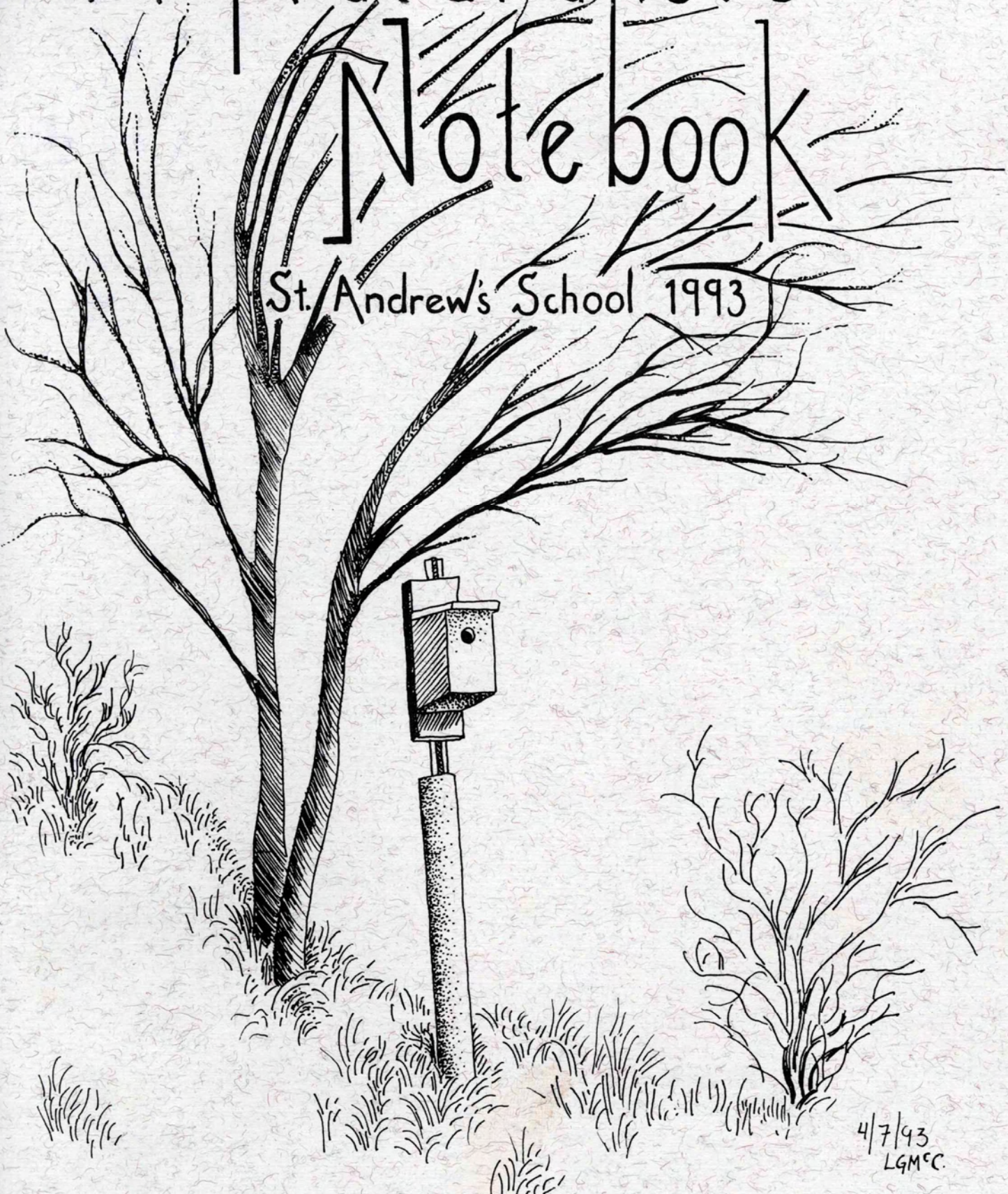
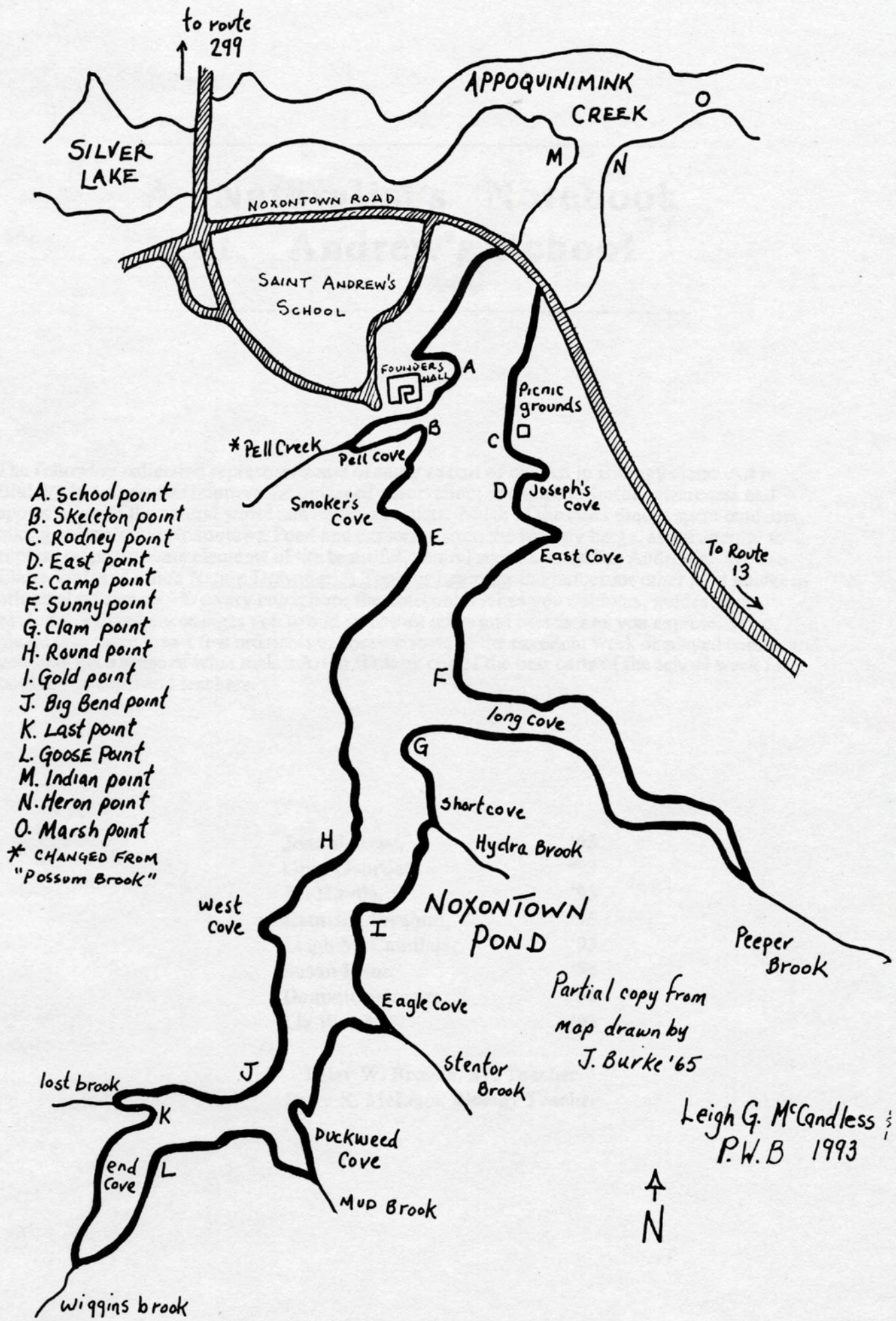


A Naturalist's Notebook

St. Andrew's School 1993



4/7/93
LGMCC



- A. School point
- B. Skeleton point
- C. Rodney point
- D. East point
- E. Camp point
- F. Sunny point
- G. Clam point
- H. Round point
- I. Gold point
- J. Big Bend point
- K. Last point
- L. Goose Point
- M. Indian point
- N. Heron point
- O. Marsh point
- * CHANGED FROM "Possum Brook"

Partial copy from
map drawn by
J. Burke '65

Leigh G. McCandless
P.W.B 1993



A Naturalist's Notebook

St. Andrew's School

The following collection represents hours of study as part of our Art in Biology class. Art in Biology is designed to improve the power of observation; we hope to further awareness and appreciation of the natural world and ability as artists. Much of the class time is spent outdoors, hiking trails around Noxontown Pond and exploring from the biology barge, as we attempt to capture on paper some elements of the beautiful, natural scene around St. Andrew's. We use Claire Walker Leslie's Nature Drawing: A Tool for Learning and numerous other field guides as principal references. We very much hope the notebook invites you outdoors, guides your explorations, and encourages you to add your own notes and sketches as you explore. Also, please take more than a few moments to observe some of the excellent work displayed herein, and you may get a sense of what makes Art in Biology one of the best parts of the school week for both the students and teachers.

Jenn Bourne,	'93
Greg Gourdet,	'93
Jill Hindle,	'93
Camellia Ibrahim,	'95
Leigh McCandless,	'93
Susan Prior,	'94
Dominic Seiterle,	'94
Liz Wood,	'93

Peter W. Brooke, Art Teacher
Peter K. McLean, Biology Teacher

scaly bracts -
slightly shiny

cottony
stem

rounded heads
about 1/4 in. long;
tiny tubular disk
flowers w/ bristles

pointed, narrow leaves:
1-4 in. long
whitish and woolly
underneath

Habitat:
dry clearings/fields
edges of woods
1-2 ft. tall

fragrant flower clusters
branched;

scaly bracts tinged yellow
in bud form until they
seed

in bloom,
fully opened



(enlarged)



SWEET EVERLASTING; CATFOOT

Gnaphalium obtusifolium

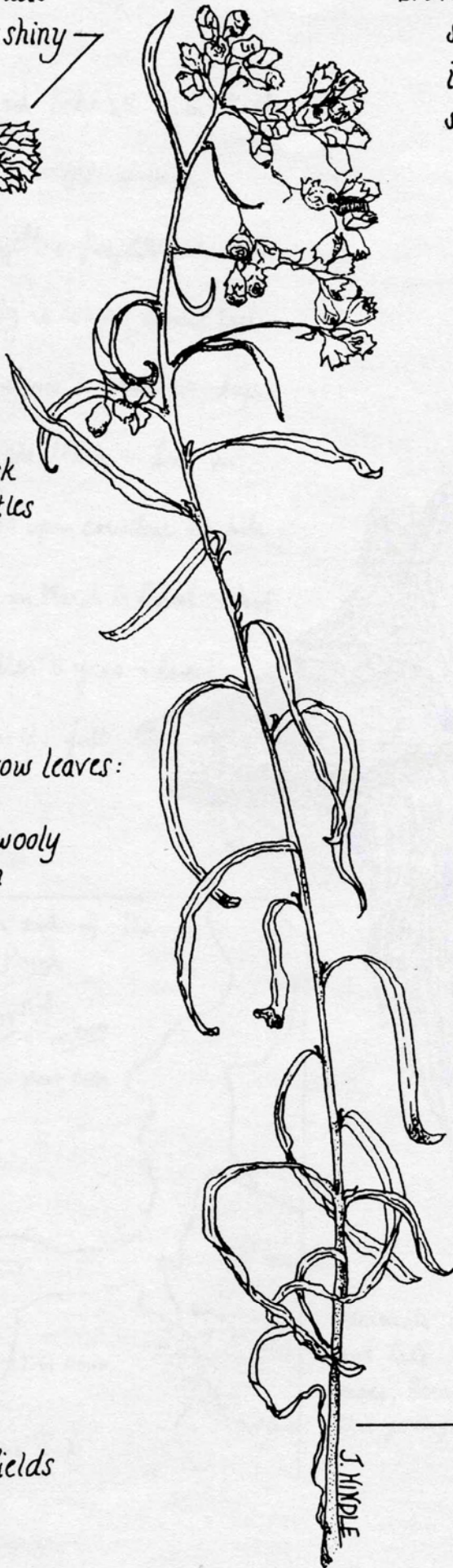
COMPOSITE/DAISY FAMILY

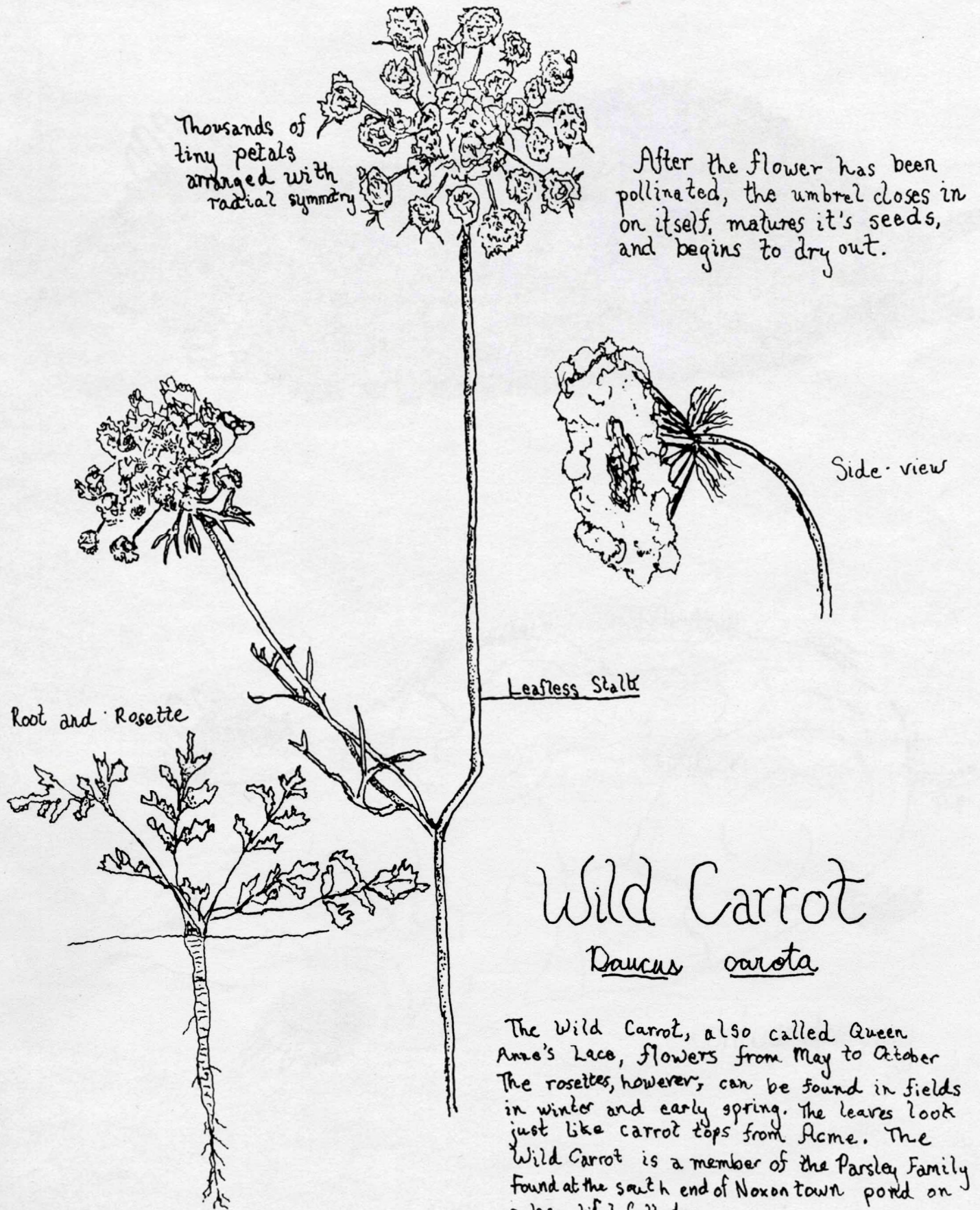
Flowers August-November

Gnaphalium -
derived from Greek
name graphallon
meaning "tuft of wood"

erect,
cottony stem

1/2 INCH





Wild Carrot

Daucus carota

The Wild Carrot, also called Queen Anne's Lace, flowers from May to October. The rosettes, however, can be found in fields in winter and early spring. The leaves look just like carrot tops from Rome. The Wild Carrot is a member of the Parsley Family found at the south end of Noxon town pond on a beautiful fall day.

