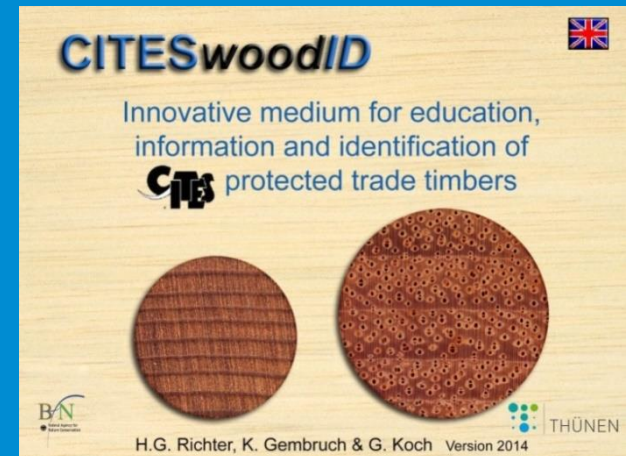


CITESwoodID

Control of CITES-protected timber



PD Dr. habil. Gerald Koch

Thünen Institute of Wood Research – CITES Workshop_2017, Hamburg



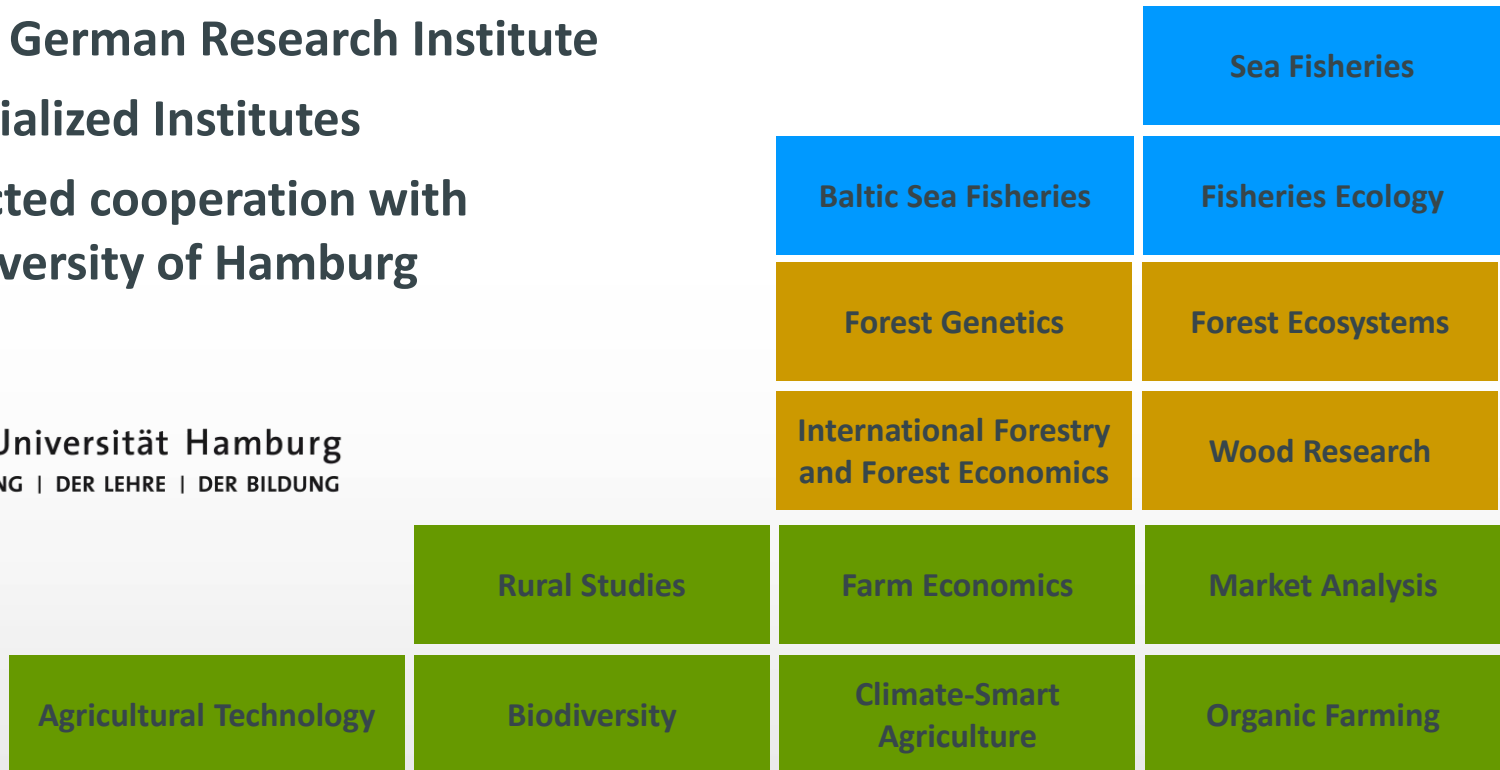
Federal Ministry
of Food
and Agriculture

- Federal German Research Institute
- 14 specialized Institutes
- Contracted cooperation with the University of Hamburg



Universität Hamburg

DER FORSCHUNG | DER LEHRE | DER BILDUNG

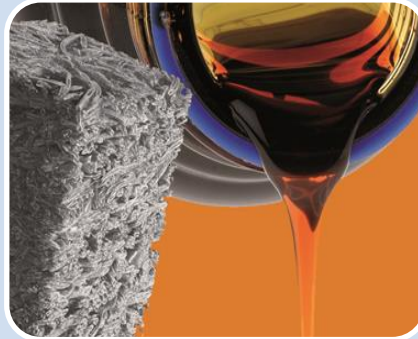


Thünen Institute of Wood Research

Research Units



**Quality of
Wood and
Wood
Products**



**Bio-based
Resources and
Materials**



**Impact of
Wood
Utilization on
Environment
and Climate**

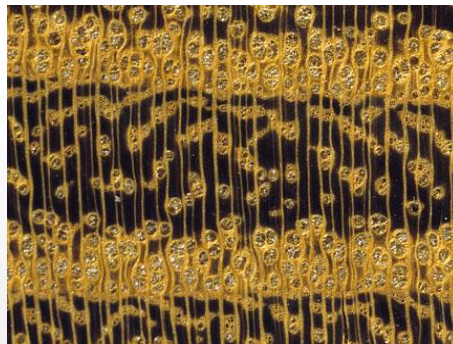


**Human Health
and Consumer
Protection**

Thünen Institute of Wood Research

Department: Wood structure, Wood properties and Wood quality

- Scientific organisation of the wood collection with approx. 37,500 specimens and approx. 50,000 microscopic sections
- Wood anatomical identification of internationally traded timber
- Dissemination of consumer information
- Participation in the teaching of "Wood structure and quality" at the University of Hamburg



