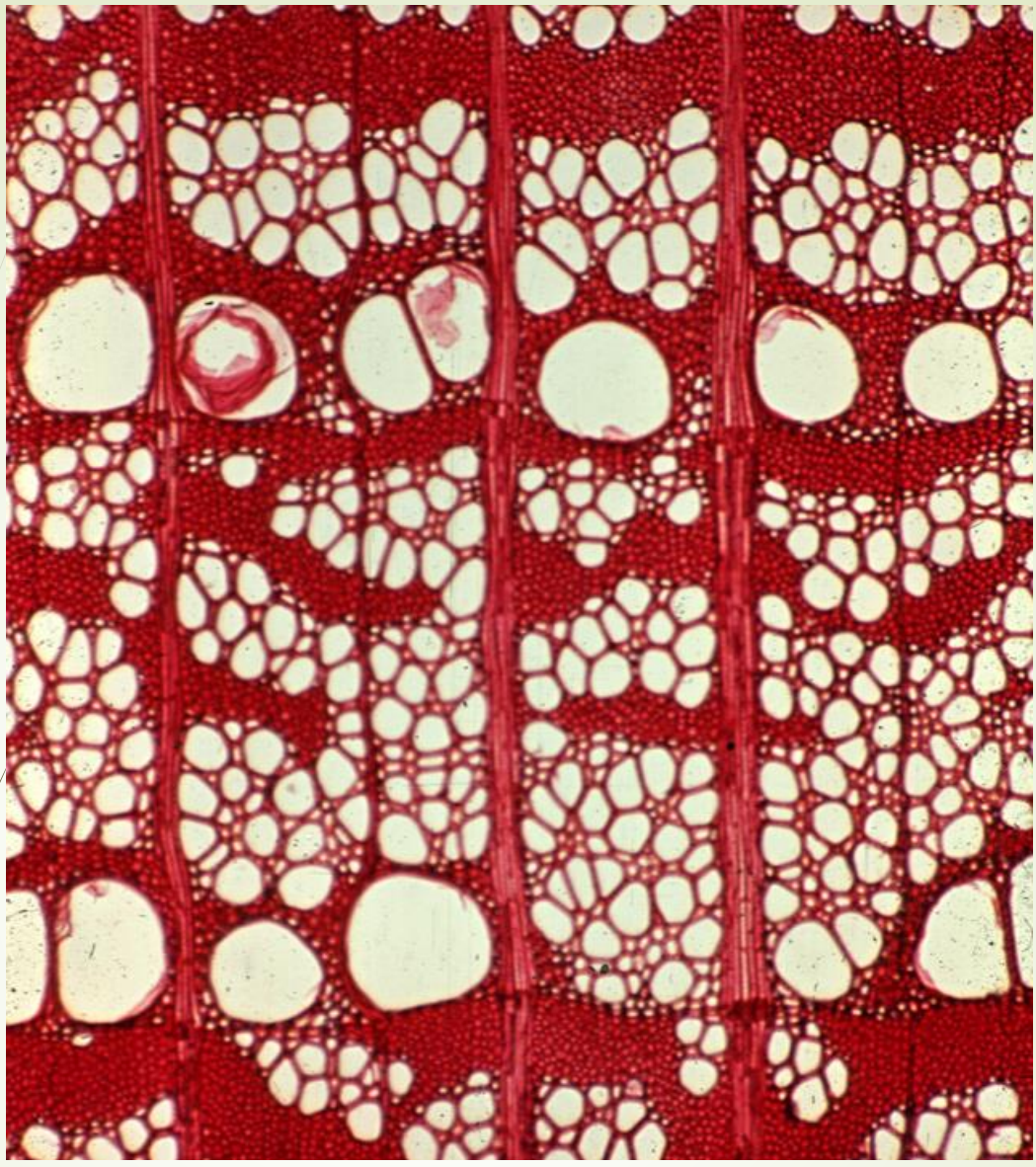
Curtis, Lersten, and Nowak, 2002 rev. 2015 : *Ulmus* (elm) wood cross section



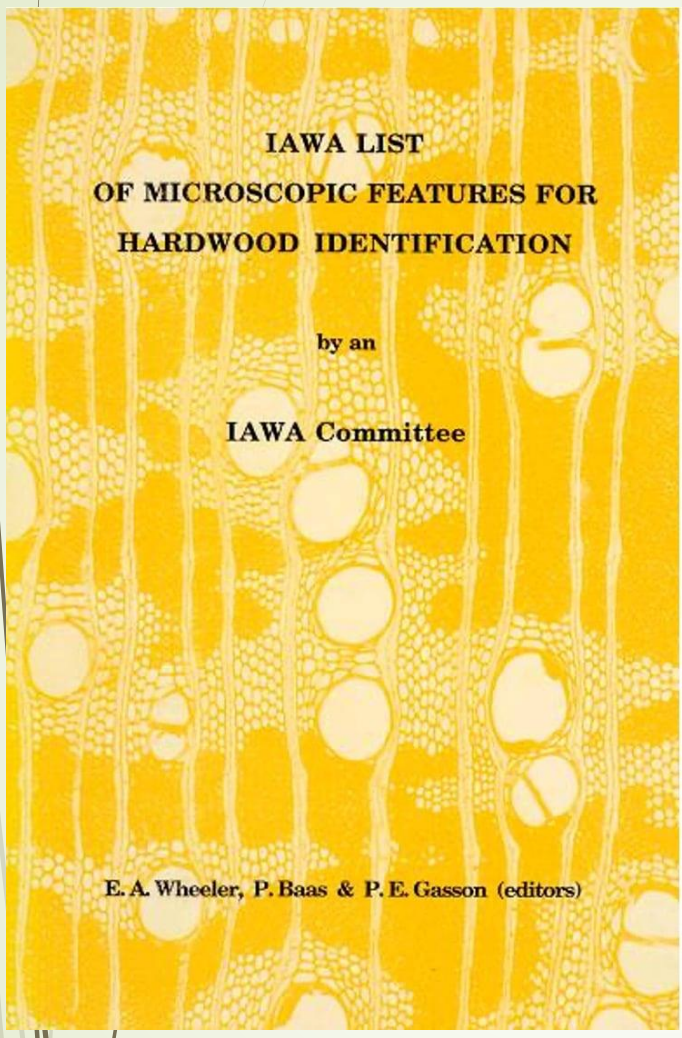
Some interesting Wood Anatomical Features for Species Identification

