**IAWA Journal - Volume 20(4)**

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Review and Debate: Hardwood fibre pits - Again!** |
| **Source:** | IAWA Journal, Volume 20, Issue 4 |
| **Publication Year:** | 1999 |
| **Pages:** | 456-459 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001571](http://dx.doi.org/10.1163/22941932-90001571) |

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| **Author(s):** | Tetsuo Itabashi; Shinso Yokota; Nobuo Yoshizawa |
| **Title:** | **The Seasonal Occurrence and Histology of Septate Fibers in Kalopanax Pictus** |
| **Source:** | IAWA Journal, Volume 20, Issue 4 |
| **Publication Year:** | 1999 |
| **Pages:** | 395-404 |
| **Keywords:** | lignification; septation; Kalopanax pictus Nakai; septate wood fiber |
| **Abstract:** | Septate wood fibers were abundant in the following parts of growth rings of Kalopanax pictus Nakai: 1) around the vessels, 2) in the vicinity of ray cells, 3) in terminal regions of the growth rings. Septum formation in wood fibers progressed from the initial region (pore zone) towards the terminal region within a current growth ring with progressing 1ignification of the wood fiber walls. Many septate wood fibers at the end of the growth ring had radially continuous septa. Karyokinesis was observed in severa1 wood fibers before the initiation of septum formation, while lignification was in progress after the completion of the S3 layer deposition. This suggests that the septation starts in parallel with the progress of lignification after the deposition of the S3 layer. |
| **DOI:** | [10.1163/22941932-90001564](http://dx.doi.org/10.1163/22941932-90001564) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Preliminary material** |
| **Source:** | IAWA Journal, Volume 20, Issue 4 |
| **Publication Year:** | 1999 |
| **Pages:** | i-iv |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001558](http://dx.doi.org/10.1163/22941932-90001558) |

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| **Author(s):** | Angela C. Morrow; Roland R. Dute |
| **Title:** | **Electron Microscopic Investigation of the Coating Found on Torus-Bearing Pit Membranes of Botrychium Dissectum, the Common Grape Fern** |
| **Source:** | IAWA Journal, Volume 20, Issue 4 |
| **Publication Year:** | 1999 |
| **Pages:** | 359-373 |
| **Keywords:** | Botrychium dissectum; wound response; wood; torus; xylem; fern; pit membrane |
| **Abstract:** | TEM investigation of the torus-bearing pit membranes in tracheids of Botrychium dissectum wood has revealed in some specimens a coating that covers the pit membrane and torus, and sometimes lines the lumen-side of the tracheary wall. Such coatings have been associated with wound response in dicot woods, but have not previously been reported in the wood of Botrychium. In response to wounding, rhizome sampIes incubated on water-saturated filter paper produced the coating material within 4 days. Rhizome sampIes that were incubated with an ethylene inhibitor for a maximum incubation time of 20 days did not develop the wound-response coating. Therefore, based on experimental evidence the wound response appeared to be ethylene mediated. Field sampIes which were artificially grazed by removing the leaf/spike complex exhibited a displaced wound-response coating in the rhizome. Histochemical studies indicate that the coating material has both pectin and phenolic components. |
| **DOI:** | [10.1163/22941932-90001559](http://dx.doi.org/10.1163/22941932-90001559) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Review** |
| **Source:** | IAWA Journal, Volume 20, Issue 4 |
| **Publication Year:** | 1999 |
| **Pages:** | 374-374 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001560](http://dx.doi.org/10.1163/22941932-90001560) |

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| **Author(s):** | Yuzou Sano; Yuko Kawakami; Jun Ohtani |
| **Title:** | **Variation in the Structure of Intertracueary Pit Membranes in Abies Sacualinensis, as Observed by Field-Emission Scanning Electron Microscopy** |
| **Source:** | IAWA Journal, Volume 20, Issue 4 |
| **Publication Year:** | 1999 |
| **Pages:** | 375-388 |
| **Keywords:** | Abies sachalinensis; extended torus; margo; field-emission scanning electron microscopy; bordered pit membrane; torus |
| **Abstract:** | An examination was made of the fine structure of bordered pit membranes in the radial walls between tracheids in the outer sapwood of Abies sachalinensis to improve our understanding of the so-called extended torus, the minute holes in the torus and the imperforate zone near the periphery of the pit membranes, Field-emission scanning electron microscopy revealed that a so-called extended torus was present in many bordered pit membranes. We examined the frequency occurrence of and variations in the extended torus within a single annual ring. The frequency tended to increase from the earlywood to the latewood within a single annual ring. In the tori of many bordered pit membranes, we detected minute holes, and the number and location of such minute holes in a single torus varied among individual pit membranes. The appearance of each minute hole also varied. An imperforate zone was observed near the periphery of the pit membrane. In this imperforate zone, we found amorphous materials, and fine fibrils were visible that were an extension of the fibrillar meshwork of the margo. |
| **DOI:** | [10.1163/22941932-90001561](http://dx.doi.org/10.1163/22941932-90001561) |

