**IAWA Journal - Volume 16(3)**

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| **Author(s):** | E.A. Wheeler; J. McClammer; C.A. LaPasha |
| **Title:** | **Similarities and Differences in Dicotyledonous Woods of the Cretaceous and Paleocene. San Juan Basin, New Mexico, Usa** |
| **Source:** | IAWA Journal, Volume 16, Issue 3 |
| **Publication Year:** | 1995 |
| **Pages:** | 223-254 |
| **Keywords:** | San Juan Basin; paleobotany; Ojo Alamo Sandstone; Paraphyllanthoxylon; Fossil wood; Plataninium; Nacimiento Formation; Cretaceous; Paleocene; Kirtland Shale |
| **Abstract:** | Fossil wood is common in the Late Cretaceous and Early Paleocene of the San Juan Basin, New Mexico. Six types of dicotyledonous wood are recognized: Paraphyllanthoxylon arizonense Bailey, Paraphyllanthoxylon anasazi sp. nov., Plataninium piercei sp. nov., Metcalfeoxylon kirtlandense gen. et sp. nov., Chalkoxylon cretaceum gen. et sp. nov., Carlquistoxylon nacimientense gen. et sp. nov. Woods with the characteristics of Paraphyllanthoxylon arizonense Bailey are the most common and occur in the Cretaceous Kirtland Shale and the Paleocene Ojo Alamo Sandstone and Nacimiento Formation. This wood type's characteristics are stable from the Cretaceous to the Paleocene. There were no significant differences in the vessel diameters, vessel densities, ray sizes, or estimated specific gravities of the P. arizonense woods from the Late Cretaceous (Kirtland Shale) and Early Paleocene (Nacimiento Formation and Ojo Alamo Sandstone). Based on the samples examined for this study, dicotyledonous woods were more diverse in the Cretaceous (five types) than in the Paleocene (two types) of the San Juan Basin. Diameters of the Cretaceous woods examined ranged from 14-40cm indicating they were trees rather than shrubs; diameters of the Paleocene woods examined ranged from 10-80cm. All the woods have generalized structure with combinations of features seen in more than one extant family, order, or subclass. Information from databases for fossil and extant woods indicates that some combinations of features (e. g., solitary narrow vessels, low vessel density and scalariform perforation plates, as seen in Metcalfeoxylon kirtlandense and Chalkoxylon cretaceum), while relatively common in the Cretaceous, represent strategies of the hydraulic system that are extremely rare in the Tertiary and at present. None of the dicotyledonous woods have distinct growth rings, although some samples of Paraphyllanthoxylon arizonense from the Paleocene show variations in vessel density and vessel diameter that may correspond to seasonal variations in water availability. |
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| **Author(s):** | J. Ismail; M. Z. Jusoh; Mohd. H. Sahri |
| **Title:** | **Anatomical Variation in Planted Kelempayan (Neolamarckia Cadamba, Rubiaceae)** |
| **Source:** | IAWA Journal, Volume 16, Issue 3 |
| **Publication Year:** | 1995 |
| **Pages:** | 227-287 |
| **Keywords:** | Neolamarckia cadamba; vertical variation; fibre dimensions; tissue proportions; tropical hardwoods; Kelempayan; radial variation; Anthocephalus chinensis |
| **Abstract:** | Six plantation grown Kelempayan trees [Neolamarckia cadamba (Roxb.) Bosser, syn. Anthocephalus chinensis (Lamk.) A. Rich. ex Walp., Rubiaceae] were sampled along their radii and at five different height levels to evaluate variations of wood anatomical properties. Analysis of variance indicates that between tree differences in all anatomical properties measured were significant. Vessel proportion increases while ray proportion decreases with height, while both fibre diameter and fibre lumen diameter decrease with height. No significant trend was found for fibre length vertically. Cell wall substance and vessel and ray proportion increase from pith to bark, while fibre proportion decreases. Fibre length and fibre wall thickness increase from pith to bark, while fibre diameter and fibre lumen diameter first increase and then decrease. Within-tree variations are more consistent radially than vertically. |
