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| **Author(s):** | Uwe Schmitt; Hans Georg Richter; Claudia Muche |
| **Title:** | **Tem Study of Wound-Induced Vessel Occlusions in European Ash (Fraxinus Excelsior L.)** |
| **Source:** | IAWA Journal, Volume 18, Issue 4 |
| **Publication Year:** | 1997 |
| **Pages:** | 401-404 |
| **Keywords:** | wounding; vessel occlusion; Fraxinus excelsior L.; transmission electron microscopy |
| **Abstract:** | Vessel occlusions in branches of Fraxinus excelsior L. were investigated by means of transmission electron microscopy. The vessel occlusions are formed by exudates released from adjacent ray and axial parenchyma cells through the intact pit membranes. Initial stages mostly display balloon- like structures protruding from the pit aperture into the vessellumen. These inclusions possess a very electron dense outer membrane and dispersed exudates in their interior. Therefore, the vessel occlusions in F. excelsior do not represent true tyloses. |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Preliminary material** |
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| **Author(s):** | Alberta M.W. Mennega |
| **Title:** | **Wood Anatomy of the Hippocrateoideae (Celastraceae)** |
| **Source:** | IAWA Journal, Volume 18, Issue 4 |
| **Publication Year:** | 1997 |
| **Pages:** | 331-368 |
| **Keywords:** | systematie wood anatomy; Campylostemoneae; included phloem; Helictonemeae; non-lignified ray tissue; Celastraceae; Hippocrateoideae; Hippocrateae; Salacieae |
| **Abstract:** | In this paper the wood anatomy of the subfarnily Hippocrateoideae of the Celastraceae is treated. Halle's division (1986, 1990) of the subfarnily into four tribes, chiefly based on material of tropical Africa: viz. Salacieae, Campylostemoneae, Helictonemeae and Hippocrateae is followed. In a recent issue of the Flora of the Guianas the Hippocrateaceae - there treated as aseparate farnily - were divided into Hippocrateoideae and Salacioideae. This bipartition was reflected in the wood structure of the genera studied (Mennega 1994). Here the wood structure of all genera worldwide (24), except the Asian genus Arnicratea, is described. It appeared that again a subdivision into two distinct anatomical groups could be made, with the three last tribes mentioned above showing the same characteristic structure as found before in New World Hippocrateae/Hippocrateoideae. The most important features of this group are the presence of very wide and very high rays, in a number of genera with unlignified ray cells at the growth ring border, the absence of included phloem tissue, and in many species an intruding bark resulting in an indented wood pattern in stern cross sections or even an intricate pattern of deep furrows. The Salacieae/Salacioideae on the other hand are characterized by narrow, not exceptionally high rays, absence of unlignified ray cells, the occurrence of septate fibres in a parenchyma-like distribution, and often by the presence of included phloem tissue, either as isolated strands or more often as conspicuous concentric bands, or as irregular bands with radial connections. Features present in all genera are: vessels with simple perforation plates, preponderance of solitary vessels, wide and narrow vessels distributed at random, alternate pitting; fibretracheids, and libriform nonseptate and septate fibres present; axial parenchyma scanty paratracheal or as rare isolated strands; rays heterogeneous, the cell types irregularly distributed, rhombic crystals numerous, often in characteristic radial distribution. Campylostemon, considered in the past by some taxonornists as belonging in Celastraceae or as intermediate between Hippocrateaceae and Celastraceae, closely resembles Hippocrateae in its wood anatomy. And it is especially this group that by its characteristic features -like the wide rays - is more different from Celastraceae in general than Salacieae, which have several features in common with genera of Celastraceae. |
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| **Author(s):** | Gracielza Dos Santos; Regis B. Miller |
| **Title:** | **Wood Anatomy of Jacaranda (Bignoniaceae): Systematic Relationships in Sections Monolobos and Dilobos as Suggested by Twig and Stem Wood Rays** |
| **Source:** | IAWA Journal, Volume 18, Issue 4 |
| **Publication Year:** | 1997 |
| **Pages:** | 369-383 |
| **Keywords:** | Jacaranda; wood anatomy; rays; Bignoniaceae; section Monolobos; section Dilobos |
| **Abstract:** | This report provides a generic description of the stern wood anatomy of 15 species of Jacaranda from seetions Monolobos and Dilobos. In Monolobos (excluding J. copaia), the rays are homocellular and exclusively uniseriate, occasionally with a small biseriate portion. In Dilobos, the rays are heterocellular and 2-3(-4) cells wide. To verify the differences in ray structure, 27 species of twig specimens were examined and compared with stern specimens of the same seetion. The wood anatomy corroborates morphological evidence that suggests partitioning of Jacaranda into two distinct seetions and supports the hypothesis that section Dilobos is primitive. The wood anatomy of Jacaranda copaia is distinct from that of other species in the genus. The vessels are larger in diameter and fewer per square millimetre, the vessel elements and fibres are longer, and the number of cells per parenchyma strand is higher. In addition, the rays are fewer per millimetre, taller, and homocellular to slightly heterocellular, with one irregular row of square cells, 2-3(-4) cells wide. Jacaranda copaia seems to be intermediate between seetions Monolobos and Dilobos. |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Review** |