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| **Author(s):** | Jianhua Xu; Walter Liese |
| **Title:** | **On the Occurrence of Warty Structures in Rattan** |
| **Source:** | IAWA Journal, Volume 20, Issue 4 |
| **Publication Year:** | 1999 |
| **Pages:** | 389-393 |
| **Keywords:** | resin casting method; rattan; scanning electron microscopy; wood anatomy; Warts |
| **Abstract:** | A study on cellular details of rattan sterns by the resin casting method revealed the presence of wart-like structures as apposition on the cell wall of metaxylem vessels, protoxylem tracheids, fibres and also parenchyma. They were apparent for some species, but not observed in others. Conventional SEM confirmed the presence of warts with a considerable variation in occurrence. Therefore they have only limited taxonomic significance for the rattans. |
| **DOI:** | [10.1163/22941932-90001562](http://dx.doi.org/10.1163/22941932-90001562) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Review** |
| **Source:** | IAWA Journal, Volume 20, Issue 4 |
| **Publication Year:** | 1999 |
| **Pages:** | 394-394 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001563](http://dx.doi.org/10.1163/22941932-90001563) |

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| **Author(s):** | Tetsuo Itabashi; Shinso Yokota; Nobuo Yoshizawa |
| **Title:** | **The Seasonal Occurrence and Histology of Septate Fibers in Kalopanax Pictus** |
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| **Publication Year:** | 1999 |
| **Pages:** | 395-404 |
| **Keywords:** | lignification; septation; Kalopanax pictus Nakai; septate wood fiber |
| **Abstract:** | Septate wood fibers were abundant in the following parts of growth rings of Kalopanax pictus Nakai: 1) around the vessels, 2) in the vicinity of ray cells, 3) in terminal regions of the growth rings. Septum formation in wood fibers progressed from the initial region (pore zone) towards the terminal region within a current growth ring with progressing 1ignification of the wood fiber walls. Many septate wood fibers at the end of the growth ring had radially continuous septa. Karyokinesis was observed in severa1 wood fibers before the initiation of septum formation, while lignification was in progress after the completion of the S3 layer deposition. This suggests that the septation starts in parallel with the progress of lignification after the deposition of the S3 layer. |
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| **Author(s):** | J.E. Dakak; R. Keller; V. Bucur |
| **Title:** | **Rays in Juvenile Wood of Acer** |
| **Source:** | IAWA Journal, Volume 20, Issue 4 |
| **Publication Year:** | 1999 |
| **Pages:** | 405-417 |
| **Keywords:** | juvenile wood; Acer campestre; Ray size; Acer pseudoplatanus; Acer saccharinum; Acer platanoides; Acer saccharum; earlywood |
| **Abstract:** | Juvenile wood characteristics of multiseriate and uniseriate rays of five species of the genus Acer were studied on young trees from France and Canada. Ray height, width, number in width of cells and proportion/mm2 were determined for the earlywood. Variance analysis was used to discriminate the variability of the characteristics of rays. Simple regression analysis shows some strong correlations between the characteristics of multiseriate and uniseriate rays of each species. Except for A. saccharinum, no relationships were established between the ray characteristics and the specific gravity. Except for A. pseudoplatanus, no relationships were established between annual ring width and ray characteristics. Principal component analysis focused separatelyon multiseriate rays and on uniseriate rays revealed differences between A. saccharum and A. saccharinum (e.g., the proportion and the number of cells in multiseriate rays). |
| **DOI:** | [10.1163/22941932-90001565](http://dx.doi.org/10.1163/22941932-90001565) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Review** |
| **Source:** | IAWA Journal, Volume 20, Issue 4 |
| **Publication Year:** | 1999 |
| **Pages:** | 418-418 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001566](http://dx.doi.org/10.1163/22941932-90001566) |