Lore -

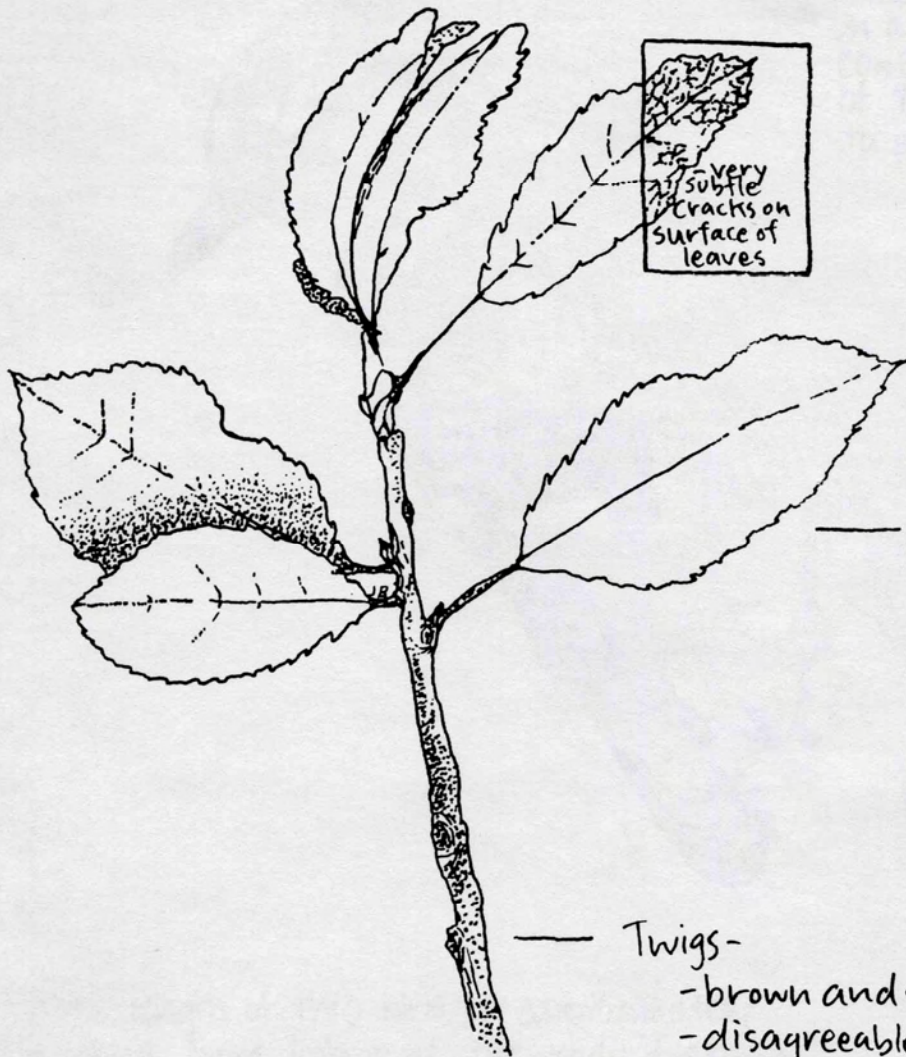
-the chokecherry gets its name from its acidic taste, despite this reputation habitants of Quebec (some regions) have bred and cultivated chokecherries with edible and even tasty fruit.

Common Chokecherry (Prunus virginiana)

Found: behind Mein's, 10/28/92,
slightly overcast, mild climate

Fruit-

- acidic tasting
- large pits
- dark, juicy flesh
- $\frac{1}{4}$ - $\frac{1}{3}$ inch thick
- 6 - 10 mm diameter



Leaves-

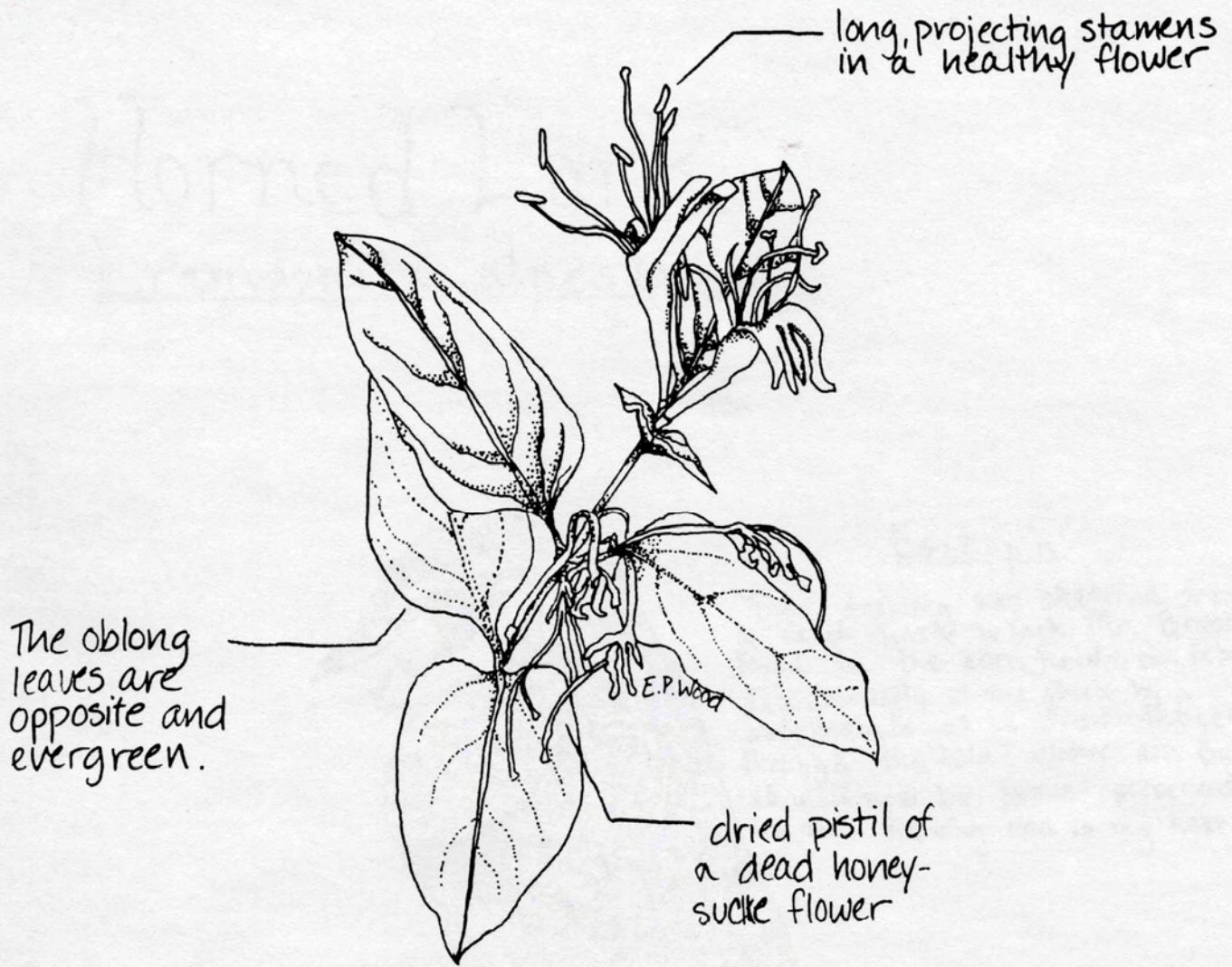
- except for central, the veins are faintly defined
- elliptical in shape
- very fine teeth

Twigs-

- brown and slender
- disagreeable odor
- bitter tasting

About the tree

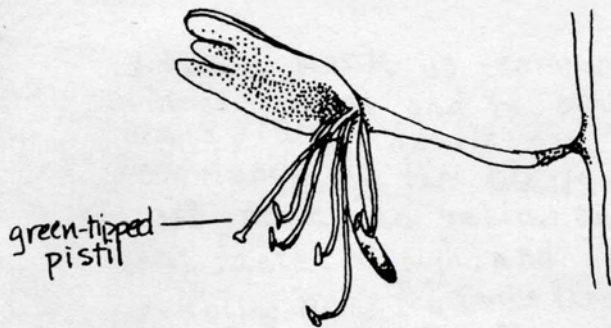
- varies in size; from 2'-3' shrubs to 20'-30' high trees
- hard wood
- brown or gray bark, smooth or scaly



The oblong leaves are opposite and evergreen.

long, projecting stamens in a healthy flower

dried pistil of a dead honey-suckle flower



The Honeysuckle flower varies in color from white to buffy yellow. The long, curved, yellow-tipped stamens are characteristic of the Honey-suckle.

- This Honeysuckle vine was found on the edge of some woods.

- The Honeysuckle flower produces a black berry.

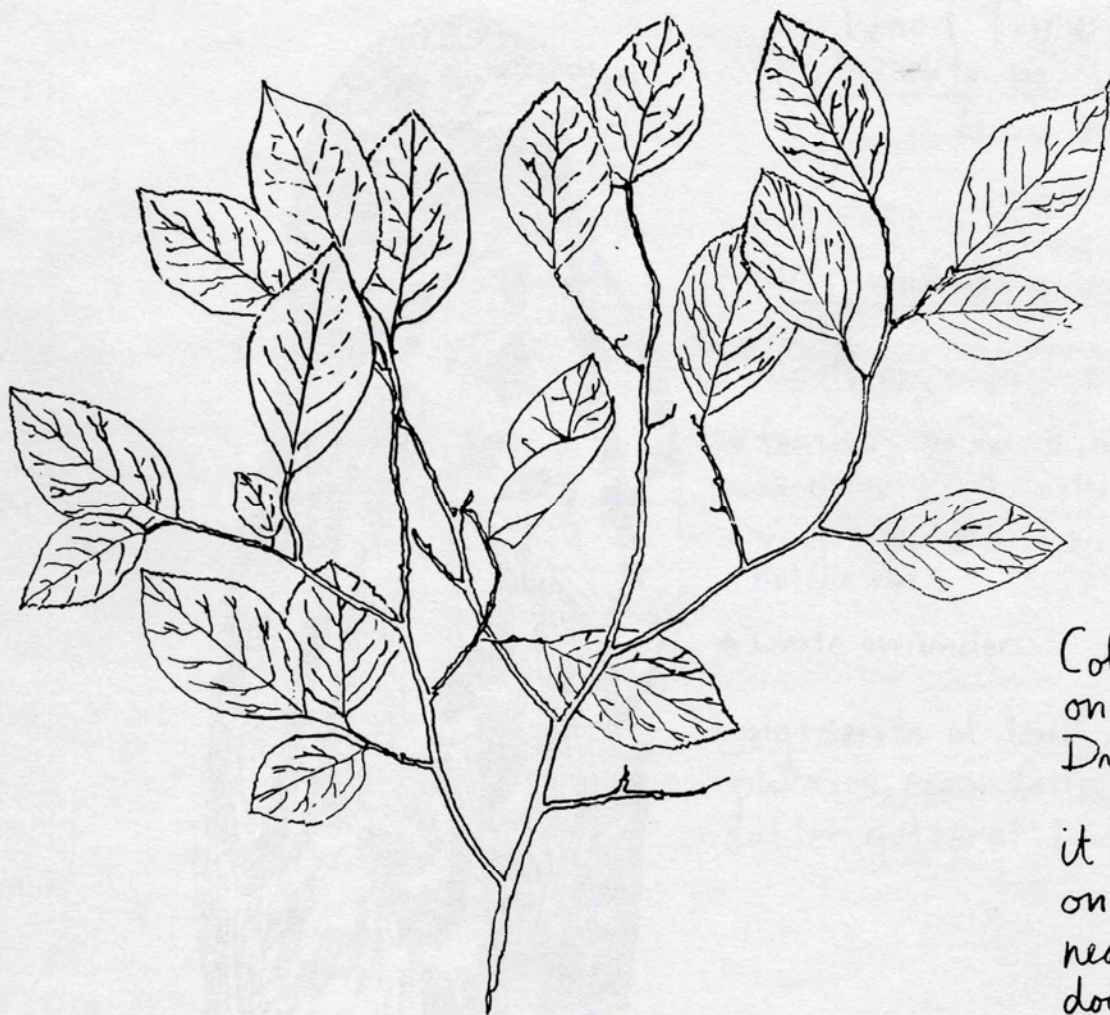
Japanese Honeysuckle
(Lonicera japonica)

