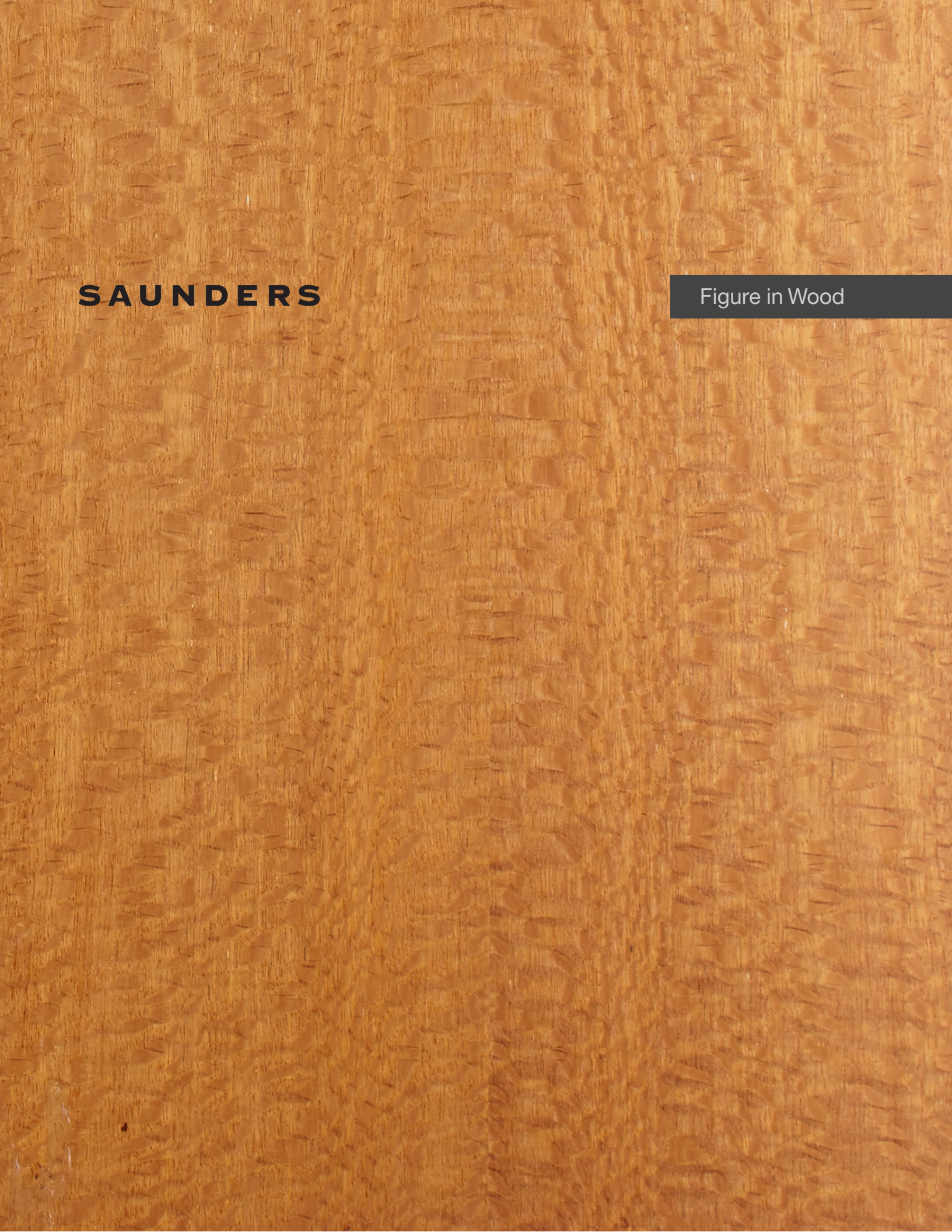
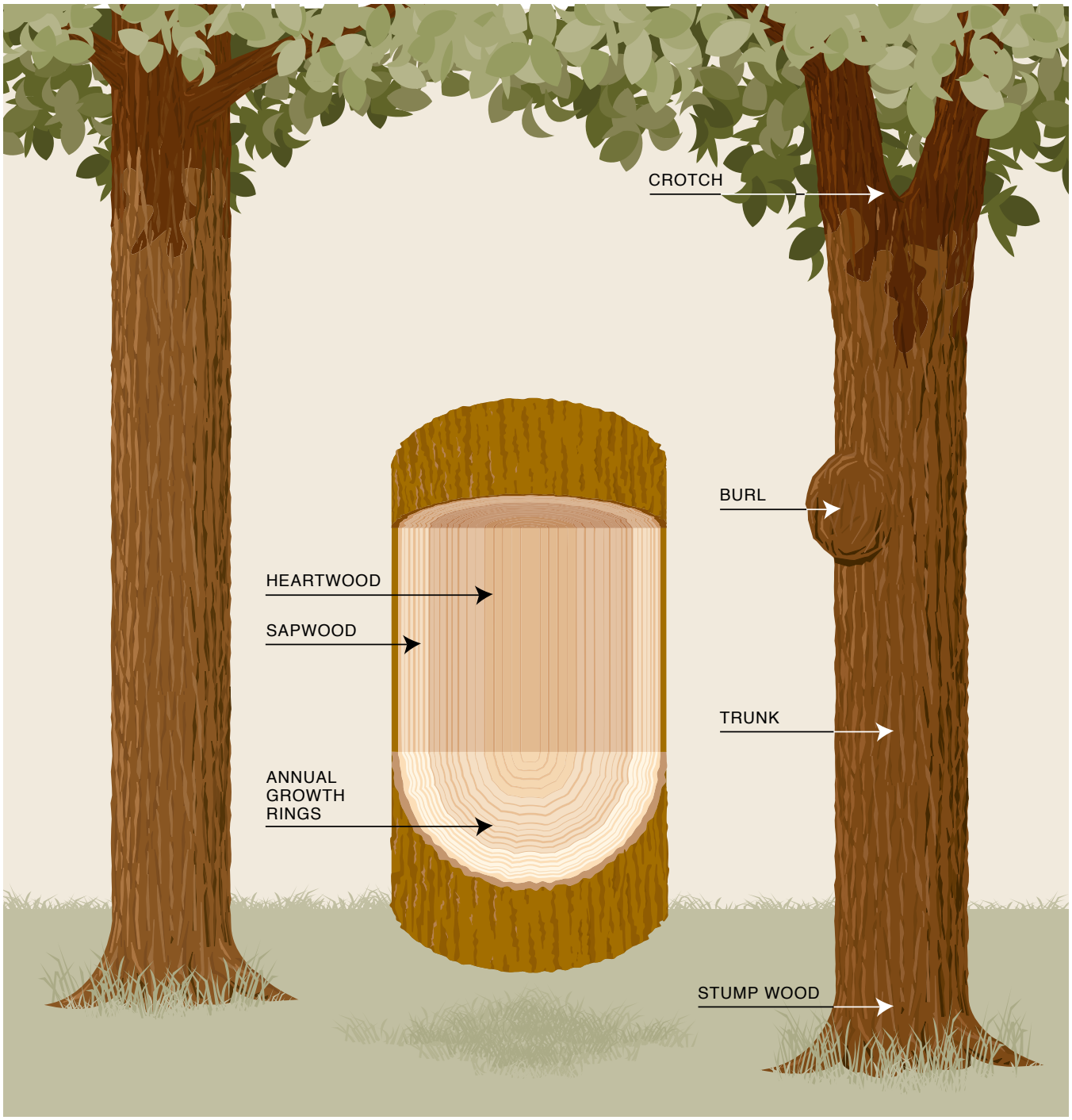
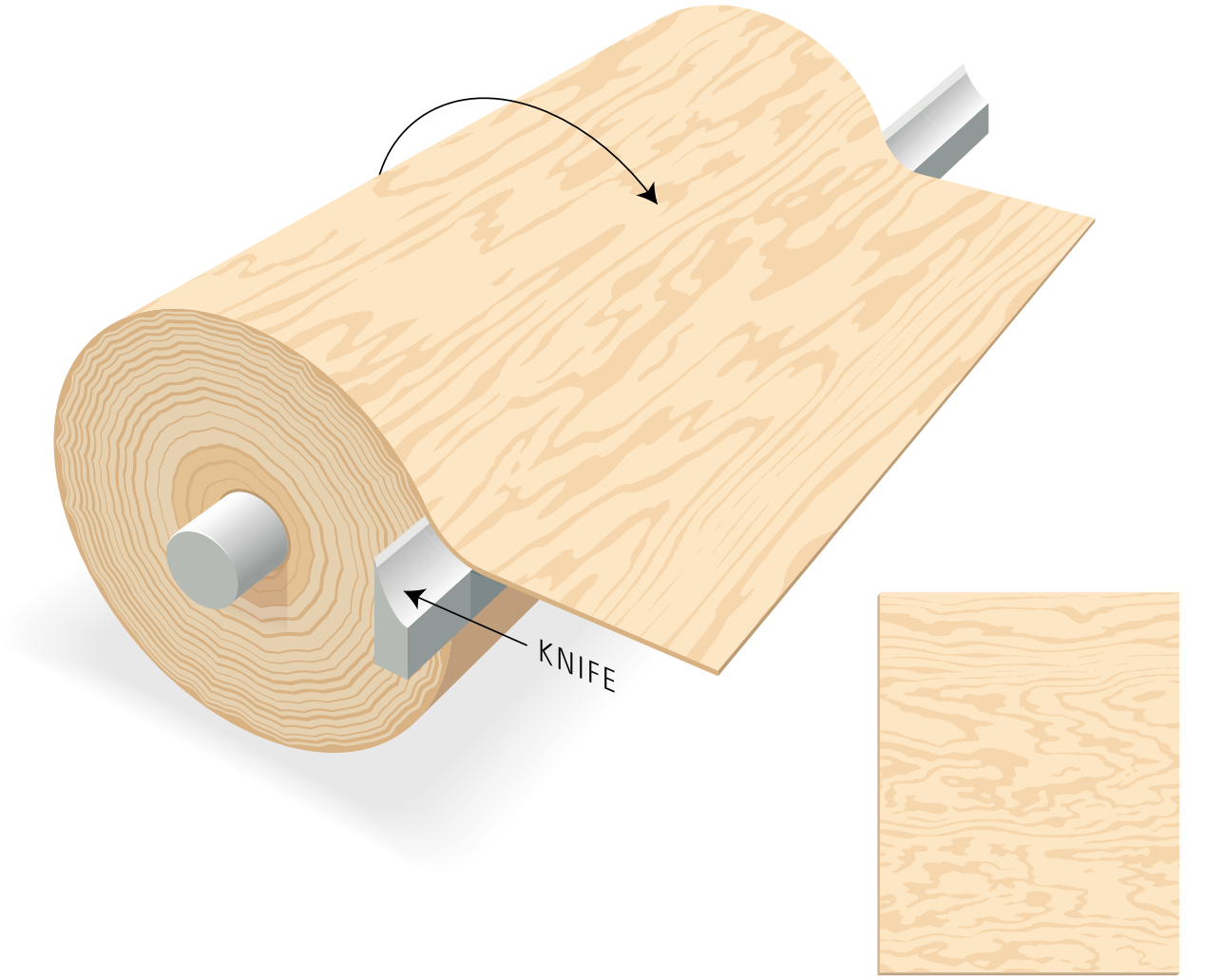

