**IAWA Journal - Volume 17(2)**

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| **Author(s):** | Ladislav J. Kučera |
| **Title:** | **Hans Heinrich Bosshard** |
| **Source:** | IAWA Journal, Volume 17, Issue 2 |
| **Publication Year:** | 1996 |
| **Pages:** | 103-104 |
| **Keywords:** |  |
| **Abstract:** |  |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Connection Between Silviculture and Wood Quality Through Modelling Approaches and Simulation Softwares** |
| **Source:** | IAWA Journal, Volume 17, Issue 2 |
| **Publication Year:** | 1996 |
| **Pages:** | 105-112 |
| **Keywords:** |  |
| **Abstract:** | Below are ten of the 91 abstracts submitted to the organizers; these abstracts represent contributions that include some aspect of wood anatomy or wood formation. |
| **DOI:** | [10.1163/22941932-90001438](http://dx.doi.org/10.1163/22941932-90001438) |

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| **Author(s):** | Yasuhiro Utsumi; Yuzou Sano; Jun Ohtani; Seizo Fujikawa |
| **Title:** | **Seasonal Changes in the Distribution of Water in the Outer Growth Rings of Fraxinus Mandshurica Var. Japonica: A Study By Cryo-Scanning Electron Microscopy** |
| **Source:** | IAWA Journal, Volume 17, Issue 2 |
| **Publication Year:** | 1996 |
| **Pages:** | 113-124 |
| **Keywords:** | xylem physiology; cryo-SEM; water transport; Fraxinus mandshurica var. japonica; ring-porous tree; Cavitation |
| **Abstract:** | Seasonal changes in the distribution of water in the outer growth rings of Fraxinus mandshurica var.japonica were visualised by cryo-scanning electron microscopy using samples in which water was freeze-fixed in the living trunk . During the growing season from mid-May to late-July when formation ofxylem progressed steadily, all cell lumina of the newly forming xylem elements were filled with water. From August to October, water was lost from the lumina of wood fibres in the current-year xylem. Loss of water from wood fibres began in August at the initial zone of the earlywood, and progressed toward the cambial zone. By November, water had disappeared from the lumina of current-year earlywood vessels, and water reappeared in the lumina of earlywood fibres around the currentyear earlywood vessels. Our results indicate that cavitation in lumina of current-year earlywood vessels occurred during the period from October to November. |
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| **Author(s):** | Chen Hui Lee; Song Yung Wang |
| **Title:** | **A New Technique for the Demarcation Between Juvenile and Mature Wood in Cryptomeria Japonica** |
| **Source:** | IAWA Journal, Volume 17, Issue 2 |
| **Publication Year:** | 1996 |
| **Pages:** | 125-131 |
| **Keywords:** | variance component; Cryptomeria; Japanese cedar; sampling precision; tracheid length; juvenile wood determination |
| **Abstract:** | Three average, healthy Cryptomeria trees were felled in fall 1990 from a 40-year-old plantation located in central Taiwan. The plantation was established with l- year-old cuttings at a 2 × 2 m spacing. A5 cm thick circular-shaped disk specimen was removed from each sample tree at breast height, then a 2 em wide wood strip cut along the south-north aspect of each disk specimen. The wood strip was separated further into individual growth increments in odd-numbered growth rings numbered 1 (near pith) to 33 (near bark) and forty latewood tracheids per growth ring were measured. Their mean lengths were used as items in an analysis of variance on each of eight sets of data. |
| **DOI:** | [10.1163/22941932-90001440](http://dx.doi.org/10.1163/22941932-90001440) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Review** |
| **Source:** | IAWA Journal, Volume 17, Issue 2 |
| **Publication Year:** | 1996 |
| **Pages:** | 132-132 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001441](http://dx.doi.org/10.1163/22941932-90001441) |

