**IAWA Bulletin New Series - Volume 11(4)**

|  |  |
| --- | --- |
| **Author(s):** | J. A. B. Prior; P. E. Gasson |
| **Title:** | **Comparative Wood Anatomy of Afromontane and Bushveld Species from Swaziland, Southern Africa** |
| **Source:** | IAWA Bulletin NS, Volume 11, Issue 4 |
| **Publication Year:** | 1990 |
| **Pages:** | 319-336 |
| **Keywords:** | archaeological charcoal; Swaziland; ecological anatomy; SEM; Bushveld; Afromontane |
| **Abstract:** | The habit, specific gravity and wood anatomy of 43 Afromontane and 50 Bushveld species from Swaziland are compared, using qualitative features from SEM photographs of charred samples. Woods with solitary vessels, scalariform perforation plates and fibres with distinctly bordered pits are more common in the Afromontane species, whereas homocellular rays and prismatic crystals of calcium oxalate are more common in woods from the Bushveld. |
| **DOI:** | [10.1163/22941932-90000524](http://dx.doi.org/10.1163/22941932-90000524) |

|  |  |
| --- | --- |
| **Author(s):** | Deng Liang; Pieter Baas |
| **Title:** | **Wood Anatomy of Trees and Shrubs from China ii. Theaceae** |
| **Source:** | IAWA Bulletin NS, Volume 11, Issue 4 |
| **Publication Year:** | 1990 |
| **Pages:** | 337-378 |
| **Keywords:** | Systematic wood anatomy; ecological wood anatomy; Sladenia; China; Theaceae; identification; Camellia |
| **Abstract:** | The wood anatomy of 95 species belonging to fifteen genera of the Theaceae native to China is described. Despite the wood anatomical homogeneity of the family it is possible to key out individual genera (p. 373) as long as the unknown material is confined to Chinese species. In general the wood of Theaceae can be characterised by exclusively solitary vessels, scalariform perforations, opposite to scalariform vessel wall pitting, ground tissue of long fibre-tracheids, parenchyma scanty paratracheal and apotracheally diffuse, and heterocellular rays. |
| **DOI:** | [10.1163/22941932-90000525](http://dx.doi.org/10.1163/22941932-90000525) |

|  |  |
| --- | --- |
| **Author(s):** | M. N. B. Nair; H. Y. Mohan Ram |
| **Title:** | **Structure of Wood and Cambial Variant in the Stem of Dalbergia Paniculata Roxb.** |
| **Source:** | IAWA Bulletin NS, Volume 11, Issue 4 |
| **Publication Year:** | 1990 |
| **Pages:** | 379-391 |
| **Keywords:** | successive bidirectional cambia; Cambial variant; vestured pits; included phloem |
| **Abstract:** | The wood of Dalbergia paniculata is unique as it consists of concentric layers of broad xylem, alternating with bands of narrow phloem. This anomaly results from the periodic formation of successive cambia in the secondary phloem. Some phloem parenchyma cells dedifferentiate to form a discontinuous ring of cambium. Such parenchyma cells have higher succinate dehydrogenase activity than the neighbouring cells of secondary phloem. The newly differentiated cambial layer functions bidirectionally, and its products give rise to xylem internally and phloem externally. The phloem along with cambium present internal to the newly formed xylem becomes included.The wood is diffuse-porous and the intervessel pits are vestured. The phloem has welldifferentiated sieve tube members and companion cells. |
| **DOI:** | [10.1163/22941932-90000526](http://dx.doi.org/10.1163/22941932-90000526) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Wood Anatomy News** |
| **Source:** | IAWA Bulletin NS, Volume 11, Issue 4 |
| **Publication Year:** | 1990 |
| **Pages:** | 392-392 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000527](http://dx.doi.org/10.1163/22941932-90000527) |