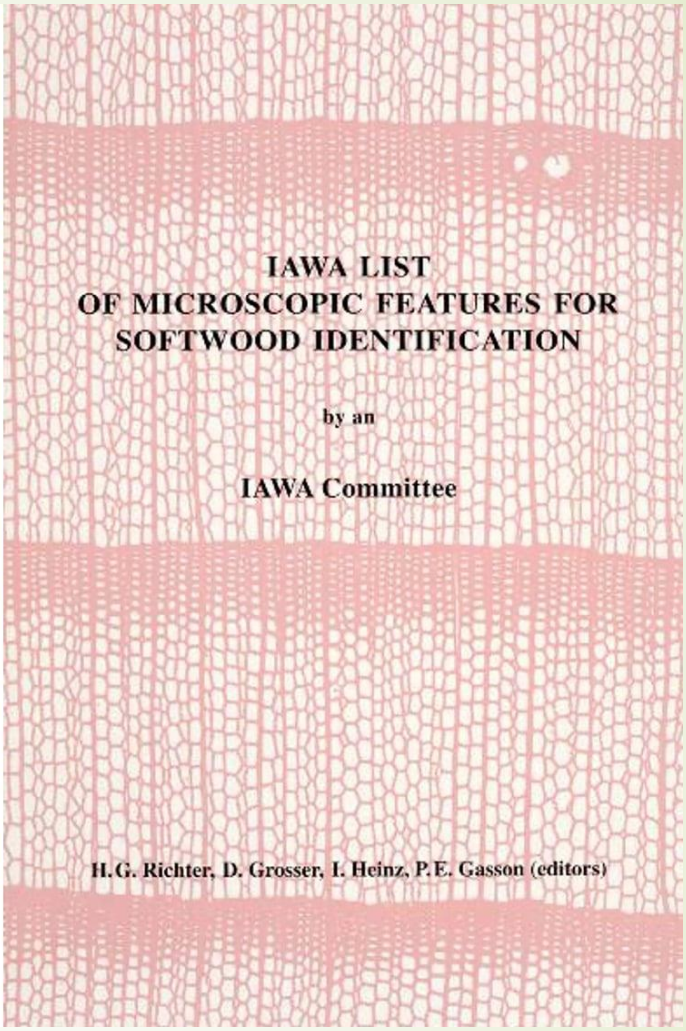
Samuel Bouchut

Recommandation

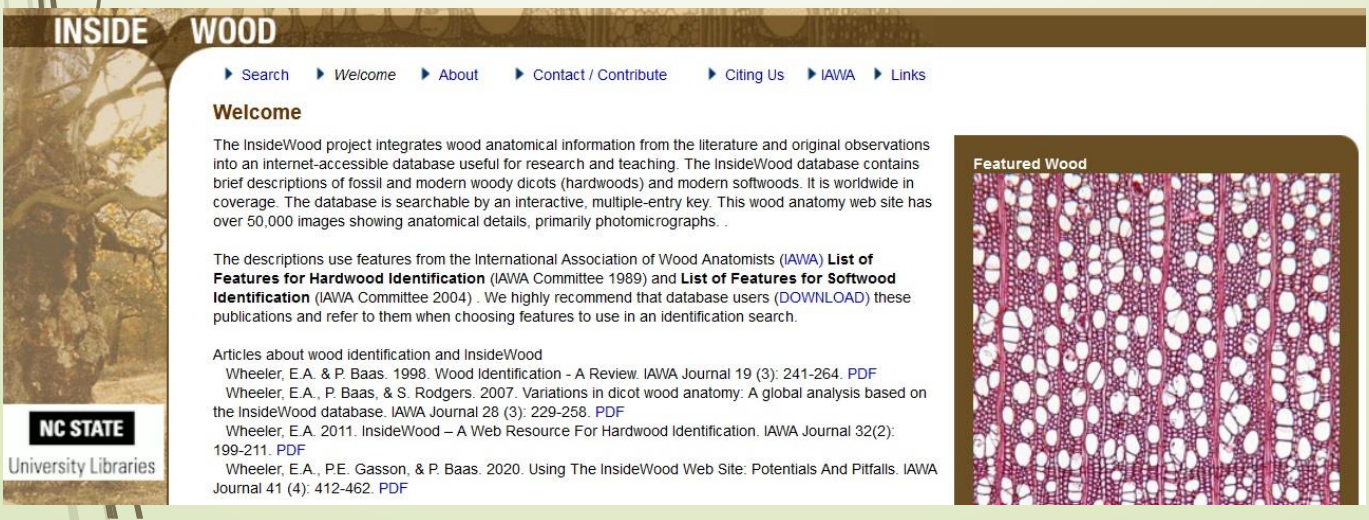
IAWA & InsideWood

The reference for wood anatomical descriptions & species identifications !