Wood anatomical characteristics of black locust (*Robinia pseudoacacia*)

The scientific wood collection of the Thünen Institute

Reference specimens for the wood identification

- Number of specimens: approx. 37,500
- Botanical families: approx. 245
- Botanical genera: approx. 2,400
- Individual species: approx. 11,500



Photos Ilja Hendel

- Number of regularly traded timber (600 to 800 worldwide)

Practical wood identification - Global wood trade

- Daily entries of specimens from:
 - Timber trade,
 - Customs and environmental authorities,
 - Environmental organisations (NGOs),
 - Private consumer
- Increasing identification of so called “lesser known species”, especially manufactured in products from Asia / South-East-Asia
- Detailed market overview of the internationally traded timber



Examples of submitted samples - Wood identification in practice



Photos Ilja Hendel



- Approx. 725 expertises were prepared in 2016

Washington Convention

CITES = Convention on International Trade in Endangered Species

- Many plant and animal species, including economically important timbers, e.g., **true mahogany** (*Swietenia macrophylla*) are endangered
- To prevent the uncontrolled depletion, the **Convention on international trade in endangered species (CITES)** was contracted in 1973
- Within the European Union, CITES will be fully implemented by the regulations No 338 / 97 and 865 / 2006



Washington Convention

CITES = Convention on International Trade in Endangered Species

The endangered species are listed according to the degree of their exposure in three [ANNEXES](#), for which different restrictions are applied in international trade

- Appendix “A” (European Union) contains the species listed in ANNEX I of CITES, trade is strictly prohibited (e.g., Brazilian rosewood = *Dalbergia nigra*)
- Appendix “B” (European Union) includes the species listed in ANNEX II of CITES, the conservation status still permits commercialisation under strict control of origin and export/import documents (e.g., true mahogany = *Swietenia* spp.)
- Appendix “C” (European Union) contains the species listed in ANNEX III of CITES which are accorded trade restrictions by individual countries (e.g., Cedro = *Cedrela odorata* in Peru and Colombia)



CITES-regulations in the EU

Individual restrictions on trade

- The import of the following species into the European Union is currently prohibited:

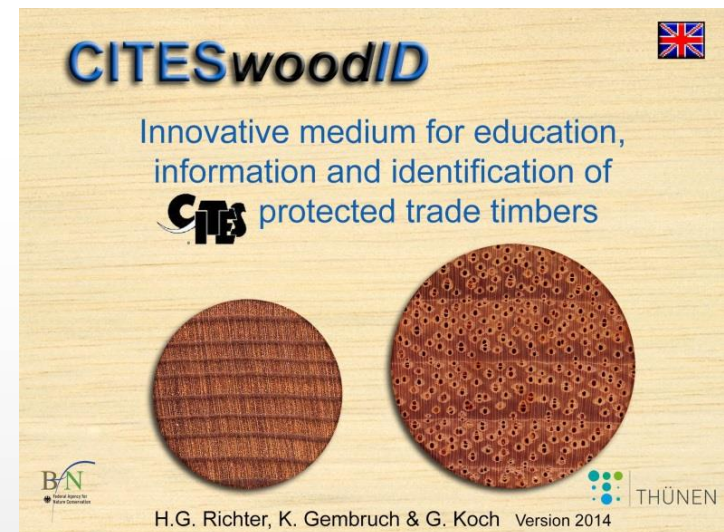
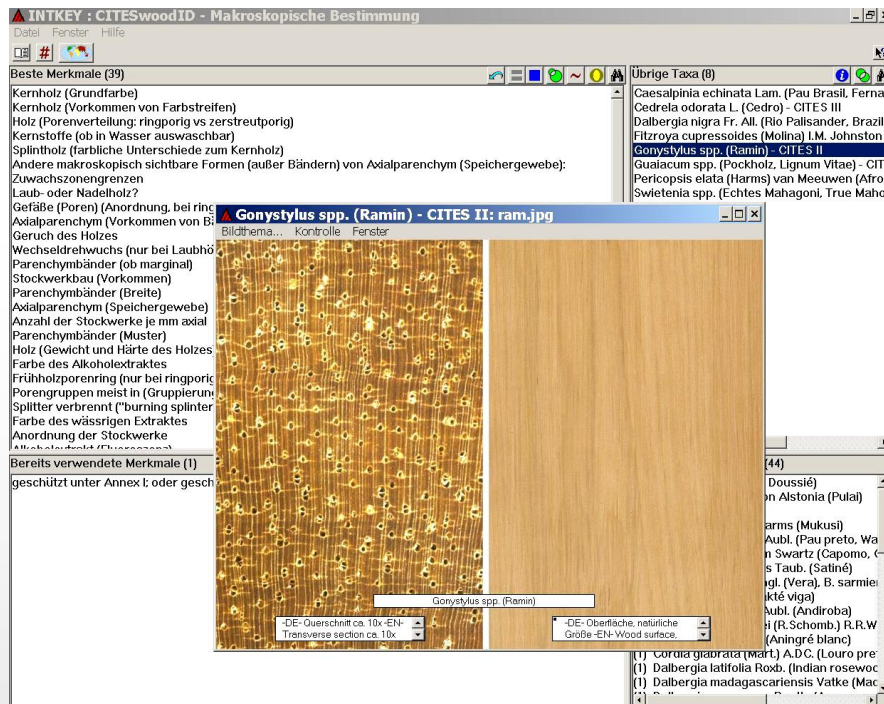
| Wood species | Origin | since |
|-------------------------------|---|--|
| <i>Aquilaria malaccensis</i> | Bangladesh | 11.09.2012 |
| <i>Prunus africana</i> | Tanzania DR Congo Equatorial-Guinea | 29. 02. 2008 15. 09. 2008 15. 09. 2008 |
| <i>Pericopsis elata</i> | Cote d'Ivoire | 07.02.2013 |
| <i>Pterocarpus santalinus</i> | India | 29.01.2009 |
| <i>Swietenia macrophylla</i> | Bolivia | 03. 08. 2010 |
| <i>Swietenia macrophylla</i> | Belize (CITES-Notification 2012/057) | 07.09.2012 |