Alien

Honeysuckle Family

Plant Kingdom

Flowers April - July



Collected and pressed
on Oct. 21, 1992
Drawn Nov. 4

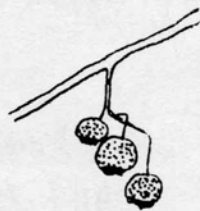
it was found growing
on a wooded bank
near the starting
docks



the plant is heavy blooming
with greenish flowers



fruit is blue
and sour



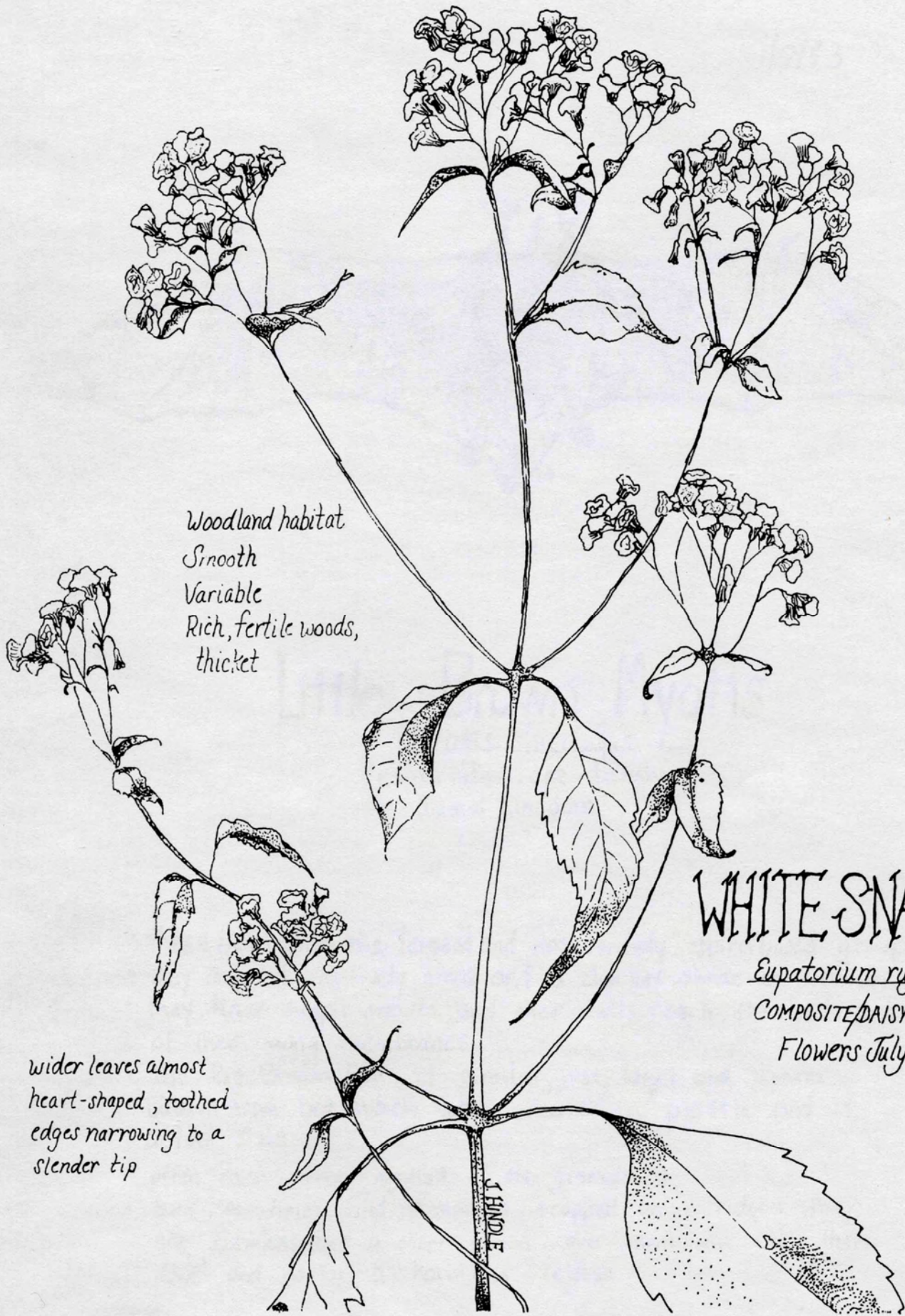
alternate leaves
with an
orange / mauve
color



the small drawings
were taken from
a book

Velvetleaf Blueberry
Vaccinium mystilloides

Velvetleaf is also called
Sourtop Blueberry



Woodland habitat
Smooth
Variable
Rich, fertile woods,
thicket

wider leaves almost
heart-shaped, toothed
edges narrowing to a
slender tip

WHITE SNAKEROOT

Eupatorium rugosum
COMPOSITE/DAISY FAMILY
Flowers July-Oct.



Crooked-Stemmed Aster

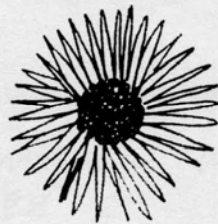
Aster prenanthoides

Daisy family

Plant Kingdom

flowers Aug.-Oct.

- Stem is smooth and zigzags
- leaves are smooth, opposite and grow where plant branches off, they also clasp the stem
- grows off wood edges, banks and wet thickets
- grows from 1 to 3 feet tall



35-45 lavender petals, center is yellow



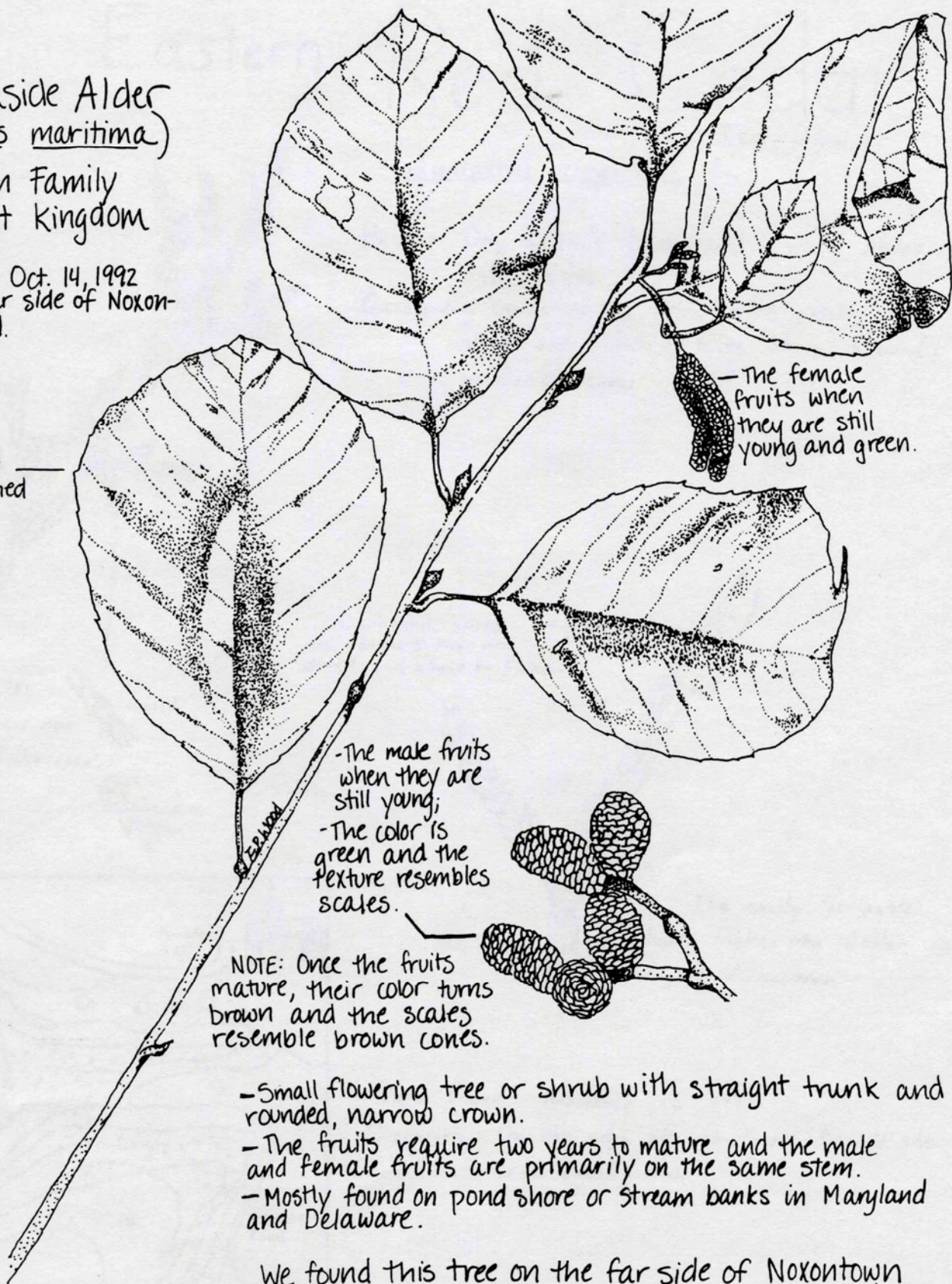
budding flower is yellow

Seaside Alder
(*Alnus maritima*)

Birch Family
Plant Kingdom

Found on Oct. 14, 1992
on the far side of Noxon-
town Pond.

Finely
saw-toothed
edges.



-The female
fruits when
they are still
young and green.

-The male fruits
when they are
still young;
-The color is
green and the
texture resembles
scales.

NOTE: Once the fruits
mature, their color turns
brown and the scales
resemble brown cones.

- Small flowering tree or shrub with straight trunk and rounded, narrow crown.
- The fruits require two years to mature and the male and female fruits are primarily on the same stem.
- Mostly found on pond shore or stream banks in Maryland and Delaware.

We found this tree on the far side of Noxontown pond on October 14, 1992. It was still sunny and clear out, and we were concentrating on drawing tree silhouettes. I was especially intrigued with the examples of both male and female fruits on the same branch of this tree.

Small White Aster (Aster vimineus)

Daisy Family

Flowers Aug.- Oct.

Found in Fields and
Meadows

2-5 ft. (60-150 cm)

Note smaller
leaflets in
axils.

"Aster" comes
from the Greek word for "star."
Throughout history, asters have
been associated with 'good.'*

September 30, 1993

Big Bend Cove

- On the boundary of the forest
and the fields.

Characteristics that decided
I identification included:

1. purple-tinged stem (smooth)
2. flowers are mostly
clustered along one side
of the widely diverging
branches

Flower head approx.
8mm wide

leaves on lower part of stem
are toothed.

* Because of their
connection with good, they
were placed around altars
and used to help heal
wounds by keeping
evil spirits away.

Turtlehead

Chelone glabra
Snapdragon Family
flowers July-Sept.

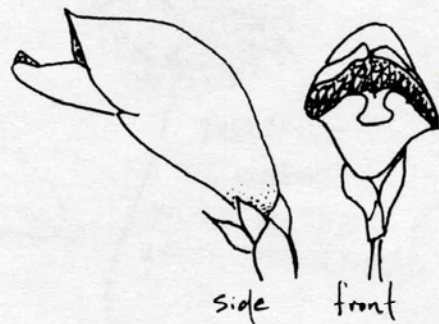
A wilted flower
is surrounded by
the dried stamens
of previous flowers.

leaves are
toothed and
paired.

As the Turtlehead
grows in wet environs,
I found two small
snails on this plant
as well as the
egg sac pictured
below.

flowers cluster in
groups of four

LGMCC

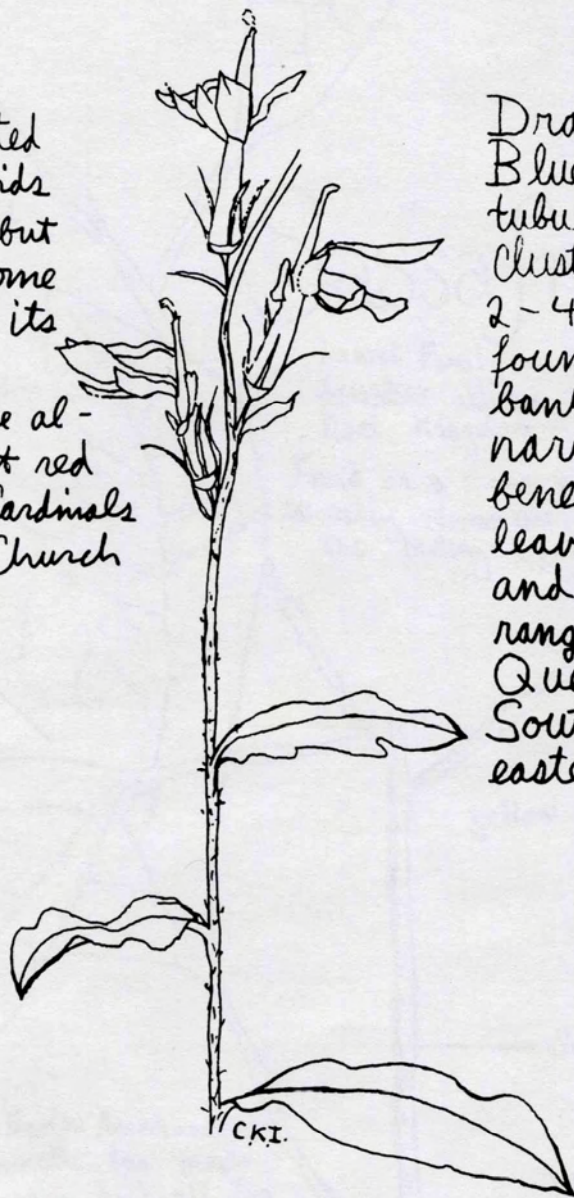


Cardinal Flower

Labelia cardinalis

flowers pollinated
by humming birds
common flower but
overpicking in some
areas has led to its
scarcity

It's common name al-
ludes to the bright red
robes worn by Cardinals
in the Catholic Church



Drawn on Sept. 24, 1992

Bluebell Family

tubular flowers in an elongated
cluster on an erect stalk

2-4 feet tall

found in wet places, stream
banks, swamps

narrow leaf-like bracts
beneath flowers

leaves = 6 in. long, alternate
and toothed

range: Southern Ontario and
Quebec to New Brunswick
South to Florida; west to
eastern Texas; north to Minn.