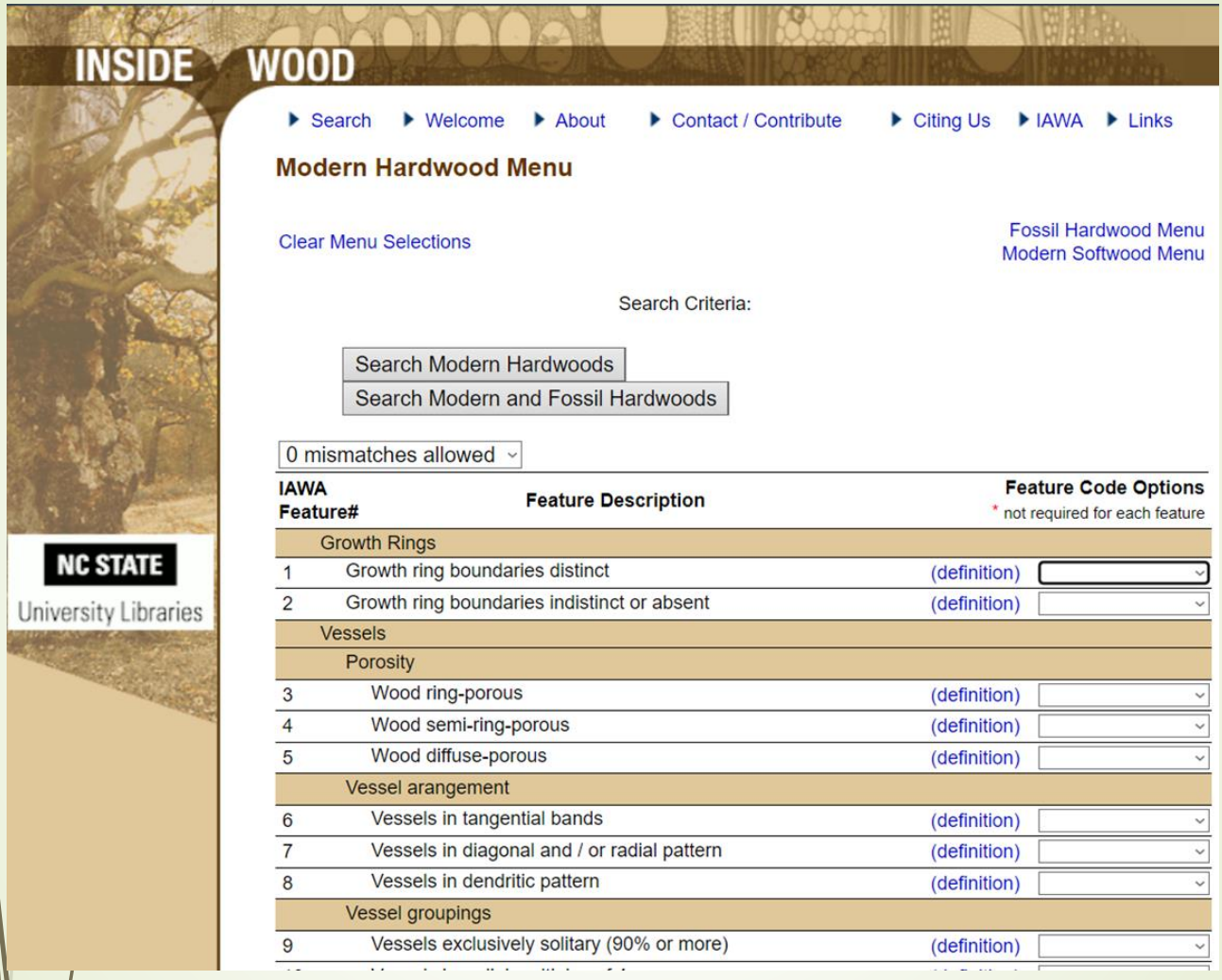
Along with the Inside Wood database website :



IAWA & InsideWood

The reference for wood anatomical descriptions & species identifications !

Interactive keys and Feature codes to help in identifications :



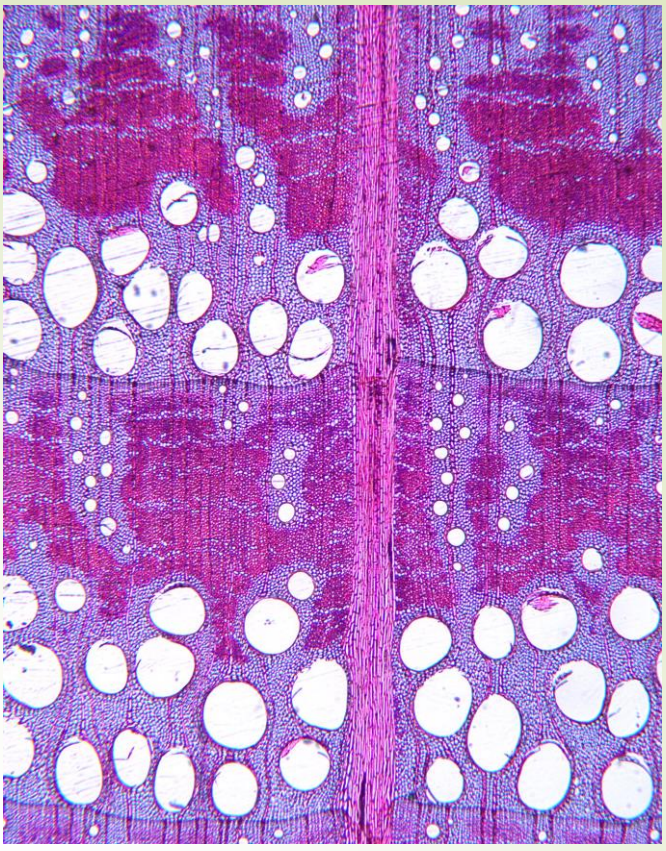
All images come from the InsideWood database :

InsideWood. 2004-onwards. Published on the Internet. http://insidewood.lib.ncsu.edu/search

Wheeler, E.A. 2011. InsideWood – A Web Resource For Hardwood Identification. IAWA Journal 32(2): 199-211.

Wheeler, E.A., P.E. Gasson, & P. Baas. 2020. Using The InsideWood Web Site: Potentials And Pitfalls. IAWA Journal 41 (4): 412-462.

