

The Hardwood Coss-sections Book

Endgrain Macroscopic Images of the Most Common Timbers

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Acknowledgements

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Impressum

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Image source:

All macroscopic images are original and collected by Flavio Ruffinatto using the XyloScope.

Wood samples sources:

Royal Museum for Central Africa, Tervuren, BE
USDA Forest Products Laboratory, Madison, WI, USA
Flavio Ruffinatto's personal wood collection

Cover pictures (cross-sections, 10x):

<i>Alexa imperatricis</i>	<i>Alnus glutinosa</i>	<i>Alnus rubra</i>	<i>Alstonia macrophylla</i>
<i>Aniba rosodora</i>	<i>Anisoptera costata</i>	<i>Anopyxis klaineana</i>	<i>Antiaris toxicaria</i>

Back cover pictures (cross-sections, 10x):

<i>Afzelia bipindensis</i>	<i>Ailanthus altissima</i>	<i>Albizia ferruginea</i>	<i>Albizia lebbeck</i>
<i>Amphimas pterocarpoides</i>	<i>Andira coriacea</i>	<i>Androstachys johnsonii</i>	<i>Aniba canelilla</i>

Scientific plant and Family names updated on June 2020 according to Plants of the world online (<http://www.plantsoftheworldonline.org/>)

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Table of contents

Introduction.	5
Wood identification visual guide	7
Species cross-sections.	9
Species by scientific name	111
Species by family	115
References	119

Introduction

Wood identification support to laws and treaties safeguarding vulnerable tree species, to curtail international illegal logging, or to the study of wood culture throughout the ages -to mention a few- couldn't be larger. A wide range of publications is currently pioneering novel approaches toward wood identification, including mass spectrum analysis, DNA sequence analysis, and machine learning of microscopic and macroscopic images. Among these welcome innovations, the centuries' old macroscopic and microscopic wood identification techniques still provide the most widely applied and reliable methods to approach an unknown piece of wood to be named.

Both macroscopic and microscopic wood identification rely on the ability to identify diagnostic traits and on the availability of reference material. A well-supplied and reliable wood collection is pivotal to compare the unknown wood with similar-looking species. Unfortunately, most people involved in wood identification do not have access to institutional wood collections, nor to the wood sample sources or space to own their personal xilarium. Digital images of wood surfaces are not a tangible substitute to real wood samples but are undoubtedly an alternative easier to access and rapidly browsable. Some free sources of macroscopic cross-section images are available on the web and

therefore frequently consulted (e.g. Hobbit House, Insidewood, The wood database).

Illustrating the end-grain view of the most commonly traded hardwood timbers, this book provides and allows the comparison of 404 timber species by showing 1212 color images of their fine-sanded¹ cross-sections. The images are prepared from authentic wood samples selected as representing the distinctive features of each species. Images were acquired with the XyloScope (Hermanson et al. 2019, Ravindran et al. 2020), a digital imaging device for wood developed at the Forest Products Laboratory of Madison, Wisconsin. Each image represents a 6.35 x 6.35 mm cross-sectional area and approximately resembles the view of a wood cross-section as seen through a 10x hand lens.

Alone or in combination with macroscopic identification keys (e.g. Ilic 1990, Richter et al. 2014; Richter & Oelker 2002; Ruffinatto et al. 2019) and atlases (e.g. CITES 2002, Hoadley 1990, Ruffinatto & Crivellaro 2019, Wiedenhoeft 2011), this book is a useful aid for professional and amateur wood collectors, students of wood anatomy, wood scientists, timber traders, museum curators, archaeologists and all people interested in collecting and identifying hardwood samples.

¹ Please note that because of sanding, smaller vessels may appear occluded by sanding dust.

Wood identification visual guide

1. Locate the cross-section on your unknown piece of wood.



2. Prepare the cross-section for observation.



3. Observe the prepared surface at 10/20x magnification.



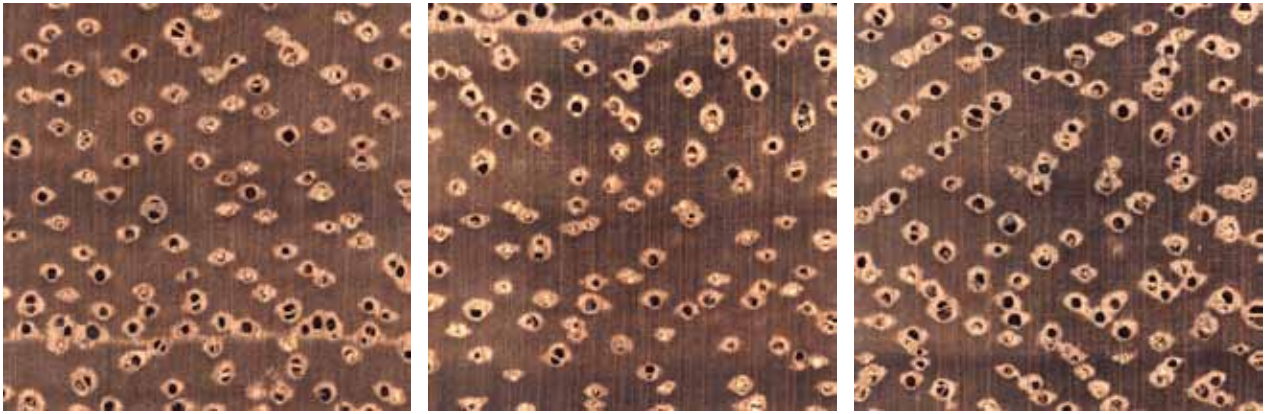
4. Identify the wood using atlases, identification keys and reference material.