SAUNDERS
Figure in Wood

From the Tree



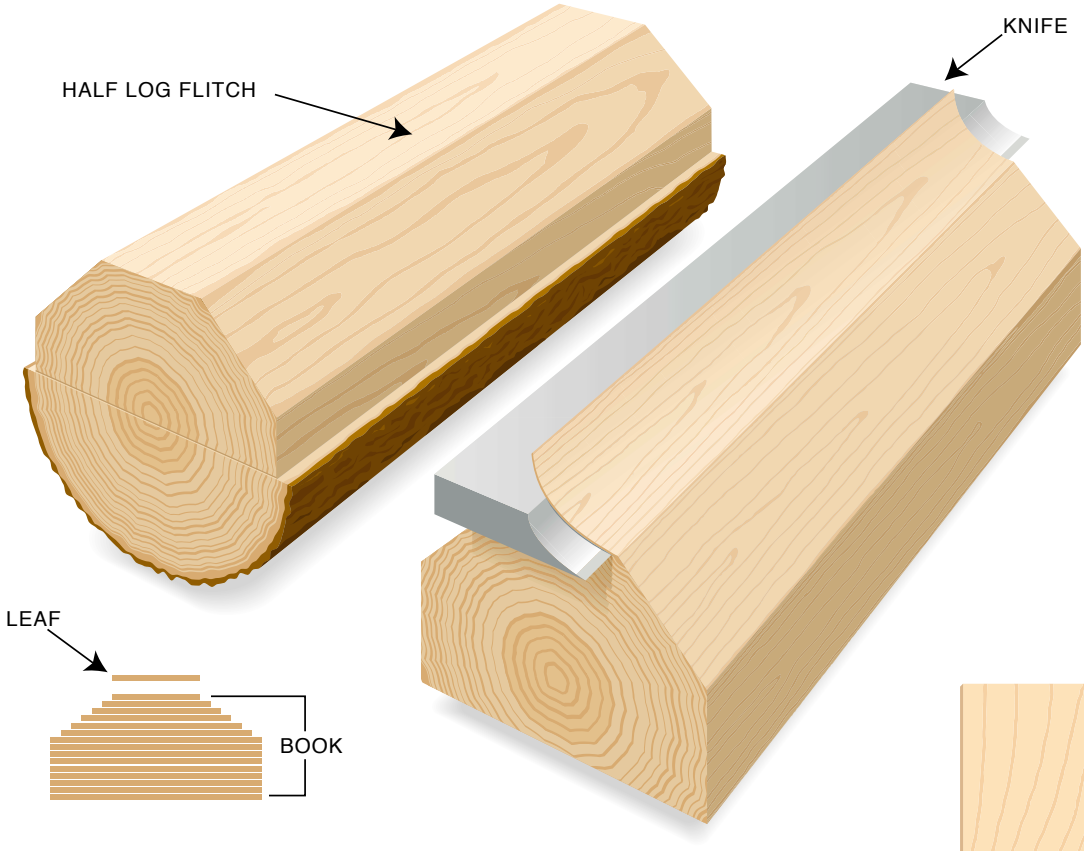
Rotary Cut



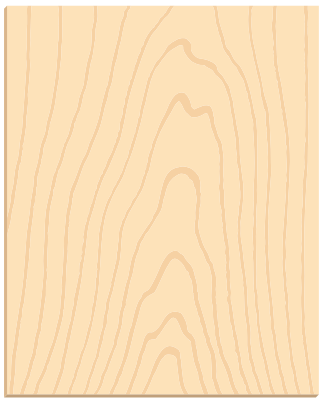
Very Broad Pattern

This cut produces wide sheets, with a broad pattern, making this cut very difficult for matching.

Plain-Sliced or Flat-Sliced

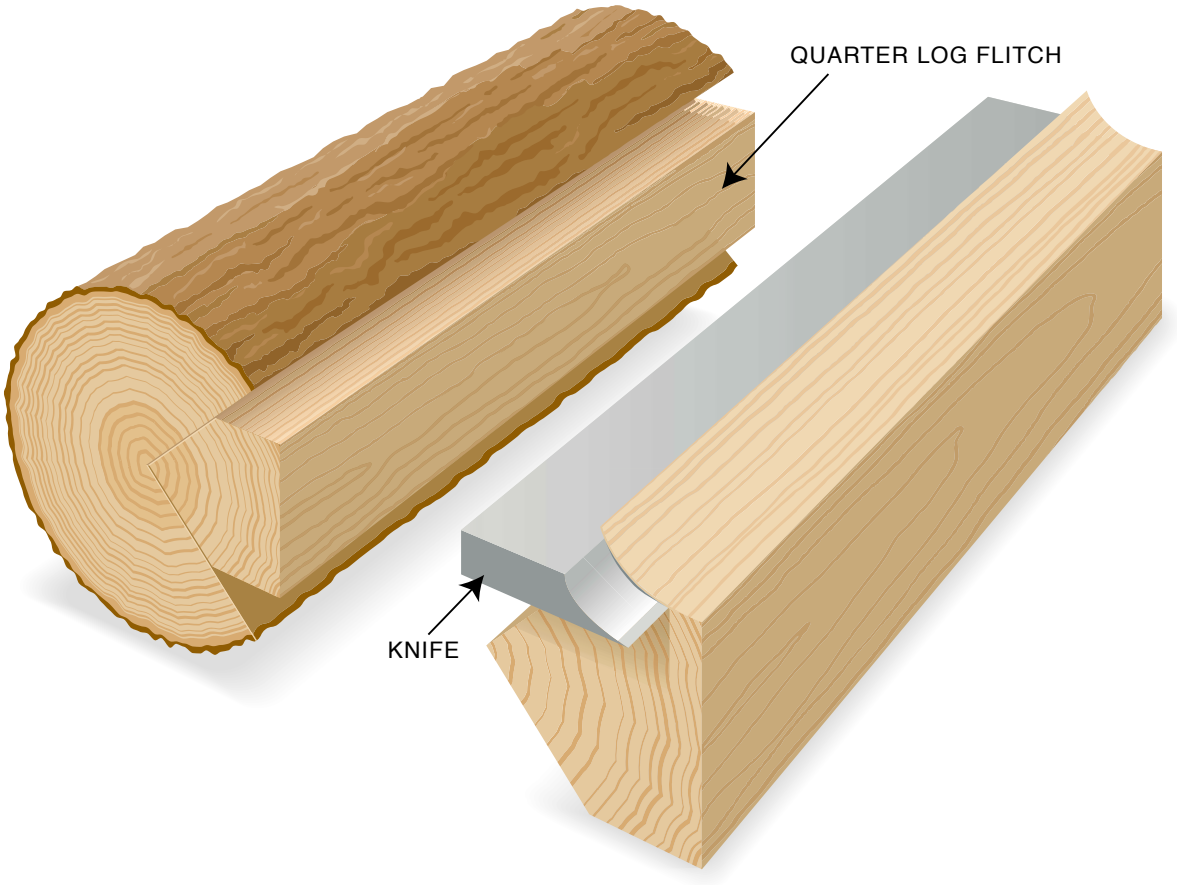


Leaf width depends on the log size and area of the flitch.

