**IAWA Bulletin New Series - Volume 12(4)**

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Preliminary material** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 4 |
| **Publication Year:** | 1991 |
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| **Author(s):** | Carsten Schirarend |
| **Title:** | **The Systematic Wood Anatomy of the Rhamnaceae Juss. (Rhamnales). I. Tribe Zizipheae** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 4 |
| **Publication Year:** | 1991 |
| **Pages:** | 359-388 |
| **Keywords:** | systematic wood anatomy; tribe Zizipheae; Rhamnaceae; dendritic vessel pattern |
| **Abstract:** | The wood anatomy of the tribe Zizipheae sensu Suessenguth (1953a) is described in detail. Similarities and differences between the genera are discussed in relation to the taxonomy of the tribe. Wood anatomically the Zizipheae are rather heterogeneous and not clearly separated from the other tribes of the family. |
| **DOI:** | [10.1163/22941932-90000540](http://dx.doi.org/10.1163/22941932-90000540) |

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| **Author(s):** | Peter Gasson; David R. Dobbins |
| **Title:** | **Wood Anatomy of the Bignoniaceae, with a Comparison of Trees and Lianas** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 4 |
| **Publication Year:** | 1991 |
| **Pages:** | 389-415 |
| **Keywords:** | trees; Bignoniaceae; Lianas; anomalous structure; wood; xylem |
| **Abstract:** | The secondary xylem anatomy of trees and lianas was compared in the family Bignoniaceae. General descriptions of the family and the six woody tribes are provided. Lianas belong to the tribes Bignonieae, Tecomeae and Schlegelieae, and most have ve.ssels of two distinct diameters, many vessels per unit area, large intervascular pits, septate fibres, large heterocellular rays often of two distinct sizes, scanty paratracheal and vasicentric axial parenchyma and anomalous growth. Conversely, trees, which belong to the tribes Coleeae, Crescentieae, Oroxyleae and Tecomeae generally have narrower vessels in one diameter class, fewer vessels per unit area, smaller intervascular pits, non-septate fibres, small homocellular rays, scanty paratracheal, aliform or confluent parenchyma, and none exhibits anomalous growth. The majority of both trees and Hanas possess growth rings, are diffuse-porous, have non-solitary vessels which lack helical thickenings, and few have apotracheal parenchyma or storied structure. All species have alternate intervascular pitting and simple perforation plates. |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Appendix** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 4 |
| **Publication Year:** | 1991 |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Reviews** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 4 |
| **Publication Year:** | 1991 |
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| **Abstract:** |  |
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| **Author(s):** | Shinji Fujiwara; Kazuhiko Sameshima; Kenichi Kuroda; Norio Takamura |
| **Title:** | **Anatomy and Properties of Japanese Hardwoods I. Variation of Fibre Dimensions and Tissue Proportions and their Relation to Basic Density** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 4 |
| **Publication Year:** | 1991 |
| **Pages:** | 419-424 |
| **Keywords:** | tissue proportions; Cross sectional dimensions of fibres; Japanese hardwoods; basic density; fibre length |
| **Abstract:** | Variations of tissue proportions and fibre dimensions (fibre length, fibre cross sectional area, fibre wall thickness, fibre wall area, percentage of fibre wall area) of 50 Japanese hardwoods are compared. The fibre cross sectional area showed large variations as compared to fibre length. There is no significant correlation between fibre cross sectional area and fibre wall thickness.The multiple regression analysis showed that fibre wall thickness, percentage of fibre wall material and ray volume are the parameters most closely correlated with basic density. |
| **DOI:** | [10.1163/22941932-90000544](http://dx.doi.org/10.1163/22941932-90000544) |

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| **Author(s):** | María Agueda Castro |
| **Title:** | **Ultrastructure of Vestures on the Vessel Wall in Some Species of Prosopis (Leguminosae-Mimosoideae)** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 4 |
| **Publication Year:** | 1991 |
| **Pages:** | 425-430 |
| **Keywords:** | helical thickenenings; 'wart-like' vestures; ultrastructure; Prosopis; vestures |
| **Abstract:** | Ultrastructural characteristics of the vessel wall of fourteen Argentinian species of Prosopis L. were studied with SEM and TEM.Branched and 'wart-like' vestures are present on the inner surface of the vessel. TEM observations permitted to define them as outgrowths of the secondary wall covered by an electron dense layer, probably composed of polysaccharides. |
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| **Author(s):** | Hisashi Abe; Jun Ohtani; Kazumi Fukazawa |
| **Title:** | **Fe-Sem Observations on the Microfibrillar Orientation in the Secondary Wall of Tracheids** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 4 |
| **Publication Year:** | 1991 |
| **Pages:** | 431-438 |
| **Keywords:** | developing earlywood tracheid wall; microfibril; microfibrillar orientation; secondary wall; field emission scanning electron microscope; Abies sachalinensis Masters; lamella |
| **Abstract:** | Field emission scanning electron microscopy was used to observe the inner surfaces of the developing secondary walls of earlywood tracheids of Abies sachalinensis Masters. Microfibrillar orientation in the secondary wall, as seen from the lumen side, changed in a clockwise direction from the outermost S1 to the middle of the S2 and from there counter-clockwise to the innermost S3. Sometimes microfibrils oriented in a steep S-helix were observed in the S3 layer. Lamellae showing different microfibrillar orientations in wall layers other than the S2 were observed beneath newly deposited microfibrils on the inner surface of the developing wall. Furthermore, on the inner surface of the wall forming the S12, S23 and S3, lamellae with microfibrils closely aligned at the same angle as one another and lacking spaces were not observed. These observations suggest that in layers other than the S2 most lamellae are not composed of closely spaced microfibrils. |
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| **Author(s):** | Ryo Funada; Anne-Marie Catesson |
| **Title:** | **Partial Cell Wall Lysis and the Resumption of Meristematic Activity in Fraxinus Excelsior Cambium** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 4 |
| **Publication Year:** | 1991 |
| **Pages:** | 439-444 |
| **Keywords:** | Fraxinus excelsior; cell wall; calcium; cambium; autolysis |
| **Abstract:** | Cytochemical changes in cambia! cell walls were studied during the transition from rest to mitotic activity in spring. A partial autolysis occurred in the radial walls especially at cell junctions. The lysis was closely associated with a localised decrease in the level of calcium ions bound to the cell walls. |
| **DOI:** | [10.1163/22941932-90000547](http://dx.doi.org/10.1163/22941932-90000547) |