Dockmackie Arrow-wood

OR
MAPLE LEAVED VIBURNUM

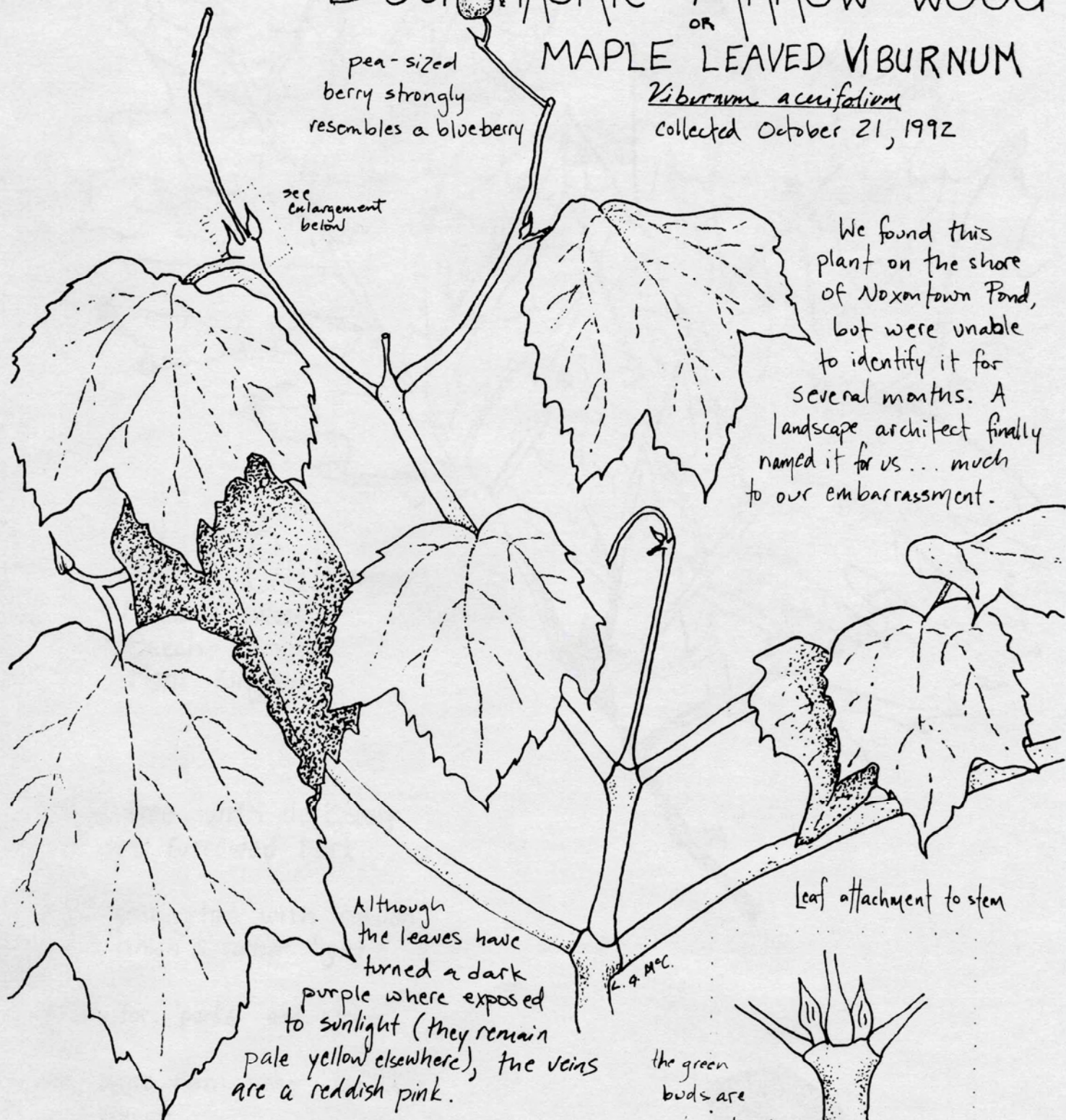
Viburnum acerifolium

collected October 21, 1992

pea-sized
berry strongly
resembles a blueberry

see
enlargement
below

We found this
plant on the shore
of Noxontown Pond,
but were unable
to identify it for
several months. A
landscape architect finally
named it for us... much
to our embarrassment.



Although
the leaves have
turned a dark
purple where exposed
to sunlight (they remain
pale yellow elsewhere), the veins
are a reddish pink.

Leaf attachment to stem

the green
buds are
striped with
purple.

A small woody bush, the most
obvious characteristic being the maple-like
leaf.

"... o.k, I've succumb to the urge, and plopped down in the grassy field. It smells of fall and clover, and someone's painted the Western sky a rich, deep blue. I think I'll close my book now and just enjoy things - like Pooh might if he were here... What's that flower over there?.... "

Sept. 30, 1992

Wild Potato Vine

Ipomoea pandurata
Morning-glory family

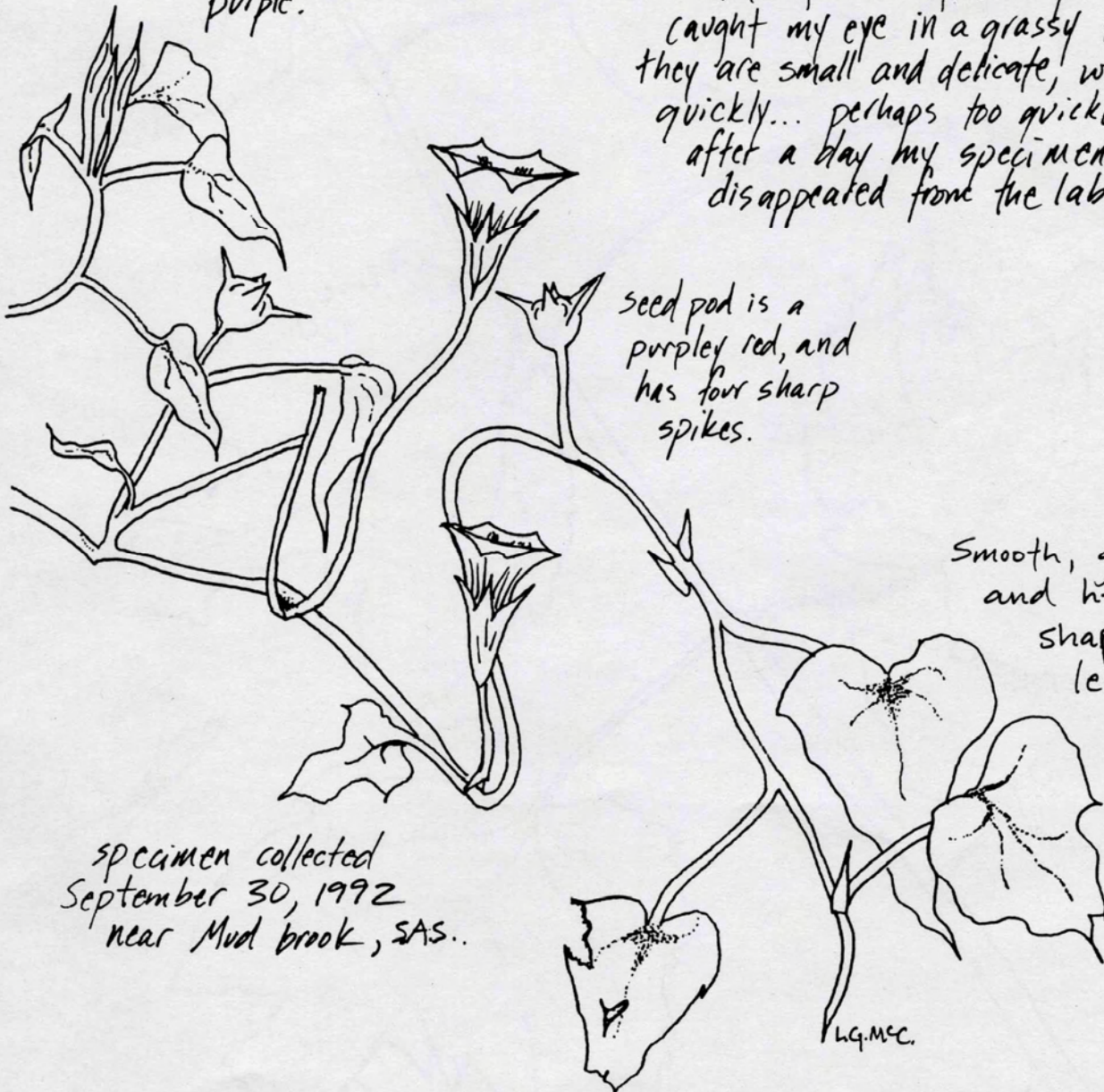
Green brds are long, slender, and tipped with purple.

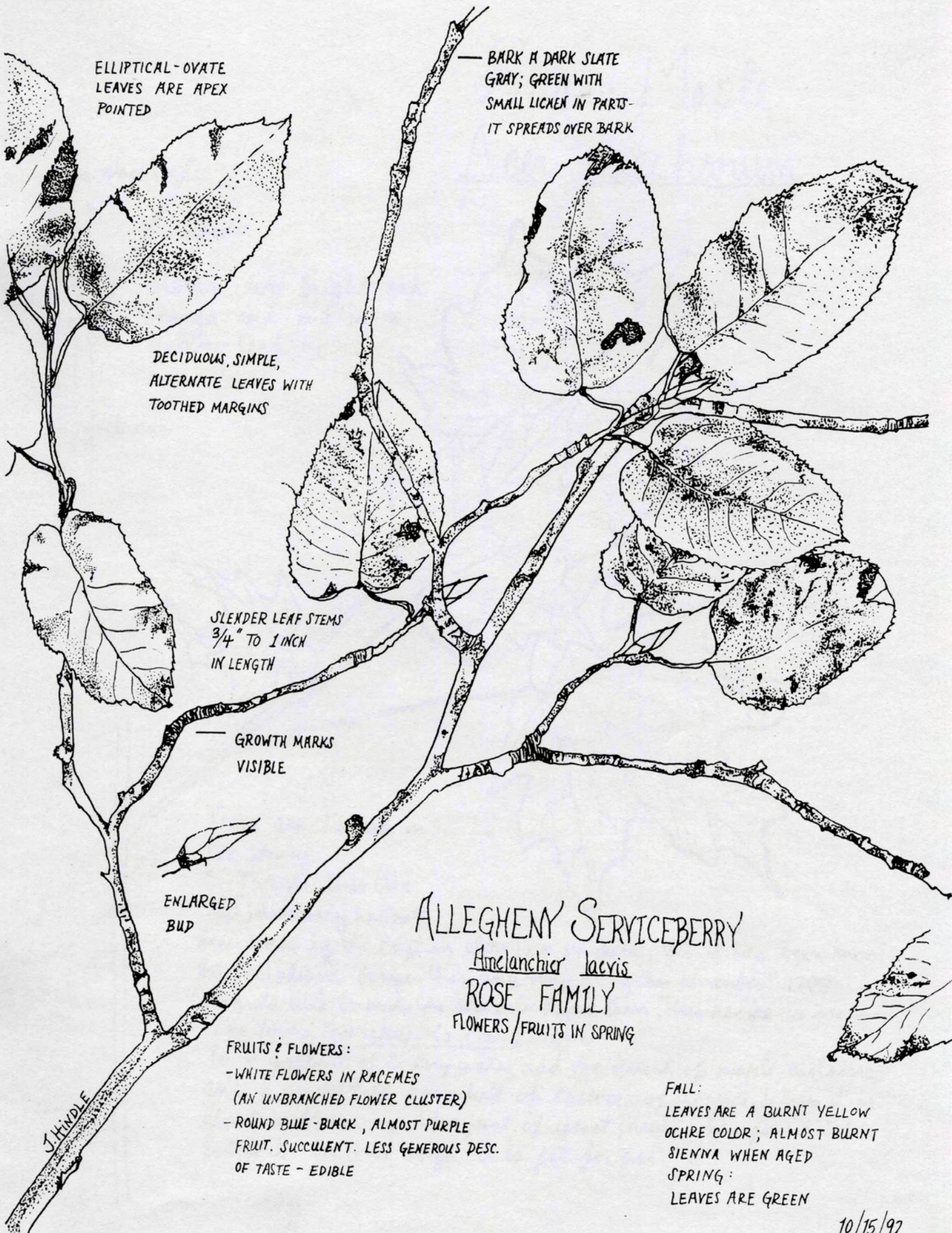
The white flowers of this plant caught my eye in a grassy field; they are small and delicate, wilting quickly... perhaps too quickly, as after a day my specimen had disappeared from the lab!

seed pod is a purple red, and has four sharp spikes.

Smooth, green and heart-shaped, the leaves are slightly glossy.

specimen collected
September 30, 1992
near Mud brook, SAS..