Transverse section →



Specimen BWCw 8544

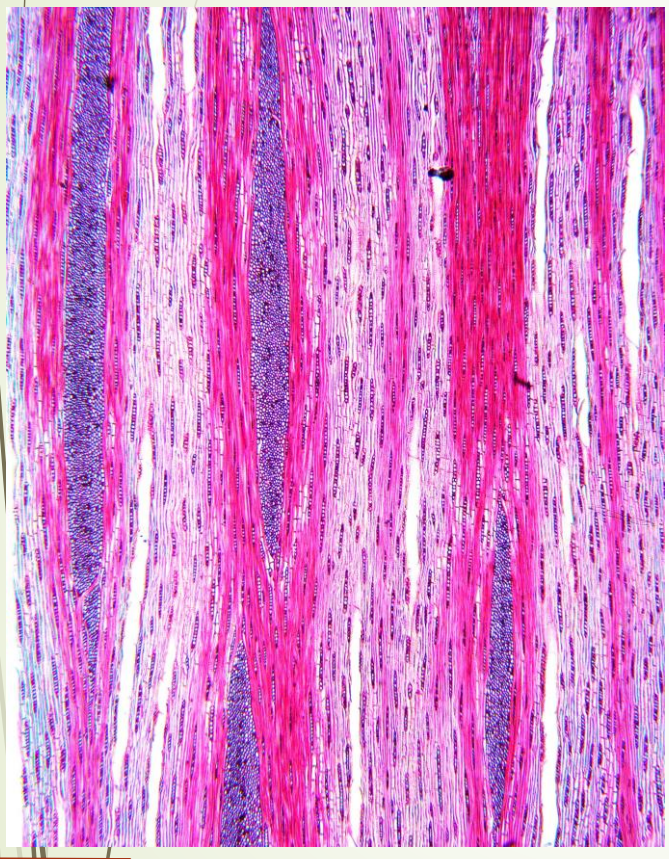
Name FAGACEAE Quercus coccinea

Family FAGACEAE

Species Quercus coccinea

Type of Wood Modern Hardwood

© Elizabeth Wheeler



← Tangential section

Angiosperms

Heteroxylous wood

Radial section →

Wood diffuse-porous

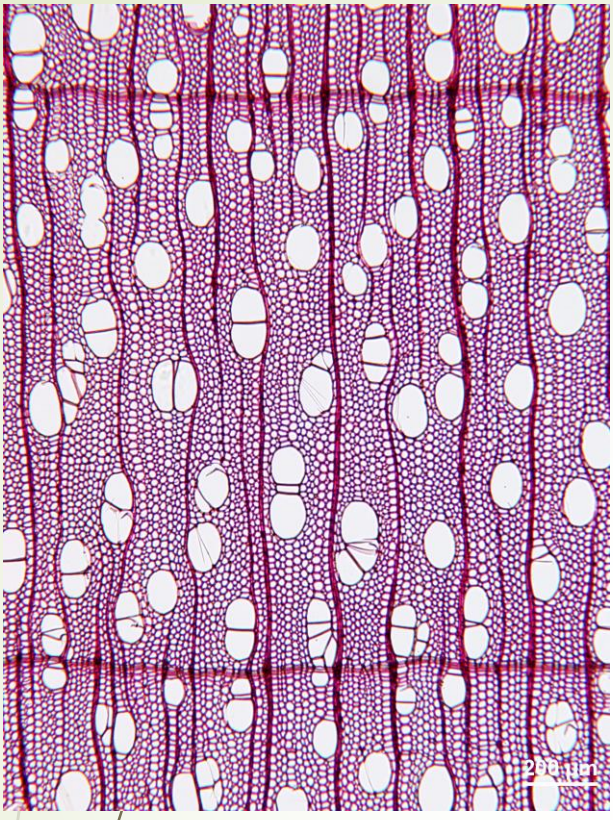


Image ID 48681

Specimen BWCw 8126

Name BETULACEAE Betula papyrifera

Family BETULACEAE

Species Betula papyrifera

Type of Wood Modern Hardwood

View cross section

Magnification 004

Contributor Elisabeth Wheeler

Image ID 660

Specimen BWCw s.n.A.sacch

Name SAPINDACEAE Acer saccharinum

Family SAPINDACEAE

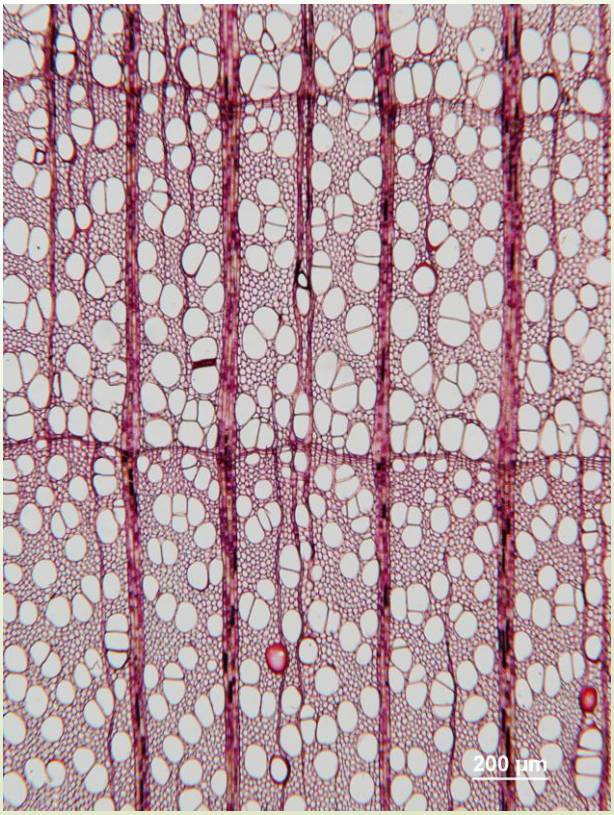
Species Acer saccharinum

Type of Wood Modern Hardwood

View cross section

Magnification 004

Contributor Elisabeth Wheeler



See also : Gums and deposits in vessels

Wood ring-porous

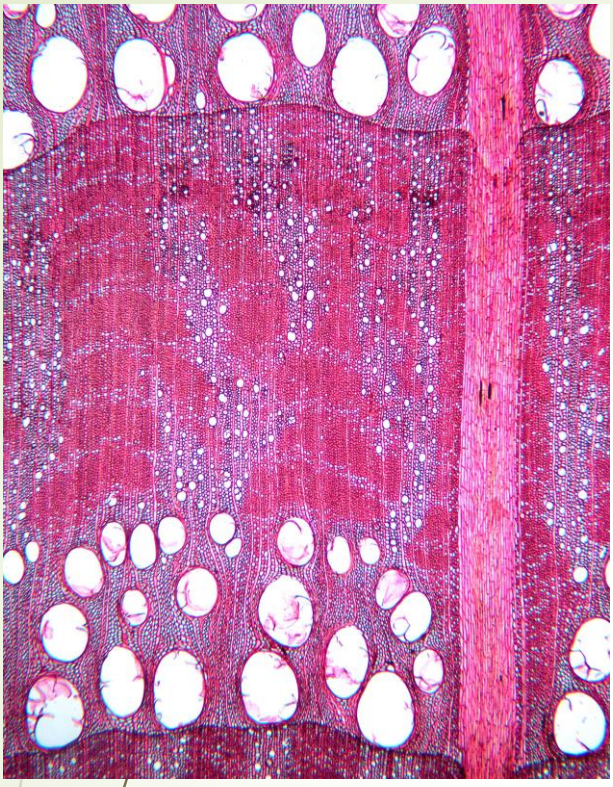


Image ID 66990

Specimen BWCw 8071

Name FAGACEAE Quercus alba

Family FAGACEAE

Species Quercus alba

Type of Wood Modern Hardwood

View cross section

Magnification 002

Contributor Elisabeth Wheeler

See also : Tyloses in vessels,
Vessels in diagonal, dendritic and / or radial pattern
Axial parenchyma in narrow bands or lines