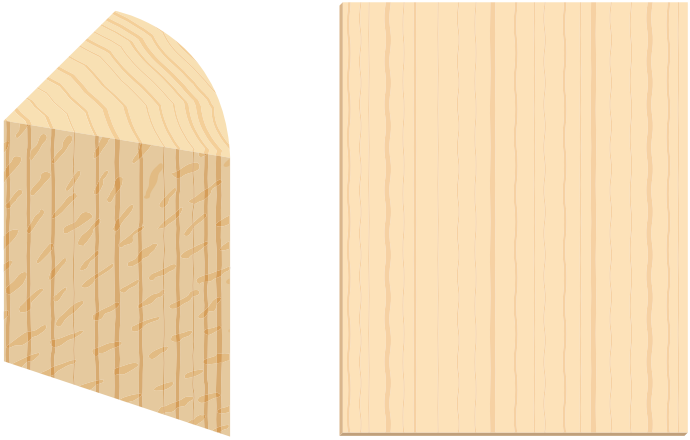


Cathedral Pattern

Quarter-Sliced

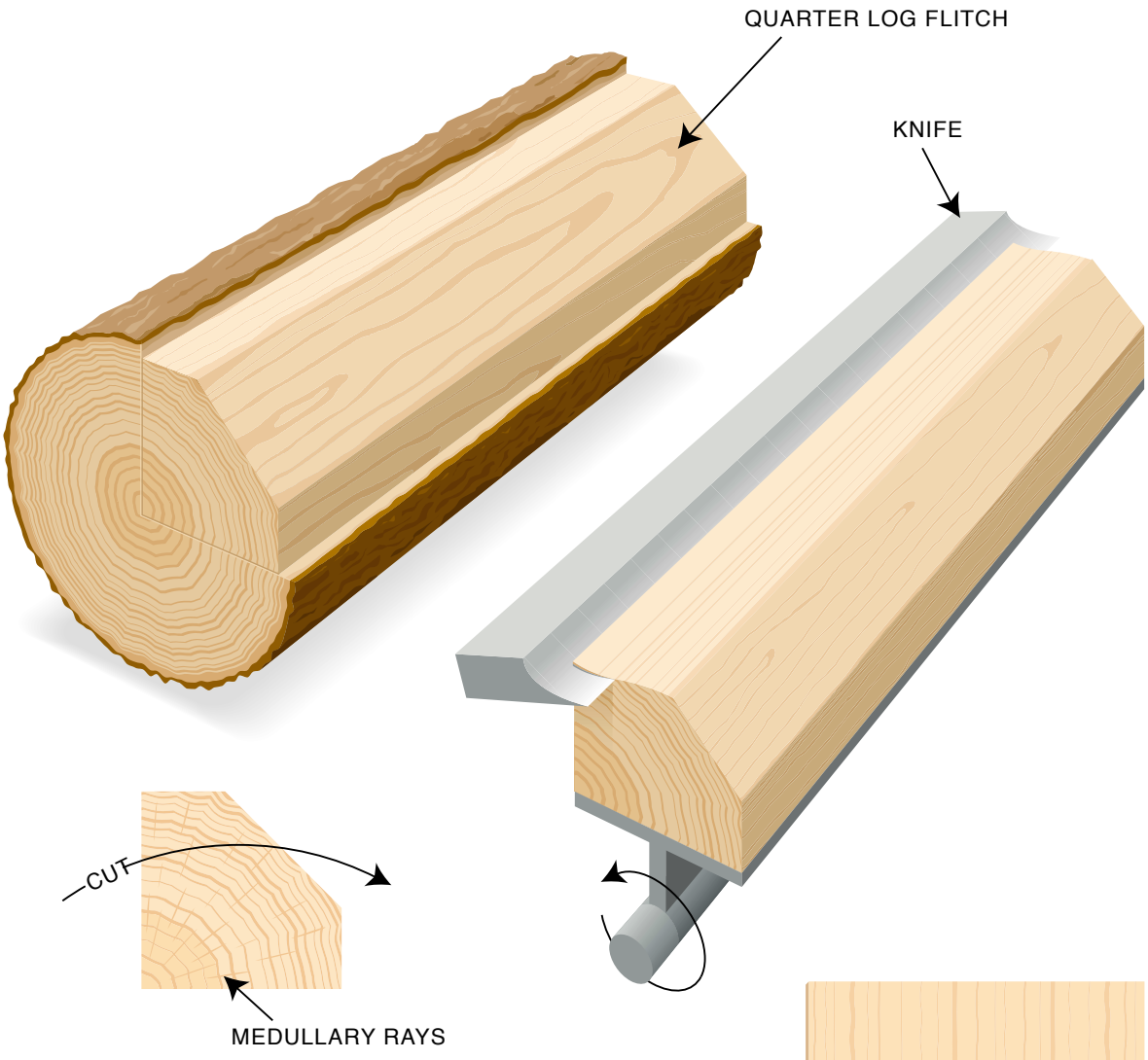


A flake pattern is produced when slicing through medullary rays in some species, principally oak.

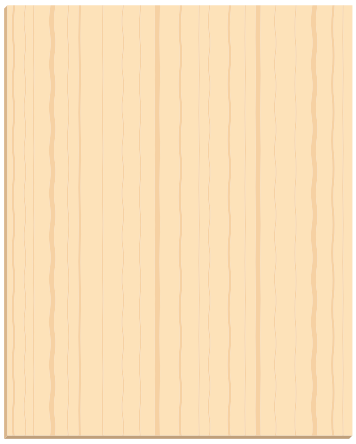


Narrow-Striped Pattern

Rift-Cut

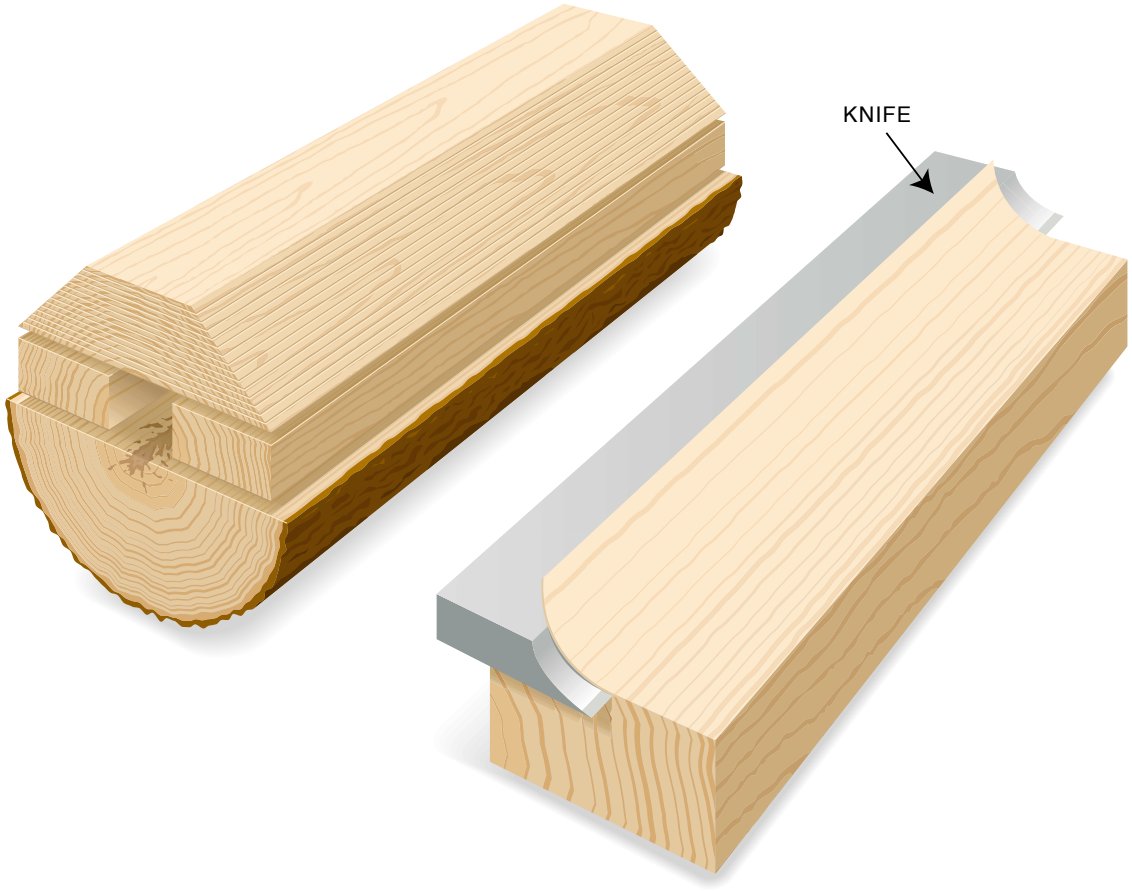


The angle of cut is 15 degrees to the radial, minimizing the ray flake effect in oak. Comb grain is the portion which has very tight and straight grain.