ELLIPTICAL-OVATE
LEAVES ARE APEX
POINTED

BARK A DARK SLATE
GRAY; GREEN WITH
SMALL LICHEN IN PARTS-
IT SPREADS OVER BARK

DECIDUOUS, SIMPLE,
ALTERNATE LEAVES WITH
TOOTHED MARGINS

SLENDER LEAF STEMS
3/4" TO 1 INCH
IN LENGTH

GROWTH MARKS
VISIBLE



ENLARGED
BUD

ALLEGHENY SERVICEBERRY

Amelanchier laevis

ROSE FAMILY

FLOWERS/FRUITS IN SPRING

FRUITS & FLOWERS:

- WHITE FLOWERS IN RACEMES
(AN UNBRANCHED FLOWER CLUSTER)
- ROUND BLUE-BLACK, ALMOST PURPLE
FRUIT. SUCCULENT. LESS GENEROUS DESC.
OF TASTE - EDIBLE

FALL:

LEAVES ARE A BURNT YELLOW
OCHRE COLOR; ALMOST BURNT
SIENNA WHEN AGED

SPRING:

LEAVES ARE GREEN

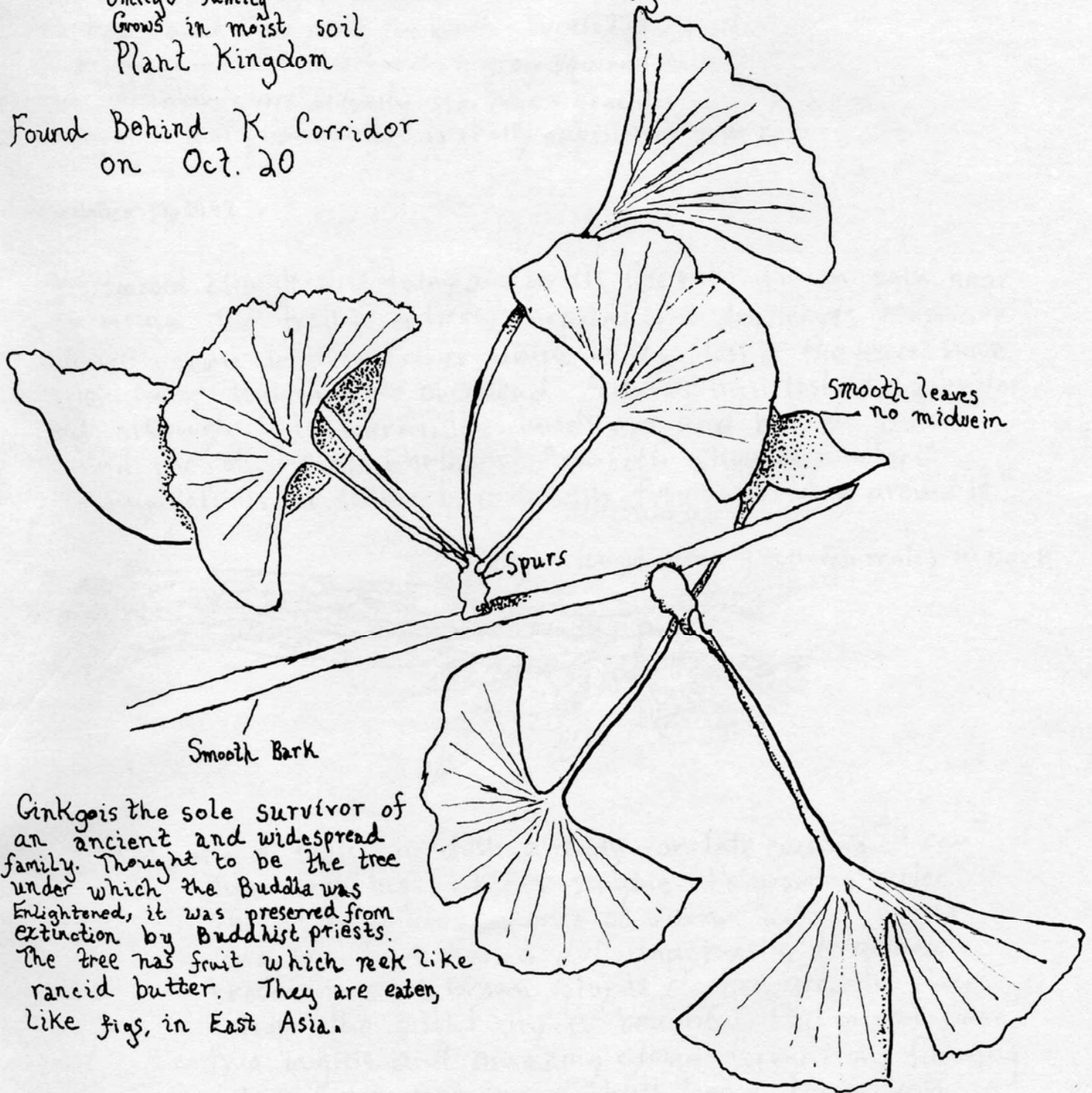
J. HINDLE

Ginkgo

Ginkgo biloba
Ginkgo Family
Grows in moist soil
Plant Kingdom

Found Behind K Corridor
on Oct. 20

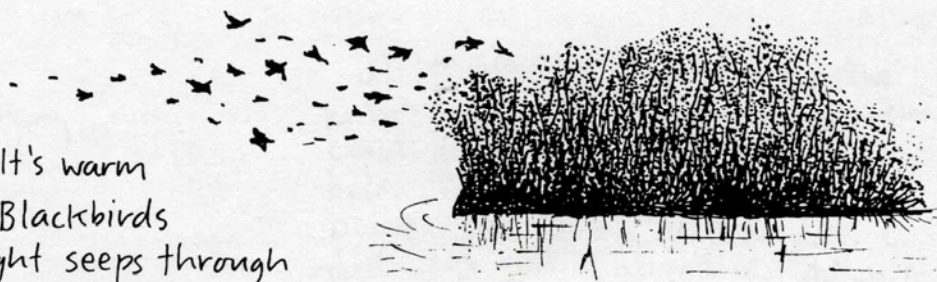
After studying Buddhism and the Enlightenment in Western Civilization class, I sat in the fallen leaves below the tree from which this branch was taken. Unfortunately, I did not get Enlightened. Oh, well, maybe next time.



Ginkgo is the sole survivor of an ancient and widespread family. Thought to be the tree under which the Buddha was Enlightened, it was preserved from extinction by Buddhist priests. The tree has fruit which reek like rancid butter. They are eaten, like figs, in East Asia.

October 21, 1992

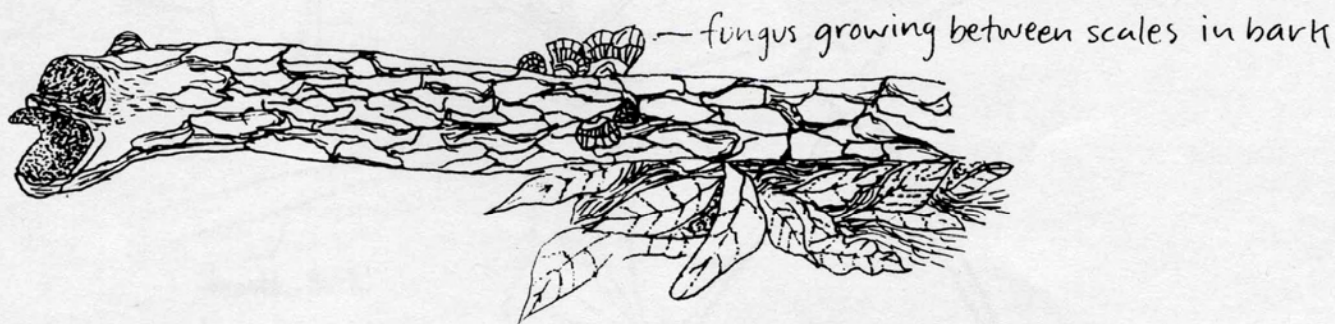
- First day in Art + Biology. It's warm (I'm wearing a T-shirt). Blackbirds dotting the sky as sunlight seeps through translucent blue grey of clouds.
- The red-leaved trees along the bank - Tupelo + dogwood.
- Blue jay, chickadee, nut hatch, + grey squirrel calls.
- The blackbirds are actually starlings + grackles.
- Change in leaf pigmentation is really exposure of true colors.



November 11, 1992

Not too cold climate-wise today and smells like rain. I'm on path near our house. The trail is entirely carpeted with dry leaves. Most are oak with some tulip and other simple leaves. Most of the leaves have fallen. Geese still migrate overhead. Autumn has lost its splendor and, although it is warm, the landscape and barren trees remind me of Gretel Ehrlich's "smooth skull of winter."

- To my left is a fallen branch with fungus growing around it.



3:10 pm - it feels like dusk already - or late evening. I can hear night bugs + birds singing. It's growing cooler. The leaves which were once so vibrant looking (not so long ago) have turned dull and mostly to golden brown or dark brown. Sky is darker grey in places. I hope the night sky is beautiful. Full moon past two nights and amazing cloud formations fanning out, encompassing moon. Will head back soon. Can't wait for nightfall. - I hope it rains hard.

Sugar Maple

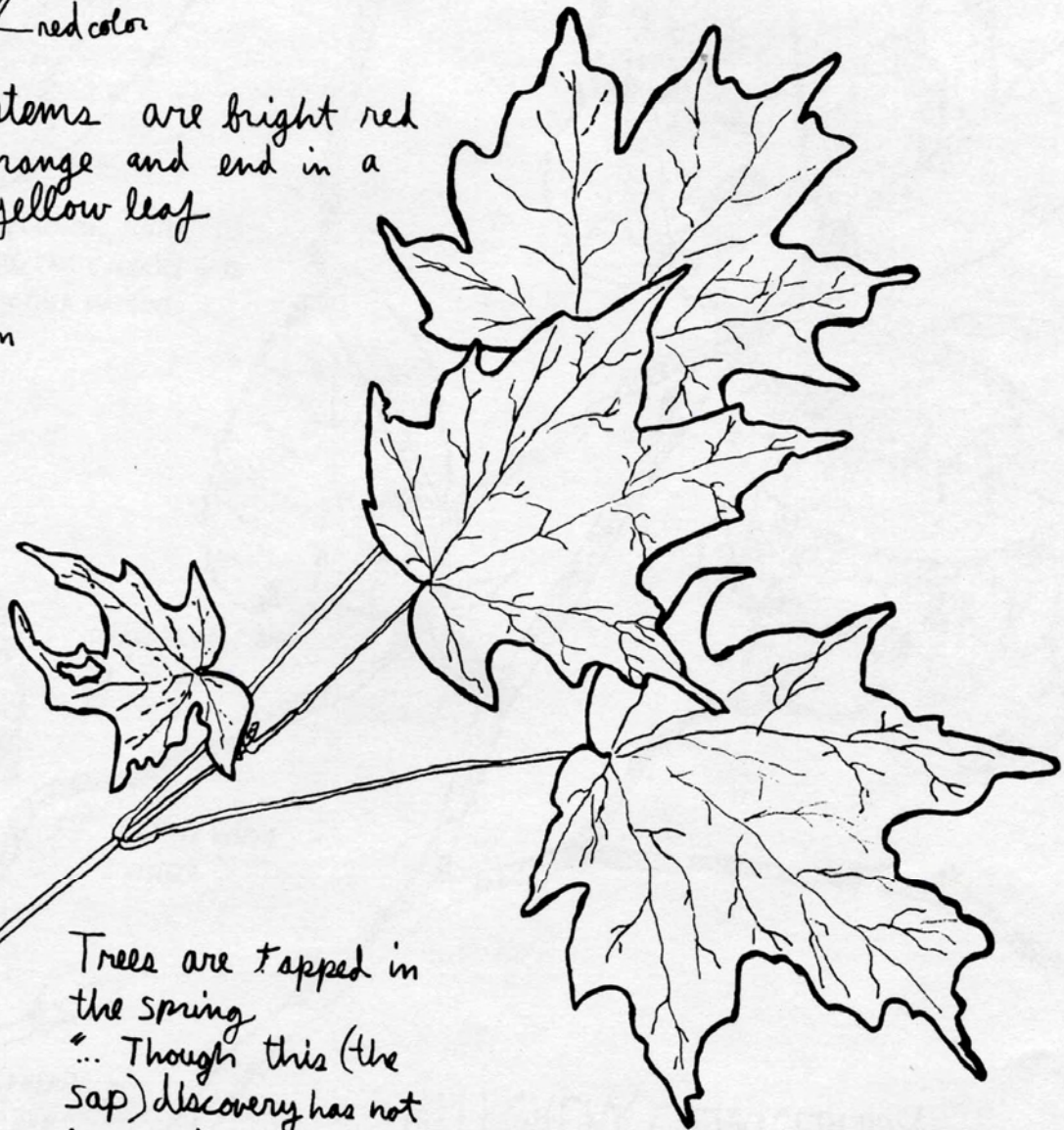
Acer saccharum

stems shoot
at a
right
angle

- red color

stems are bright red
orange and end in a
yellow leaf

- brown

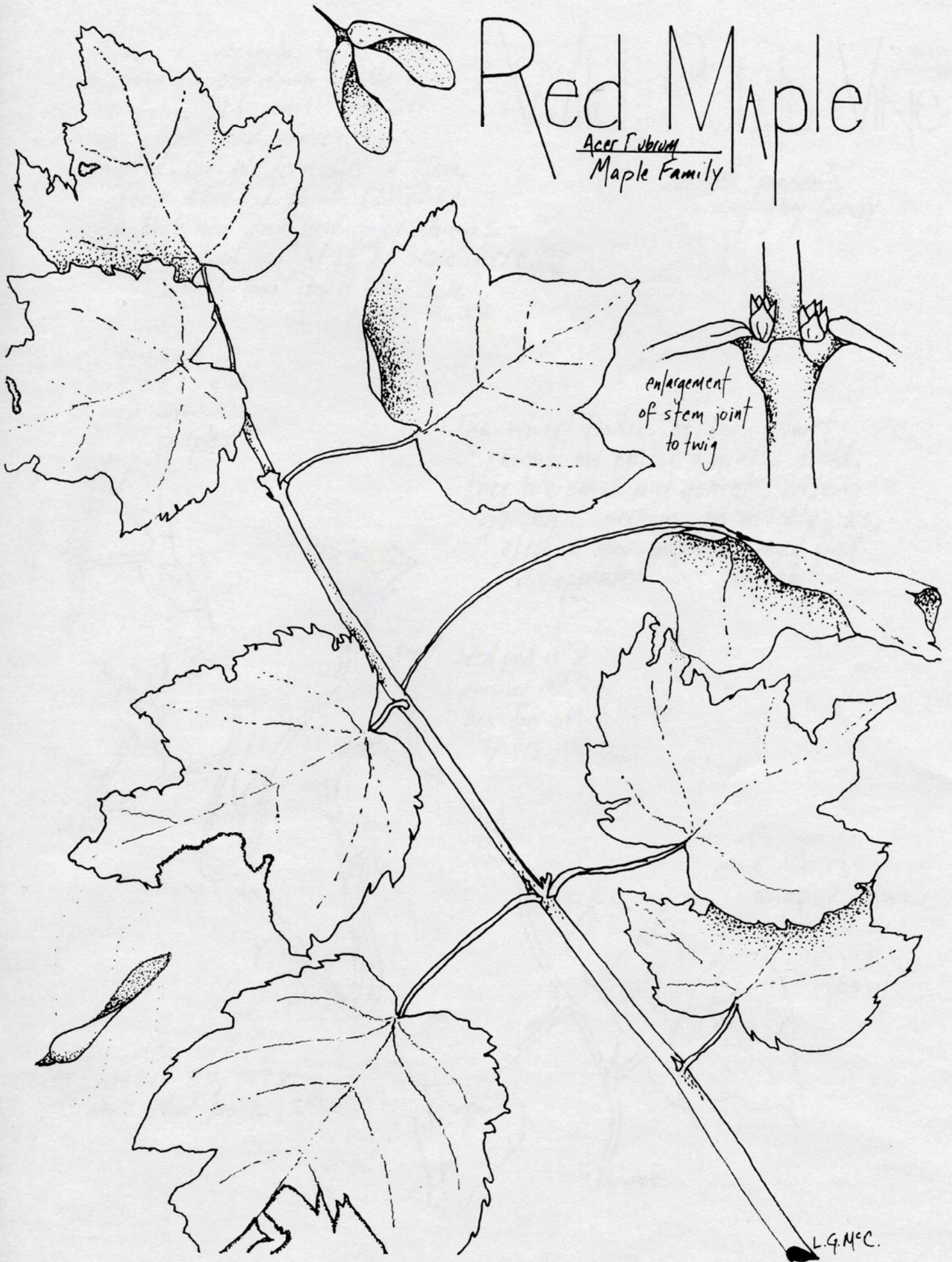


Trees are tapped in
the spring
"... Though this (the
sap) discovery has not
been made by the English above 12 or 14 years; yet it has been known
by the Indians longer than any now living can remember." 1705
Colonists used to make the sap into Maple Beer. This recipe is from
The Young Housekeeper's Friend 1846

