TRAIL BLAZERS

Key to Common Trees
of the
MASHIPACONG FOREST

INTRODUCTION AND ACKNOWLEDGMENTS

This booklet is one of three interrelated publications on trees created for Trail Blazer Camps (TBC) by a group of TBC alumni to share their knowledge with current staff and campers about some of the wonderful trees at TBC's Mashipacong Estate in Montague, New Jersey. This alumni group included Juanita Barrena, Deb Dolph, Suzanne (Levy) Graver, Jane Kortz, Mary Kay Inserra, Martha Grace (Price) Lawrence, Diane Schaefer, and Deborah Willis.

This "Key to Common Trees of the Mashipacong Forest" ("KEY") is based on a tree key created by Dr. William Harlow in the early 1950's for campers and staff to use to identify trees commonly found on TBC's Mashipacong property. Dr. Harlow (also known as "Moosewood Bill") was a professor of Wood Technology at State University of New York, College of Environmental Science and Forestry. He is best known for his publication titled *Textbook of Dendrology.* Although most of his work focused on plants, Dr. Harlow also taught and wrote on the subject of outdoor education and taught at several nature camps, including Life/Trail Blazer Camps. Photos of the original "Moosewood Bill" key are included as an appendix.

For this "KEY," the original "Moosewood Bill" key content was edited and updated by Deb Dolph and Jane Kortz for clarity and currency. Diane Schaefer created the illustrations and Juanita Barrena designed and edited the booklet. The "KEY" is designed to be used with a second booklet in the series, "Camper's Guide to Common Trees of the Mashipacong Forest," which Includes photos and additional information about the trees identified in the "KEY." Page numbers (e.g., CG, p.8) below the names of trees refer to pages in the "Camper's Guide to Common Trees of the Mashipacong Forest." The third booklet in the series, "Exploring Trees With Your Campers," includes information on the biology of trees that can be shared with campers and suggested activities to engage campers in learning about trees. It also includes resources that staff may wish to explore to enhance their own knowledge about trees and ways to engage children in learning about trees.

Important Information about this Tree Key

What is a tree key?

A tree key unlocks a tree's identity. It answers the question, "What is the name of that tree?" By using a tree key, we can identify a tree, or group of trees, through close observation of the characteristics of each tree. In this "KEY," leaves or needles, with their specific attributes, provide the main means of identifying the tree. Other features such a bark, flowers, fruit, and twigs may also be used.

How to use this "KEY."

Begin by selecting a leaf or needle whose size, shape, and arrangement are typical. Just as a detective must search for clues, a person using a tree key must look closely at the leaves or needles to make decisions about how to proceed.

In our "KEY," one looks at the leaves or needles to determine which description is most accurate and then follows the "go to" numbers. The illustrations in the "KEY," along with the page references to the "Camper's Guide to Common Trees of the Mashipacong Forest" booklet (e.g., CG page 12), provide additional resources for making the final determination in identifying the tree.

Definition of terms used in the "KEY."

Alternate: refers to leaves that occur one after the other on the twig (staggered).

Blade: refers to the flat, thin part of a leaf or leaflet that is characteristic of the trees with leaves, as opposed to needles.

Compound Leaf: refers to a leaf of a plant consisting of several or many distinct parts (leaflets) joined to a single stem.

Conifer: refers to trees that have cones.

Deciduous: refers to trees that have leaves/needles that drop off each year.

Entire: refers to a leaf edge or margin that is smooth with no teeth.

Evergreen: refers to a tree that keeps its leaves (or needles) all year long.

Lobes: refers to the projections or segments that form the shape of the leaf.

Margin: refers to the edge of a leaf.

Midrib: refers to the main rib or central vein of a leaf.

Opposite: refers to leaves that occur directly across from each other.

Simple Leaf: refers to a single blade with a stem connected directly to the twig.

Teeth: refers to generally small, pointed notches on the outer edges of a leaf.

