**IAWA Journal - Volume 15(2)**

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| **Author(s):** | Monique T.M. Bosman; Ingrid de Kort; Marianne K. van Genderen; Pieter Baas |
| **Title:** | **Radial Variation in Wood Properties of Naturally and Plantation Grown Light Red Meranti (Shorea, Dipterocarpaceae)** |
| **Source:** | IAWA Journal, Volume 15, Issue 2 |
| **Publication Year:** | 1994 |
| **Pages:** | 111-120 |
| **Keywords:** | tropical hardwoods; basic specific gravity; wood quality; Light Red Meranti; tissue proportions; Shorea leprosula; plantations; Shorea parvifolia; cell wall percentage |
| **Abstract:** | The wood quality parameters of cell wallpercentage, tissue proportions and basic specificgravity were determined for three naturallyand nine plantation grown trees of LightRed Meranti (Shorea leprosula and S. parvifolia). |
| **DOI:** | [10.1163/22941932-90001350](http://dx.doi.org/10.1163/22941932-90001350) |

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| **Author(s):** | V. Bucur; C. Herbé; G. Nosei |
| **Title:** | **Annual Ring Characteristics of Pinus Taeda Measured by Ultrasonic and X-Ray Techniques** |
| **Source:** | IAWA Journal, Volume 15, Issue 2 |
| **Publication Year:** | 1994 |
| **Pages:** | 121-132 |
| **Keywords:** | elastic parameters; X-ray microdensitometry; ultrasonic velocity; Pinus taeda; annual rings |
| **Abstract:** | X-ray microdensitometry and ultrasonic velocity were used to study radial variation of selected physical properties in wood of Pinus taeda. The analysed physical properties were earlywood and latewood density and stiffnesses in longitudinal and tangential anisotropic directions, calculated as the square of velocity multiplied by density. X-ray microdensitometry was used to measure earlywood and latewood density. Ultrasonic direct transmission velocity was used to measure velocity in longitudinal and tangential directions, in earlywood and latewood, in each ring. |
| **DOI:** | [10.1163/22941932-90001351](http://dx.doi.org/10.1163/22941932-90001351) |

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| **Author(s):** | W. Wayne Wilcox |
| **Title:** | **Osmium Staining Fails to Detect Early Cell Wall Damage in Brown Rot Wood Decay** |
| **Source:** | IAWA Journal, Volume 15, Issue 2 |
| **Publication Year:** | 1994 |
| **Pages:** | 133-136 |
| **Keywords:** | scanning electron microscopy; decay diagnosis; Early decay; brown rot; osmium tetroxide; birefringence; polarised light microscopy |
| **Abstract:** | Loss of cell wall birefringence under polarised light in the light microscope is an important diagnostic characteristic for early stages of brown rot wood decay not available with the scanning electron microscope (SEM). Osmium tetroxide staining was explored as a means of visualising this early manifestation of decay in the SEM, but proved unsuccessful as X-ray spectroscopy indicated that osmium was evenly distributed across both distorted and non-distorted cell walls. |
| **DOI:** | [10.1163/22941932-90001352](http://dx.doi.org/10.1163/22941932-90001352) |

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| **Author(s):** | I.D. Gourlay; G.W. Grime |
| **Title:** | **Calcium Oxalate Crystals in African Acacia Species and Them Analysis by Scanning Proton Microprobe (Spm)** |
| **Source:** | IAWA Journal, Volume 15, Issue 2 |
| **Publication Year:** | 1994 |
| **Pages:** | 137-148 |
| **Keywords:** | growth bands; calcium oxalate crystals; Acacia; marginal parenchyma; PIXE; scanning proton microprobe |
| **Abstract:** | The radial and cross sections of wood samples from individual trees of known age of African Acacia species were examined for growth rings. These were apparent in most species as narrow bands of marginal parenchyma filled with long crystal chains. The crystals were subsequently identified as calcium oxalate through the use of a scanning proton microprobe. Several other chemical elements were concentrated around this zone. The number of parenchyma bands formed annually corresponded to the number of peaks in the annual rainfall distribution. These results suggest that the presence of marginal parenchyma bands and crystalliferous chains define growth phases in African Acacia species, and can be used for age determination. |
| **DOI:** | [10.1163/22941932-90001353](http://dx.doi.org/10.1163/22941932-90001353) |

