**IAWA Journal - Volume 19(3)**

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| **Author(s):** | Ted Hillis |
| **Title:** | **Obituary Mary Margaret Chattaway (1899-1997)** |
| **Source:** | IAWA Journal, Volume 19, Issue 3 |
| **Publication Year:** | 1998 |
| **Pages:** | 239-240 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001527](http://dx.doi.org/10.1163/22941932-90001527) |

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| **Author(s):** | Elisabeth A. Wheeler; Pieter Baas |
| **Title:** | **Wood Identification -A Review** |
| **Source:** | IAWA Journal, Volume 19, Issue 3 |
| **Publication Year:** | 1998 |
| **Pages:** | 241-264 |
| **Keywords:** | Wood identification; keys; computer-aided wood identification |
| **Abstract:** | Wood identification is of value in a variety of contexts - commercial, forensic, archaeological and paleontological. This paper reviews the basics of wood identification, including the problems associated with different types of materials, lists commonly used microscopic and macroscopic features and recent wood anatomical atlases, discusses types ofkeys (synoptic, dichotomous, and multiple entry), and outlines some work on computer-assisted wood identification. |
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| **Author(s):** | Jean-Pierre André |
| **Title:** | **A Study of the Vascular Organization of Bamboos (Poaceae-Bambuseae) Using a Microcasting Method** |
| **Source:** | IAWA Journal, Volume 19, Issue 3 |
| **Publication Year:** | 1998 |
| **Pages:** | 265-278 |
| **Keywords:** | vessel; bamboo; vascular bundle; Metaxylem; node-intercalary meristem |
| **Abstract:** | A reliable and simple microcasting method is applied to the study of the vascular structure in bamboo nodes; it provides new insights into their complexity, revealing the exact arrangement of branched vessels and clustered tracheary elements. Axial differentiation gradients in the metaxylem cell files, probable relics of the intercalary meristem, can also be found using this method. This anatomical finding can be linked to arecent hypothesis on the continuum in the tracheary element differentiation. |
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| **Author(s):** | Claudia Luizon Dias-Lerne; Veronica Angyalossy-Alfonso |
| **Title:** | **Intrusive Cavities in Euphorbiaceae Fibre Walls** |
| **Source:** | IAWA Journal, Volume 19, Issue 3 |
| **Publication Year:** | 1998 |
| **Pages:** | 279-283 |
| **Keywords:** | Croton; Sapium; Intrusive cavity; Alchornea; fibre cavities; Sebastiania; Euphorbiaceae |
| **Abstract:** | Fibres with intrusive cavities were present in Alchornea sidifolia, Alchornea triplinervia, Croton floribundus, Sapium glandulatum, and Sebastiania serrata (Euphorbiaceae). These cavities are the result of an intrusive growth of fibres which detour when they encounter a cellular obstacle, form either a fork or a concavity around the obstacle, and subsequently unite. The term 'intrusive cavity' is proposed for this structure. |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Evolution and Diversification of Land Plants. K. Iwatsuki ' P. H. Raven (eds.), xiii + 330 pp., illus., 1997. Springer-Verlag, Tokyo, Berlin, Heidelberg, New York (in cooperation with the Botanical Society of Japan), ISBN 4-431-70203 -2. Price: ¥ 11,000 (hard cover). For members of the Botanical Society of Japan ¥ 6,000.** |
| **Source:** | IAWA Journal, Volume 19, Issue 3 |
| **Publication Year:** | 1998 |
| **Pages:** | 284-284 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001531](http://dx.doi.org/10.1163/22941932-90001531) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Erratum** |
| **Source:** | IAWA Journal, Volume 19, Issue 3 |
| **Publication Year:** | 1998 |
| **Pages:** | 284-284 |
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| **Author(s):** | Yuzou Sano; Ryogo Nakada |
| **Title:** | **Time Course of the Secondary Deposition of Incrusting Materials on Bordered Pit Membranes in Cryptomeria Japonica** |
| **Source:** | IAWA Journal, Volume 19, Issue 3 |
| **Publication Year:** | 1998 |
| **Pages:** | 285-299 |
| **Keywords:** | Cryptomeria japonica; intermediate wood; bordered pit membrane; heartwood; sapwood; scanning electron microscopy; ultraviolet microspectrophotometry; phenolic compounds |
| **Abstract:** | Bordered pit membranes of Cryptomeria japonica were examined successively from the outermost sapwood to the heartwood by scanning electron microscopy and by ultraviolet microspectrophotometry in an attempt to evaluate the time course of the secondary deposition of incrusting materials and to gain clues to their chemical composition. Scanning electron microscopy revealed that the bordered pit membranes were covered by incrusting materials from the middle layer of the sapwood to the heartwood. Both the amount and the appearance of the deposited incrusting materials differed among four regions of the wood, namely, the middle to inner layer of the sapwood, the innermost layer of the sapwood, the intermediate wood and the heartwood. From our results it appears that, in C. japonica, incrusting materials are deposited on bordered pit membranes by stages over several years. Apparent absorption of ultraviolet light by the bordered pit membranes was detected in the analysis of the innermost layer of the sapwood, the intermediate wood and the heartwood. The incrusting materials deposited in these zones were probably phenolic compounds. However, differences in the manner and extent of the absorption of ultraviolet light were found between these three regions of the wood. The results of microspectrophotometric analysis also suggested the phased deposition of incrusting materials at the bordered pit membranes of C. japonica. |
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| **Author(s):** | Elisabeth Wheeler |
| **Title:** | **Review** |
| **Source:** | IAWA Journal, Volume 19, Issue 3 |
| **Publication Year:** | 1998 |
| **Pages:** | 300-300 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001534](http://dx.doi.org/10.1163/22941932-90001534) |