| **Source:** | IAWA Journal, Volume 18, Issue 4 |
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| **Keywords:** |  |
| **Abstract:** |  |
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| **Author(s):** | Cecilia G. Costa; Vera T. Rauber Coradin; Cláudia M. Czarneski; Benedito A. da S. Pereira |
| **Title:** | **Bark Anatomy of Arborescent Leguminosae of Cerrado and Gallery Forest of Central Brazil** |
| **Source:** | IAWA Journal, Volume 18, Issue 4 |
| **Publication Year:** | 1997 |
| **Pages:** | 385-399 |
| **Keywords:** | cerrado; phloem; Bark anatomy; Leguminosae |
| **Abstract:** | The bark anatomy of28 species of arborescent Leguminosae of 'cerrado' and gallery forest in the Brazilian Federal District was examined. The most significant characteristics for taxonomic purposes were determined to be: delimitation between collapsed and non-collapsed phloem; phloem stratification; type and position of sieve plates; dilatation patterns; arrangement and contents of sc1ereids; and presence of secretory cells. The bark data support the idea that Papilionoideae is the most advanced group of the Leguminosae. |
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| **Author(s):** | Monique T. M. Bosman |
| **Title:** | **Variability in Wood Properties of Six-Year-Old Planted Meranti Trees** |
| **Source:** | IAWA Journal, Volume 18, Issue 4 |
| **Publication Year:** | 1997 |
| **Pages:** | 405-413 |
| **Keywords:** | wildlings; Shorea parvifolia; juvenile wood; tissue proportions; Shorea paucijlora; Shorea leprosula; plantations; tropical hardwoods; cuttings; fibre wall percentage; specific gravity |
| **Abstract:** | Radial and longitudinal variation in fibre wall percentage, area percentage of vessels and resin canals and specific gravity was studied in five superior six-year-old plantation grown trees of red meranti (Shorea leprosula, S. parvifolia and S. pauciflora). In another 23 trees of these species specific gravity was measured at breast height. |
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| **Author(s):** | Hans ter Steege; Ben J. H. ter Welle; Peter B. Laming |
| **Title:** | **The Possible function of Buttresses in Caryocar Nuciferum (Caryocaraceae) in Guyana: Ecological and Wood Anatomical Observations** |
| **Source:** | IAWA Journal, Volume 18, Issue 4 |
| **Publication Year:** | 1997 |
| **Pages:** | 415-431 |
| **Keywords:** | stern wood; root wood; ecology; Caryocar nuciferum; Buttresses; growth stresses; reaction wood; tension wood; Caryocaraceae |
| **Abstract:** | This paper describes the microscopic structure and morphology of stern and buttresses of swamp-grown Caryocar nuciferum L. and discusses the function of buttresses. Buttresses are mainly found at the opposite side of the leaning direction of a tree and thus could function as tension members. In contrast to the stern wood, which exhibits a moderate amount of tension wood fibres with a gelatinous layer, the wood of the buttresses on the tension side and the compression side of the leaning tree is characterised by thick-walled tension wood fibres. In addition, the number of vessels in the buttresses is substantially higher than that in the stern wood. The preferential direction of the buttresses and the anatomical differences in the various parts of the tree are discussed. |
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| **Author(s):** | Rosanne D'Arrigo; Michael Barbett; Manas Watanasak; Brendan Buckley; Paul Krusic; Saran Boonchirdchoo; Sakunyut Sarutanon |
| **Title:** | **Progress in Dendroclimatic Studies of Mountain Pine in Northern Thailand** |
| **Source:** | IAWA Journal, Volume 18, Issue 4 |
| **Publication Year:** | 1997 |
| **Pages:** | 433-444 |
| **Keywords:** | Thailand; Southeast Asia; Pinus kesiya; dendrochronology; Tree rings; Pinus merkusii; mountain pine; monsoon |
| **Abstract:** | New data added to the existing tree-ring width chronologies of mountain pine (Pinus kesiya and Pinus merkusii) result in a total of seven chronologies for these species for Thailand. The oldest (1647-1993) is from a P. merkusii site at Phu Kradung, north central Thailand. An analysis of the three longest P. kesiya chronologies, from north central Thailand, with Phetchabun rainfall (1951-1992) reveals correspondence between years oflow growth and below average rainfall (drought) during the wet season (July-November). The lowest growth year averaged over these three sites during the period of rainfall data (1951-1992) occurred in 1979, coinciding with the lowest wet season rainfall on record. For the common period of tree-ring record prior to 1951 (1830-1950), the level of drought severity in 1979 appears to have been exceeded only twice previously, in 1832 and 1894. A P. merkusii record from Thung Salaeng Luang is most significantly correlated with temperatures during May-June, considered a critical period for the subsequent evolution of the Asian monsoon. |
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| **Author(s):** | Editors IAWA Journal |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Wood Anatomy News** |
| **Source:** | IAWA Journal, Volume 18, Issue 4 |
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| **Author(s):** | Editors IAWA Journal |
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| **Title:** | **Association Affairs** |
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| **Author(s):** | Editors IAWA Journal |
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