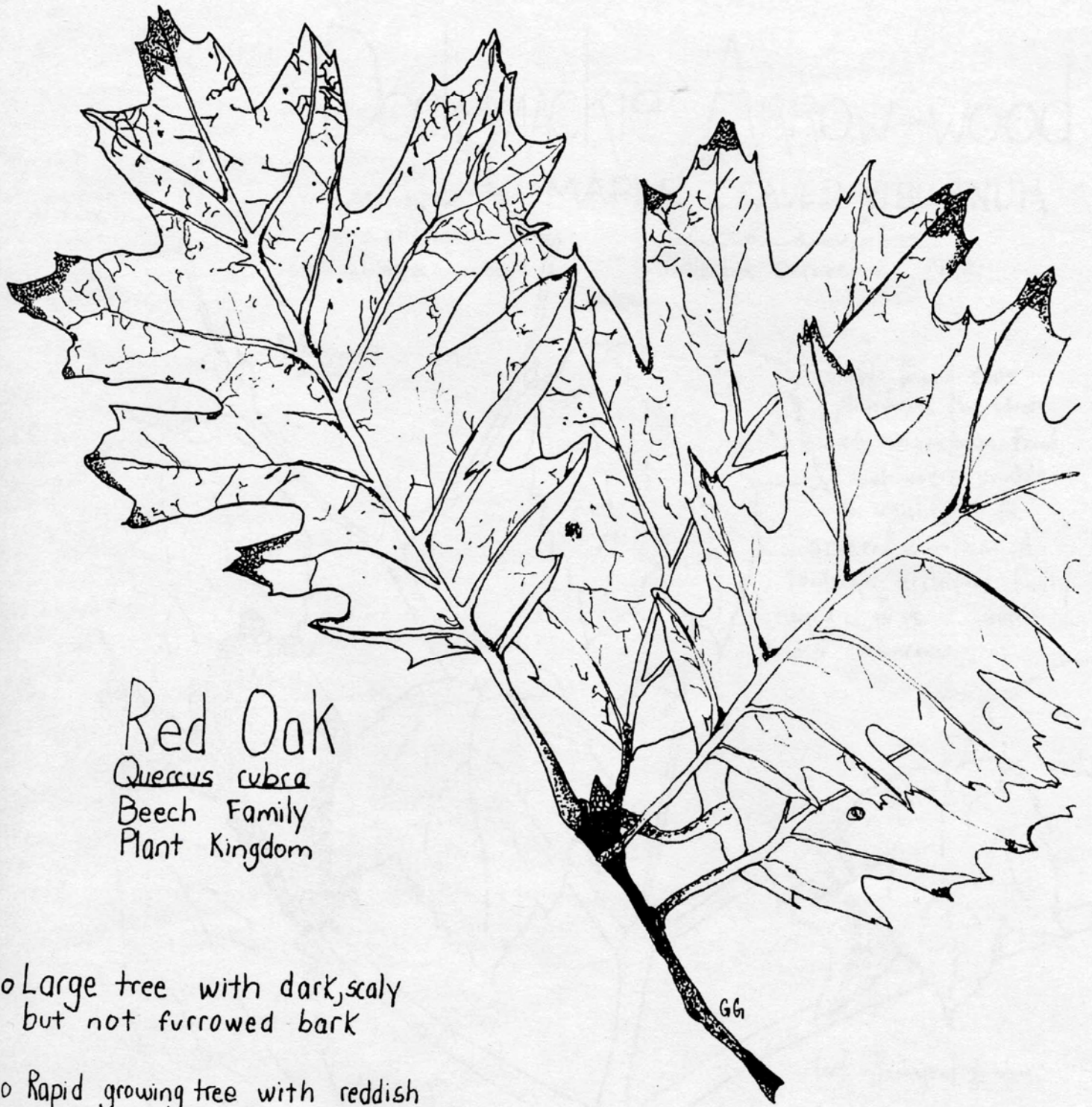
"To 4 gallons of boiling water, add one quart of maple molasses,
and a small table spoonfull of essence of spruce. When it is
about milk warm, add a pint of yeast; and when fermented,
bottle it. In three days it is fit for use."

Red Maple

Acer Rubrum
Maple Family



L.G.M.C.



Red Oak
Quercus rubra
Beech Family
Plant Kingdom

- o Large tree with dark, scaly but not furrowed bark
- o Rapid growing tree with reddish wood which is rather light
- o good for parks and streets
- o its leaves turn either brown or orange

its acorns are egg - shaped



- enlarged

"Against an Indian summer sky, a tree lifts up its hands and testifies to glory, the glory of a blue October day. Yellow or orange... The leaves of a sassafras prove that not all autumnal splendor is confined to Northern forests."

A Natural History of Trees (1991)

Sassafras

Laural Family
Sassafras albidum
 Plant Kingdom

Found on a sunny, warm day in early November, near the biology barge



Sassafras was used by North Americans as an herbal remedy; aromatic tea made from the roots served as a heal-all. The roots also were used as toothbrushes and flavorings. In 1977, sassafras was found to be carcinogenic.

STAR-SHAPED ALTERNATE LEAVES
5-7" wide, 5-7 DEEPLY CUT POINTED
LOBES W/ FINE-TOOTHED MARGINS
GREEN IN SPRING TURNING BRILLIANT
RED-AND-GOLD IN FALL

GROWS 18-20 FEET TALL
3-5 FEET IN DIAMETER

BARK GRAY-BROWNISH
COLOR; FURROWED ON
TRUNK -
MY TWIG HAD SMOOTH
GREENISH-BROWN BARK
FLECKED WITH BEIGE

USED FOR FURNITURE,
BUILDING, ETC.

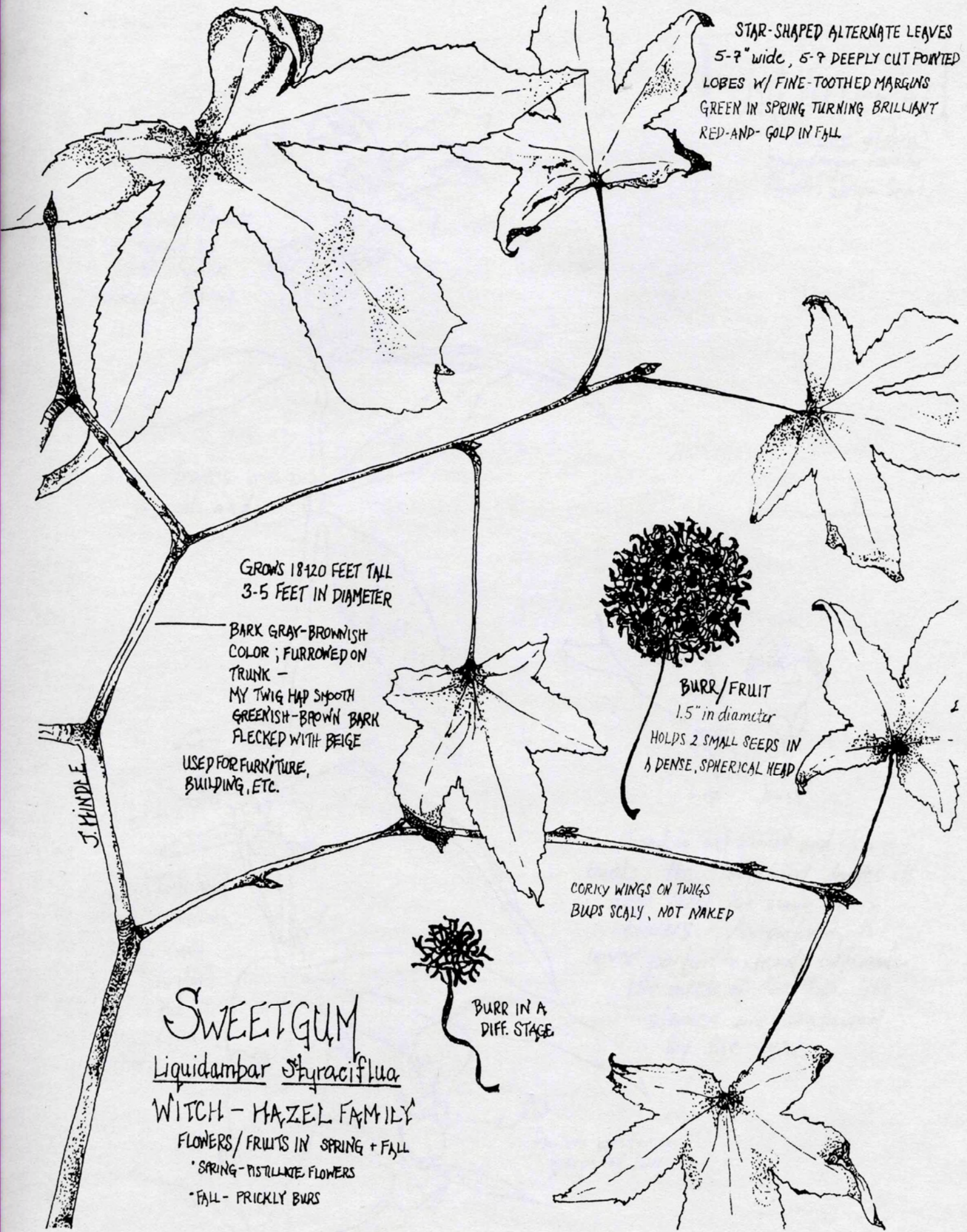
BURR/FRUIT
1.5" in diameter
HOLDS 2 SMALL SEEDS IN
A DENSE, SPHERICAL HEAD

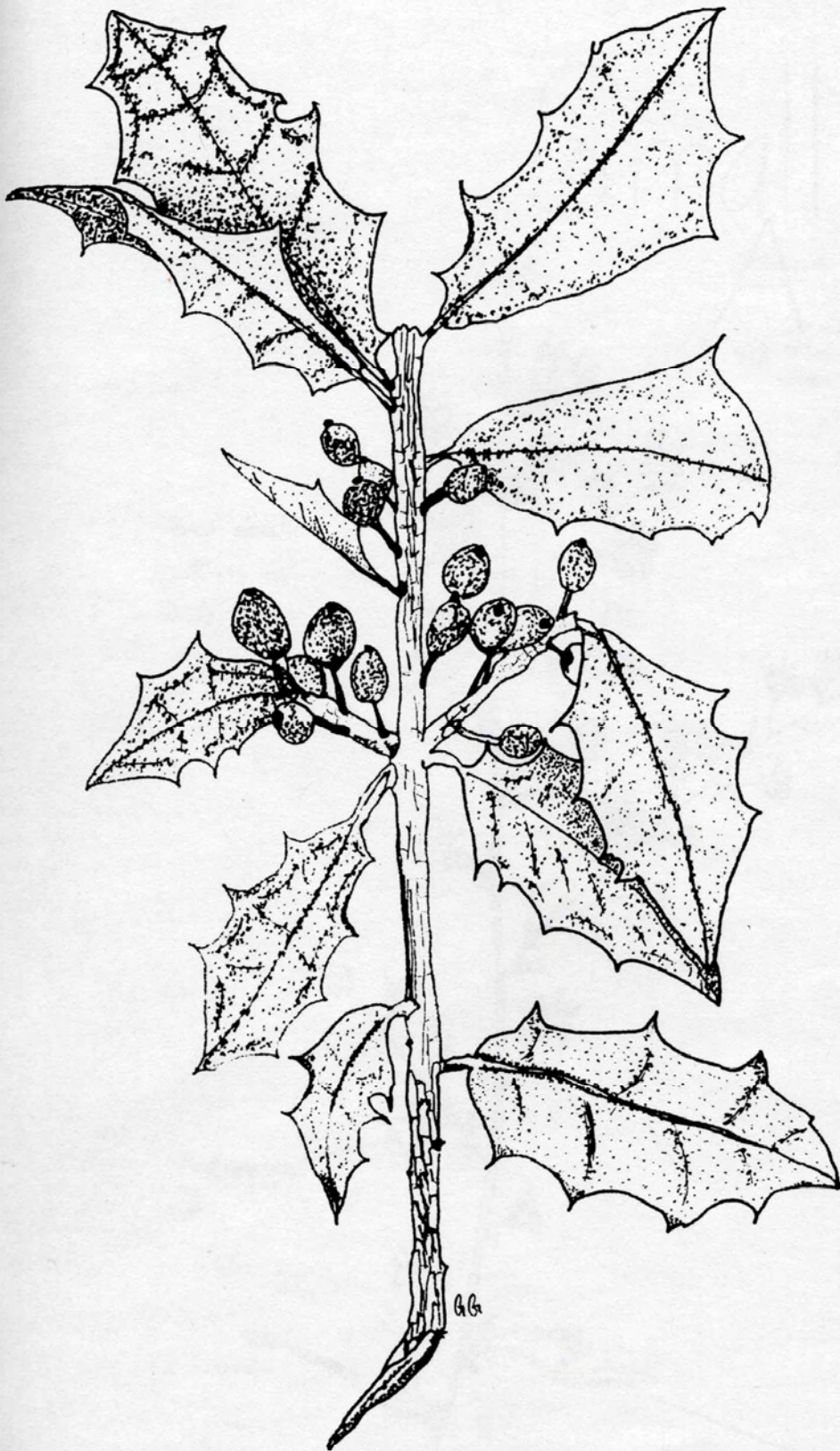
CORKY WINGS ON TWIGS
BUDS SCALY, NOT NAKED

BURR IN A
DIFF. STAGE

J. HINDLE

SWEETGUM
Liquidambar styraciflua
WITCH-HAZEL FAMILY
FLOWERS/FRUITS IN SPRING + FALL
* SPRING - PISTILLATE FLOWERS
* FALL - PRICKLY BURS





- Shrubs and trees of about 2 feet in diameter and 20 to 40 feet high
- leaves are alternate evergreen and have tiny points which come out they are pretty leathery
- bark is light grey and smooth
- the tree is slow-growing
- fruit is a round, red berry



American Holly

Ilex opaca
Holly Family
Plant Kingdom

- This is the Christmas Holly. This tree tends to be cut down often for its decorative uses. Its conservation has become a problem. Ways in which holly is picked is sometimes very dangerous to full holly trees.