- The import of *Swietenia macrophylla* (all countries of origin except Guatemala and Mexico) is individually controlled by a scientific group of the EU



CITESwoodID - Computer-aided identification and description of CITES protected trade timbers

- **CITESwoodID** serves as a visual (illustrations) and textual (descriptions) identification aid to all institutions and persons involved in controlling import as well as export of wood and wood products under particular consideration of CITES/EU regulations



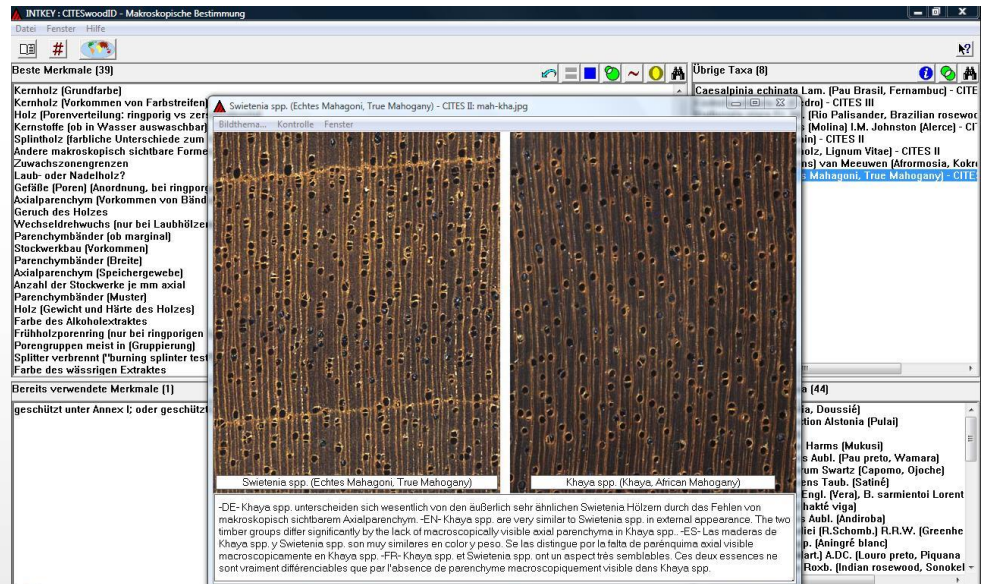
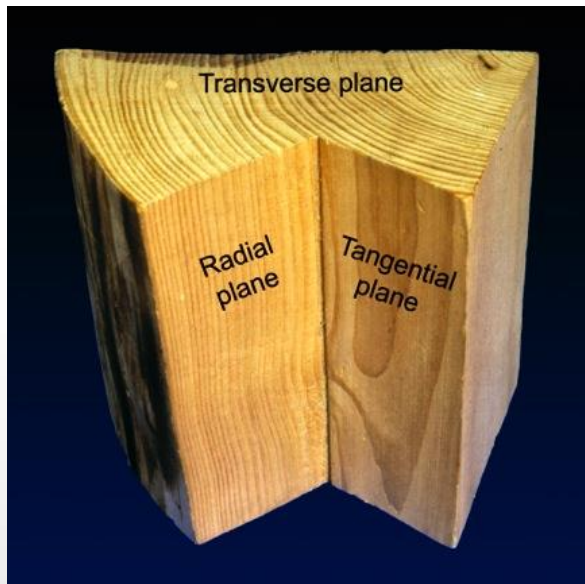
CITESwoodID - Computer-aided identification and description of CITES protected trade timbers

- The database (Update_2017) contains **44 CITES-protected** known for their potential in the manufacture of lumber and downstream processing into products, and **32 trade timbers** which can be easily mistaken for CITES protected timbers (look-alike species)

