**IAWA Bulletin New Series - Volume 6(1)**

|  |  |
| --- | --- |
| **Author(s):** | William C. Dickison; Kristen D. Phend |
| **Title:** | **Wood Anatomy of the Styracaceae: Evolutionary and Ecological Considerations** |
| **Source:** | IAWA Bulletin NS, Volume 6, Issue 1 |
| **Publication Year:** | 1985 |
| **Pages:** | 3-22 |
| **Keywords:** | latitude; systematic anatomy; Styracaceae; ecological wood anatomy; Lissocarpaceae |
| **Abstract:** | Woods of over 40 species representing nine genera of Styracaceae were studied. Features present in most taxa include growth rings, diffuse porosity, combinations of both solitaries and pore multiples, exclusively scalariform perforation plates, opposite to alternate intervessel pitting, imperforate tracheary elements with indistinctly bordered pits, both uniseriate and multiseriate heterocellular rays, and axial parenchyma distributed as a combination of diffuse, diffuse-in-aggregates, and scanty. Prismatic crystals occur in species of the genera Bruinsmia, Halesia, and Styrax, and silica is present in a few Neotropical species of Styrax. The characteristic solitary pore distribution and high scalariform perforation plate bar number of Huodendron are of potential evolutionary significance. The xylem of Lissocarpa differs from the Styracaceae in possessing more highly evolved vessel elements with both simple and scalariform perforations and prominently banded axial parenchyma. The occurrence of simple perforation plates in the wider, earlywood vessel elements, along with an increased pore frequency and decreased vessel element length, in Styrax platanifolius and S. texanus is documented. Both species inhabit seasonally dry habitats of the southwestern United States, thus supporting similar specialisations observed in other plants growing in xerophytic conditions. The apparent variation in perforation plate condition within different geographic varieties of S. officinalis is discussed. Significant correlations of wood anatomical characters and latitude of provenance are present among species of Styracaceae. Increasing latitude is strongly correlated with increased pore and multiseriate ray frequency, and decreased vessel element length and wall thickness. Increasing latitude is less strongly correlated with an occurrence of decreased pore diameter, increased bar number per perforation plate, increased fibre-tracheid and intervessel pit diameter, and increased frequency of uniseriate rays. Weak correlations are also evident between increasing latitude and shorter ray height and narrower, shorter, and thinner-walled fibre-tracheids. |
| **DOI:** | [10.1163/22941932-90000903](http://dx.doi.org/10.1163/22941932-90000903) |

|  |  |
| --- | --- |
| **Author(s):** | Lek-Lim Chan |
| **Title:** | **The Anatomy of the Bark of Libocedrus in New Zealand** |
| **Source:** | IAWA Bulletin NS, Volume 6, Issue 1 |
| **Publication Year:** | 1985 |
| **Pages:** | 23-34 |
| **Keywords:** | Bark anatomy; crystals; trabeculae; Libocedrus |
| **Abstract:** | The anatomy of the bark of Libocedrus bidwillii and L. plumosa, both indigenous to New Zealand, is described. The phloem cell types include axial and ray parenchyma, sieve cells and fibres. Fibres are of two types, thin-walled and thick-walled. The ends of these fibres are mostly blunt or abrupt. |
| **DOI:** | [10.1163/22941932-90000904](http://dx.doi.org/10.1163/22941932-90000904) |

|  |  |
| --- | --- |
| **Author(s):** | María Agueda Castro |
| **Title:** | **Structure of the Vessel-Parenchyma Pit Membrane in Some Species of Lauraceae** |
| **Source:** | IAWA Bulletin NS, Volume 6, Issue 1 |
| **Publication Year:** | 1985 |
| **Pages:** | 35-38 |
| **Keywords:** | vessel; radial parenchyma; Axial parenchyma; pit membrane |
| **Abstract:** | The structure of the vessel-parenchyma pit membranes in the secondary xylem of seven species of Lauraceae has been studied with scanning electron microscopy (SEM). |
| **DOI:** | [10.1163/22941932-90000905](http://dx.doi.org/10.1163/22941932-90000905) |