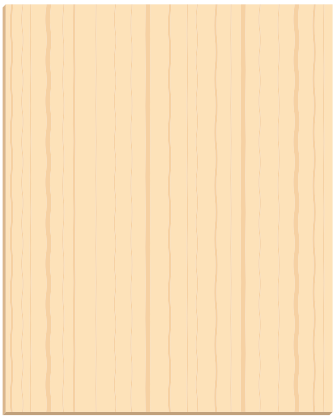


Narrow-Striped Pattern

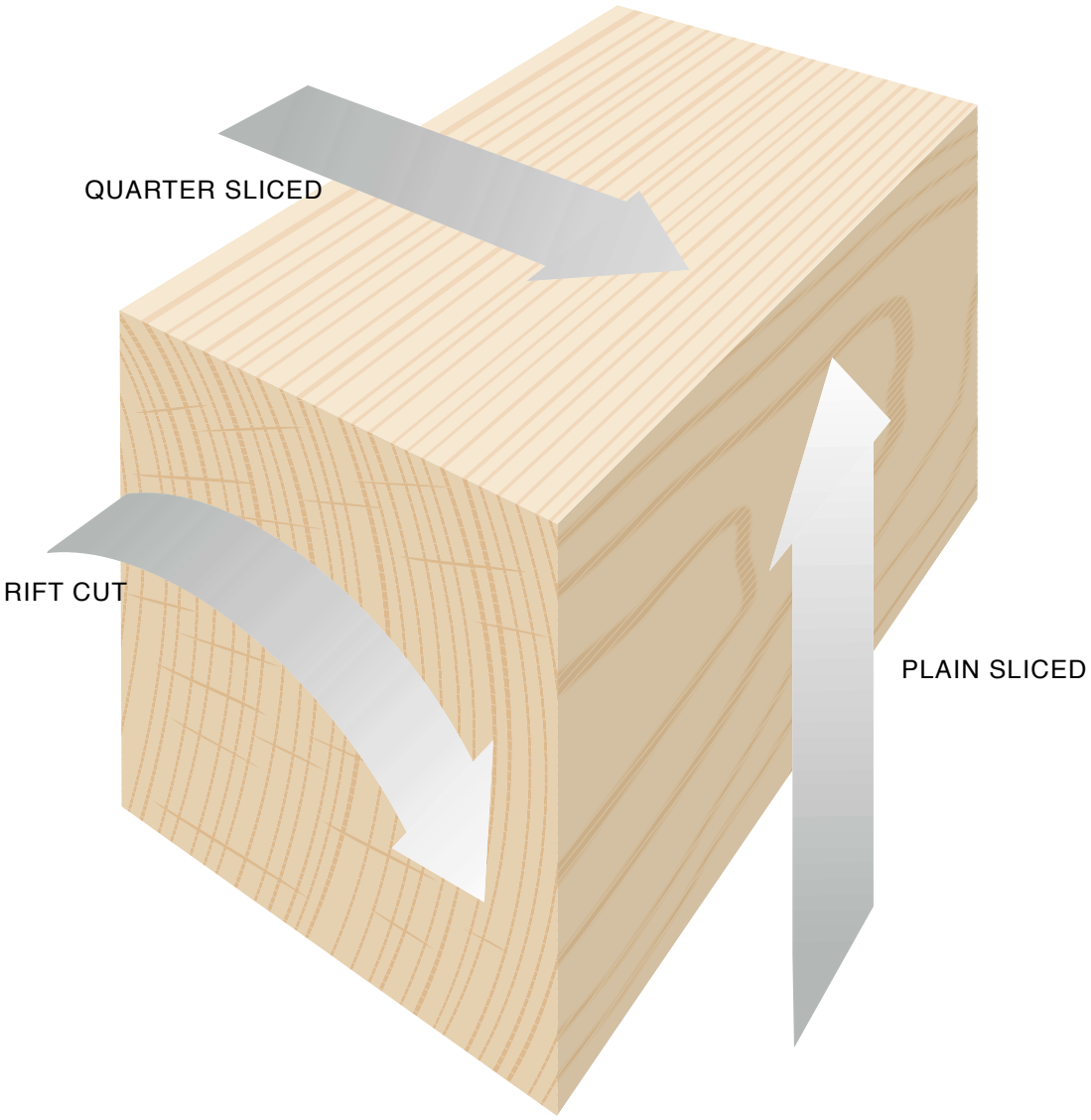
Salvaging



Logs that have poor quality centers (juvenile wood) can be salvaged by cutting out the bad section.
After the upper portion of the flitch is sliced, the lower portion is removed from the slicer and the waste piece is cut out. The remaining small pieces are then sliced.



Veneer Cuts



Veneer Matching

BOOK OF VENEER

Book Match

Every other leaf is turned over as if they are facing pages in a book. The figures always match at the joints. This is the most common match with plain-sliced veneer

Slip Match

Consecutive leaves are slipped out side by side. They are not turned over or end-to-end. No grain match at the seams.

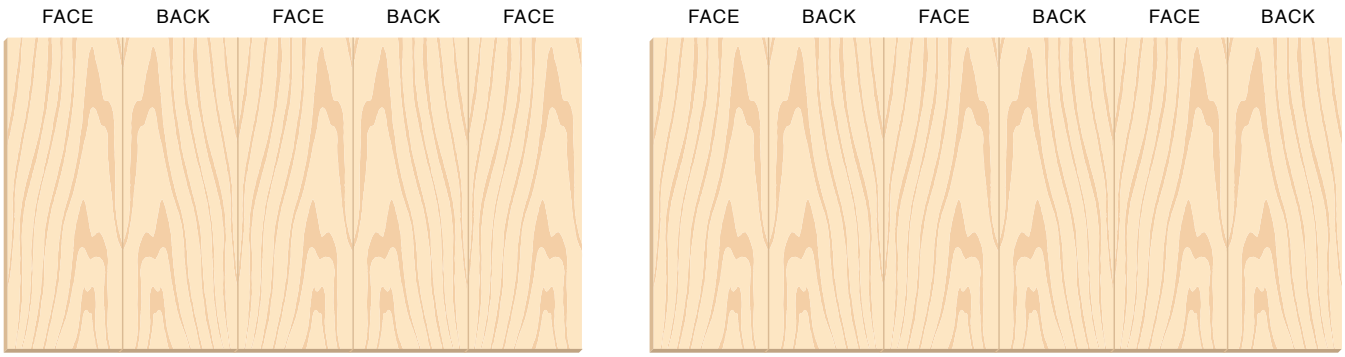
Swing Match

Slip and swing is shown (also Reverse Slip Match). Every other leaf is turned end-to-end. Used primarily on horizontal surfaces.

Veneer Matching

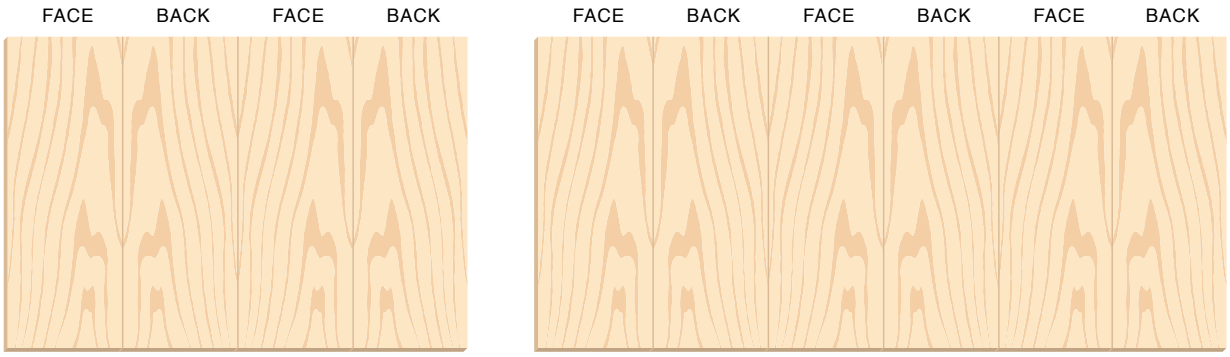
Running Match (Sequence Match)

Individual leaves are split between panels.
The leaves are pulled from the book of leaves in sequence.



Balance Match

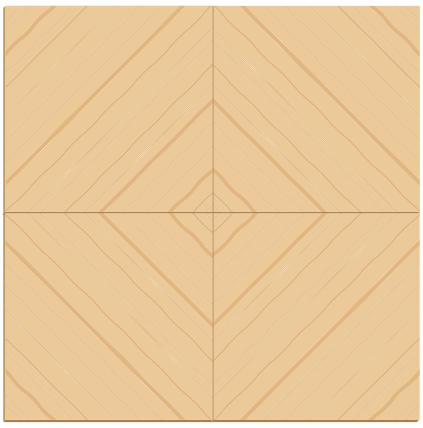
All leaves on the panel are the same size.



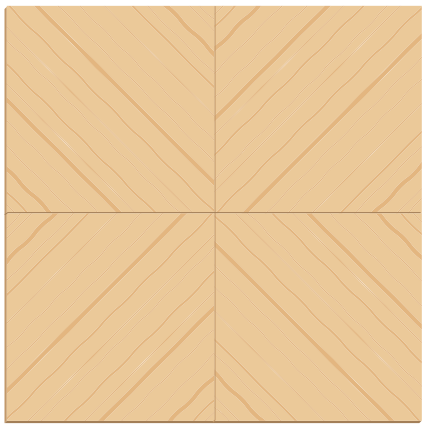
Center Match

Each panel is always made up of an even number of equally sized leaves.

