenta*

CHERRY SMELL

brown edges to scales

Black cherry  
*Prunus serotina*

tan twigs & buds  
washboard grooves on scales

Hop hornbeam  
*Ostrya virginiana*

dark twigs & buds  
scales with white edges

Musclewood  
*Carpinus caroliniana*

ALTERNATE BUDS

bumpy twigs

Gray birch  
*Betula populifolia*

hairy twigs

Paper birch  
*Betula papyrifera*

narrowed at base

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washboard grooves on scales

Hop hornbeam  
*Ostrya virginiana*

dark twigs & buds  
scales with white edges

Musclewood  
*Carpinus caroliniana*

Deciduous trees and, verso, shrubs and vines, of open dry rocky woods and glades in the Northern Forest region. A few species that barely enter the NFR were omitted deliberately and a few others because I ran out of room. Most are winter identifiable, the shadbushes, hawthorns, lowbush blueberries, and grapes being obvious exceptions. But not always identifiable by buds alone. Look at the whole plant, use bark and branch pattern as well as buds, and dig in the snow for old leaves if you have too. And be patient and don't think too much. Nature's language is visual, and she yields her secrets on her own terms.

NFA

WILDLIFE  
CONSERVATION  
SOCIETY

Jerry Jenkins, 2014

A product of the Northern Forest Atlas Project and the Wildlife Conservation Society Adirondack Program

Jerry Jenkins, 2014

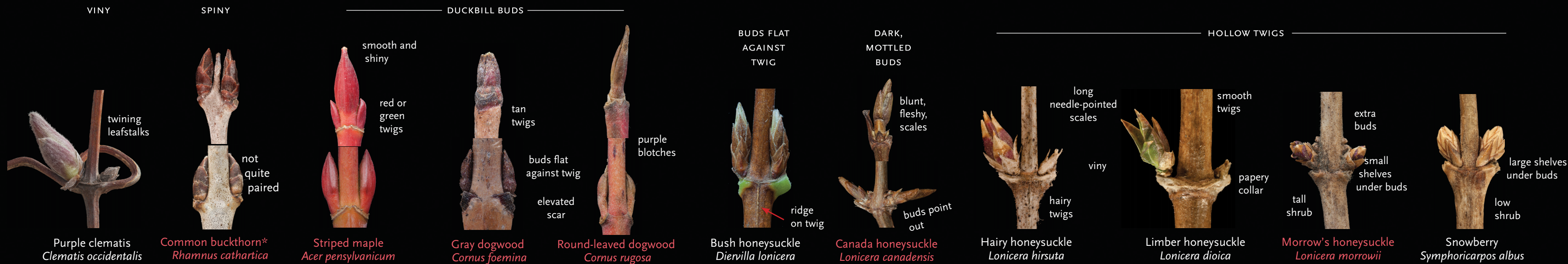
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NFA

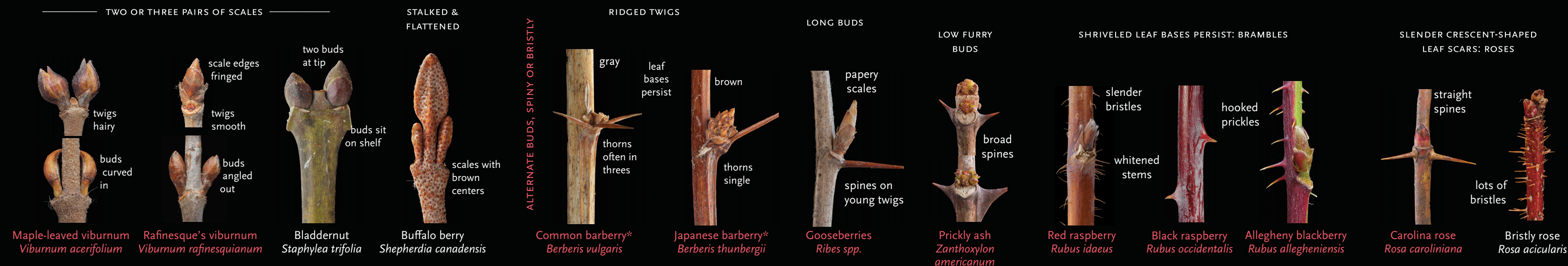
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OPPOSITE BUDS



OPPOSITE BUDS



ALTERNATE BUDS, MORE ROSES