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| **Author(s):** | Dong Ok Lim |
| **Title:** | **Spiral Growth in Cudrania Tricuspidata Caused by Liana Entwinement** |
| **Source:** | IAWA Journal, Volume 17, Issue 2 |
| **Publication Year:** | 1996 |
| **Pages:** | 133-139 |
| **Keywords:** | liana; spirally grown stemwood; spiral grain; radial growth; Pueraria thunbergiana; Cudrania tricuspidata; abnormal growth |
| **Abstract:** | The anatomy of Cudrania tricuspidata stemwood that grew spirally due to liana entwinement has been examined. In the first three years after entwinement by the liana (Pueraria thunbergiana) annual radial growth of the stemwood increased by 1.2 to 5.0 times . Thereafter the radial increment declined markedly as the liana continued to develop, producing abnormal growth in the tree stem. The wood of the liana-affected stem showed distinct differences in both cell orientation and anatomical characteristics compared with normal wood. In the first three year s after entwinement, the vessels became inclined to the stem axis. In later growth all the axial cells contributed to spiral grain angles up to 30° to the stem axis. Dimensions of vessels and fibres were also found to be affected. Physiological aspects of severe liana entwinement on the wood anatomy of the host stem are discussed. |
| **DOI:** | [10.1163/22941932-90001442](http://dx.doi.org/10.1163/22941932-90001442) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Wood Anatomy News** |
| **Source:** | IAWA Journal, Volume 17, Issue 2 |
| **Publication Year:** | 1996 |
| **Pages:** | 140-140 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001443](http://dx.doi.org/10.1163/22941932-90001443) |

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| **Author(s):** | Elsa Nunes; Teresa Quilhó; Helena Pereira |
| **Title:** | **Anatomy and Chemical Composition of Pinus Pinaster Bark** |
| **Source:** | IAWA Journal, Volume 17, Issue 2 |
| **Publication Year:** | 1996 |
| **Pages:** | 141-150 |
| **Keywords:** | bark anatomy; bark chemical composition; Pinus pinaster Aiton |
| **Abstract:** | The secondary phloem of Pinus pinaster Aiton bark has sieve cells and axial and radial parenchyma, but no fibres. Resin ducts are present in fusiform rays . Stiloid crystals, starch granules and tannins occur inside sieve and parenchyma cells. The rhytidome of P. pinaster bark has a variable number of periderms forming scale-type discontinuous layers over expanded parenchyma cells. Phellem comprises 4-6 layers of thickwaIled and little suberized cells and phelloderm a layer of 2 or 3 thickened lignified ceIls and a layer of expanded cells. |
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| **Author(s):** | Uwe Schmitt; Hans Georg Richter; Bernd Wittke |
| **Title:** | **Fracture Morphology of Hickory (Carya Spp., Juglandaceae) Under Single-Blow Impact Loading** |
| **Source:** | IAWA Journal, Volume 17, Issue 2 |
| **Publication Year:** | 1996 |
| **Pages:** | 151-160 |
| **Keywords:** | fibre fractures; electron microscopy; Carya spp.; shock resistance; Hickory |
| **Abstract:** | Wood specimens of the true hickory group were tested for their shock resistance with the single blow impact method. From this test series 10 pieces with a uniform fracture mode, 'brash' and 'tough' , were selected for electron microscopy to examine the fracture mode of individual fibres in the tensile zone. 'Brash' specimens are characterized by well defined transverse or slightly oblique fracture lines across the entire cell wall, or a stepped-up course preferably within the secondary wall. Stepping-up mainly occurs along the interface between S1 and S2 layer or between primary wall and S1 layer. The smooth fracture of fibres in 'brash' specimens appears to be caused by compression-induced pre-slip planes which do not occur in 'tough' specimens. Individual fibres of 'tough' specimens mostly display a conspicuous and irregular zigzag course of the fracture line due to the tearing apart of fibrillar bundles . In addition, 'tough' specimens are characterised by the regular development of microcracks at a distance of up to several millimeters from the fracture plane. Such microcracks were not observed in 'brash' specimens. The described micro morphological differences between both fracture modes help to explain the considerable variation in shock resistance between specimens of similar density and gross wood structure. |
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| **Author(s):** | Roland R. Dute; John D. Freeman; Frank Henning; Logan D. Barnard |
| **Title:** | **Intervascular Pit Membrane Structure in Daphne and Wikstroemia - Systematic Implications** |
| **Source:** | IAWA Journal, Volume 17, Issue 2 |
| **Publication Year:** | 1996 |
| **Pages:** | 161-181 |
| **Keywords:** | wood ultrastructure; Daphne; torus; pit membrane; Thymelaeaceae; Wikstroemia |
| **Abstract:** | Intervascular pit membranes were investigated in species of Daphne, Wikstroemia, and other allied genera of the Thymelaeaceae. Results confirmed a previous study showing that, except for section Mezereum, all sections of Daphne had pit membranes with tori. Taxonomically isolated species D. aurantiaca and D. genkwa had tori, but lacked a G-layer. Tori similar in structure to those of D. aurantiaca and D. genkwa were observed in three species from the subgenus Diplomorpha of Wikstroemia. Tori of a slightly different morphology were noted in W. kudoi (subg. Daphnimorpha). Tori appeared absent from species of the subgenus Wikstroemia (= Euwikstroemia of Domke), and from the genera Drapetes, Edgeworthia, and Eriosolena. These results suggest a close relationship between Daphne and Wikstroemia. The degree of torus development and the distinctiveness of helical thickenings suggest that smaller tracheary elements serve as a backup water-conducting system to larger vessel elements. |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Wood Anatomy News** |
| **Source:** | IAWA Journal, Volume 17, Issue 2 |
| **Publication Year:** | 1996 |
| **Pages:** | 182-182 |
| **Keywords:** |  |
| **Abstract:** |  |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Additions to e-mail directory** |
| **Source:** | IAWA Journal, Volume 17, Issue 2 |
| **Publication Year:** | 1996 |
| **Pages:** | 182-182 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001448](http://dx.doi.org/10.1163/22941932-90001448) |