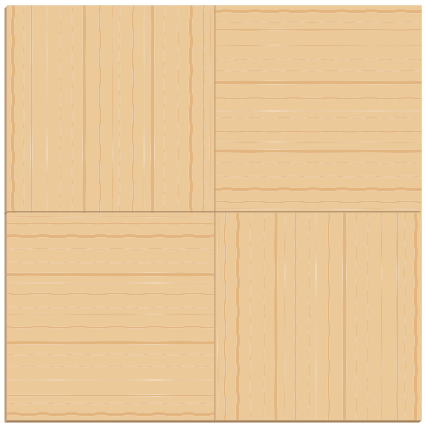
Sketch-Face Patterns



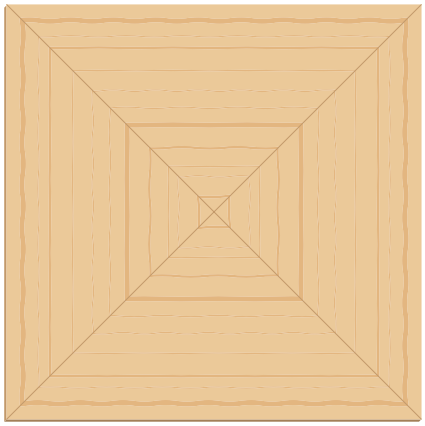
DIAMOND



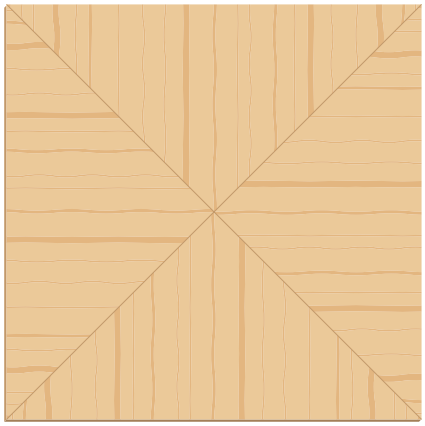
REVERSE DIAMOND



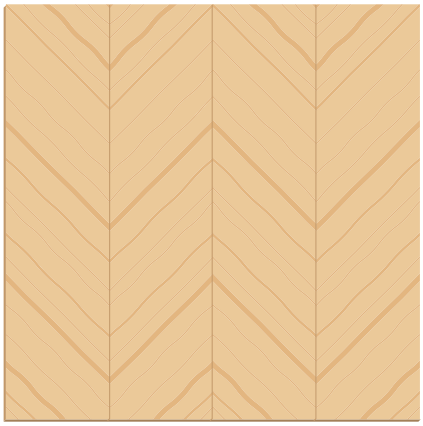
CHECKERBOARD



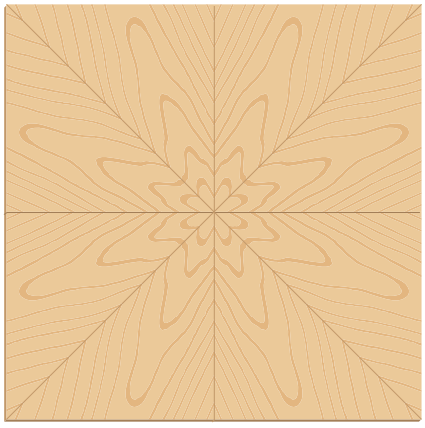
BOX



REVERSE BOX

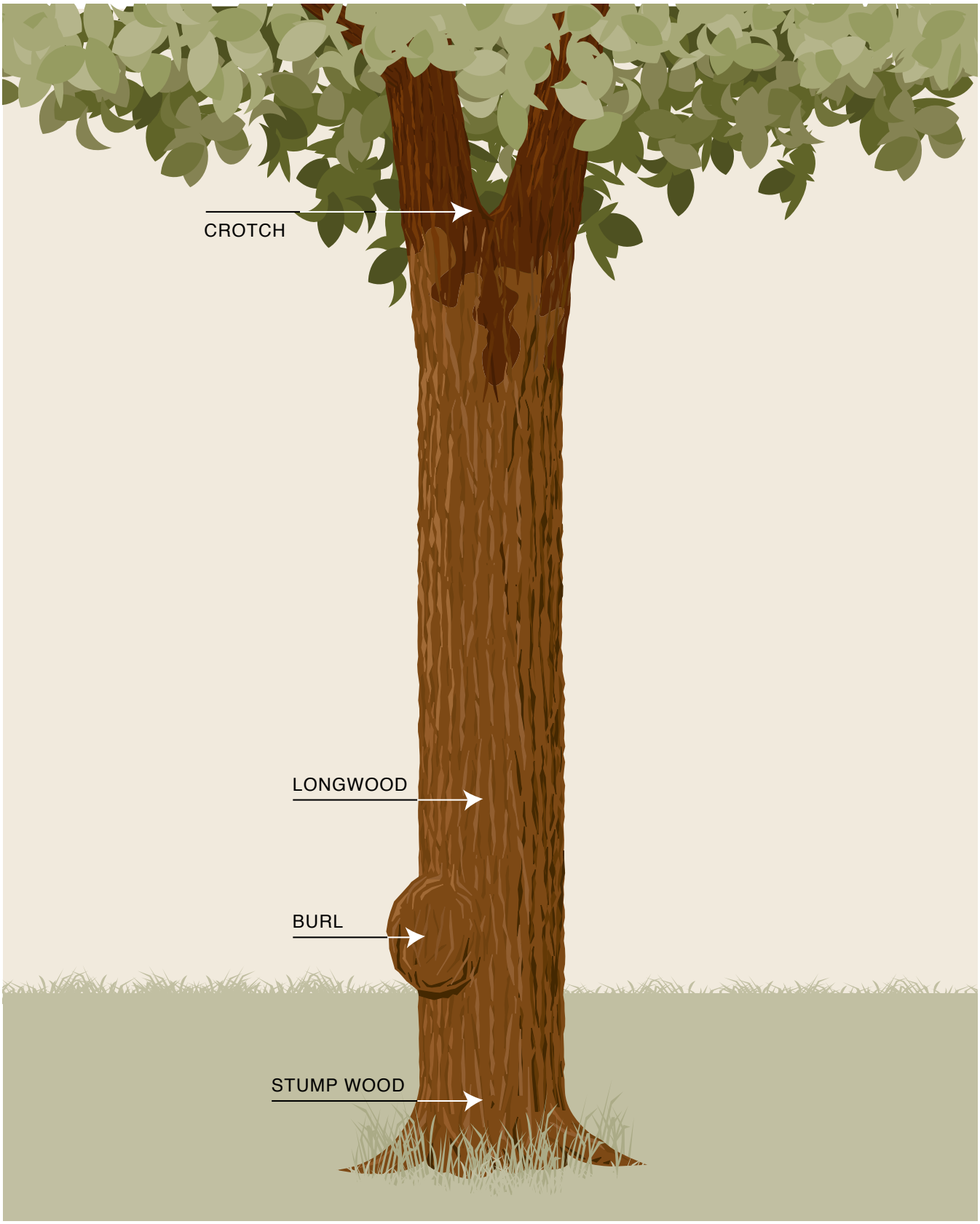


HERRINGBONE



STARBURST

Wood Types from the Tree



Wood Types from the Tree

Longwood

The area from the stump to the first limb of the tree produces the majority of the veneer from the tree. It will be harvested as plain sliced (flat sawn) or quarter sawn cuts. This material, as is most , veneer, is sliced when it is wet; this prevents "ripping" of the veneer leaves.

Crotch

This area produces the feather-like veneer grain pattern that most are familiar with. As expected, this is harvested from the fork area of the tree where the limbs branch out from the Longwood section of the tree.

Stump Wood

As the name implies, this particular grain type is obtained from the stumps of trees. It is seldom seen except in walnut and it is characterized by wrinkles and blotches of color variations. Some of this material is used as veneer for furniture, but the majority of the product is used for solid material such as gun stocks.

Burls

These goiter-like growths are found predominately at the base of elm, walnut, mahogany, and redwood trees. They produce wild swirling grain patterns that are many times loaded with wood grain tension that cause the burl stump to pop and crack as they are sliced.

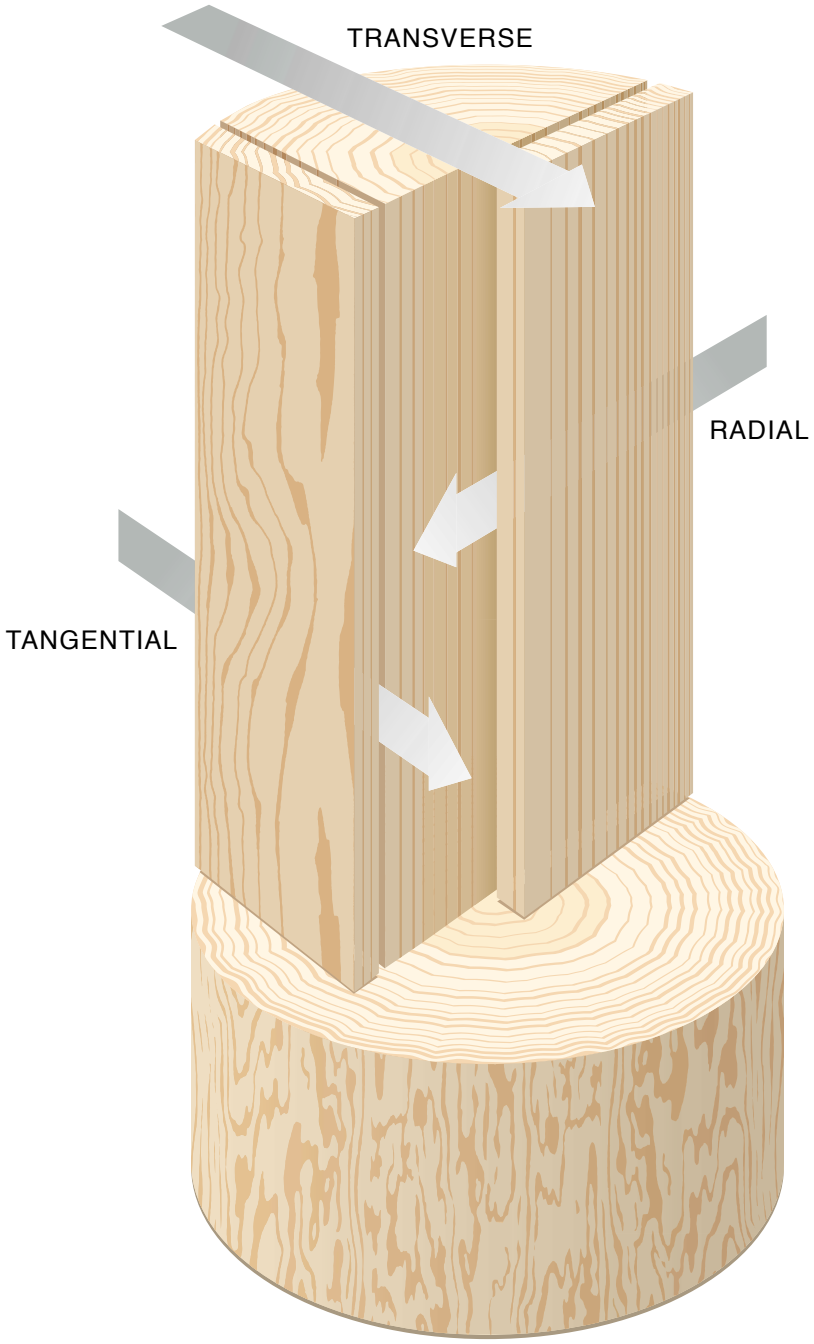
Ray Fleck Effect

In some species such as oak, sycamore, and lacewood, the medullar rays are exposed parallel to the slice of the veneer. This produces a series of shiny, light-reflecting surfaces.