Species cross-sections

Fabaceae

Acacia koa



Fabaceae

Acacia melanoxylon



Sapindaceae

Acer pseudoplatanus



Sapindaceae

Acer rubrum



Acer saccharinum

Sapindaceae

*Acer saccharum*

Sapindaceae

*Adina cordifolia*

Rubiaceae

*Aesculus hippocastanum*

Sapindaceae



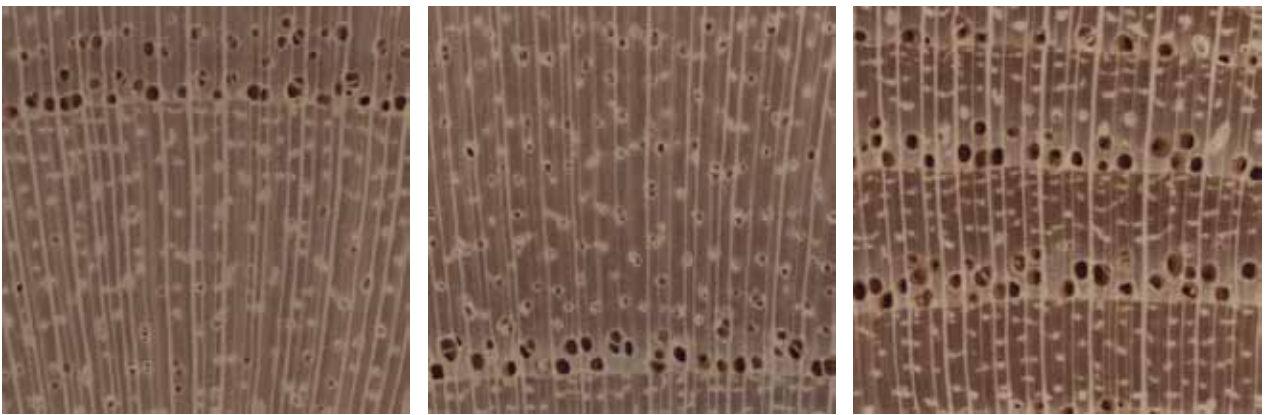
Fabaceae

Azelia bipindensis



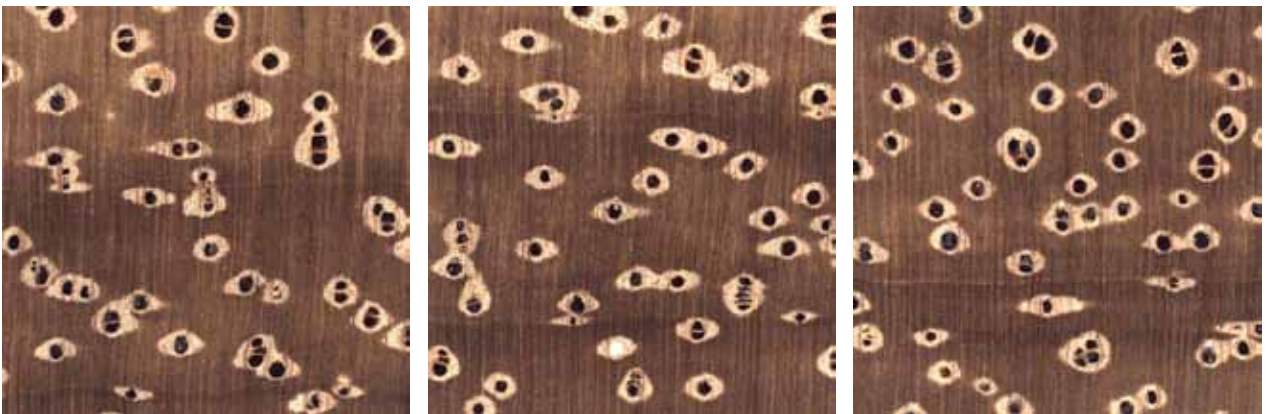
Simaroubaceae

Ailanthus altissima



Fabaceae

Albizia ferruginea



Fabaceae

Albizia lebbeck