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| **Author(s):** | Young Geun Eom; Youn Jib Chung |
| **Title:** | **Tumor Wood Anatomy in Korean Red Pine (Pinus Densiflora)** |
| **Source:** | IAWA Journal, Volume 15, Issue 2 |
| **Publication Year:** | 1994 |
| **Pages:** | 149-155 |
| **Keywords:** | Korean red pine; Pinus densiflora; Branch wood; tumor wood; hazel growth ring; tracheids |
| **Abstract:** | The anatomy of tumor wood and normal wood in a branch of Korean red pine (Pinus densiflora S. et Z.) is compared. In tumor wood the tracheids and rays are irregularly arranged, the cell lumina contain resinous substances and fungal hypha, the tracheid files are of variable width within the growth ring, and traumatic vertical resin canals are present. There are also differences in length of tracheids, numbers of vertical and horizontal resin canals (fusiform rays), height of fusiform rays, and number and height of uniseriate rays. The modified structure of the tumor wood originates near the pith. The wider growth rings, considerably shorter but not wider tracheids, and larger and more numerous rays in tumor wood are associated with a higher radial growth rate, which in turn results in the externally massive wood tumor. |
| **DOI:** | [10.1163/22941932-90001354](http://dx.doi.org/10.1163/22941932-90001354) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Tree Anatomy. Alex Shigo, 124 pp., 89 colour plates, 1994. Shigo ' Trees, Associates, P.O. Box 769, Durham, New Hampshire 03824, USA. ISBN 0-943563-14-3. Price US$ 79.00 (+ US$ 4.00 for shipping and handling) (hardback).** |
| **Source:** | IAWA Journal, Volume 15, Issue 2 |
| **Publication Year:** | 1994 |
| **Pages:** | 156-156 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001355](http://dx.doi.org/10.1163/22941932-90001355) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Tree Anatomy slide packages. Tree anatomy, below ground. 80 slides + script + audio tape narrated by the author. Price US$ 79.00 (+ US$ 4.00 for shipping ' handling); Tree anatomy, above ground. Ibid. US$ 79.00 (+ US$ 4.00 for shipping and handling).** |
| **Source:** | IAWA Journal, Volume 15, Issue 2 |
| **Publication Year:** | 1994 |
| **Pages:** | 156-156 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001356](http://dx.doi.org/10.1163/22941932-90001356) |

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| **Author(s):** | Uwe Schmitt; Walter Liese |
| **Title:** | **Wound Tyloses in Robinia Pseudoacacia L.** |
| **Source:** | IAWA Journal, Volume 15, Issue 2 |
| **Publication Year:** | 1994 |
| **Pages:** | 157-160 |
| **Keywords:** | wounding; tyloses; Robinia pseudoacacia; electron microscopy |
| **Abstract:** | The formation of tyloses in vessels of Robinia pseudoacacia L. after wounding was investigated by transmission electron microscopy. Some tyloses in earlywood vessels exhibit cell division. The young walls between mother and daughter tyloses with primary wall-like appearance evince plasmodesmata; pits develop simultaneously with wall thickening. |
| **DOI:** | [10.1163/22941932-90001357](http://dx.doi.org/10.1163/22941932-90001357) |

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| **Author(s):** | M.J. Potgieter; A.E. van Wyk |
| **Title:** | **Bark Structure of the Southern African Icacinaceae** |
| **Source:** | IAWA Journal, Volume 15, Issue 2 |
| **Publication Year:** | 1994 |
| **Pages:** | 161-170 |
| **Keywords:** | Cassinopsis; Icacinaceae; Apodytes; bark; anatomy |
| **Abstract:** | A description of the bark structure of southern African species of Apodytes and Cassinopsis is presented for the first time. Bark anatomy was found useful in distinguishing between species, especially in the genus Apodytes. Fibres, associated with sclereids, are found exclusively in Apodytes spec. nov. B, whereas A. dimidiata subsp. dimidiata and Apodytes spec. nov. A contain only sclereids. Fibres are abundant in Cassinopsis tinifolia, but sparse in C. ilicifolia. Wreathing of the sclerenchyma by calcium oxalate crystals occurs in all three species of Apodytes, but not in Cassinopsis. Apodytes contains prismatic crystals as opposed to druses in Cassinopsis. Apodytes dimidiata subsp. dimidiata and Apodytes spec. nov. A show a prismatic crystal arrangement, consisting of crystalliferous cells with a large centralised prismatic crystal surrounded by numerous small peripheral crystals. Chambered cystalliferous strands occur in Cassinopsis, but not in Apodytes. Bark anatomically Apodytes spec. nov. A shows a closer correlation with A. dimidiata than with the other species. |
| **DOI:** | [10.1163/22941932-90001358](http://dx.doi.org/10.1163/22941932-90001358) |

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| **Author(s):** | Susan E. Anagnost; Robert W. Meyer; Carl de Zeeuw |
| **Title:** | **Confirmation and Significance of Bartholin's Method for the Identification of the Wood of Picea and Larix** |
| **Source:** | IAWA Journal, Volume 15, Issue 2 |
| **Publication Year:** | 1994 |
| **Pages:** | 171-184 |
| **Keywords:** | Picea; spiral thickenings; Larix; ray tracheid pit border |
| **Abstract:** | Eighty-seven Picea and Larix samples from thirty-nine species were examined microscopically to confirm an accurate method of genus separation. The proportions and type of ray tracheid bordered pits as described by Bartholin (1979) were the only wood anatomical feature to correctly identify all specimens. |
| **DOI:** | [10.1163/22941932-90001359](http://dx.doi.org/10.1163/22941932-90001359) |