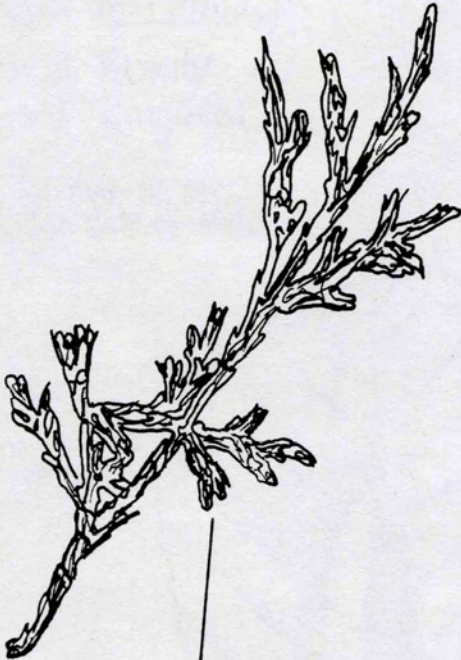
Eastern Red Cedar

- Red Juniper

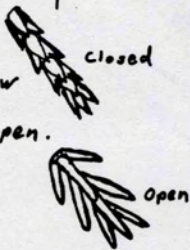
Juniperus virginiana L.

Habitat: Dry uplands (limestone) to flood plains and swamps.

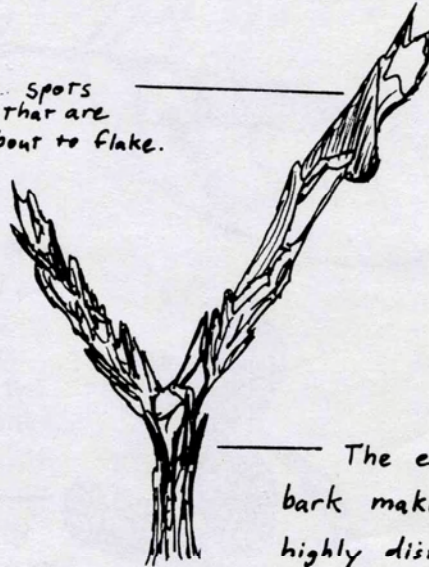
Outstanding Characteristics: Older bark quickly turns dark and begins to flake. Sharp, 3-sided, needlelike leaves.



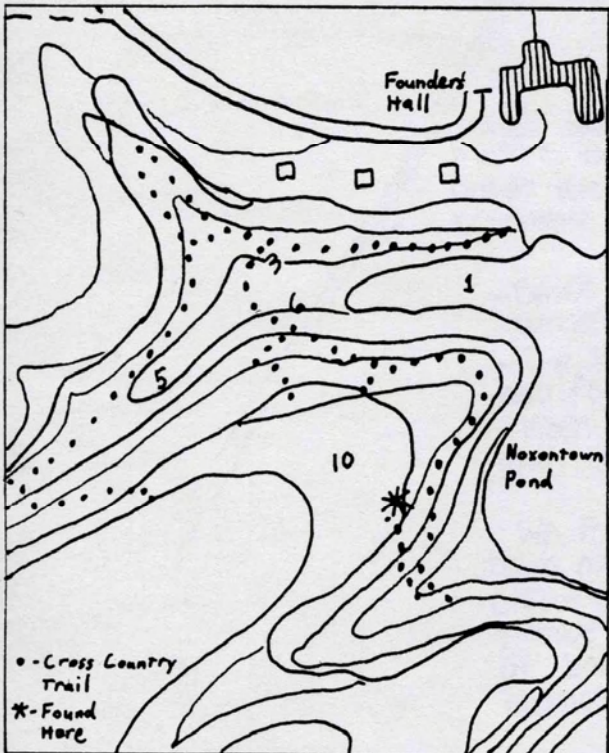
Old foliage is closed, whereas new foliage has scales open.



Darkened spots are leaflets that are dried and about to flake.



The easily 'stripable' bark makes the Cedar highly distinctive



Date found: November 12, 1992

Location: On the edge of the forest beside the cross-country trail.

Friday, February 5, 1993

It's a Friday, and too mucky to go outside. Thanks to Mr. Brooke our back-up activity is sketching birds who have died and been in frozen storage. How uplifting. I think it frustrates Mr. Brooke that I never fetch the Marsh Wren myself, but I am afraid its eyes will pop open or something. It's kind of hard to avoid the fact that it's dead, but you get kind of used to looking at it. Well. I guess I should stop overanalyzing and procrastinating, and draw.



Long-billed Marsh Wren

(Cistothorus palustris)

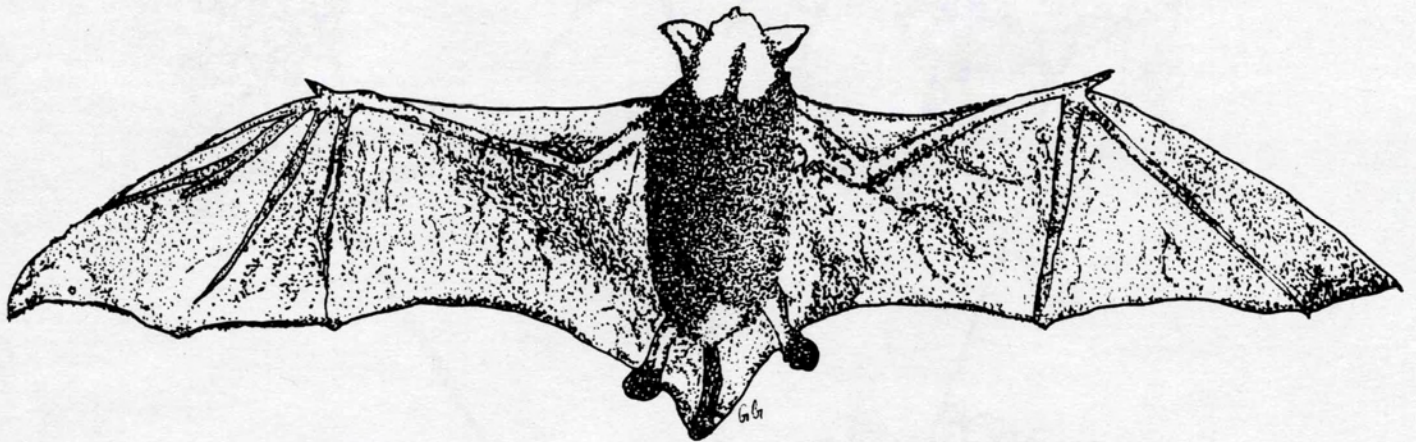
found off route 9, June 14, 1991

family: Troglodytidae

* Distinguishing Features

- dark feathers on crown, white spots behind head + shoulders
- tannish markings under wings
- white belly with faint tan highlights
- medium brown hue throughout wings with dark + light areas
- wings consist of 7-8 layers of feathers similar in color to those on the tail
- white stripe over each eye
- this specimen was approximately 3 inches in length
 - song is no more than a few musical rattles (varied pitch), preceded by a low buzz
 - feeds on aquatic insects such as dragonflies, snails, and caterpillars
 - bird inhabits marshes across the country, and parts of Canada + Mexico

1/8/93



Little Brown Myotis

Myotis lucifugus
Vespertilionidae family
Animal Kingdom

- these bats form the largest and most widely distributed group
- they are all relatively small and a darker shade of brown
- they have simple snouts and their tails reach the back ends of their wing membranes
- the Big Brown Bat is similar, just larger and lighter
- drawn from bat which was encased in plastic and is actual size
- often seen after nightfall at the grassdocks
- bats sometimes find themselves trapped on corridors - they are harmless and a sheet thrown over them will calm them down and do for a harmless release



Wood Thrush
(Hylocichla mustelina)
found May 6, 1990

Distinguishing features

- * spots on breast are dark brown
- * feathers on back and top of wings is more of a rusty brown
- * vine-like dark brown markings below eyes
- * white on underside of tail and belly

song: series of loud flute-like phrases, each followed by a softer, guttural trill

- actual length of bird is $6\frac{1}{2}$ inches

- wings are each 4 inches in length

Food: insects from tree leaves sometimes, usually ground insects (beetles, flies, worms, grasshoppers)

Habitat: usually found in various terrain - woods, swamps, especially woods with thick undergrowth, and wooded lowlands. The bird has adapted to city living also.

* Winter home - Central America + Brazil

* Summer home - Great Lakes region and New Jersey to Georgia

Horned Lark

Eremophila alpestris



Epitaph

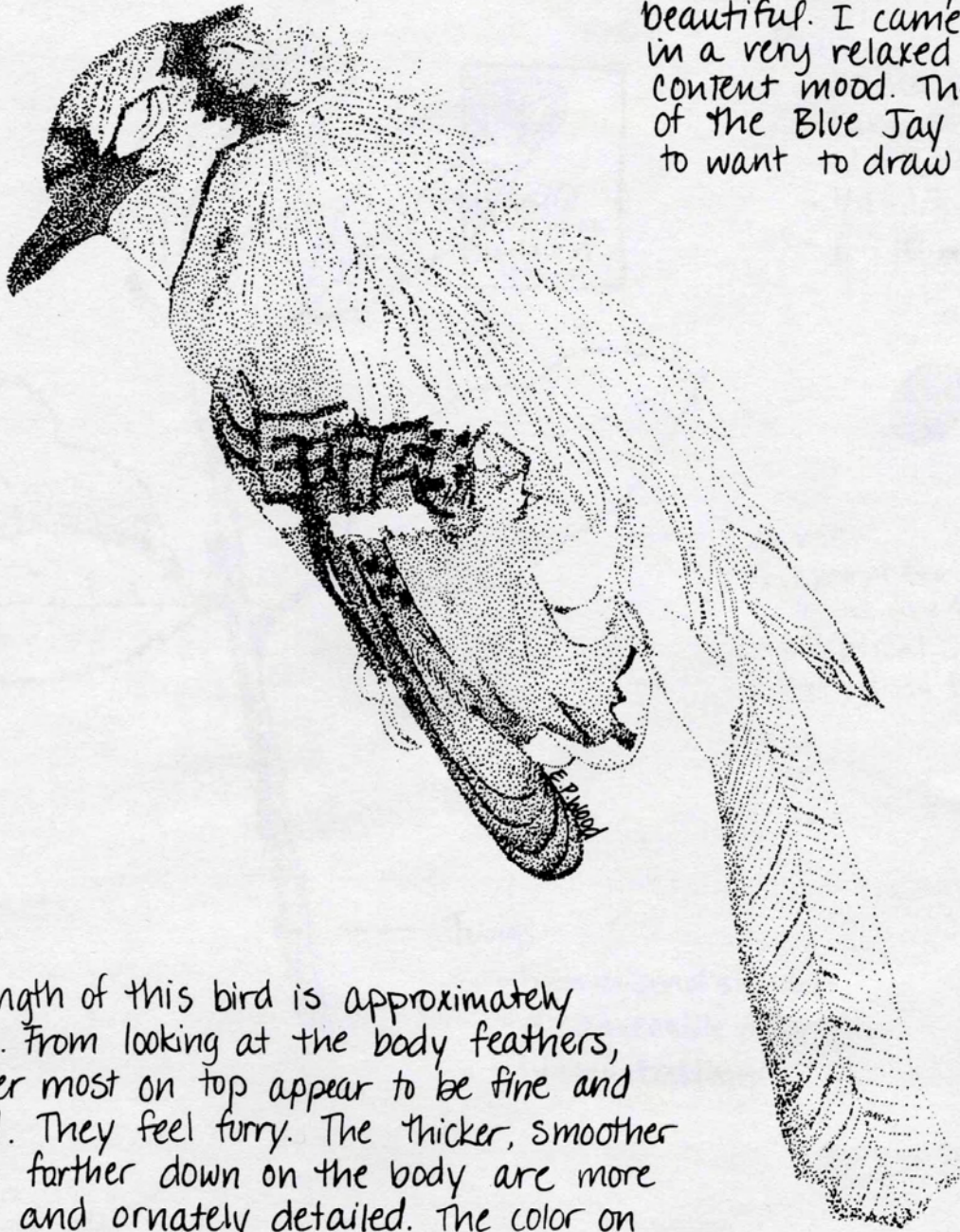
This drawing was sketched from a dead lark which Mr. Brooke found in the corn fields, one February day. Seemingly, it was struck by a snowmobile as it flew innocently through the cold winter air. But it will now be forever preserved in this drawing and in my heart.

The Horned Lark is common in large fields and in other open places. Adults can be recognized by the black breast mark, the yellow and black facial design, and the feathers resembling horns. The immature birds show these marks less distinctly.