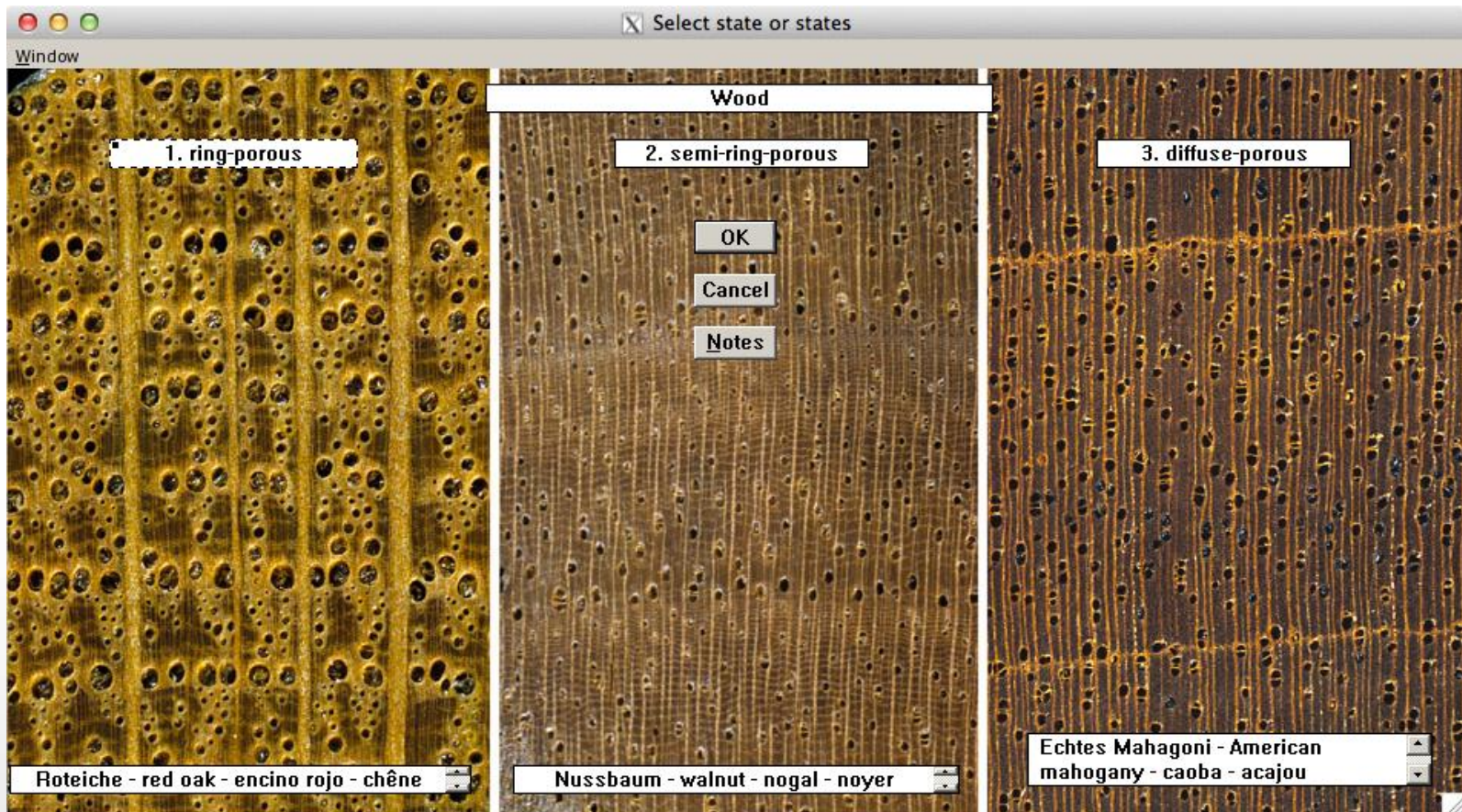
| | | |
|------------------------------|---------------------------|--------------------|
| <i>Bulnesia sarmientoi</i> | Palo santo | CITES II / B |
| <i>Caesalpinia echinata</i> | Fernambuc | CITES II / B |
| <i>Cedrela odorata</i> | Cedro | CITES III / C |
| <i>Dalbergia nigra</i> | Brazilian rosewood | CITES I / A |
| <i>Dalbergia</i> spp. | Rosewood (> 250 species) | CITES II / B |
| <i>Diospyros</i> spp. | Ebony (Madagascar) | CITES II / B |
| <i>Fitzroya cupressoides</i> | Alerce | CITES I / A |
| <i>Gonystylus</i> spp. | Ramin | CITES II / B |
| <i>Guaiacum</i> spp. | Pockholz | CITES II / B |
| <i>Pericopsis elata</i> | Afrormosia | CITES II / B |
| <i>Platymiscium</i> spp. | Granadillo | CITES II / B |
| <i>Swietenia</i> spp. | True Mahagoni | CITES II / B |

Wood identification is based on observations of the following planes (often also referred to as “face”, “section” or “surface”):

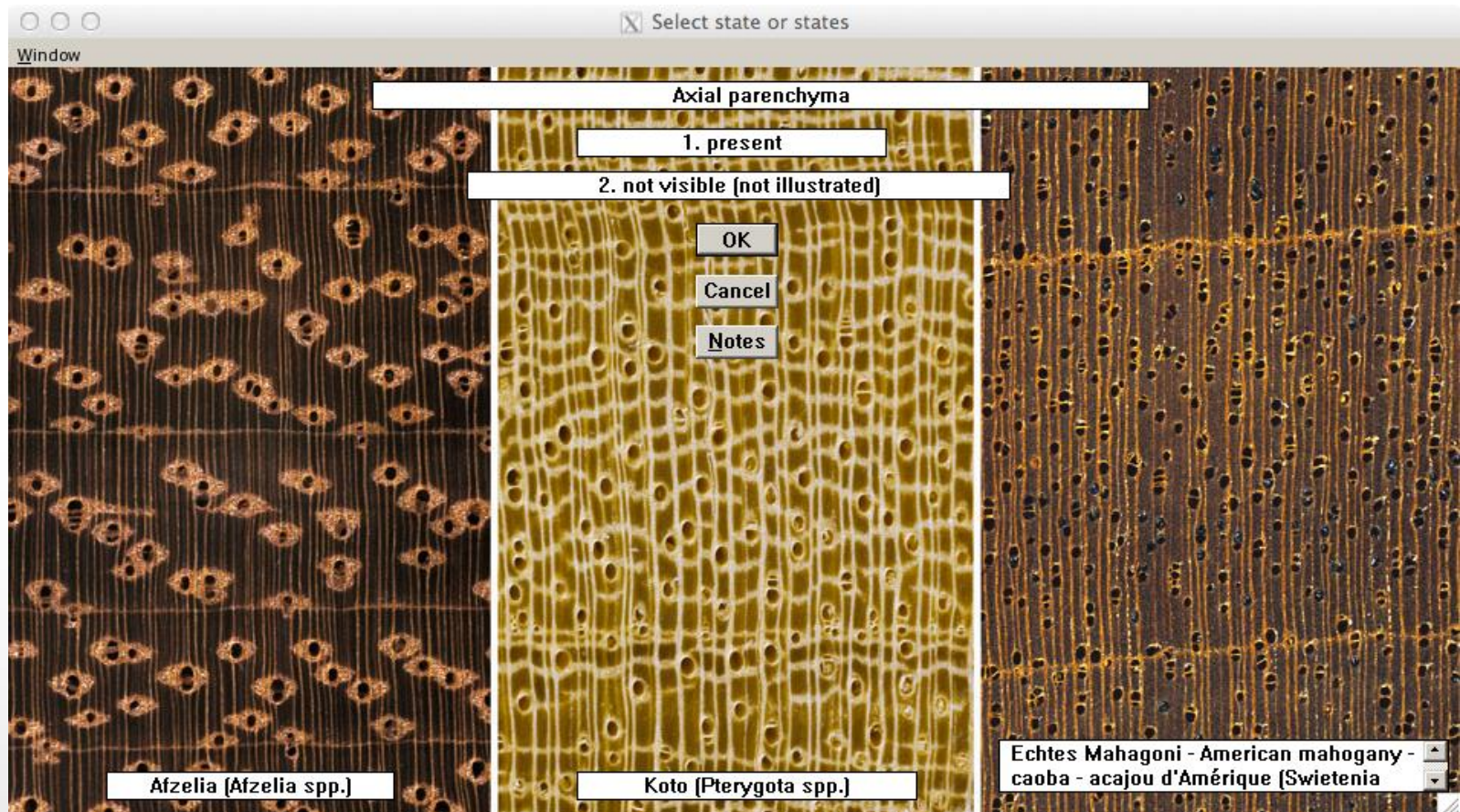
- **Transverse** (perpendicular to the stem axis),
- **Radial** (parallel to the stem axis along the radius) and
- **Tangential** (parallel to the stem axis perpendicular to the radius)