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| **Author(s):** | G.K. Psaras; I. Sofroniou |
| **Title:** | **Wood Anatomy of Capparis Spinosa from an Ecological Perspective** |
| **Source:** | IAWA Journal, Volume 20, Issue 4 |
| **Publication Year:** | 1999 |
| **Pages:** | 419-429 |
| **Keywords:** | Capparis spinosa; ecological wood anatomy |
| **Abstract:** | Root and stern wood of the Mediterranean summergreen Capparis spinosa L. was studied. Wood anatomical features favour high hydraulic conductivity, which is necessary for maintaining the high midday stomatal conductance and rates of photosynthesis observed in this plant. Xylem conduits of both stern and root consist of wide and short vessel elements with simple perforation plates. Vessel grouping in the stern secures xylem safety against cavitations. The plant would be highly vulnerable to cavitations due to freezing conditions, although these are rare during the Mediterranean winter. Thus, the anatomical features of the plant, which does not seem to suffer from water stress though growing entirely during the Mediterranean summer drought, are compatible with its adaptive strategy. The significant amount of minerals found in the root vessels, and the abundant starch grains of the wood might be involved in a possible osmotic shifting of water in the xylem. |
| **DOI:** | [10.1163/22941932-90001567](http://dx.doi.org/10.1163/22941932-90001567) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Review** |
| **Source:** | IAWA Journal, Volume 20, Issue 4 |
| **Publication Year:** | 1999 |
| **Pages:** | 430-430 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001568](http://dx.doi.org/10.1163/22941932-90001568) |

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| **Author(s):** | Sherwin Carlquist |
| **Title:** | **Wood Anatomy, Stem Anatomy, and Cambial Activity of Barbeuia (Caryophyllales)** |
| **Source:** | IAWA Journal, Volume 20, Issue 4 |
| **Publication Year:** | 1999 |
| **Pages:** | 431-440 |
| **Keywords:** | Fibriform vessel elements; vessel dimorphism; successive cambia; Phytolaccaceae; tracheids |
| **Abstract:** | Liquid-preserved material of mature sterns of Barbeuia madagascariensis Steud. permiUed analysis of meristematic activities. The species has successive cambia, each producing secondary xylem and phloem; outside of these vascular strands is a nondiffuse lateral meristem, probably functionally a single cell in thickness, which produces radial files of secondary cortex to the outside and conjunctive tissue and vascular cambia to the inside. The secondary xylem of Barbeuia has dimorphism in vessel diameter, reminiscent of vessel dimorphism in other lianas, such as Agdestis. Diffuse parenchyma and tracheids, found in Barbeuia, also occur in Stegnosperma and Agdestis but not other Phytolaccaceae s.l., and are traditionally considered primitive features. Wood anatomy and lateral meristem activity of Barbeuia are distinctive enough to support segregation of the genus from Phytolaccaceae s. s. |
| **DOI:** | [10.1163/22941932-90001569](http://dx.doi.org/10.1163/22941932-90001569) |

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| **Author(s):** | Peter Gasson |
| **Title:** | **Wood Anatomy of the Tribe Dipterygeae With Comments on Related Papilionoid and Caesalpinioid Leguminosae** |
| **Source:** | IAWA Journal, Volume 20, Issue 4 |
| **Publication Year:** | 1999 |
| **Pages:** | 441-455 |
| **Keywords:** | Taralea; Pterodon; Dipteryx; Dipterygeae; wood descriptions |
| **Abstract:** | The wood anatomy of all three genera in the tribe Dipterygeae, Dipteryx, Pterodon and Taralea is described here in a systematic context. Dipteryx and Pterodon have short, narrow, storied rays and fine intervessel pitting, whereas Taralea has narrow non-storied rays and much finer intervessel pitting. The wood of T. casiquiarensis is much more similar to that of Dipteryx and Pterodon than to its congeners, and a new combination based on both wood and morphological features is being published in Kew Bulletin (Lewis ' Gasson, in press). The Dipterygeae may form an outlying group to the Dalbergieae, although its nearest affinity has been thought to be with Monopteryx (Sophoreae). Here, the wood anatomy of the three genera is compared with that of Sophoreae, Swartzieae and Dalbergieae. |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Review** |
| **Source:** | IAWA Journal, Volume 20, Issue 4 |
| **Publication Year:** | 1999 |
| **Pages:** | 460-460 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001572](http://dx.doi.org/10.1163/22941932-90001572) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Wood Anatomy News** |
| **Source:** | IAWA Journal, Volume 20, Issue 4 |
| **Publication Year:** | 1999 |
| **Pages:** | 460-461 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001573](http://dx.doi.org/10.1163/22941932-90001573) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Association Affairs** |
| **Source:** | IAWA Journal, Volume 20, Issue 4 |
| **Publication Year:** | 1999 |
| **Pages:** | 461-465 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001574](http://dx.doi.org/10.1163/22941932-90001574) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Acknowledgement of Reviewers** |
| **Source:** | IAWA Journal, Volume 20, Issue 4 |
| **Publication Year:** | 1999 |
| **Pages:** | 466-466 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001575](http://dx.doi.org/10.1163/22941932-90001575) |