The Blue Jay
Cyanocitta cristata

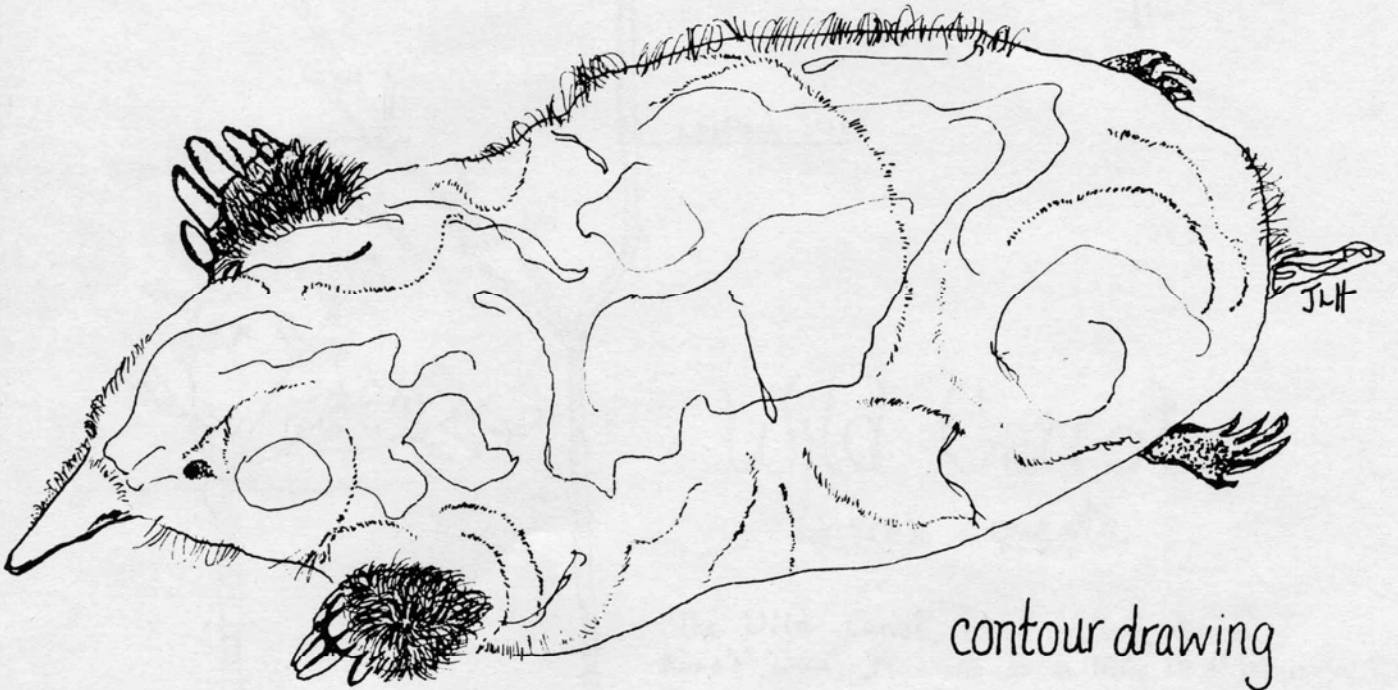
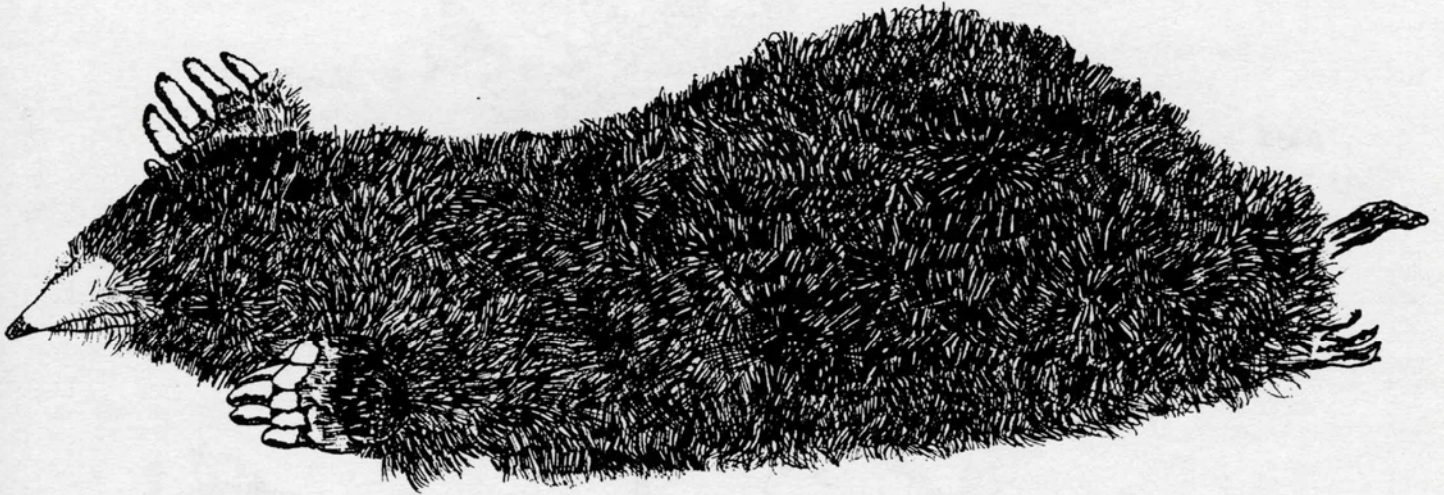
Drawn on Jan. 20, 1993
(Inauguration Day!)

The weather today is bitter cold but extremely sunny and beautiful. I came to class in a very relaxed and content mood. The colors of the Blue Jay struck me to want to draw it.



The length of this bird is approximately 10" long. From looking at the body feathers, the outer most on top appear to be fine and separated. They feel furry. The thicker, smoother feathers farther down on the body are more defined and ornately detailed. The color on the majority of the body is a deep blue with darker blue and black patches.

Eastern Mole



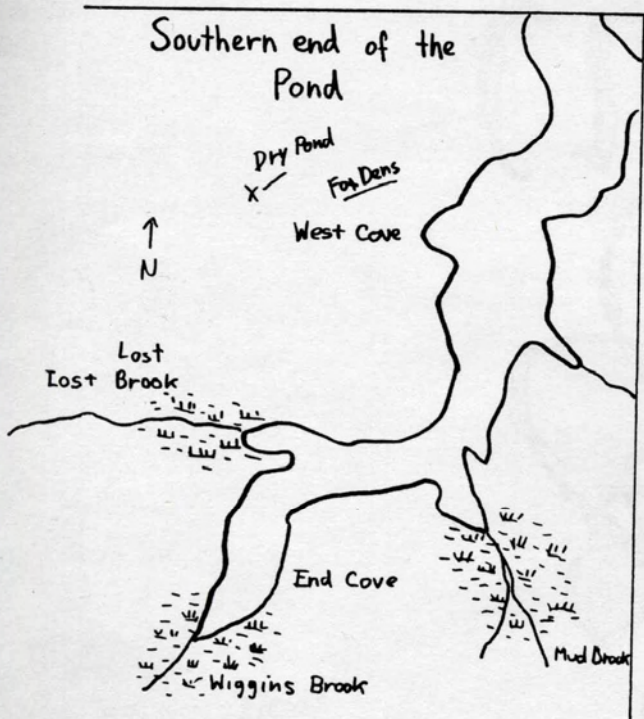
head and body: 22-25 in. - tail:

14-16 in - weight: 10-15 lb.

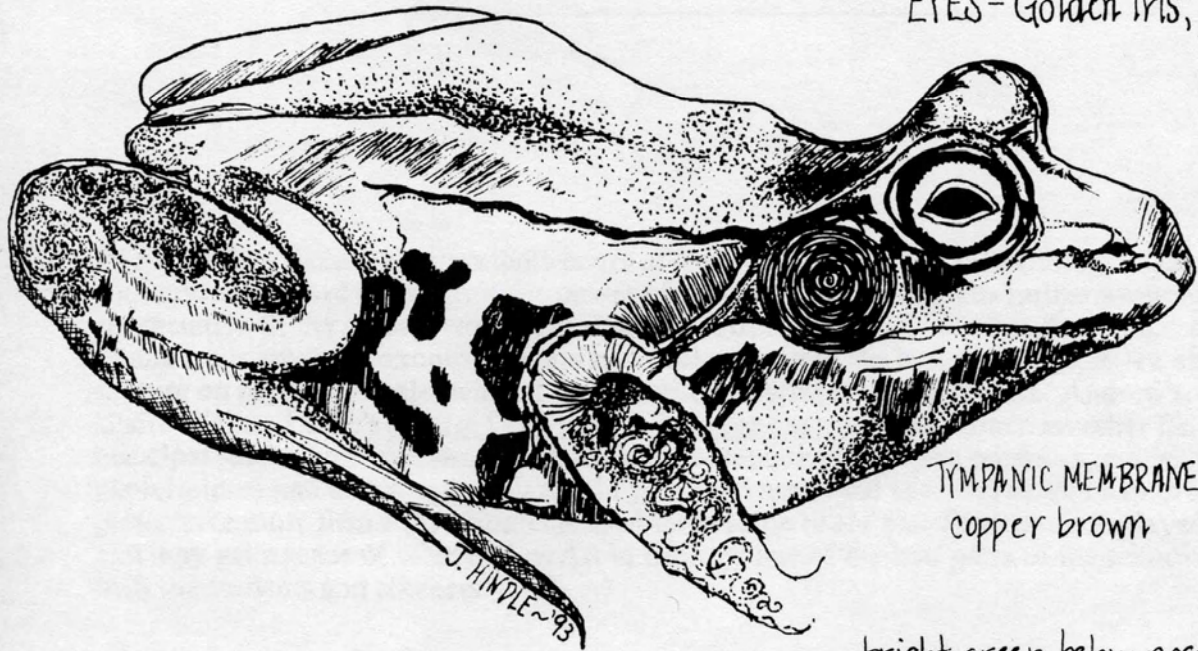
reddish yellow fur, darkest on back, belly is white, bushy tail with sometimes a white tip, legs and feet are black ~ live in forests and open country ~ kits are born in March or April ~ foxes have 1 litter a year ~ leave parents in the fall

RED FOX

Vulpes Fulva



animals are most active at night, early morning, and late evenings ~ food ranges from insects, hares, mice, berries and other fruits ~ parents bring food to the young in the den ~ usually have several dens

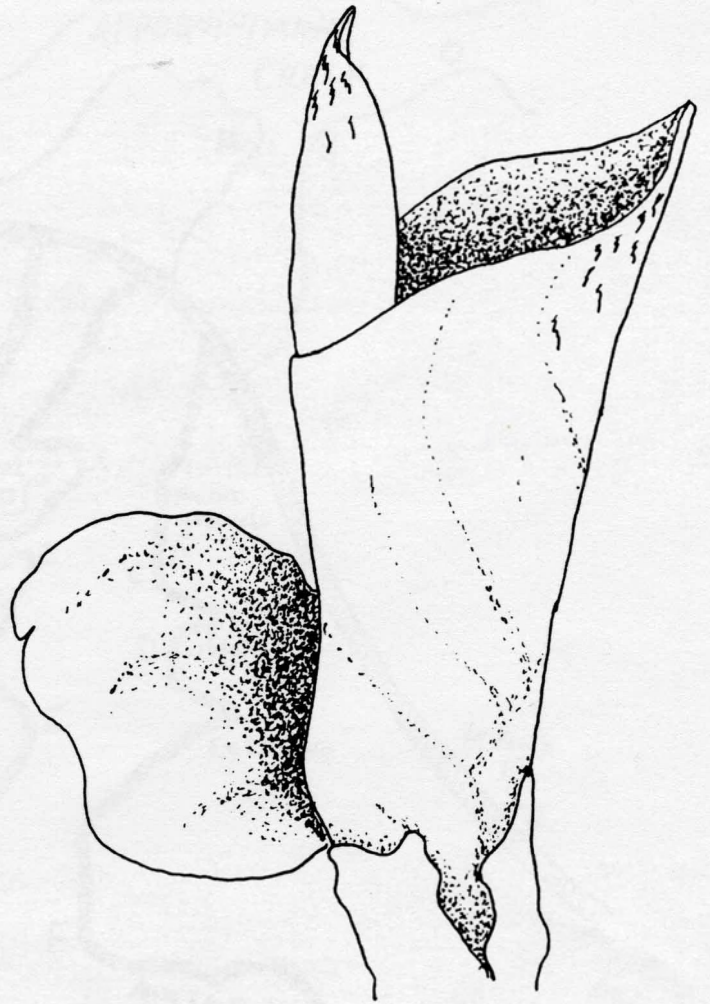
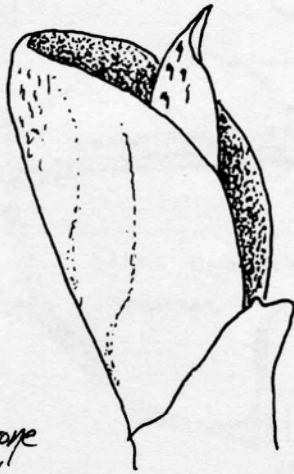


EYES - Golden iris, jet black pupil

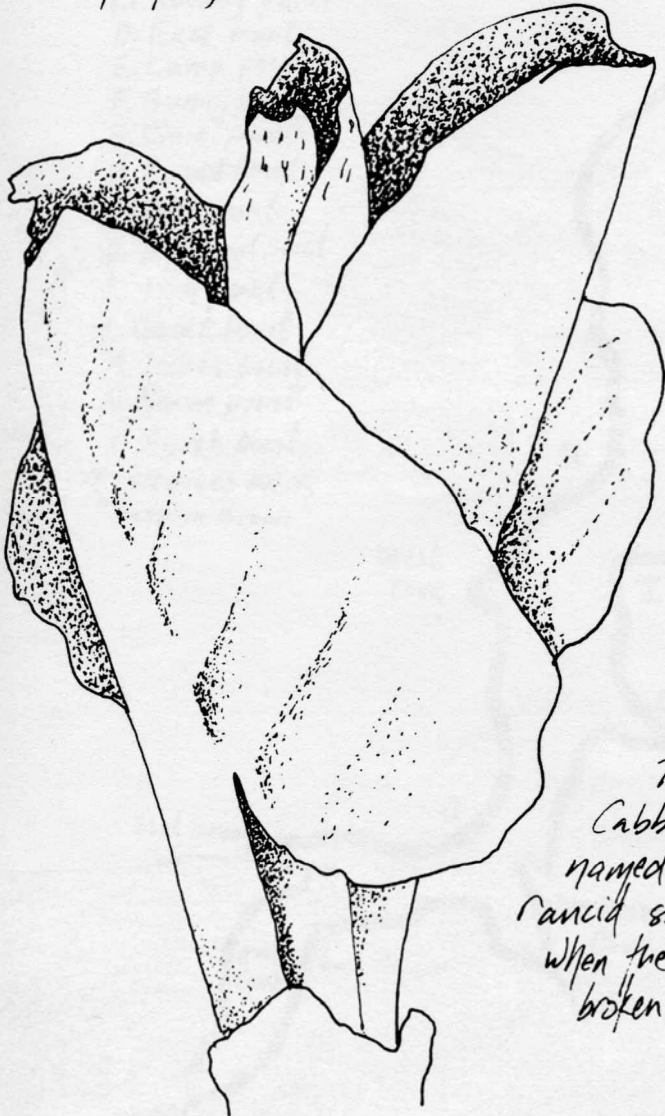
TYMPANIC MEMBRANE -
copper brown

bright green below nostril
and behind sensory disc

GREEN FROG



The Skunk Cabbage is one of the most prolificant plants on campus. It can be found in the woodland gullies from early spring to late fall.



Skunk Cabbage

Symplocarpus foetidus
Arum family

The Skunk Cabbage is so named for the rancid smell emitted when the plant is broken or cut.