|  |  |
| --- | --- |
| **Author(s):** | Babu Lal Sharma; R. Vijendra Rao; S. S. Bisen; R. Dayal |
| **Title:** | **Modified Scalariform and Reticulate Perforation Plates in Species of Euodia (Rutaceae)** |
| **Source:** | IAWA Bulletin NS, Volume 6, Issue 1 |
| **Publication Year:** | 1985 |
| **Pages:** | 39-41 |
| **Keywords:** | E. lunu-ankenda; Euodia elleryana; silica bodies; vessel perforations |
| **Abstract:** | Although there have been some reports of occurrence of scalariform and modified scalariform types of perforation in vessels of some members of the Rutaceae, no such observation has so far been made in the woods of Euodia species. In two species, E. elleryana and E. lunuankenda, besides the scalariform type, irregular and regular reticulate types of perforation have been observed. Additionally, silica bodies have also been noticed in vessels, fibres and axial parenchyma. |
| **DOI:** | [10.1163/22941932-90000906](http://dx.doi.org/10.1163/22941932-90000906) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Association Affairs** |
| **Source:** | IAWA Bulletin NS, Volume 6, Issue 1 |
| **Publication Year:** | 1985 |
| **Pages:** | 42-42 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000907](http://dx.doi.org/10.1163/22941932-90000907) |

|  |  |
| --- | --- |
| **Author(s):** | Pieter Baas |
| **Title:** | **Review** |
| **Source:** | IAWA Bulletin NS, Volume 6, Issue 1 |
| **Publication Year:** | 1985 |
| **Pages:** | 42-42 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000908](http://dx.doi.org/10.1163/22941932-90000908) |

|  |  |
| --- | --- |
| **Author(s):** | Jun Ohtani |
| **Title:** | **Sem Observations on Trabeculae in Abies Sachalinensis** |
| **Source:** | IAWA Bulletin NS, Volume 6, Issue 1 |
| **Publication Year:** | 1985 |
| **Pages:** | 43-51 |
| **Keywords:** | Abies sachalinensis; warts; central core; trabeculae; SEM |
| **Abstract:** | The morphology of normal and abnormal trabeculae were observed in the secondary xylem of Abies sachalinensis using scanning electron microscopy. Both the usual types of trabeculae and the various abnormalities observed are described and illustrated. |
| **DOI:** | [10.1163/22941932-90000909](http://dx.doi.org/10.1163/22941932-90000909) |

|  |  |
| --- | --- |
| **Author(s):** | Pieter Baas |
| **Title:** | **Wood - Chemistry, ultrastructure, reactions. D. Fengel and G. Wegener, xiii + 613 pp., 351 mus., 1984. Walter de Gruyter, Berlin, New York. Price: DM 245.00 (cloth).** |
| **Source:** | IAWA Bulletin NS, Volume 6, Issue 1 |
| **Publication Year:** | 1985 |
| **Pages:** | 52-52 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000910](http://dx.doi.org/10.1163/22941932-90000910) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Seedling physiology and reforestation success. Mary L. Duryea and Gregory N. Brown (eds.), 339 pp., mus., 1984. Nijhoff / Junk, Dordrecht, Boston, Lancaster. Price: Dfl. 120.00; US $ 45.50; UK£ 30.50 (cloth).** |
| **Source:** | IAWA Bulletin NS, Volume 6, Issue 1 |
| **Publication Year:** | 1985 |
| **Pages:** | 52-52 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000911](http://dx.doi.org/10.1163/22941932-90000911) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Tree harvesting techniques. K.A.G. Staaf and N.A. Wiksten, 371 pp., mus., 1984. Nijhoff/Junk, Dordrecht, Boston, Lancaster. Price: Dfl. 140.00; US $ 53.50; UK£ 35.75 (cloth).** |
| **Source:** | IAWA Bulletin NS, Volume 6, Issue 1 |
| **Publication Year:** | 1985 |
| **Pages:** | 52-52 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000912](http://dx.doi.org/10.1163/22941932-90000912) |