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| **Author(s):** | Hisashi Abe; Jun Ohtani; Kazumi Fukazawa |
| **Title:** | **A Scanning Electron Microscopic Study of Changes in Microtubule Distributions During Secondary Wall Formation in Tracheids** |
| **Source:** | IAWA Journal, Volume 15, Issue 2 |
| **Publication Year:** | 1994 |
| **Pages:** | 185-189 |
| **Keywords:** | microfibril; cell wall formation; tracheid; Microtubule; Abies sachalinensis; scanning electron microscopy; secondary wall |
| **Abstract:** | A quantitative scanning electron microscopic (SEM) study of the changes in microtubule orientations and arrays during secondary wall formation has been done on conifer (Abies sachalinensis Masters) tracheids. Microtubules have similar orientations as the microfibrils being deposited in the various wall layers. The density of microtubules is different in different stages of secondary cell wall formation. Microtubules are more closely arrayed in the tracheids forming the S2 than the S12 and S3. During S3 formation, sometimes 2-7 microtubules are closely arrayed, and form bundles about 80-350 nm wide. Bundles of microfibrils of similar width were also observed during S3 formation. |
| **DOI:** | [10.1163/22941932-90001360](http://dx.doi.org/10.1163/22941932-90001360) |

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| **Author(s):** | E.A. Wheeler |
| **Title:** | **Timber trees: Major commercial timbers. I. Soerianegara and R.H.M.J. Lemmens (eds.), 610 pp., illus., 1993. PROSEA. Plant Resources of South-East Asia. Vol. 5 (1). Pudoc Scientific Publishers, Wageningen, The Netherlands. ISBN 90-220-1033- 3. Price: Dfl. 390 or US$ 260 (cloth). To be available in the PROSEA countries in a paperback edition, ISBN 979-8316-05 at a price of c. US$ 20.00.** |
| **Source:** | IAWA Journal, Volume 15, Issue 2 |
| **Publication Year:** | 1994 |
| **Pages:** | 190-191 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001361](http://dx.doi.org/10.1163/22941932-90001361) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Macroscopic wood identification manual for Papua New Guinean timbers. AA Oteng-Amoako, 118 pp., illus., 1990. Publication No.1, PNG Forest Research Institute, P.O. Box 314, Lae, Papua New Guinea. Price unknown (paperback).** |
| **Source:** | IAWA Journal, Volume 15, Issue 2 |
| **Publication Year:** | 1994 |
| **Pages:** | 191-191 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001362](http://dx.doi.org/10.1163/22941932-90001362) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Photomicrographic atlas of Papua New Guinea timbers - with IAWA microscopic hardwood identification features. A.A. Oteng-Amoako, 122 pp., illus., 1992. Publication No.3, PNG Forest Research Institute, P.O. Box 314, Lae, Papua New Guinea. Price unknown (paperback).** |
| **Source:** | IAWA Journal, Volume 15, Issue 2 |
| **Publication Year:** | 1994 |
| **Pages:** | 191-191 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001363](http://dx.doi.org/10.1163/22941932-90001363) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Eichensterben - Ein Problem in Berlin? D. Eckstein ' D.Dujesiefken (and others), 86 pp., illus., 1992. Arbeitsmaterialien der Berliner Forsten 2, Senatsverwaltung fUr Stadtentwicklung und Umweltschutz, Lindenstrasse 20-25, 1000 Berlin 61, Germany. Price unknown (paperback).** |
| **Source:** | IAWA Journal, Volume 15, Issue 2 |
| **Publication Year:** | 1994 |
| **Pages:** | 191-192 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001364](http://dx.doi.org/10.1163/22941932-90001364) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Jahrringe und Umwelt - Dendroökologie. F.H. Schweingruber, xi + 474 pp., illus., 1993. Eidgenossische Forschungsanstalt für Wald, Schnee und Landschaft, Birmensdorf, CH-8903 Switzerland. ISBN 5-8752-011-9. Price: US$ 40.00 (hard cover).** |
| **Source:** | IAWA Journal, Volume 15, Issue 2 |
| **Publication Year:** | 1994 |
| **Pages:** | 192-192 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001365](http://dx.doi.org/10.1163/22941932-90001365) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Wood Anatomy News** |
| **Source:** | IAWA Journal, Volume 15, Issue 2 |
| **Publication Year:** | 1994 |
| **Pages:** | 193-193 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001366](http://dx.doi.org/10.1163/22941932-90001366) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Association Affairs** |
| **Source:** | IAWA Journal, Volume 15, Issue 2 |
| **Publication Year:** | 1994 |
| **Pages:** | 194-194 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001367](http://dx.doi.org/10.1163/22941932-90001367) |