KEY TO COMMON TREES OF THE MASHIPACONG FOREST

1. Tree has needle or scale-like “leaves”..  …..go to..……..2

1. Tree has flat, broad, blade-like leaves …….  ..go to …….7

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2. Needles tufted on a short spur..  ….**Tamarack or Larch**
(see CG, p. 38)

2. Needles in bundles of 3 or 5 or arranged singly…….go to…….....3

  

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3. Needles in bundles……..go to ……..4

3. Needles arranged singly
&/or scale-like……   …… go to ……..…....5

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4. Needles in bundles of 3 ..  ……..….**Pitch Pine**
(see CG, p. 34)

4. Needles in bundles of 5……  ……...**Eastern White Pine**
(see CG, p. 25)

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5. New growth needles are spiky and prickly.
Old growth needles are darker, scale-like,
with branchlets…….....…….**Eastern Red Cedar**  
(see CG, p. 24)

5. Needles alternate, about ½ inch long are flat…  … go to …....6

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6. Needles flexible and flat with two white bands on backside……  **Eastern Hemlock**
(see CG, p. 22)

6. Needles are stiff, 4-sided and will roll between thumb and finger……  **Black Spruce**
(see CG, p. 20)

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7. Leaves compound (several leaf blades joined on a central stalk)……  ….go to……8

7. Leaves simple (one leaf blade per stalk).  ....go to...…....11

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8. Leaves alternate ……  ……go to…….....9

8. Leaves opposite……  …..…...go to ….....10

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9. Leaflets 9 or more ……  ……..……..**Butternut**
(see CG, p. 21)

9. Leaflets 7 or fewer …… (Pignut and Shagbark Hickories)……  …….……**Hickories**
….....(see CG, p. 28)

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10. Leaflets have stems and are elliptical to oval. Edges sparingly toothed……  ……**White Ash**
(see CG, p. 12)

10. Leaflets are stemless, somewhat oblong. Edges obviously toothed……  ..... **Black Ash**
(see CG, p. 12)

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11. Leaves opposite….  ……..go to……..…12

11. Leaves alternate……..  ……..go to…….……14

****

12. Leaves lobed. Veins run fanlike from the base of the leaf……  …..go to……..…..13

12. Leaves have smooth edges. Veins run outward from a central vein, curving to follow leaf edge.....  **Flowering Dogwood**
(see CG, p. 26)

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13. Most leaves with 5 lobes. Leaf edges NOT toothed …….  ...……..…....**Sugar Maple**
(see CG, p. 31)

13. Most leaves with 3 lobes. Leaf edges ARE toothed ……  ……..**Red Maple**
(see CG, p. 30)

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14. Twigs are armed with thorns  ….**Hawthorn (Thornapple)**
(see CG, p. 27)

14. Twigs do not have thorns …… go to……....15

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15. Some leaves are cut into one or two segments or lobes. Some are not ……  …….go to.……16

15. Leaves are unlobed, but may be toothed or wavy…  ……go to…..…19

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16. Leaves entire, 2 lobes (mitten like), or 3 lobes, smooth edges and aromatic when chewed or crushed……..**Sassafras**

(see CG, p. 35)

16. Leaves taste bitter or with little taste…… go to ……...17

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17. Leaves on long stems with 4 smooth-edged lobes, two lobes on either side of midrib……**Tulip Tree**

(see CG, p. 39)

17. Leaves short-stemmed with 5 or more lobes…  ..go to …. 18

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18. Lobe tips are rounded …  ……..…… **White Oak**

(see CG, p. 32. 33)

18. Lobes tips are pointed and some end in a hair or bristle……  …....**Red Oak Group**

(includes Red, Scrub, Black, and Scarlet Oaks) (see CG, p. 32, 33)

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19. Leaf stem flat, leaf trembles in the slightest breeze.

Leaf margin with large teeth……**Bigtooth Aspen**

(see CG, p. 13, 14)

Leaf margin with small teeth……..**Quaking Aspen**

(see CG, p. 13, 14)

19. Leaf stem circular (round) …… go to ……....20

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20. Edge of leaf smooth, not lobed, toothed or wavy……go to……...21

20. Edge of leaf toothed or wavy……..……...…go to……..…...22

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21. Leaves entire, often clustered near ends of lateral branches ……**Sour Gum**

(a.k.a., Black Tupelo, Black Gum)
(see CG, p. 37)

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22. Leaf edge has large rounded teeth or wavy……go to……..23

22. Leaf edge has sharp teeth ……go to……..24

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23. Leaf symmetrical with many rounded teeth……..**Chestnut Oak**

(see CG, p. 32)

23. Leaf uneven at base (stem) and leaf edges are irregularly wavy……**Witch Hazel**

(see CG, p. 40)

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24. Chewed twigs have a wintergreen flavor……..go to……..….25