|  |  |
| --- | --- |
| **Author(s):** | Karel J. M. Bonsen; Ladislav J. Kučera |
| **Title:** | **Vessel Occlusions in Plants: Morphological, Functional and Evolutionary Aspects** |
| **Source:** | IAWA Bulletin NS, Volume 11, Issue 4 |
| **Publication Year:** | 1990 |
| **Pages:** | 393-399 |
| **Keywords:** | evolution; tyloses; gums; Vessel occlusions |
| **Abstract:** | The minimum pit aperture diameter of a vessel-parenchyma pit pair was found as the decisive wood anatomical feature for vessel occlusion by either tyloses or gums. Based on this observation, as well as on considerations and established knowledge about the functional significance of vessel occlusions, an evolutionary hypothesis is presented. In order to withstand microorganisms and embolisms, plants are able to occlude their vessels with tyloses or gums. The most primitive Angiosperms show tylosis formation. With the decreasing pit sizes in the vessel wall during plant evolution, gum formation was developed, whereas the increasing vessel sizes led in some plants to renewed tylosis formation. |
| **DOI:** | [10.1163/22941932-90000528](http://dx.doi.org/10.1163/22941932-90000528) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Reviews** |
| **Source:** | IAWA Bulletin NS, Volume 11, Issue 4 |
| **Publication Year:** | 1990 |
| **Pages:** | 400-400 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000529](http://dx.doi.org/10.1163/22941932-90000529) |

|  |  |
| --- | --- |
| **Author(s):** | Roland R. Dute; Ann E. Rushing; James W. Perry |
| **Title:** | **Torus Structure and Development in Species of Daphne** |
| **Source:** | IAWA Bulletin NS, Volume 11, Issue 4 |
| **Publication Year:** | 1990 |
| **Pages:** | 401-412 |
| **Keywords:** | dicotyledon; wood ultrastructure; torus; Daphne |
| **Abstract:** | A torus is present in intervascular pit membranes in the wood of Daphne odora and D. cneorum, but not in D. mezereum. In the two former species, each torus is surrounded by a margo consisting of fibrillar material in a tightly woven pattern. Tori are of greater diameter than pit apertures and completely occlude the apertures during aspiration. Evidence from D. odora indicates that torus deposition is spatially associated with vesicles and a plexus of microtubules, and does not begin until pit border formation is complete. The material deposited during torus synthesis also impregnates the wall of the pre-existing pit membrane. The plasmalemma often is closely appressed to the pit membrane at the site of the developing torus. In half-bordered pit pairs between tracheary elements and parenchyma cells, a torus thickening is deposited only on the side of the tracheary element. As in Osmanthus americanus, it is hypothesised that the presence of tori in species of Daphne prevents rupture of the pit membrane during aspiration. |
| **DOI:** | [10.1163/22941932-90000530](http://dx.doi.org/10.1163/22941932-90000530) |

|  |  |
| --- | --- |
| **Author(s):** | Uwe Schmitt; Walter Liese |
| **Title:** | **Wound Reaction of the Parenchyma in Betula** |
| **Source:** | IAWA Bulletin NS, Volume 11, Issue 4 |
| **Publication Year:** | 1990 |
| **Pages:** | 413-420 |
| **Keywords:** | compartmentalisation; wound reaction; electron microscopy; parenchyma; Betula; vessel/fibre blockades |
| **Abstract:** | Reactions in the xylem parenchyma of Betula pendula Roth following wounding in late spring have been investigated by light and electron microscopy. Structural changes in contact parenchyma cells are described in relation to the formation of plugs in vessels and fibres. Swelling of the Protective Layer (PL) with a simultaneous loss in electron density appears first. Fibrillar material is then synthesised, which accumulates outside the cytoplasm between the plasmalemma and the modified PL. The PL now consists of loosely packed fibrils with a structure similar to the accumulating fibrillar material. After extrusion of fibrils through the pit membrane into the lumina of adjacent vessels a membranous layer on the scalariform perforation plates as well as plugs are formed; the latter are also built up in fibres. These reactions spread axially less extensively in cells near the cambium than in the more centrally located ones. |
| **DOI:** | [10.1163/22941932-90000531](http://dx.doi.org/10.1163/22941932-90000531) |