Image ID 57674

Specimen Hw s.n.Frax.am

Name OLEACEAE Fraxinus americana

Family OLEACEAE

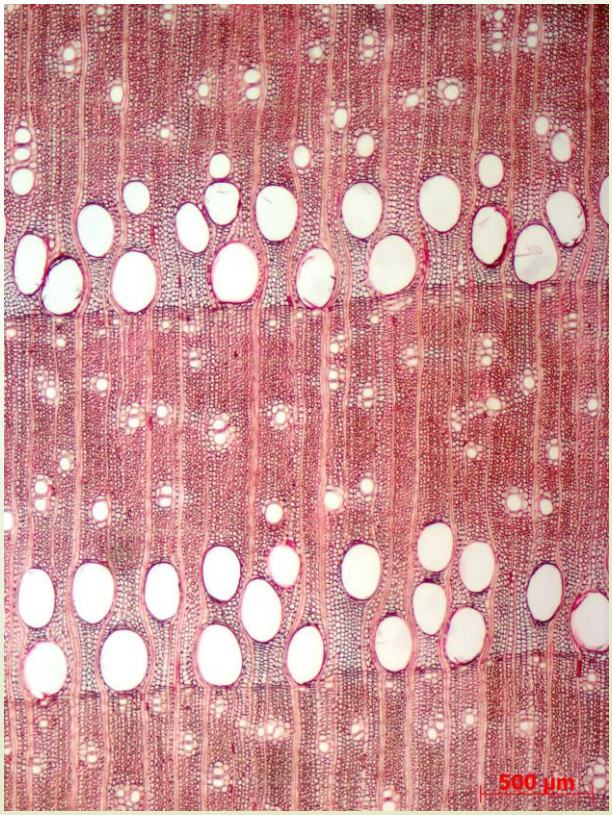
Species Fraxinus americana

Type of Wood Modern Hardwood

View cross section

Magnification 002.5

Contributor Peter Gasson



See also : Vascular / vasicentric tracheids

Prismatic crystals

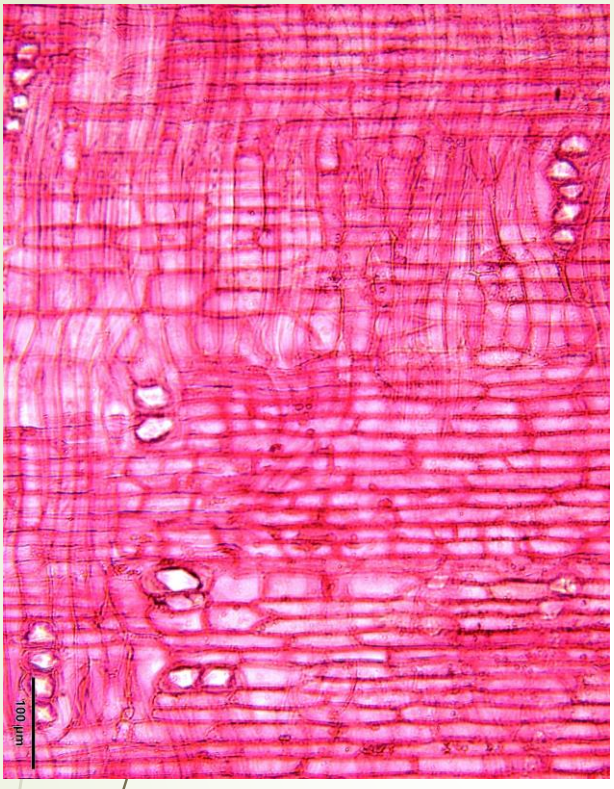


Image ID 66986

Specimen BWCw 8071

Name FAGACEAE Quercus alba

Family FAGACEAE

Species Quercus alba

Type of Wood Modern Hardwood

View radial section

Magnification 010

Contributor Elisabeth Wheeler

See also : Prismatic crystals in procumbent ray cells/in chambered axial parenchyma cells

