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exp_463

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Table DRACO

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Wood Biology

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30-11-2023

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ENFORCE – Center for Forensic Wood Research

Report Expertise

This report concerns the macro- and microscopic wood identification of the sample received with references listed below.

Reference: exp_463
Date received: 24/08/2023
Date report: 30/11/2023

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Sample description

Low table (DRACO) with round table surface and table legs. Declaration: Table surface with MDF and *Paulownia* veneer originating from Vietnam, table legs with rubberwood – *Hevea brasiliensis* originating from Vietnam. Produced in Vietnam.

See picture(s) listed below:



Treatment

A sample of around 1 cm³ was taken from each of the two table leg types and softened in an oven at 70°C (ref. Lab Protocol). Thin sections were made in transversal, tangential and radial plane using a microtome. These were stained with Safranin 0 and Alcian Blue. The anatomical features (ref. IAWA List) were studied with an optical microscope and an elektron microscope. These features were compared with reference material online (ref. InsideWood) and in the xylarium of the Service of Wood Biology.

Two samples were taken from the MDF in the table surface. The fibres and vessel elements were immersed and loosened in boiling water and prepared as a maceration for microscopic examination. The anatomical features were studied with an optical microscope. These features were compared with reference material online (ref. InsideWood, ref. Atlas of Vessel Elements) and in the xylarium of the Service of Wood Biology.

Anatomical features

Table leg type 1

N° (IAWA)	Presence*	Feature Description
5	p	Wood diffuse-porous
22	p	Intervessel pits alternate
26	p	Medium intervessel pits - 7 - 10 µm
30	p	Vessel-ray pits with distinct borders; similar to intervessel pits in size and shape throughout the ray cell
31	p	Vessel-ray pits with much reduced borders to apparently simple: pits rounded or angular
42	p	Mean tangential diameter of vessel lumina 100 - 200 µm
46	p	<= 5 vessels per square millimetre
69	p	Fibres thin- to thick-walled
77	p	Axial parenchyma diffuse-in-aggregates
86	p	Axial parenchyma in narrow bands or lines up to three cells wide
97	p	Ray width 1 to 3 cells
100	p	Rays with multiseriate portion(s) as wide as uniseriate portions
107	p	Body ray cells procumbent with mostly 2-4 rows of upright and / or square marginal cells
109	p	Rays with procumbent, square and upright cells mixed throughout the ray
113	p	Disjunctive ray parenchyma cell walls
136	p	Prismatic crystals present
138	p	Prismatic crystals in procumbent ray cells
140	p	Prismatic crystals in chambered upright and / or square ray cells
142	p	Prismatic crystals in chambered axial parenchyma cells
154	p	More than one crystal of about the same size per cell or chamber
157	p	Crystals in tyloses

*(p = present, a = absent, v = variable)

Table leg type 2

N° (IAWA)	Presence*	Feature Description
5	p	Wood diffuse-porous
22	p	Intervessel pits alternate
26	p	Medium intervessel pits - 7 - 10 µm
30	p	Vessel-ray pits with distinct borders; similar to intervessel pits in size and shape throughout the ray cell
31	p	Vessel-ray pits with much reduced borders to apparently simple: pits rounded or angular
42	p	Mean tangential diameter of vessel lumina 100 - 200 µm
46	p	<= 5 vessels per square millimetre
69	p	Fibres thin- to thick-walled
77	p	Axial parenchyma diffuse-in-aggregates
86	p	Axial parenchyma in narrow bands or lines up to three cells wide
97	p	Ray width 1 to 3 cells
100	p	Rays with multiseriate portion(s) as wide as uniseriate portions
107	p	Body ray cells procumbent with mostly 2-4 rows of upright and / or square marginal cells
109	p	Rays with procumbent, square and upright cells mixed throughout the ray
113	p	Disjunctive ray parenchyma cell walls

*(p = present, a = absent, v = variable)

MDF Sample 1

Within the macerations of the MDF Sample 1 three wood taxa (1-3) were observed corresponding to the following anatomical features.

1. Vessel-ray pitting apparently simple, vessel element length 400-600 µm, vessel element diameter 150-250 µm, simple perforation plates, pits not vestured, bordered intervessel pit vertical size 6-11 µm, intervessel pit aperture slit-like to coalescent.
2. All pits similar, vessel element length 330-400 µm, vessel element diameter 100-200 µm, simple perforation plates, vestured pits, bordered intervessel pit vertical size 3-7 µm.
3. Very sparse traces of a softwood species.

MDF Sample 2

Within the macerations of the MDF Sample 2 three wood taxa (1-3) were observed corresponding to the following anatomical features.

1. Vessel-ray pitting apparently simple, vessel element length 392-803 µm, vessel element diameter 192-232 µm, simple perforation plates, pits not vestured, intervessel pit aperture slit-like to coalescent.
2. All pits similar, vessel element length 230-300 µm, vessel element diameter 130-150 µm, simple perforation plates, vestured pits.
3. Sparse traces of a softwood species.

Conclusion

The received table does not contain *Paulownia* sp.

Table leg type 1:

The macroscopic and microscopic anatomical features of the sample fully correspond with the botanical species *Hevea brasiliensis*.

This species is traded under the commercial name Rubberwood

The added declaration (Rubberwood, *Hevea brasiliensis*) is correct.

Table leg type 2:

The macroscopic and microscopic anatomical features of the sample fully correspond with the botanical species *Hevea brasiliensis*.

This species is traded under the commercial name Rubberwood

The added declaration (Rubberwood, *Hevea brasiliensis*) is correct.

MDF Sample 1:

The microscopic anatomical features of the three wood taxa within the sample fully correspond with the botanical genera *Hevea* sp., *Acacia* sp. and an unknown softwood species.

As *Hevea brasiliensis* represents the vast majority of wood trade in the genus *Hevea*, the identification of *Hevea* sp. most likely concerns this species within the genus.

There was not enough material available within the MDF of the unknown softwood species to arrive at an identification.

MDF Sample 2:

The microscopic anatomical features of the three wood taxa within the sample fully correspond with the botanical genera *Hevea* sp., *Acacia* sp. and an unknown softwood species.

As *Hevea brasiliensis* represents the vast majority of wood trade in the genus *Hevea*, the identification of *Hevea* sp. most likely concerns this species within the genus.

There was not enough material available within the MDF of the unknown softwood species to arrive at an identification.

References

Schmitz, Nele. (2010). Lab protocol for basic wood anatomy procedures: making and staining of micro-sections of wood samples.

Wheeler, Elisabeth & Baas, Pieter & Gasson, Peter. (1989). IAWA List of Microscopie Features for Hardwood Identification. IAWA journal / International Association of Wood Anatomists. 10. 219–332.

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