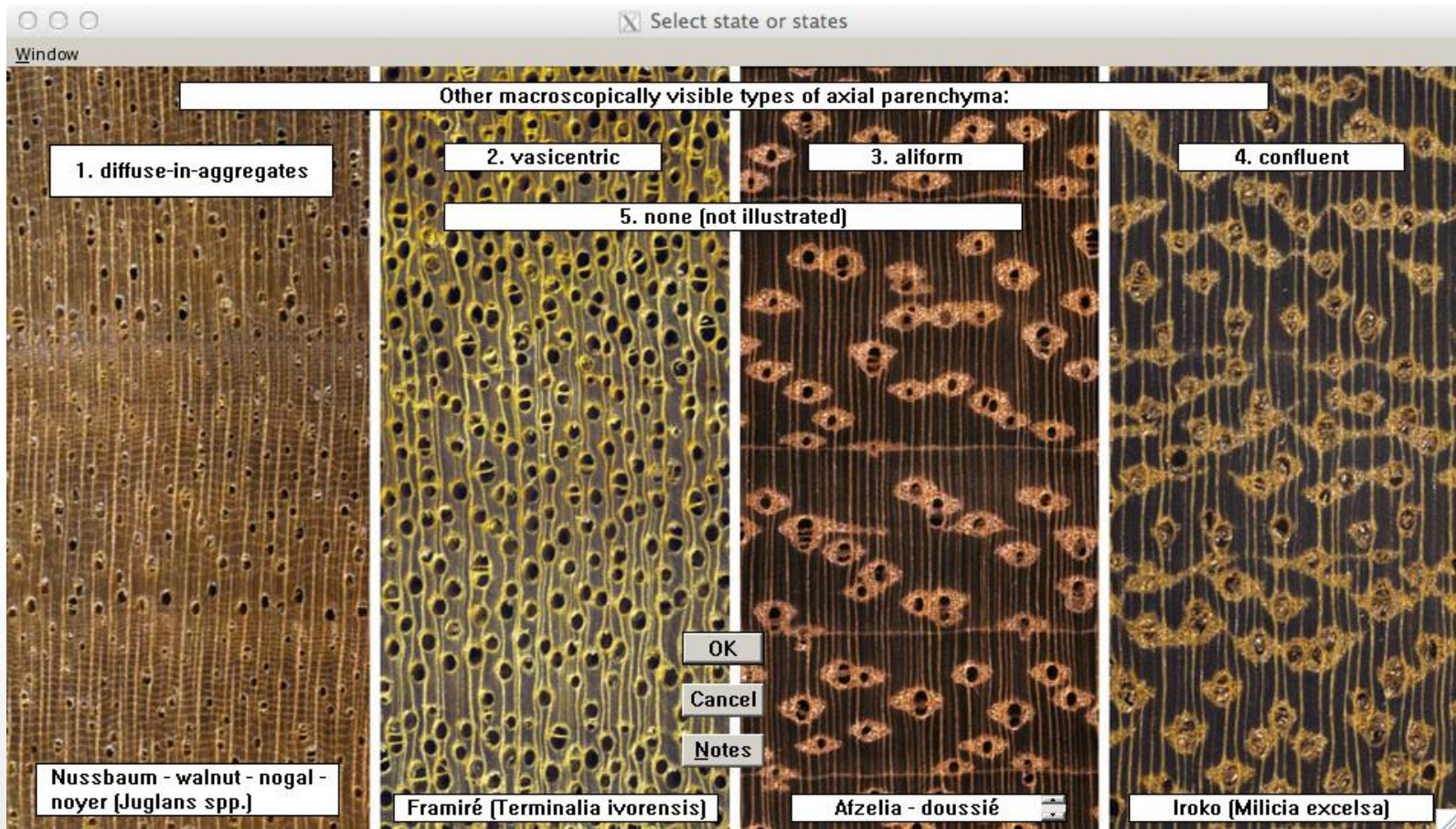
- Arrangement of the **vessels** on the transverse plane (cross section)