24 Twigs lack wintergreen flavor…….go to……..……...26

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25. Bark of young trees is dark, sometimes reddish-brown to black, with dark lines. Older trees show scales…..…**Black Birch (Sweet Birch)**
(see CG, p. 16,18)

25. Bark is papery and yellowish……..….**Yellow Birch**
(see CG, p. 16, 17)

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26. Leaf edges have more evenly sized teeth…….go to……..…..…..27

26. Leaf edges have unevenly sized teeth ……go to…….....30

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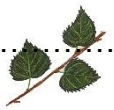
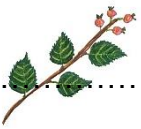
27. Leaf circular or heart shaped ……..…**Basswood**

(see CG, p. 15)

27. Leaf elliptical /oval, with pointed end……...go to……28


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28. Leaf edge with very tiny teeth…..…….…….**Shadbush**

(Downy Serviceberry)
(see CG, p. 36)

28. Leaf edge with coarse (larger) teeth ……. go to ……..…..29

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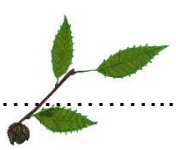
29. Only smaller trees are found.
Bark is dark brown.……**American Chestnut**


(see CG, p. 8)

29. Bark is smooth, light gray, thin.
Leaves have a papery feel/sound……..…**American Beech**

(see CG, p. 7)

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30. Leaves diamond-shaped or triangular,
with a long tapering tip……..go to..……..31

30. Leaves elliptical to oval ……...go to……..….32

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31. Leaves triangular. Bark is a dirty or chalky white ……..…**Gray Birch**
(see CG, p. 16, 17)

31. Leaves diamond shaped. Bark is bronze
to cinnamon to pinkish ……...**River Birch/Red Birch**
(see CG, p. 16, 18)

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32. Leaves egg shaped to oval, young leaves sticky when pressed.
The bark is a papery, creamy white ……...**White or Paper Birch**
(see CG, p. 16,17)

32. Leaves elliptical and sometimes egg-shaped. Leaves not sticky. Bark
is dark and not papery…… go to ……...…..33

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33. Teeth are coarse, leaf base is unequal……**American Elm**

(see CG, p. 10)

33. Teeth are fine, leaf base is usually
symmetrical (balanced) …….. go to ……..……....34

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34. Leaves narrow, with brownish hairs along underside of leaf midrib near base……  …….**Black Cherry**
(see CG, p. 19)

34. Leaves are smooth or have very little hairiness ……. go to ……..…...35

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35. The bark is bluish gray, thin, & smooth. The trunk has a sinewy, muscular appearance…….**American Hornbeam (Blue Beech)**
(see CG, p. 11)

35. The bark is brownish, rough, and finely flaked, appearing shaggy……..**Eastern Hophornbeam (Ironwood)**
(see CG, p. 23)

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APPENDIX

ORIGINAL "CLUES TO TRAIL BLAZER CAMPS TREES"

As noted in the Introduction and Acknowledgments, our "KEY" is based on a tree key created for Trail Blazer Camps by Dr. William Harlow. The photo below shows a 1950 group of campers using Dr. Harlow's tree key to identify trees on the front lawn of the Great Hall. Photos of "Moosewood Bill's original "Clues to Trail Blazer Camps Trees" are included on the following two pages.

1950 Brae Tarn Group

Clockwise around the circle beginning with white shorts: Jane (Buchanan) Banks; Sylvia Mason, in shorts and a white shirt; Betty Faust, her back to the camera in rolled up jeans; Nita Baumgardner, with her white hair barely showing, and a blueish shirt; Mary (Coniglio) Donnelly, in light orange shirt and brown shorts, with glasses; Patricia (Shilling) Beach, with jeans, behind Mary; Dottie Krumm with yellow shirt.