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| **Author(s):** | J. Ilie |
| **Title:** | **Distinguishing the Woods of Araucaria Cunninghamii (Hoop Pine) and Araucaria Bidwilli (Bunya Pine)** |
| **Source:** | IAWA Journal, Volume 16, Issue 3 |
| **Publication Year:** | 1995 |
| **Pages:** | 255-260 |
| **Keywords:** | wood identification; Araucaria; Araucariaceae |
| **Abstract:** | Araucaria today is endemic to the Southern Hemisphere, with three species in Australia. Araucaria cunninghamii Ait. ex D.Don (Hoop Pine) and A. bidwilli Hook. (Bunya Pine) were cut in the past and marketed together as Colonial Pine. Today only A. cunninghamii is cut commercially, mainly from plantations established in the last few decades. |
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| **Author(s):** | Paula Rudall |
| **Title:** | **New Records of Secondary Thickening in Monocotyledons** |
| **Source:** | IAWA Journal, Volume 16, Issue 3 |
| **Publication Year:** | 1995 |
| **Pages:** | 261-268 |
| **Keywords:** | Asparagales; monocotyledons; Secondary thickening meristem |
| **Abstract:** | A secondary thickening meristem is recorded for the first time in someherbaceous taxa of Asparagales (Herreria montevidensis and Thysanotusspiniger), and the new records are assessed in a systematic context. |
| **DOI:** | [10.1163/22941932-90001409](http://dx.doi.org/10.1163/22941932-90001409) |

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| **Author(s):** | Ed C. February; W.D. Stock; W.J. Bond; D.J. Le Roux |
| **Title:** | **Relationships Between Water Availability and Selected Vessel Characteristics in Eucalyptus Grandis and Two Hybrids** |
| **Source:** | IAWA Journal, Volume 16, Issue 3 |
| **Publication Year:** | 1995 |
| **Pages:** | 269-276 |
| **Keywords:** | water use efficiency; Eucalyptus grandis; vessel diameter; Eucalyptus hybrids; vessel frequency |
| **Abstract:** | The primary objective of this study was to determine the relationships between water availability, plant growth and selected vessel characteristics for Eucalyptus grandis and two hybrids, so as to ascertain whether these xylem characteristics predict water use efficiency. Cuttings of Eucalyptus grandis, E. grandis × camaldulensis and E. grandis × nitens were planted in 220 litre drums from which rainfall was excluded. One half of the individuals received a low watering treatment; one half received a higher watering treatment. Soil moisture depletion through root uptake was monitored weekly and the removed water replaced to maintain 60 and 80 litres in the pots of the low and high watering treatments respectively. Mean values for tangential vessel diameter, vessel frequency and vessel element length were compared for the two treatments. In E. grandis and the hybrid E. grandis × camaldulensis vessel diameter (P < 0.01 ' P < 0.05 respectively) and vessel element length (P < 0.05 for both) increased from the dry to the wet treatment as water uptake through transpiration increased. There is no significant correlation between available water and vessel frequency. For E. grandis × nitens, on the other hand, only vessel frequency was significantly (P < 0.01) correlated with water uptake. In all three species/hybrids water availability also had a significant influence on stem diameter (P < 0.0001) and transverse sectional stem area (P < 0.0001) which increased with increased water consumption. These results suggest that E. grandis × nitens may be more water use efficient than E. grandis, which is commonly grown for timber and thus could potentially be used as a replacement species that is more water conservative in this water limited region. |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Review** |
| **Source:** | IAWA Journal, Volume 16, Issue 3 |
| **Publication Year:** | 1995 |
| **Pages:** | 288-288 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001412](http://dx.doi.org/10.1163/22941932-90001412) |

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| **Author(s):** | Mathew Adam Leitch; Rodney Arthur Savidge |