Image ID 62259

Specimen BWCw 8034

Name FAGACEAE Quercus alba

Family FAGACEAE

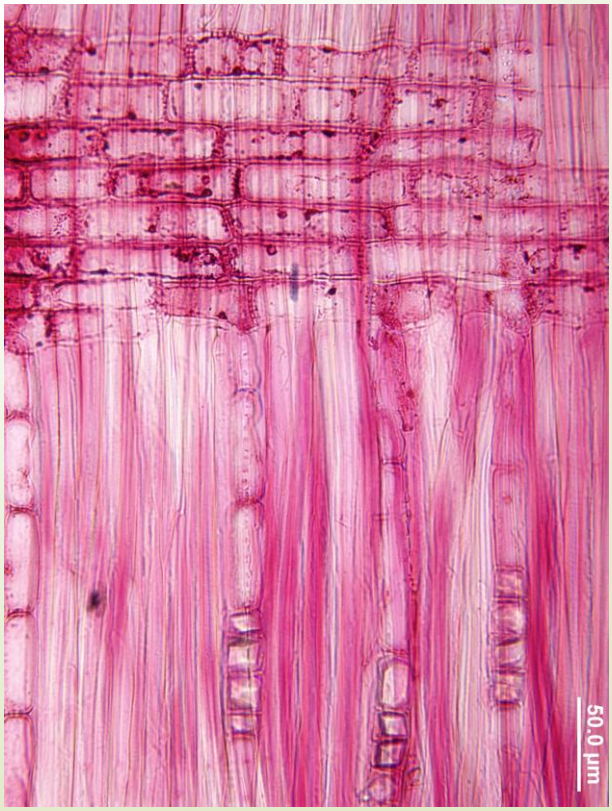
Species Quercus alba

Type of Wood Modern Hardwood

View radial section

Magnification 020

Contributor Elisabeth Wheeler



See also : Prismatic crystals in chambered axial parenchyma cells

Helical thickenings in vessel elements

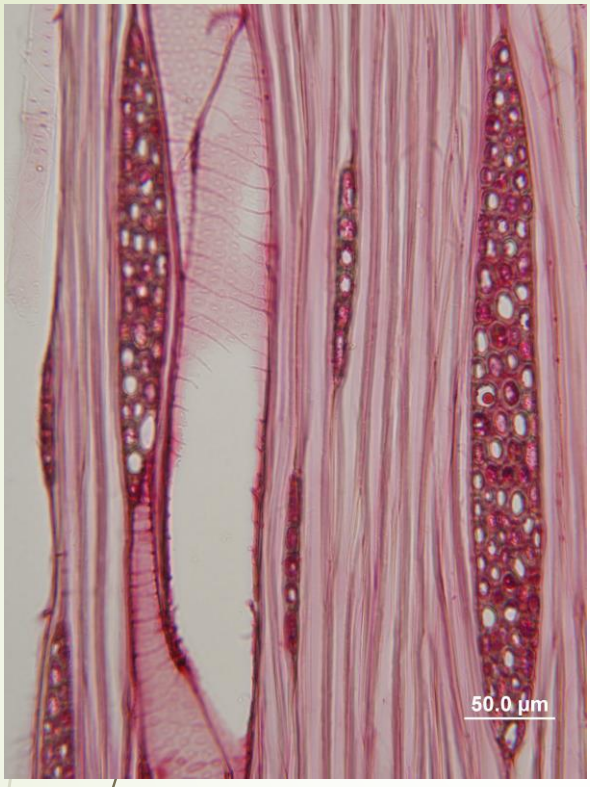


Image ID 667

Specimen BWCw s.n.A.sacch

Name SAPINDACEAE Acer saccharinum

Family SAPINDACEAE

Species Acer saccharinum

Type of Wood Modern Hardwood

View tangential section

Magnification 020

Contributor Elisabeth Wheeler

See also : Rays of two distinct sizes (uni- + multi-seriate), Intervessel pits alternate