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| **Author(s):** | Jennifer A. Thorsch; Vernon I. Cheadle |
| **Title:** | **Vessels in Eriocaulaceae** |
| **Source:** | IAWA Journal, Volume 17, Issue 2 |
| **Publication Year:** | 1996 |
| **Pages:** | 183-204 |
| **Keywords:** | Eriocaulaceae; vessels; perforation plates; phylogenetic position |
| **Abstract:** | The occurrence and level of specialization of vesse ls in 70 species representing 12 genera of Eriocaulaceae are presented. In alI species of Eriocaulaceae and in alI parts of the plant examined, vessels with simple perforations have been identified . Correlations between level of specialization of vessel members and ecological conditi ons are reported for species from diverse habitats and species with distinct differences in habit. The pattern of origin and specialization of tracheary celIs in Eriocaulaceae was compared to tracheary data for Xyridaceae , Rapateaceae, Restionaceae and Centrolepidaceae. The evolutionary position of these families has been regarded as close to Eriocaulaceae. |
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| **Author(s):** | R.W. den Outer; W.L.H. van Veenendaal |
| **Title:** | **Wood Anatomy of the Aphanocalyx-Monopetalanthus complex (Caesalpinioideae)** |
| **Source:** | IAWA Journal, Volume 17, Issue 2 |
| **Publication Year:** | 1996 |
| **Pages:** | 205-223 |
| **Keywords:** | Julbemardia; Amherstieae; Caesalpinioideae; Tetraberlinia; systematic wood anatomy; Aphanocalyx; Brachystegia; Monopetalanthus |
| **Abstract:** | The secondary xylem of 3 of the 4 genera belonging to the Aphanocalyx-Monopetalanthus complex (Aphanocalyx, Monopetalanthus and Tetraberlinia; from Michelsonia no samples were available) and the closely related genera Julbernardia and Brachystegia was studied in order to aid generic delimitation. |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Association Affairs** |
| **Source:** | IAWA Journal, Volume 17, Issue 2 |
| **Publication Year:** | 1996 |
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| **Keywords:** |  |
| **Abstract:** |  |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **IAWA Journal** |
| **Source:** | IAWA Journal, Volume 17, Issue 2 |
| **Publication Year:** | 1996 |
| **Pages:** | 225-226 |
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| **Abstract:** |  |
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