| **Title:** | **Evidence for Auxin Regulation of Bordered-Pit Positioning During Tracheid Differentiation in Larix Laricina** |
| **Source:** | IAWA Journal, Volume 16, Issue 3 |
| **Publication Year:** | 1995 |
| **Pages:** | 289-297 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001413](http://dx.doi.org/10.1163/22941932-90001413) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Flora of the Guianas 16. Hippocrateaceae ' Icacinaceae. A.R.A. Görts-van Rijn (ed.), 160 pp., illus., 1994. Koeltz Scientific Books, Koenigstein. ISBN 80-901699- 0-2 (Czech Republic), 3-87429-365-3 (Germany), 1-878762-63-X (USA). Price: DM 95.50 (paperback).** |
| **Source:** | IAWA Journal, Volume 16, Issue 3 |
| **Publication Year:** | 1995 |
| **Pages:** | 298-298 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001414](http://dx.doi.org/10.1163/22941932-90001414) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Monocotyledons - systematics and evolution. P.J. Rudall, P.J. Cribb, D.F. Cutler ' C.J. Humphreys (eds.), vol. 1 ' 2, 750 pp., illus., 1995. Royal Botanic Gardens Kew. ISBN 0-947643-85-0 (2 paperbacks in luxury box). Price unknown.** |
| **Source:** | IAWA Journal, Volume 16, Issue 3 |
| **Publication Year:** | 1995 |
| **Pages:** | 298-298 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001415](http://dx.doi.org/10.1163/22941932-90001415) |

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| **Author(s):** | Dieter Eckstein; Florian Scholz; Heinrich Klein |
| **Title:** | **Wood Anatomical Studies of Cloned Spruce Trees Fumigated With Sulphur Dioxide** |
| **Source:** | IAWA Journal, Volume 16, Issue 3 |
| **Publication Year:** | 1995 |
| **Pages:** | 299-309 |
| **Keywords:** | sulphur dioxide; wood anatomy; genetic effects; Spruce |
| **Abstract:** | The wood anatomy was studied of 180 young spruce trees of 30 clones fumigated with SO2. The resulting data were assessed using rank correlation statistics, factor analysis and analysis of variance. In the year before fumigation none of the measured characteristics showed any correlation with the degree by which clones were damaged after fumigation. Genetic effects were assessed to be responsible for 65% of latewood width variation prior to fumigation. In the treatment year as well as in the subsequent year there was a correlation between some of the characteristics measured and the degree of damage, and in the same period genetic influences accounted for only 10% of latewood width variation. Two years after fumigation no correlations between the measured wood anatomical characteristics and the degree of damage could be detected. |
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| **Author(s):** | E. A. Wheeler |
| **Title:** | **Growth patterns in vascular plants. Muhammad Iqbal (ed.), 480 pp., illus., 1994. Dioscorides Press, Portland, Oregon. ISBN 0-931146-26-7. Price: US$ 69.95.** |
| **Source:** | IAWA Journal, Volume 16, Issue 3 |
| **Publication Year:** | 1995 |
| **Pages:** | 310-311 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001417](http://dx.doi.org/10.1163/22941932-90001417) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Fiber Atlas - Identification of Papermaking Fibers. Marja-Sisko Ilvessalo-Pfäffli, xi + 400 pp., illus., 1995. Springer Series in Wood Science (Editor T.E. Timell), Springer Verlag, Berlin, Heidelberg, New York, etc. ISBN 3-540-55392-4. Price: DM 398.00, FF 1500.00, UK£ 173.00 (hardback).** |
| **Source:** | IAWA Journal, Volume 16, Issue 3 |
| **Publication Year:** | 1995 |
| **Pages:** | 311-312 |
| **Keywords:** |  |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Wood Anatomy News** |
| **Source:** | IAWA Journal, Volume 16, Issue 3 |
| **Publication Year:** | 1995 |
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| **Abstract:** |  |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Association Affairs** |
| **Source:** | IAWA Journal, Volume 16, Issue 3 |
| **Publication Year:** | 1995 |
| **Pages:** | 318-318 |
| **Keywords:** |  |
| **Abstract:** |  |
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