All of the above grain patterns do create a "figure" in the veneer but are not commonly referred to as "specific" figure in wood. There are three categories of specific figure in wood:

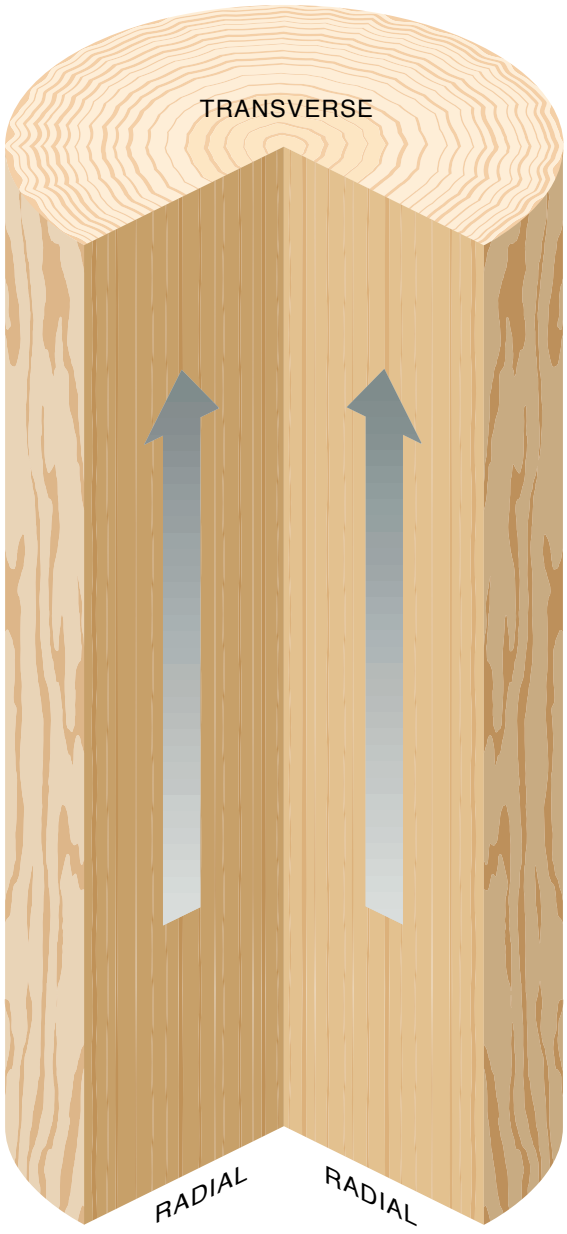
(1) Figure related to spiral growth
(2) Figure related to undulating growth; and
(3) Figure related to indented growth rings.

Tangential, Radial and Transverse



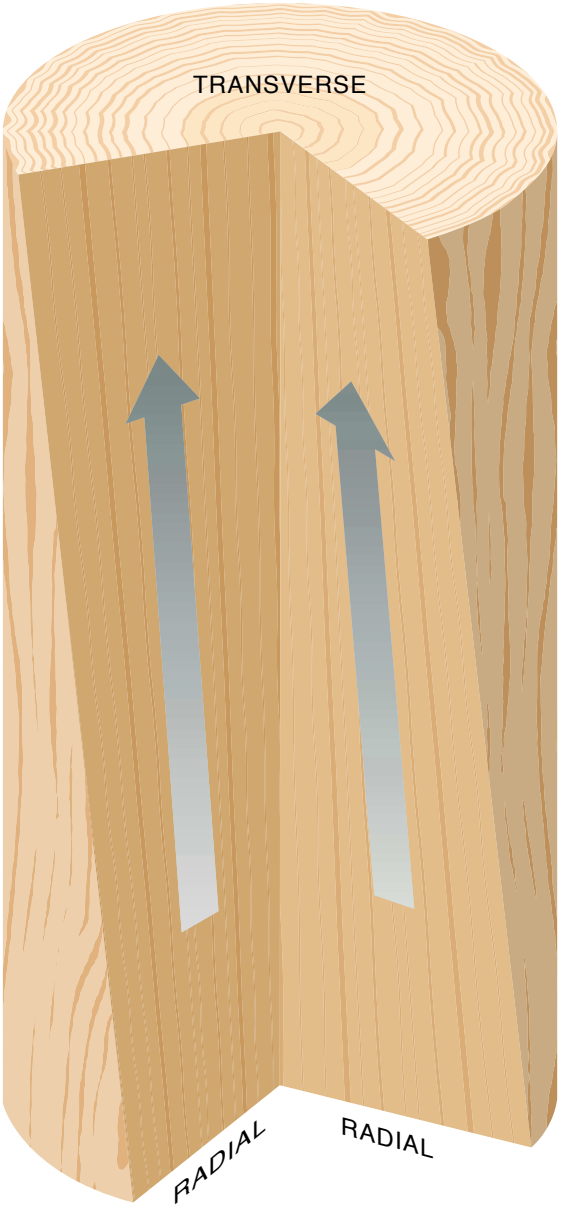
The “formal” term for the plain-sliced section is the tangential section, and the quarter-sawn section is referred to as the radial section. Notice the crosscut section is referred to as the transverse section.

Tree Growth, Perceived



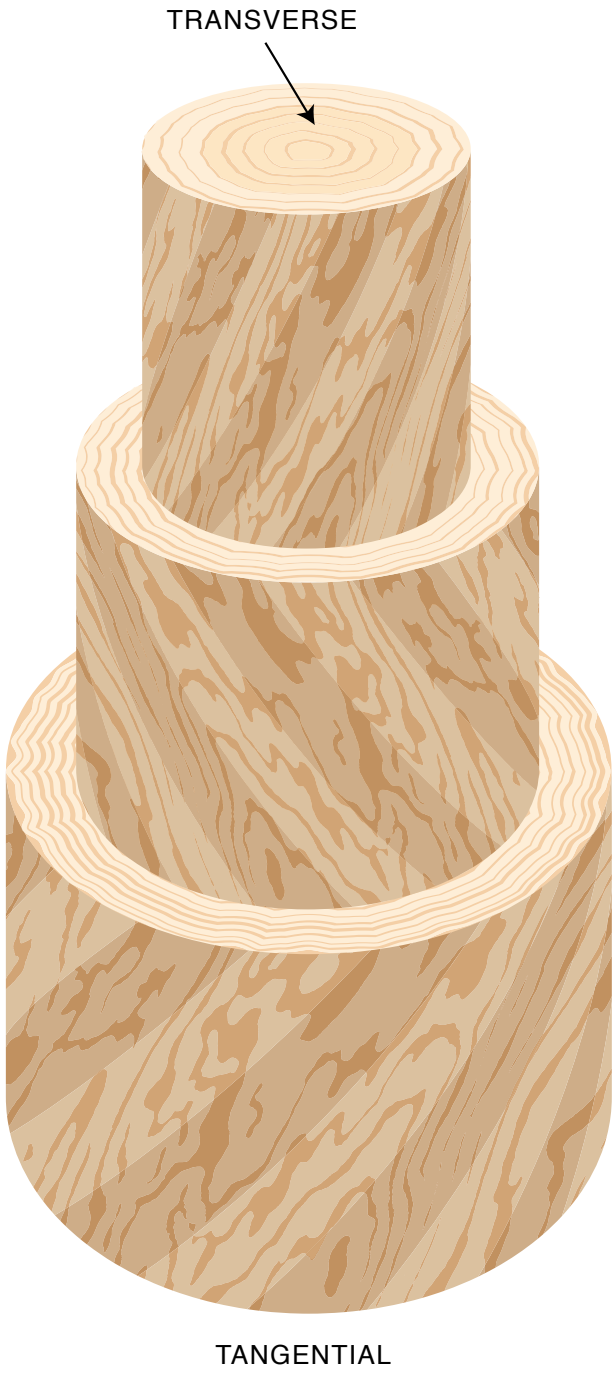
Ideally, a tree would grow straight, with the vertical grain structures running perpendicular to both the tangential and the radial surface.