Image ID 271

Specimen BWCw 8420

Name SAPINDACEAE Acer saccharum

Family SAPINDACEAE

Species Acer saccharum

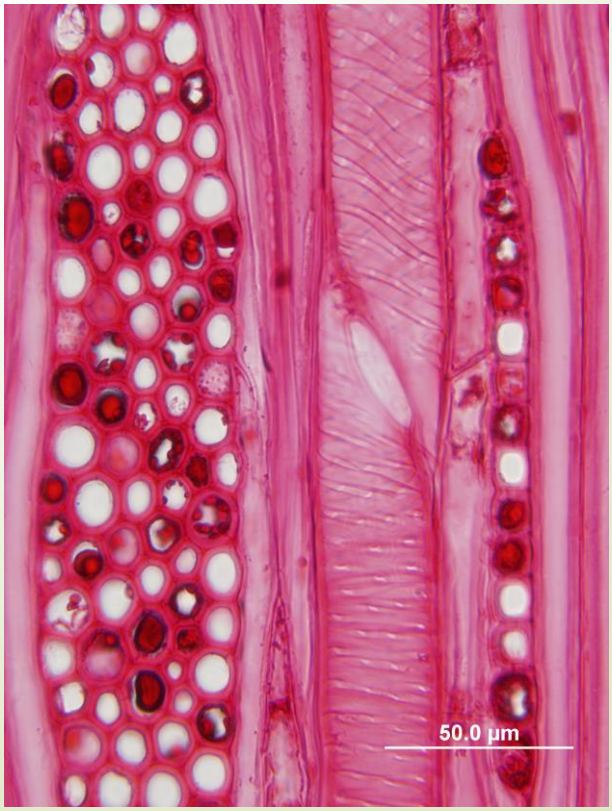
Type of Wood Modern Hardwood

View intervessel pitting

Magnification 040

Contributor Elisabeth Wheeler

See also : Simple perforation plates



Scalariform perforation plates

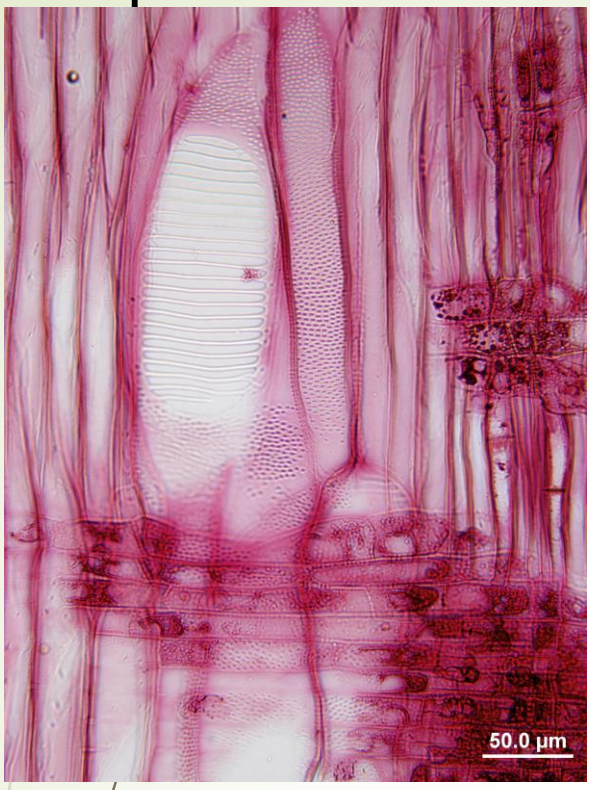


Image ID 48679

Specimen BWCw 8126

Name BETULACEAE Betula papyrifera

Family BETULACEAE

Species Betula papyrifera

Type of Wood Modern Hardwood

View radial section

Magnification 020

Contributor Elisabeth Wheeler

See also : Intervessel pits alternate, Shape of alternate pits polygonal

Image ID 74720

Specimen BWCw 8000

Name BETULACEAE Betula papyrifera

Family BETULACEAE

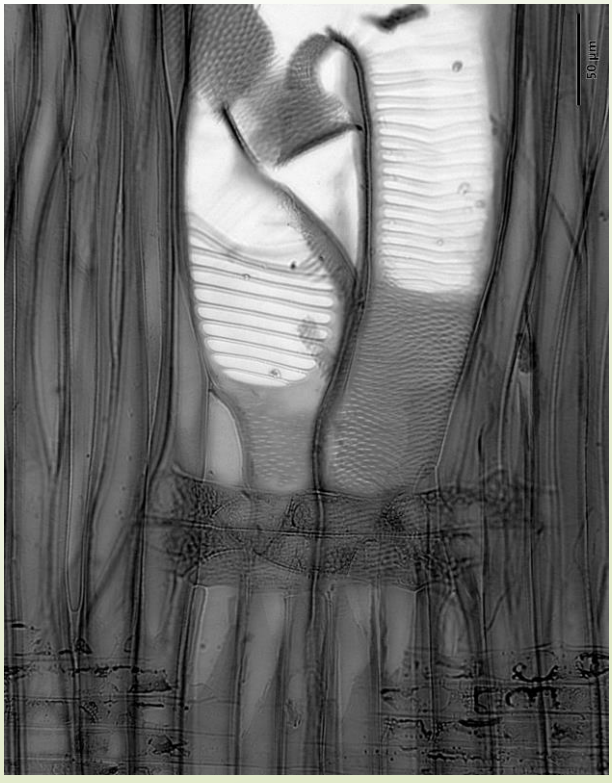
Species Betula papyrifera

Type of Wood Modern Hardwood

View radial section

Magnification 020

Contributor Elisabeth Wheeler



See also :

Transverse section

Tyloses

Protrusions emanating from axial paratracheal parenchyma cells into xylem vessels through pits linking the two. When the plant is stressed by drought or infection, tyloses will fall from the sides of the cells and "dam" up the vascular tissue to prevent further damage to the plant (i.e. embolism or pathogens propagation).

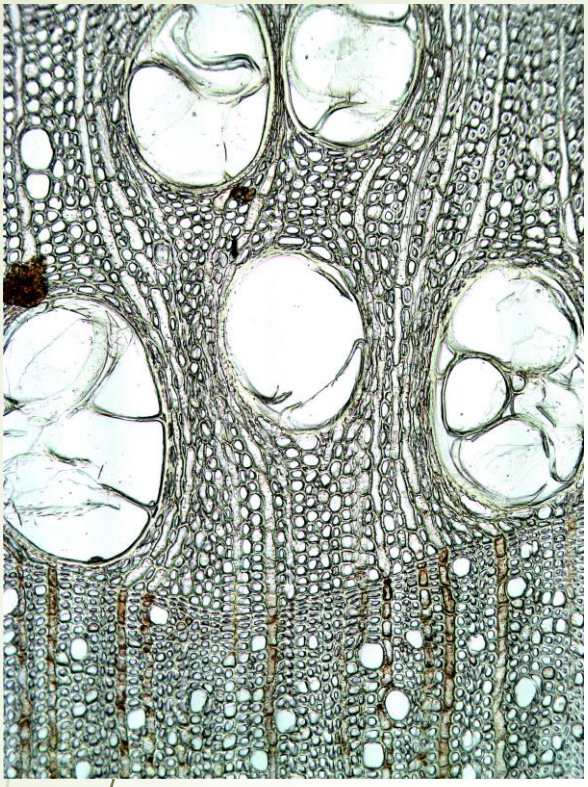


Image ID 65441

Specimen WUR 14 162

Name FAGACEAE Quercus alba

Family FAGACEAE

Species Quercus alba

Type of Wood Modern Hardwood

View cross section

Magnification 010

Contributor Raimund Aichbauer

See also :

Image ID 66991

Specimen BWCw 8071

Name FAGACEAE Quercus alba

Family FAGACEAE

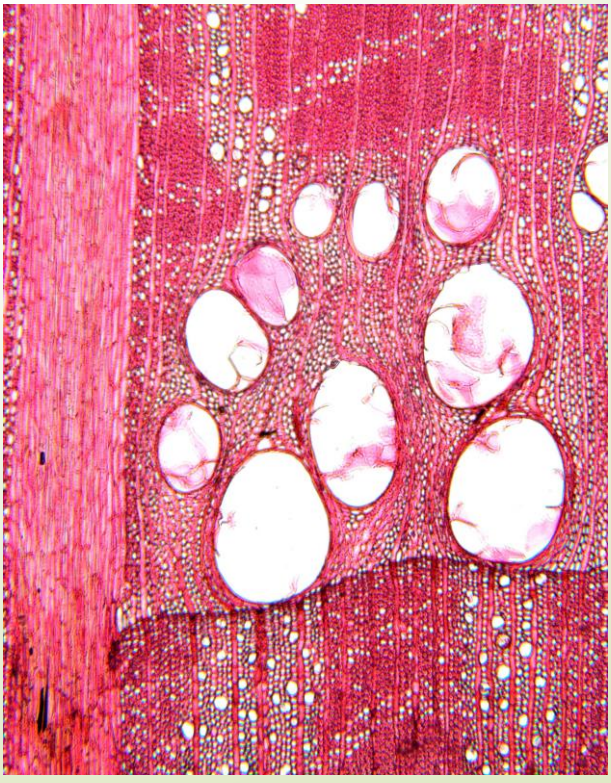
Species Quercus alba

Type of Wood Modern Hardwood

View cross section

Magnification 004

Contributor Elisabeth Wheeler



See also :