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| **Author(s):** | Simcha Lev-Yadun; Roni Aloni |
| **Title:** | **An Experimental Method of inducing 'hazel' Wood in Pinus Halepensis (Pinaceae)** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 4 |
| **Publication Year:** | 1991 |
| **Pages:** | 445-451 |
| **Keywords:** | Aleppo pine; wounding; cambium; xylem differentiation; Pinus halepensis; hazel wood |
| **Abstract:** | 'Hazel' wood was induced experimentally in Pinus halepensis Mill. by parallellongitudinal scratches. Two years after treatment, the growth rings showed indentations where the cambium had been scratched. Tissues formed following wounding had many very large resin ducts in addition to the normalsized ones, irregularly shaped tracheids and ray cells, more rays, spiral orientation and narrower tracheids. We suggest that the wounding disturbed the normal hormonal balance, and that disturbances in hormonal balance probably are the physiological basis for other cases of hazel growth. |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Reviews** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 4 |
| **Publication Year:** | 1991 |
| **Pages:** | 452-452 |
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| **Author(s):** | Ingrid de Kort; Veronique Loeffen; Pieter Baas |
| **Title:** | **Ring Width, Density and Wood Anatomy of Douglas Fir with Different Crown Vitality** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 4 |
| **Publication Year:** | 1991 |
| **Pages:** | 453-465 |
| **Keywords:** | tracheid number; crown vitality; cell wall percentage; latewood percentage; forest decline; Pseudotsuga menziesii |
| **Abstract:** | The correlations of density, cell wall percentage, number of cells per cross sectional surface area, latewood percentage and ring width are analysed within growth rings, among rings of different widths, and among six Douglas fir trees of different vitality classes. There is a consistent, positive correlation between density, cell wall percentage and latewood percentage. Correlations of ring width with latewood percentage and density vary from tree to tree. For practical purposes latewood percentage can be used to explain c. 60% of the density variation. This parameter is recommended for rapid assessment of the impact of crown vitality on wood quality. |
| **DOI:** | [10.1163/22941932-90000550](http://dx.doi.org/10.1163/22941932-90000550) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Wood Anatomy News** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 4 |
| **Publication Year:** | 1991 |
| **Pages:** | 466-466 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000551](http://dx.doi.org/10.1163/22941932-90000551) |

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| **Author(s):** | J. A. Wright; F. S. Malan |
| **Title:** | **Variation in Wood and Tracheid Properties of Pinus Maximinoi, P. Pseudostrobus and P. Patula** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 4 |
| **Publication Year:** | 1991 |
| **Pages:** | 467-475 |
| **Keywords:** | South Africa; latewood percentage; density; Pinus; tracheid size |
| **Abstract:** | Wood density, latewood percentage, ring width and the cross sectional dimensions of tracheids (wall thickness, lumen area, radial and tangential lumen diameters) were evaluated from ten-year-old trees of Pinus maximinoi H.E. Moore, P. pseudostrobus Lindley and P. patula Schiede ' Deppe grown in South Africa. The species were almost equal in terms of average volume per tree. The wood of P. patula differed from the other species in latewood percentage, tracheid wall thickness, lumen area, radial and tangential lumen diameters. Apart from ring widths, significant differences within species were found for all of the wood and tracheid properties studied. The wood of P. patula has a higher latewood percentage especially in the outer parts of the stem and smaller tracheids than the other two species. The wood densities of P. patula and P. maximinoi were similar. The tracheids of P. pseudostrobus had thinner cell walls than the other two species and wood density was also lower for this species possibly as a result of reduced volume of cell wall material. The differences between and within species for wood and tracheid properties suggest that end use products will vary according to the seed source used. |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Wood Anatomy News** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 4 |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Association Affairs** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 4 |
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| **Author(s):** | Editors IAWA Journal |
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