Tree Growth, Actual



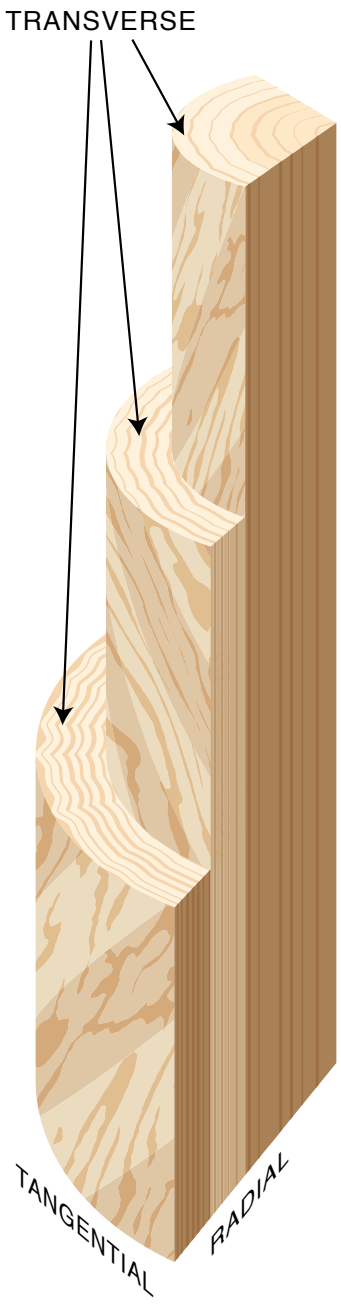
Unfortunately, most trees take on a spiral growth effect. The result of this affects the book-match lay-up but creates no figure. It does enhance the other effects of true figuring in veneer.

Interlocked Grain



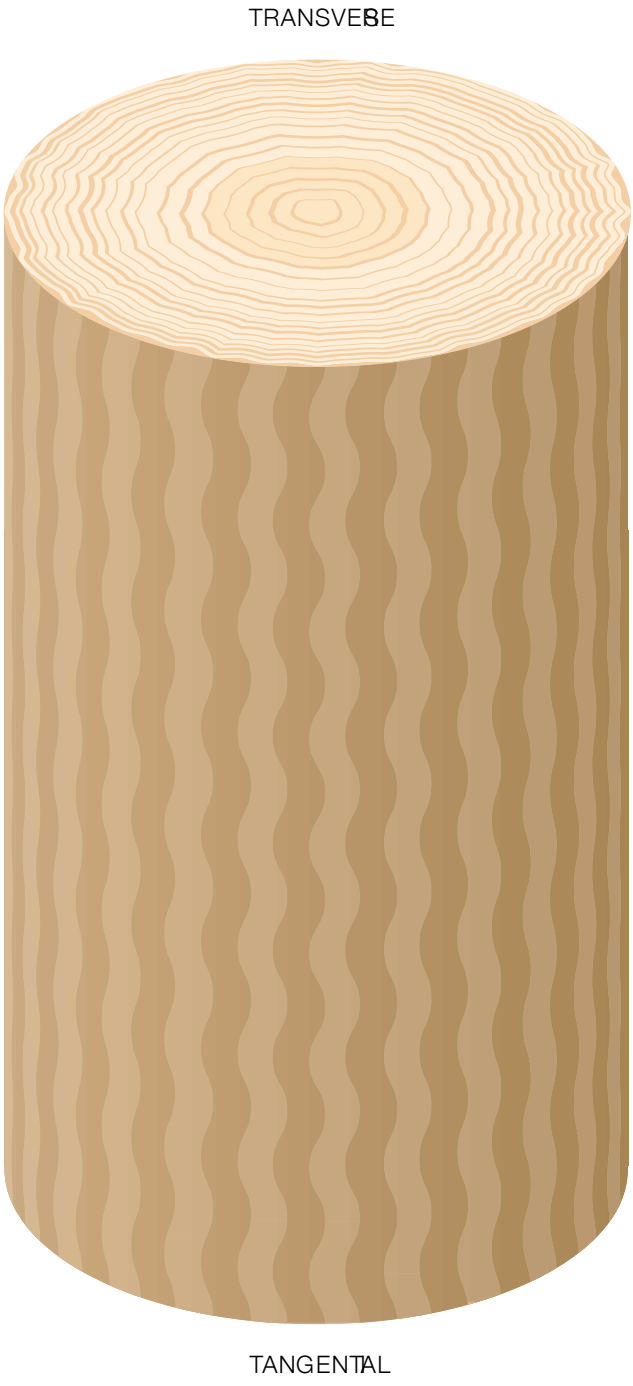
Interlocked grain is a pattern that is created when the spiral growth reverses itself periodically. This is very common in the Mahogany family.

Ribbon Effect



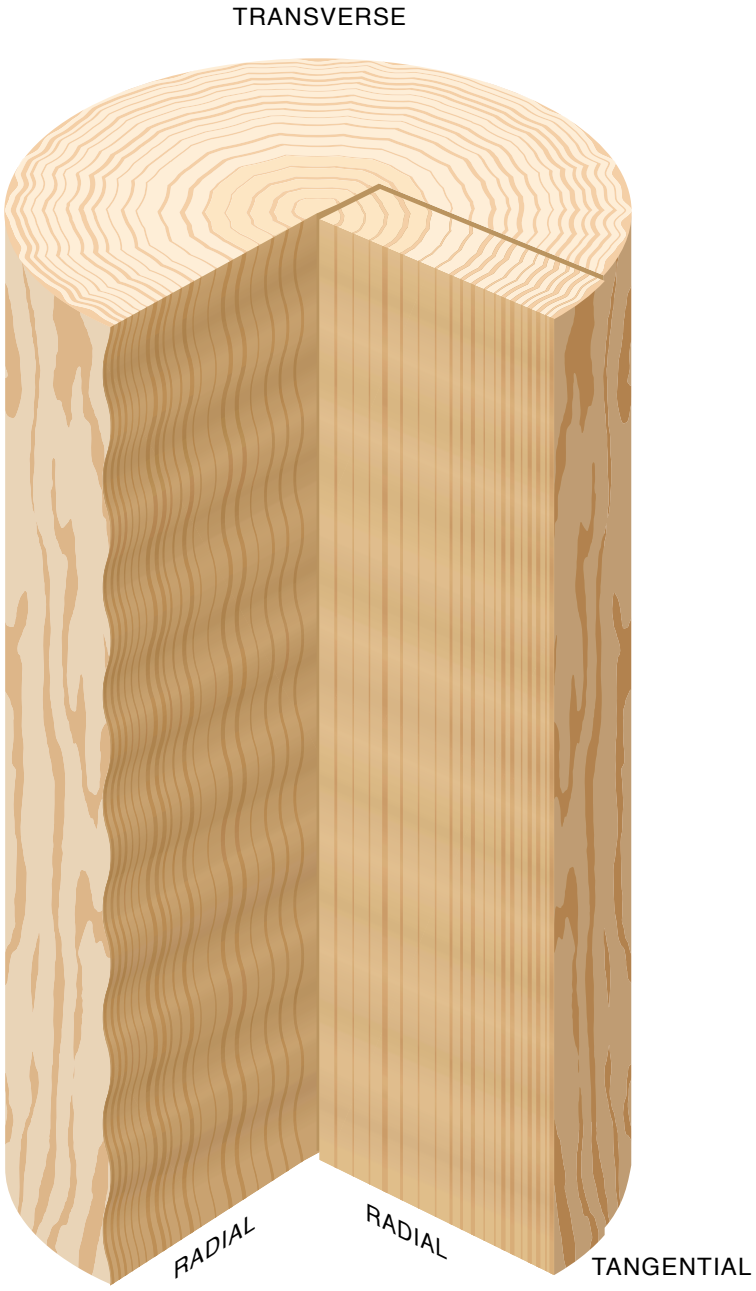
A view from the quarter cut section reveals a dark-light ribbon effect.

Undulating Wavy Grain



This is an example of the undulating wavy grain pattern. Notice that the tangential surface is smooth.

Fiddle-Back/Curly

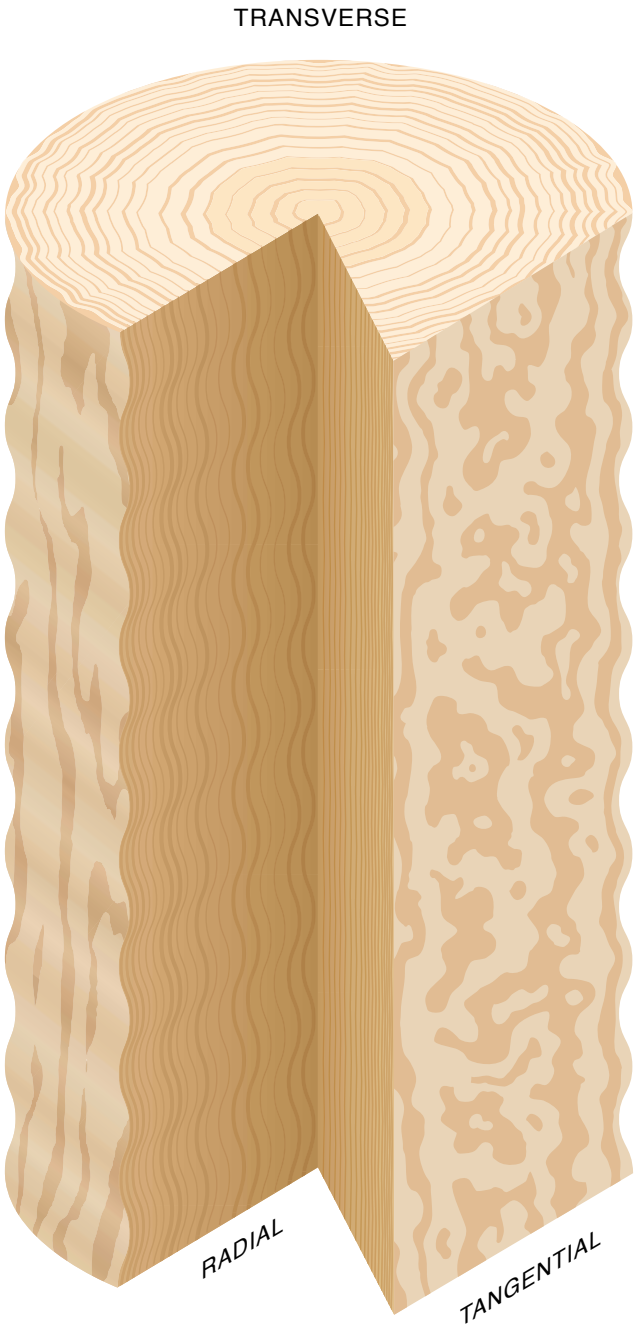


When the radial surface is exposed, the figuring becomes obvious. The amount of figure is a variable that can never be determined until this surface is exposed. When this figure is combined with a reversing spiral-interlocked growth pattern it is referred to as a broken-stripe pattern, or "block mottled". This veneer will be quarter-sawn to produce the greatest amount of figure.