CLUES TO TRAIL BLAZER CAMP TREES

by W.M. "Moosewood" Harlow, N.Y. State College of Forestry

1. Leaves needlelike; or narrow and less than 2" long. 2
1. Leaves broad, mostly more than 2" long. 7

2. Leaves tufted on short spurs. . . . . Tamarack
2. Leaves in bundles of 3 or 5; or arranged singly. 3

3. Needles in bundles. 4
3. Needles or leaves arranged singly. 5

4. Needles in 3's, bundle sheath persistent as in all hard pines. . .Pitch Pine
4. Needles in 5's, bundle sheath deciduous as in all soft pines. . . White Pine

5. Leaves opposite, or in whorls of 3; leaves on older trees very small and scale-like, forming 4-sided branchlets. . . . . .Eastern Red Cedar
5. Leaves alternate (in spirals). 6

6. Leaves flat, with two white bands underneath. . . . . ..Hemlock
6. Leaves 4-sided (roll one between thumb and finger). . . . . .Black Spruce

7. Leaves compound (several blades joined to a central stalk). 8
7. Leaves simple (one blade). 11

8. Leaves alternate. 9
8. Leaves opposite. 10

9. Leaflets 9 or more. . . . . Butternut
9. Leaflets 7 or less. . . . . Hickories

10. Leaflets elliptical to oval, sparingly toothed. . . . . .White Ash
10. Leaflets somewhat oblong, frankly toothed. . . . . ..Black Ash

11. Leaves opposite. 12
11. Leaves alternate. 14

12. Veins run fanlike from the base of the leaf. 13
12. Veins run outward from a central vein, then curve parallel to margin. . . . . .Fl. Dogwood

13. Under surface green; lobe margins not toothed . . . . . .Sugar Maple
13. Under surface whitish or silvery; lobe margins toothed. . . . . .Red Maple

14. Twigs are armed with thorns. . . . . .Thornapple or Hawthorn
14. Twigs not armed. 15

15. Leaves cut into evident segments or lobes. 16
15. Leaves unlobed, but may be toothed or wavy. 19

16. Leaves spicy when chewed. . . . . .Sassafras
16. Leaves bitter, or with little taste. 17

17. Leaves on long stems, 4 lobed; circular in outline. . . . . .Tulip Tree
17. Leaves short-stemmed, 5 or more lobed, not circular. 18

18. Lobe tips rounded. . . . . White Oak
18. Lobe tips ending in a hair or bristle. . . . . Red Oaks
(Such as red oak, scarlet oak, black oak and scrub oak)

19. Leaf stem flat; leaf trembles in slightest breeze. . . . . .Bigtooth Aspen with large teeth; Quaking Aspen with small teeth
19. Leaf stem circular in cross-section. 20

20. Leaf margin smooth, not toothed or wavy. 21
20. Margin toothed or wavy. 22

21. Leaf spicy when chewed. . . . . Sassafras
21. Leaf not spicy. . . . . Sour Gum

22. Margin with large rounded teeth or wavy. 23
22. Margin with sharp teeth. 24

23. Leaf symmetrical, with many rounded teeth. . . . . .Chestnut Oak
23. Leaf lopsided, ~~margin irregularly wavy(What are the cones?)~~.Witch Hazel

24. Chewed twigs have wintergreen taste. 25
24. Twigs lack wintergreen flavor. 26

25. Bark smooth and black, later scaly . . . . . .Black Birch
25. Bark papery, yellowish. . . . . Yellow Birch

26. Margins with single teeth. 27
26. Margins with double teeth. 30

27. Leaf circular or heart shaped. . . . . .Basswood
27. Leaf elliptical. 28

28. Margin with fine teeth; chewed twig has faint bitter almond flavor. . . . . .Shadbush
28. Margin with coarse teeth. 29

29. Teeth ending in fine bristles. . . . . .Chestnut
29. Teeth not bristle tipped; leaf has a papery rattle. . . . . Beech

30. Leaves diamond-shaped; or triangular with a long, narrow apex. 31
30. Leaves elliptical to oval. 32

31. Leaves triangular; bark dirty white. . . . . .Gray Birch
31. Leaves diamond shaped; bark salmon red. . . . . Red, or River Birch

32. Leaves egg shaped to oval; young leaves sticky when pressed between thumb and finger, bark papery and creamy white.White or Paper Birch
32. Leaves elliptical, less commonly eggs-shaped, never sticky, base is dark but not papery. . . . . ~~33~~

33. Teeth coarse; leaf base lopsided. . . . . American Elm
33. Teeth fine; leaf base usually symmetrical. 34

34. Whitish (later reddish) hair along base of midrib, twigs have bitter almond taste. . . . . .Black Cherry
34. Leaves smooth or sparingly hairy. 35

35. Bark bluish gray; trunk twisted. . . . . .American Hornbeam
35. Bark brownish, finely flaky. . . . . .Hophornbeam