

## A KEY TO THE GENERA OF COMMON WOODS

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The accompanying key for the identification of some of our common commercial woods was constructed as a teaching device. This key uses all of the principal characteristics of non-porous, ring-porous, and diffuse-porous woods that the student needs to know to understand the structure of woods, and the sections necessary for observation and the identity of all the types of cells in their three dimensions.

In the experience of the writer, a short key of this type is a useful tool because even beginning students with the help of the instructor can become acquainted with wood structure, reasons for the "grain" of wood, and be able to readily identify several kinds of woods. Students who learn to use such a key can quickly learn to use the larger keys.

1. Wood non-porous (no water tubes) .....	2
1. Wood porous (i.e., there are water tubes, tracheae).....	9
2. Resin ducts both horizontal and vertical in wood.....	3
2. No resin ducts (except wound ducts in tangential groups) but resin cells present in wood except in fir .....	6
3. Tracheids with spiral markings.....	<i>Pseudotsuga</i> (Douglas Fir)
3. Tracheids without spirals or with only occasional spirals.....	4
4. Cells bordering resin ducts (epithelial cells) thick-walled; ray tracheid walls smooth; biseriate rays very sparse and scattered.....	<i>Picea</i> (Spruce)
4. Cells bordering resin ducts (epithelial cells) tearing easily, i. e., thin-walled .....	5
5. Ray tracheids smooth-walled, 1 to 2 simple pits per cross-field.....	<i>Pinus</i> (White Pine)
5. Ray tracheids with rough or reticulate walls (dentate), 3 to 6 simple pits per cross-field .....	<i>Pinus</i> (Pitch, Long-leaf or Short-leaf Pine)
6. No resin cells or ducts in wood (except occasional wound ducts that are widely separated and sporadic) .....	<i>Abies</i> (Balsam Fir)
6. Resin cells in wood irregularly scattered.....	7
7. Wood aromatic and variegated in color; bordered pits in one row in tracheids (rarely in two rows); rays uniseriate and entirely of parenchyma .....	<i>Juniperus</i> ("Red Cedar")
7. Wood not aromatic, usually an even color; bordered pits commonly in two rows in radial walls of tracheids, especially in spring wood.....	8
8. Heartwood light red to deep cherry-brown; abundant resin cells; bordered pits in tracheids in one to three rows, commonly two; rays uniseriate with some partly biseriate .....	<i>Sequoia</i> (Redwood)
8. Heartwood yellowish-brown to dark-brown to almost black; when rubbed, wood feels as if it had been impregnated with paraffin; resin cells abundant; bordered pits in tracheids in 1 to 4 rows, mostly 3 .....	<i>Taxodium</i> (Bald Cypress)
9. Wood ring-porous .....	10
9. Wood diffuse-porous .....	16
10. Wood with irregular-shaped radial areas of wood parenchyma; tangential parenchyma uniseriate .....	11
10. Wood without radial parenchyma but with tangential parenchyma.....	13
11. Both large and small xylem rays present, i. e., uniseriate and multiseriate rays present .....	12
11. Xylem rays all fine (uniseriate).....	<i>Castanea</i> (Chestnut)

12. Water tubes stuffed with tyloses.....*Quercus* (White Oak)  
 12. Water tubes with few or no tyloses.....*Quercus* (Red Oak)  
 13. Summer-wood with straight, fine tangential lines of zonate metatracheal parenchyma, i. e., parenchyma distinct from small water tubes..... 14  
 13. Summer-wood with wavy, continuous bands of parenchyma and small water tubes ..... 15  
 14. Parenchyma lines continuous, distinctly metatracheal.....*Hicoria* (Hickory)  
 14. Parenchyma lines interrupted and partly paratracheal, i. e., partly associated with or adjacent to small water tubes.....*Fraxinus* (Ash)  
 15. Tyloses abundant in water tubes.....*Morus* (Mulberry)  
 15. No tyloses in water tubes .....*Ulmus* (Elm)  
 16. Wood rays (tangential section) mostly uniseriate..... 17  
 16. Some or all rays (tangential section) more than uniseriate..... 18  
 17. Wood rays homogeneous.....*Populus* (Poplar)  
 17. Wood rays heterogeneous .....*Salix* (Willow)  
 18. Rays of two distinct widths, 1 to 5 seriate and 15 to 25 seriate, homogeneous .....*Fagus* (Beech)  
 18. Rays 1 to 8 seriate ..... 19  
 19. Perforation plates in water tubes scalariform..... 20  
 19. Perforation plates in water tubes simple..... 22  
 20. Small water tubes with spirals, rays 1 to 3 seriate (mostly 1 to 2), rays heterogeneous .....*Liquidambar* (Red Gum)  
 20. Small water tubes without spirals..... 21  
 21. Rays 1 to 5 seriate and homogeneous.....*Betula* (Birch)  
 21. Rays 1 to 5 seriate (mostly 2 to 3) and heterogeneous, growth ring ending with a light colored line of wood parenchyma.....*Liriodendron* (Tulip Tree)  
 22. Parenchyma abundant, terminal, metatracheal, zonate, and uniseriate; rays 1 and 1 to 6 seriate, mostly homogeneous, terminal line of parenchyma prominent .....*Tilia* (Basswood or Linden)  
 22. Parenchyma sparse, but terminal, paratracheal and metatracheal..... 23  
 23. Rays 1 to 6 seriate (mostly 3 to 4) and homogeneous to heterogeneous .....*Prunus* (Cherry)  
 23. (a) Rays 3 to 8 seriate (mostly 5 to 7) and 1 to 3 seriate (mostly 1), mostly homogeneous.....*Acer* (Sugar Maple)  
 (b) Rays 1 to 5 seriate, with few uniseriate rays, mostly homogeneous....  
 .....*Acer* (Silver Maple)