Fiddle-Back

Broken Stripe

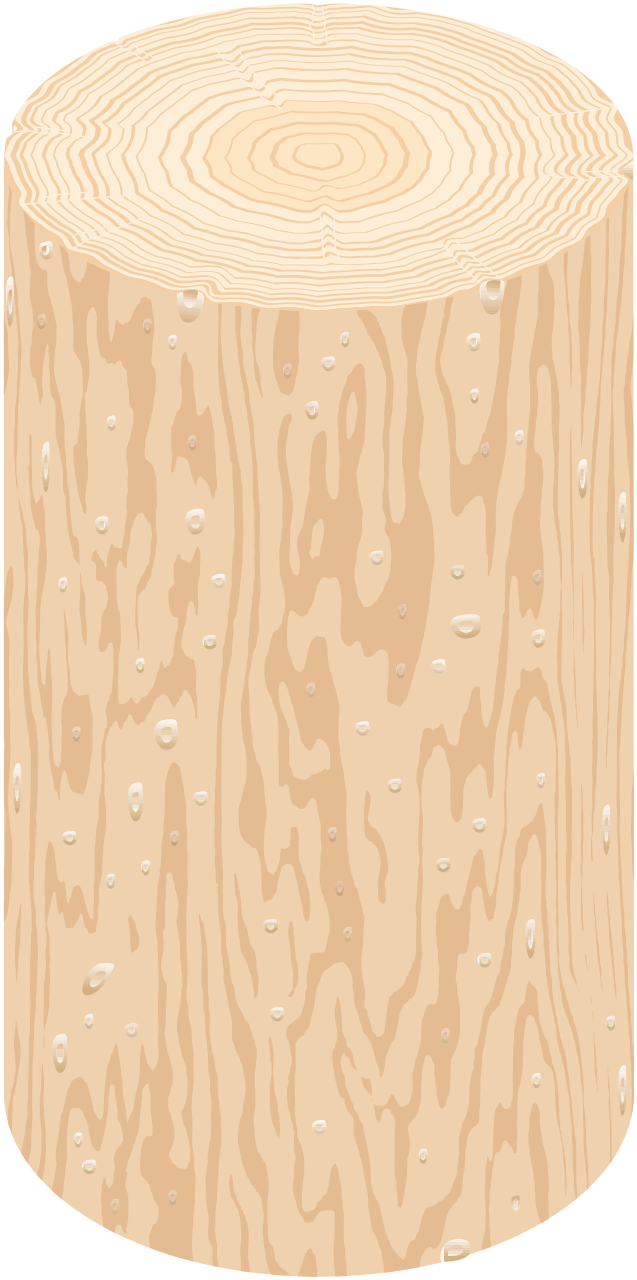
Pomele



Undulating growth on the tangential surface is easily detected when the bark is removed from the log. This material will be plain-sliced to produce a pomele, "blistered" or "quilted" effect.

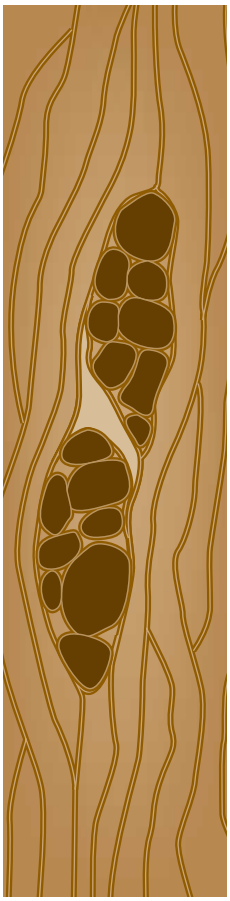
Quilted Maple in Sketch-Face

Indented Growth



Indented growth rings occur on the tangential surface and create figure such as "bird's-eye" and "bear scratch". Notice the transverse section of the log exposes the indented growth rings. Plain-slicing or half-rotary cutting will produce the most figure and greatest yield.

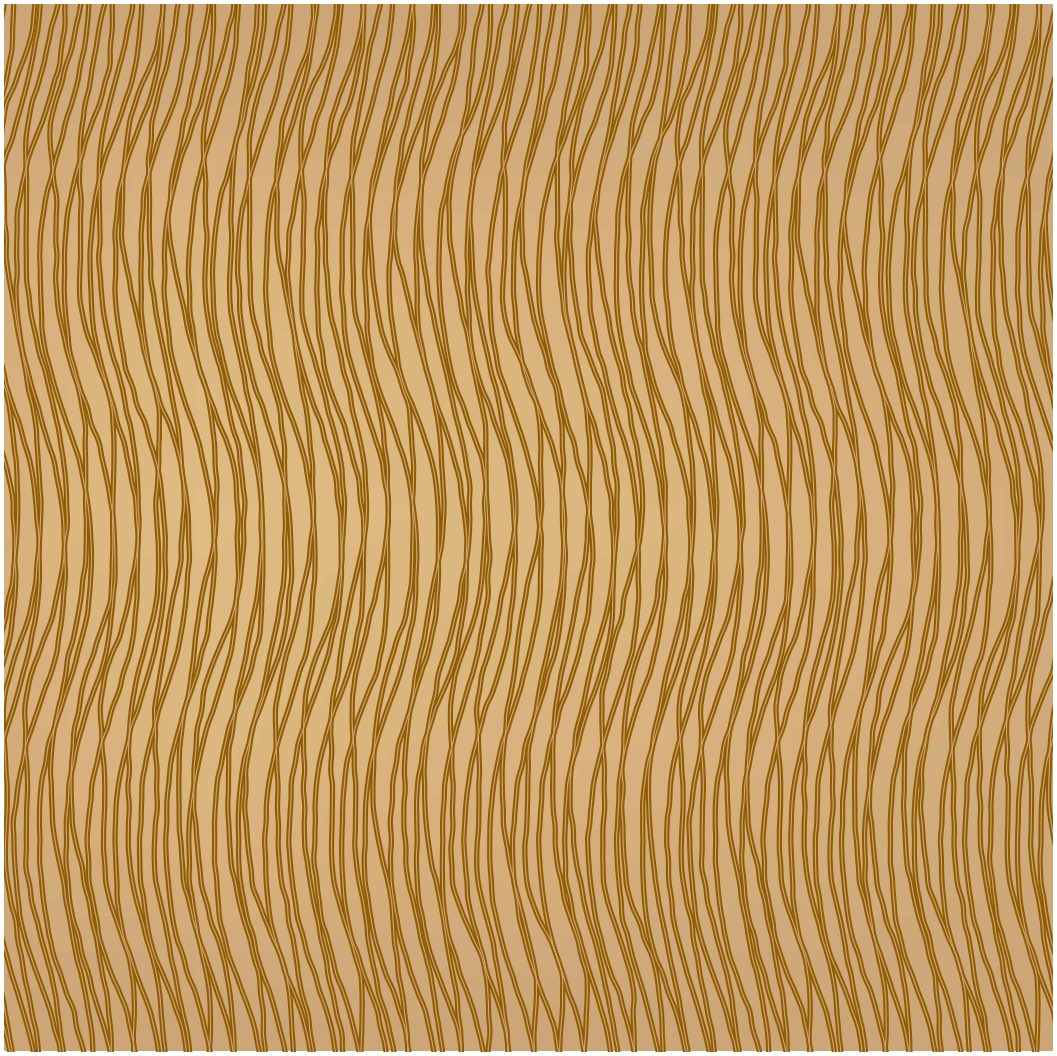
Cell Separation



Cell Separation

Cell Separation

Cell Separation Visual Effect



Incidence of Figured Patterns

Figured wood occurs in almost every species that produces wood. The amount and frequency of figuring vary from species to species.

In the hardwood furniture industry, usable highly figured veneer appears in approximately 3-5% of the material harvested.

It has not been determined what causes the unusual growth that produces figuring in wood. Some observers feel it has to do with the minerals in the ground. Others feel it is due to an abrupt change in climate, or a change in the length of the growing season. The only certainty is there is no known, documented cause for any of these disrupted growth patterns. Therefore, they cannot be reproduced by man, adding to the value of these rare specimens of nature.

SAUNDERS

1000 East Ninth Street North
Park Falls, WI 54552-0149

T: (715) 762-3916
F: (715) 762-3672
e: info@saunderswood.com