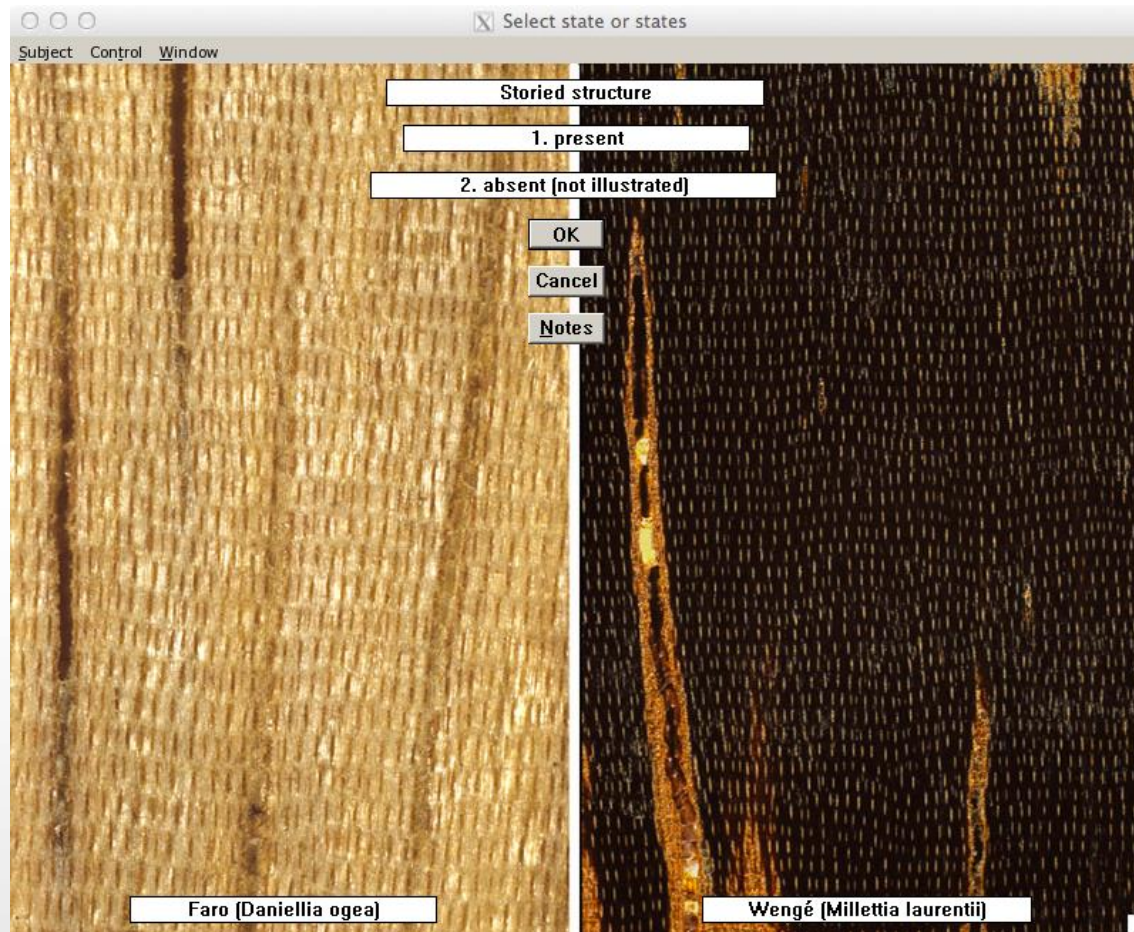
- Arrangement of the **axial parenchyma** on the transverse plane (cross section)



- Pattern of the **axial parenchyma** on the transverse plane (cross section)



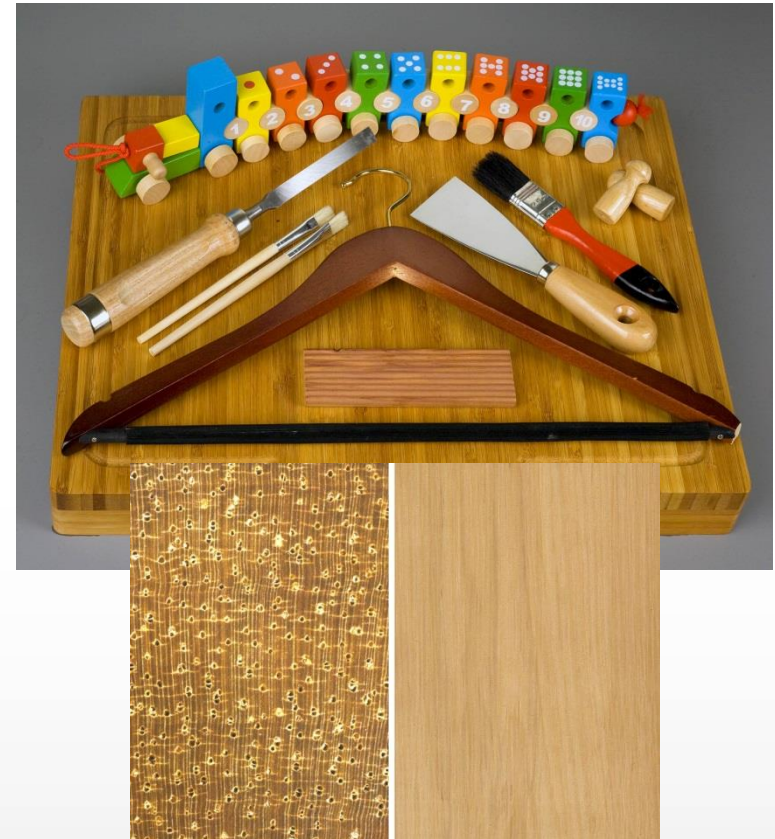
- Presence of the **storied structures** as viewed on the tangential plane



Examples for the macroscopic identification of CITES-protected timber



Identification of
Brazilian rosewood (*Dalbergia nigra*)
in fingerboards of guitars



Identification of
Ramin (*Gonystylus* spp.)
in brush handles, hangers, etc.

CITESwoodID - Control of CITES-protected timber (case studies)

Current case studies and controls conducted with CITES-protected timber in Germany

- 2009 Control of wood and wood products made of **Ramin** (*Gonystylus* spp.) - „The Pelikan case“
- 2010 Control of CITES-protected timber used for **boat buildings** (yachts) and parquet floorings
- 2012 Control of CITES-protected timber used for **musical instruments**



- Since 2017 CITES-listing of more than 250 species of the genus *Dalbergia* = Rosewood and *Guibourtia tessmannii*, *G. pellegriniana*, *G. demeusei* = Bubinga