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| **Author(s):** | Ernst Bäucker; Claus-Thomas Bues; Michael Vogel |
| **Title:** | **Radial Growth Dynamics of Spruce (Picea Abies) Measured by Micro-Cores** |
| **Source:** | IAWA Journal, Volume 19, Issue 3 |
| **Publication Year:** | 1998 |
| **Pages:** | 301-309 |
| **Keywords:** | Picea abies (L.) Karst; cambial activity; Increment micro-cores; wood formation; micro-coring; phloem |
| **Abstract:** | Using medical cannulas of 0.5 mm inside diameter, micro-cores were taken at three circurnferential heights from five spruce trees [Picea abies (L.) Karst.] in the Ore Mountains (Germany). The micro-cores were taken every second week during the growing seasons of 1996 and 1997 and light-microscopy studies were made on the micro-cores. The number of xylem and phloem cells, and total cell count in the cambial zone, were tabulated for each sampIe. Determination of the intra-annual cellular growth rate of conifers is simplified and will be possible also in long-term experiments. Preliminary evaluations of the wound response indicate that this micro-coring technique causes minimal injury. |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Review** |
| **Source:** | IAWA Journal, Volume 19, Issue 3 |
| **Publication Year:** | 1998 |
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| **Author(s):** | Sha Jiang; Tamaki Honma; Teruko Nakamura; Ikuo Furukawa; Fukuju Yamamoto |
| **Title:** | **Regulation by Uniconazole-P and Gibberellins of Morphological and Anatomical Responses of Fraxinus Mandshurica Seedlings to Gravity** |
| **Source:** | IAWA Journal, Volume 19, Issue 3 |
| **Publication Year:** | 1998 |
| **Pages:** | 311-320 |
| **Keywords:** | gibberellins; tension wood; Uniconazole-P; Fraxinus mandshurica |
| **Abstract:** | The present study deals with roles of gibberellins (GAs) in gravitropic responses of woody sterns of horizontally-positioned, 2-year-old seedling of Fraxinus mandshurica Rupr. var.japonica Maxim. The application of uniconazole-P, an inhibitor of GAs biosynthesis, to stern nodes at various concentrations significantly inhibited not only righting the sterns but also wood formation. The application of GAs (GA3 and GA4) in combination with uniconazole-P negated the inhibitory effect of the treatment of uniconazole-P alone. The GAs alone did not affect wood formation, however, both GAs increased wood formation on both the upper and lower sides of horizontal sterns with an increase in the concentration of combined uniconazole-P. In all of the seedlings, tension wood was formed on the upper side of sterns. The application of uniconazole-P alone at various concentrations did not inhibit the formation of tension wood fibres. |
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| **Author(s):** | L.A. Donaldson; M.J.F. Lausberg |
| **Title:** | **Comparison of Conventional Transmitted Light and Confocal Microscopy for Measuring Wood Cell Dimensions by Image Analysis** |
| **Source:** | IAWA Journal, Volume 19, Issue 3 |
| **Publication Year:** | 1998 |
| **Pages:** | 321-336 |
| **Keywords:** | cell dimensions; Pinus radiata; Confocal microscopy; image analysis |
| **Abstract:** | A comparison was made between conventional transmitted light microscopy and confocallaser scanning microscopy (CLSM) as the source of digital images for the measurement of wood cell dimensions by image analysis. When compared with confocal microscopy, transmitted light microscopy using 20 μm thick, safranin stained sections overestimated wall thickness by up to 50% and underestimated lumen area by up to 4% due to the effects of out-of-focus haze. Confocal microscopy using 20 μm thick, safranin stained sections, was found to produce more accurate images of the wood cells compared to transmitted light microscopy using thick sections. Images obtained by optical sectioning were comparable to the quality that might be obtained by thin sectioning of resin embedded wood. For example bordered pit chambers were easily resolved in single optical sections but were not resolved in transmitted light images. Confocal microscopy can be performed on sections as thick as 120 μm and by acquiring optical sections more than 5 μm below the surface of the section distortion of cells caused by sectioning can be avoided. Image quality declined with depth leading to substantial changes in cell dimensions at depths beyond 10-20 μm and significant errors in cell dimensions beyond 80 μm depth. Image brightness was also found to decline with depth, more rapidly in water than in immersion oil. A comparison of measurements of cell dimensions in water and in immersion oil indicated that wall thickness changes significantly during drying but that other dimensions remain almost the same in dry compared to wet seetions. |
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| **Author(s):** | Peter Gasson |
| **Title:** | **Review** |
| **Source:** | IAWA Journal, Volume 19, Issue 3 |
| **Publication Year:** | 1998 |
| **Pages:** | 337-339 |
| **Keywords:** |  |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Wood Anatomy News** |
| **Source:** | IAWA Journal, Volume 19, Issue 3 |
| **Publication Year:** | 1998 |
| **Pages:** | 339-342 |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Association Affairs** |
| **Source:** | IAWA Journal, Volume 19, Issue 3 |
| **Publication Year:** | 1998 |
| **Pages:** | 342-342 |
| **Keywords:** |  |
| **Abstract:** |  |
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