|  |  |
| --- | --- |
| **Author(s):** | Helena Pereira; Clara Araújo |
| **Title:** | **Raw-Material Quality of Fast Grown Eucalyptijs Globulus During the First Year** |
| **Source:** | IAWA Bulletin NS, Volume 11, Issue 4 |
| **Publication Year:** | 1990 |
| **Pages:** | 421-427 |
| **Keywords:** | Eucalyptus globulus; irrigation; moisture bark content; fertilisation; fibre length; specific gravity |
| **Abstract:** | The raw material quality of Eucalyptus globulus during the first year was assessed in an experimental plantation established under four management strategies (control, fertiliser, irrigation and fertiliser/irrigation). The variation of bark content, moisture content, specific gravity and fibre length along the stem for 6-months and II-months-old trees is presented. Bark content decreases with tree diameter and was lowest for the irrigated and fertilised trees. Wood moisture was negatively correlated with specific gravity. No correlation was found between specific gravity and growth rate and fibre length was generally independent of management strategy. |
| **DOI:** | [10.1163/22941932-90000532](http://dx.doi.org/10.1163/22941932-90000532) |

|  |  |
| --- | --- |
| **Author(s):** | Pieter Baas |
| **Title:** | **Wood Anatomy News** |
| **Source:** | IAWA Bulletin NS, Volume 11, Issue 4 |
| **Publication Year:** | 1990 |
| **Pages:** | 428-428 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000533](http://dx.doi.org/10.1163/22941932-90000533) |

|  |  |
| --- | --- |
| **Author(s):** | Roland E. Vetter; Vera R. Coradin; Elisatbeth C. Martino; Jose A. A. Camargos |
| **Title:** | **Wood Colour - A Comparison Between Determination Methods** |
| **Source:** | IAWA Bulletin NS, Volume 11, Issue 4 |
| **Publication Year:** | 1990 |
| **Pages:** | 429-439 |
| **Keywords:** | DIN colour chart; Munsell colour system; Amazonian woods |
| **Abstract:** | Precise colour description results in a better classification and evaluation of wood products. Two systems of colour determination were applied and compared in 98 Amazonian wood species: the Munsell colour system, a visual determination comparing colour standards with samples, and the DIN colour chart using a reflectance reading colorimeter. The Munsell system is sufficient, when applied in simple descriptions of wood colour. To evaluate variations and changes in colour, however, the method of reading the colorimeter and converting to the DIN colour chart is recommended. This method allows the user to calculate precisely differences between colours. |
| **DOI:** | [10.1163/22941932-90000534](http://dx.doi.org/10.1163/22941932-90000534) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Reviews** |
| **Source:** | IAWA Bulletin NS, Volume 11, Issue 4 |
| **Publication Year:** | 1990 |
| **Pages:** | 439-439 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000535](http://dx.doi.org/10.1163/22941932-90000535) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Wood Anatomy News** |
| **Source:** | IAWA Bulletin NS, Volume 11, Issue 4 |
| **Publication Year:** | 1990 |
| **Pages:** | 440-440 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000536](http://dx.doi.org/10.1163/22941932-90000536) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Association Affairs** |
| **Source:** | IAWA Bulletin NS, Volume 11, Issue 4 |
| **Publication Year:** | 1990 |
| **Pages:** | 441-441 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000537](http://dx.doi.org/10.1163/22941932-90000537) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Instructions to Authors** |
| **Source:** | IAWA Bulletin NS, Volume 11, Issue 4 |
| **Publication Year:** | 1990 |
| **Pages:** | 442-442 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000538](http://dx.doi.org/10.1163/22941932-90000538) |