Transverse section →

Specimen BWCw 8010

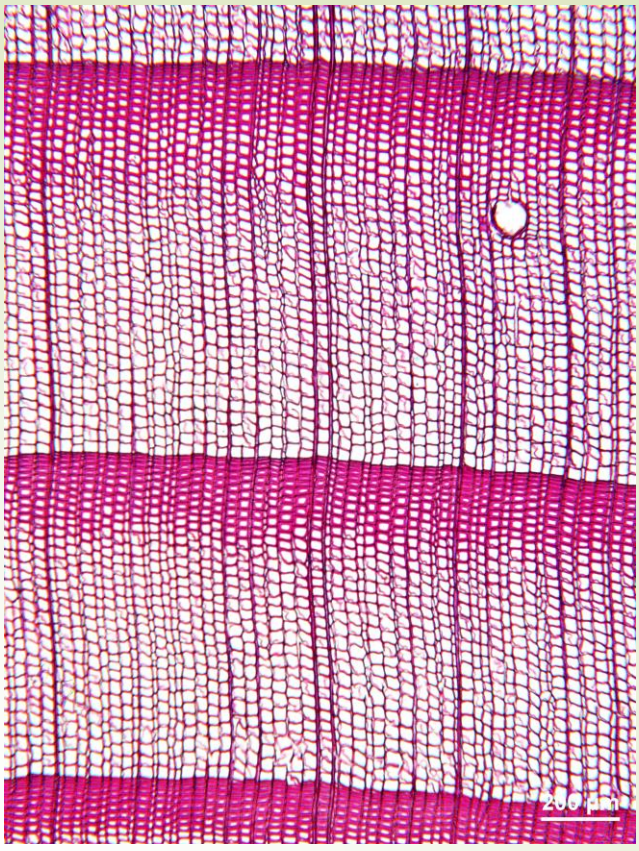
Name PINACEAE Picea mariana

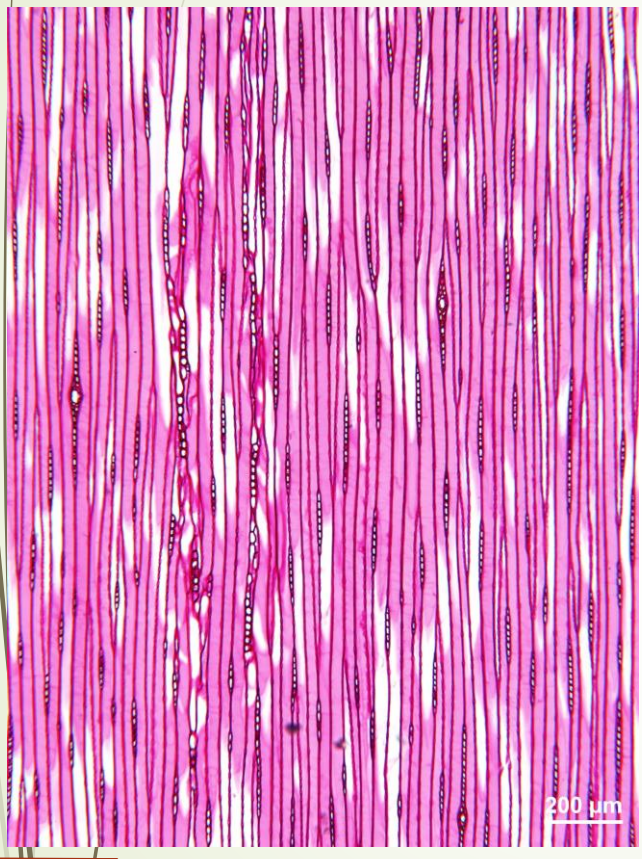
Family PINACEAE

Species Picea mariana

Type of Wood Modern Softwood

© Elizabeth Wheeler

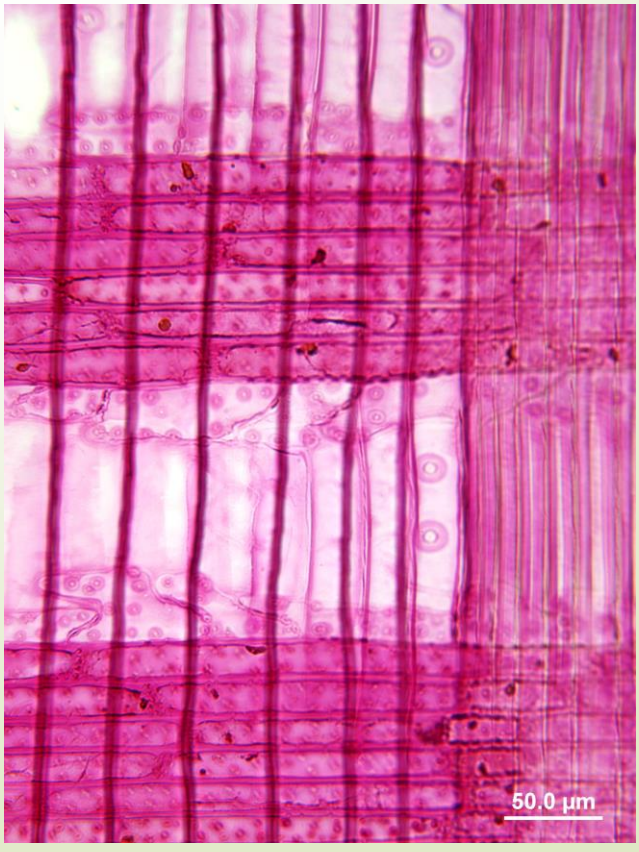




← Tangential section

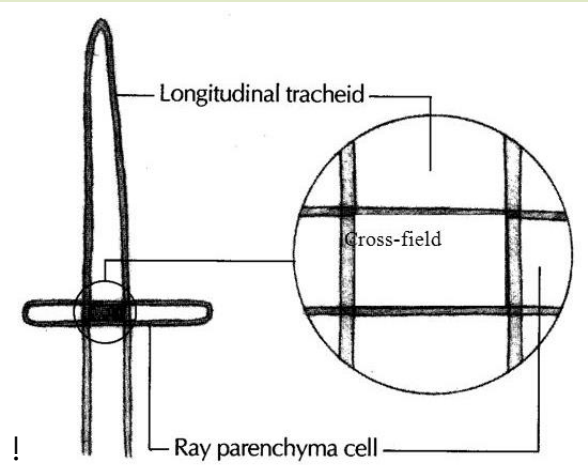
Conifers

Homoxylous wood



Radial section →

Radial section



Cross-field pitting

A very important feature for conifer identification !