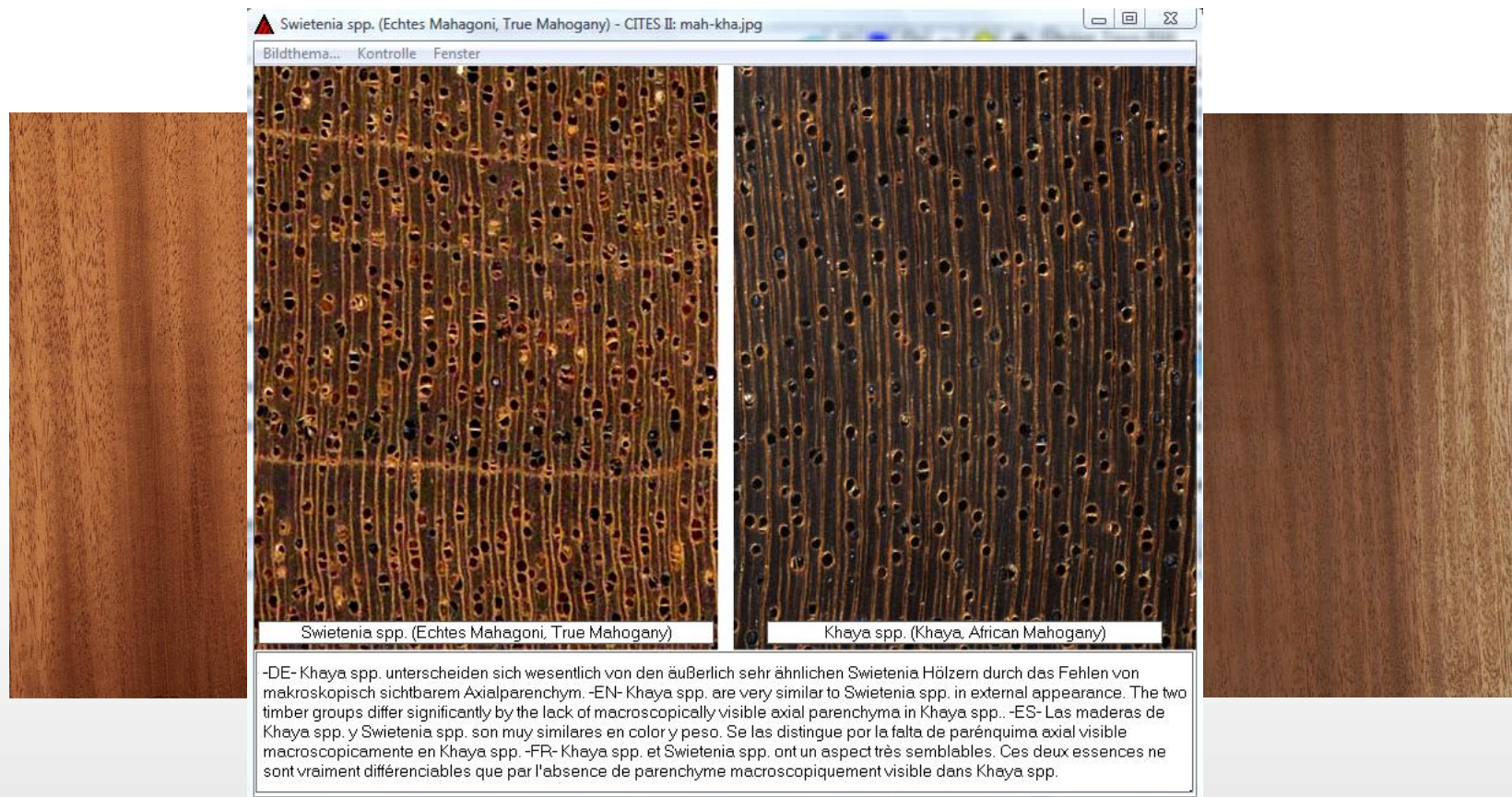
CITESwoodID - Computer-aided identification and description of CITES protected trade timbers

- Comparison (image matching) of Brazilian rosewood (*Dalbergia nigra*, left) und Sonokeling (*Dalbergia latifolia*, right) using the CITESwoodID database



CITESwoodID - Computer-aided identification and description of CITES protected trade timbers

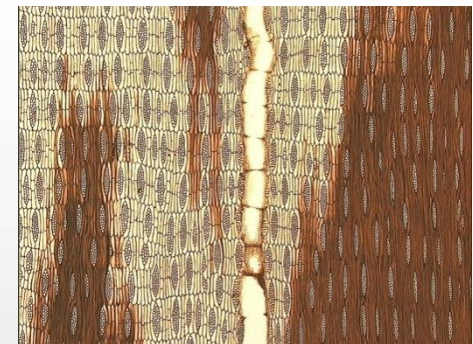
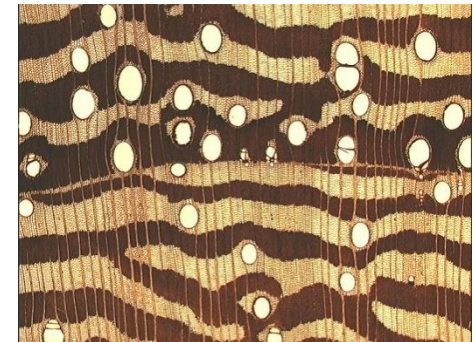
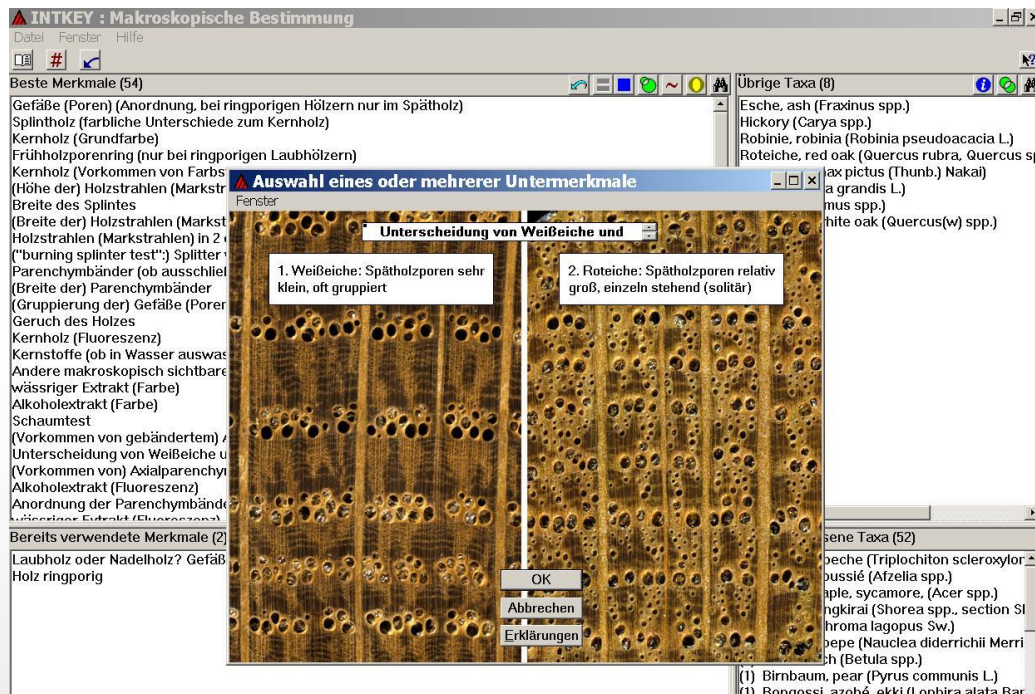
- Comparison (image matching) of true mahogany (*Swietenia* spp., left) and Khaya (*Khaya* spp., right) using the CITESwoodID database