|  |  |
| --- | --- |
| **Author(s):** | Katsuji Yamanaka |
| **Title:** | **Abnormal Tissue in Swollen Stemwood of Chamaecyparis Obtusa Sieb. ' Zucco** |
| **Source:** | IAWA Bulletin NS, Volume 6, Issue 1 |
| **Publication Year:** | 1985 |
| **Pages:** | 53-60 |
| **Keywords:** | Abnormal parenchyma cells; abnormal tissue; swollen stemwood; additional wall layer; collapsed tracheids |
| **Abstract:** | Abnormal tissue which was laid down in the boundary between the annual rings in 1973 and 1974 in the swollen stem wood of Chamaecyparis obtusa Sieb. ' Zucco has been studied. The abnormal tissue was an aggregation of polyhederal-shaped thick-walled parenchyma cells containing dark-coloured deposits, and shaped like radially elongated spindles in transverse section. The axial length of these tissues was very high, measuring 50 to 80 mm longitudinally. The thin-walled tracheids adjacent to the abnormal tissue were collapsed in a region over 20 cells wide radially. The formation of the abnormal tissue containing the darkcoloured deposits, tracheids with additional wall layer and trabeculae, indicate the structure to be caused by injury. It is suggested that moisture stress induced the collapse of tracheids during secondary wall thickening, and thus forming radial fissures which are in turn filled with callus tissue arising from a proliferation of growth from the ray cells. The subsequent swelling appears to be a secondary effect caused by the proliferation of abnormal cells. |
| **DOI:** | [10.1163/22941932-90000913](http://dx.doi.org/10.1163/22941932-90000913) |

|  |  |
| --- | --- |
| **Author(s):** | M. Harche; A.M. Catesson |
| **Title:** | **Cell Wall Architecture in Alfa (Stipa Tenacissima L.) Fibres** |
| **Source:** | IAWA Bulletin NS, Volume 6, Issue 1 |
| **Publication Year:** | 1985 |
| **Pages:** | 61-69 |
| **Keywords:** | Stipa tenacissima L; lignified fibres; Cell wall architecture |
| **Abstract:** | Mild extractions with methylamine were used to study cell wall architecture in bundle sheath and subpidermal fibres of alfa leaves. Short incubations allowed a better staining of wall polysaccharides. Rather long incubations (48 to 105 h.) were necessary to unmask the microfibrillar skeleton. Cell wall structure is shown to be polylamellate, plywood-like. |
| **DOI:** | [10.1163/22941932-90000914](http://dx.doi.org/10.1163/22941932-90000914) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Addendum to the Abstracts for the Pan-American Regional Wood Anatomy Conference** |
| **Source:** | IAWA Bulletin NS, Volume 6, Issue 1 |
| **Publication Year:** | 1985 |
| **Pages:** | 70-70 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000915](http://dx.doi.org/10.1163/22941932-90000915) |

|  |  |
| --- | --- |
| **Author(s):** | K.J.M. Bonsen; R.J. Scheffer; D.M. Elgersma |
| **Title:** | **Barrier Zone Formation as a Resistance Mechanism of Elms to Dutch Elm Disease** |
| **Source:** | IAWA Bulletin NS, Volume 6, Issue 1 |
| **Publication Year:** | 1985 |
| **Pages:** | 71-77 |
| **Keywords:** | Dutch elm disease; resistance; barrier zones; Ulmus; Ophiostoma ulmi |
| **Abstract:** | Host responses of elms susceptible and resistant to Dutch elm disease were histologically examined. In a time course study the susceptible elm clone Ulmus × hollandica 'Belgica' and U. × hollandica '390', a clone which shows a high degree of resistance to non-aggressive isolates and a moderate degree of resistance to aggressive isolates of Ophiostoma ulmi, were inoculated in twig or trunk with either an aggressive or a non-aggressive isolate of O. ulmi. For purposes of comparison, the susceptible elm U. americana and the more resistant clones U. × hollandica 'Groeneveld', U. 'Lobel' and U. 'Sapporo Autumn Gold' were included. Depending on clone-isolate compatibility, infected twigs reacted by a walling off process, by barrier zone formation, or failed to resist the infection and died. Trees inoculated into the trunk reacted comparably but in the case of a compatible combination they always formed a barrier zone and the cambium never died in the year of inoculation. |
| **DOI:** | [10.1163/22941932-90000916](http://dx.doi.org/10.1163/22941932-90000916) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Wood Anatomy News** |
| **Source:** | IAWA Bulletin NS, Volume 6, Issue 1 |
| **Publication Year:** | 1985 |
| **Pages:** | 78-78 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000917](http://dx.doi.org/10.1163/22941932-90000917) |