Development and application of computer-assisted wood identification systems

Commercial timbers (microscopic), **macroHOLZdata** (macroscopic) and **CITESwoodID** (macroscopic), developed in the DELTA-INTKEY-System

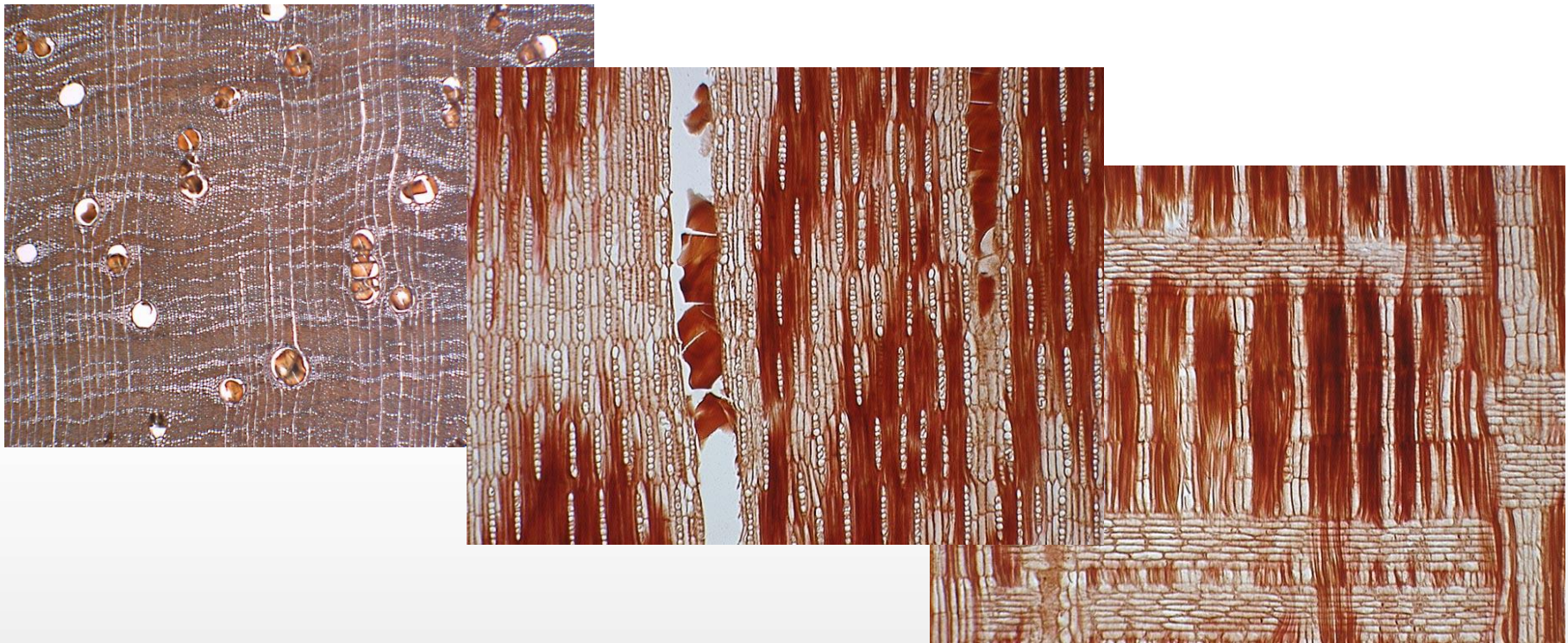
- The databases feature interactive identification and information retrieval for softwood and hardwood taxa common in international trade



- Macroscopic and microscopic characters for the wood identification

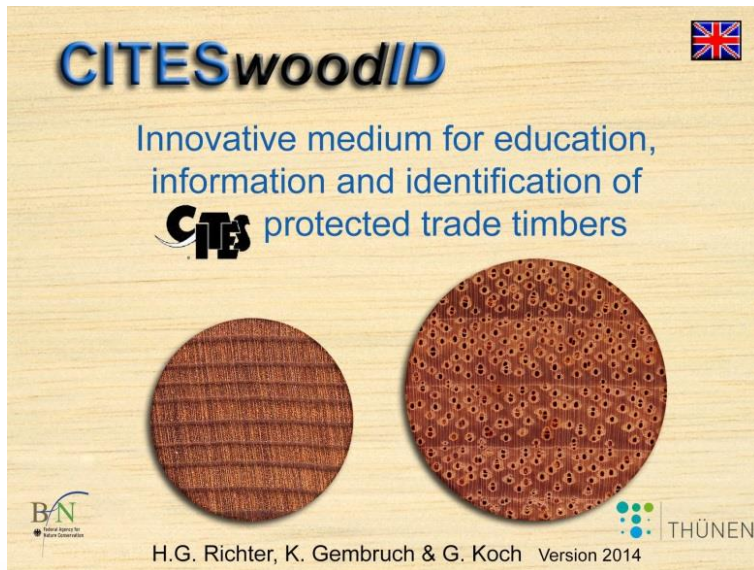
The database WoodID / Commercial timber - developed for the microscopic wood identification

- **WoodID** (Commercial timbers) - the database includes the microscopic description of 400 internationally traded timbers (www.delta-intkey.com)



- Microscopic structure of the CITES protected species *Dalbergia maritima* = Bois de rose

CITESwoodID - Computer-aided identification and description of CITES protected trade timbers



**Many thanks for
your attention!**

(www.delta-intkey.com)

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