**IAWA Bulletin New Series - Volume 13(2)**

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| **Author(s):** | R.W. den Outer; W.L.H. van Veenendaal |
| **Title:** | **Wood Anatomy of the Baphia Group (Leguminosae)** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 2 |
| **Publication Year:** | 1992 |
| **Pages:** | 135-149 |
| **Keywords:** | Airyantha; Leucomphalos; systematic wood anatomy; Baphia; Dalhousiea; Baphiastrum; Ormosia |
| **Abstract:** | The secondary xylem of 5 of the 6 genera belonging to the Baphia-group (viz. Airyantha, Baphiastrum, Leucomphalos, Dalhousiea and Baphia) and Ormosia (Leguminosae-Papilionoideae- Sophoreae) was studied, in order to aid generic delimitation in the Baphia-group. |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Fast growing trees and nitrogen fixing trees. D. Werner and P. Müller (eds.), xvi + 396 pp., illus., 1990. Gustav Fischer Verlag, Stuttgart, New York. ISBN 3-437-30623-5. Price: US$ 44.00 (special offer if ordered direct1y from D. Werner, Fachbereich Biologie der Philipps- Universität, Karl-von-Frisch-Strasse, D-3550 Marburg, Germany).** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 2 |
| **Publication Year:** | 1992 |
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| **Abstract:** |  |
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| **Author(s):** | Pierre Détienne |
| **Title:** | **Clava para la identificacion microscopica de 150 maderas Cubanas. R. Carrera Rivery ' R. Dechamps, 30 pp., 1991. Musée Royal de l' Afrique Centrale, B 3080 Tervuren, Belgium. Price unknown.** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 2 |
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| **Author(s):** | Fidel A. Roig |
| **Title:** | **Comparative Wood Anatomy of Southern South American Cupressaceae** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 2 |
| **Publication Year:** | 1992 |
| **Pages:** | 151-162 |
| **Keywords:** | Argentina; Chile; Pilgerodendron; Wood anatomy; Cupressaceae; Fitzroya; Austrocedrus |
| **Abstract:** | The wood anatomy is described for the Cupressaceae indigenous to southem South America: Austrocedrus chilensis, Pilgerodendron uviferum and Fitzroya cupressoides. The abundance and distributional pattern of axial parenchyma within each annual ring, height, and the presence or absence of nodules in the end walls of ray parenchyma are all useful anatomical features for distinguishing between the three species. Physical characteristics such as odour and heartwood colour also can be used to separate these species. Axial parenchyma cell length and tracheid length show considerable interspecific variation. Tracheid lengths of Pilgerodendron, but not of Austrocedrus and Fitzroya, decrease with increasing latitude. |
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| **Author(s):** | K. Ramesh Rao; R. Dayal |
| **Title:** | **The Secondary Xylem of Aquilaria Agallocha (Thymelaeaceae) and the Formation of 'Agar'** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 2 |
| **Publication Year:** | 1992 |
| **Pages:** | 163-172 |
| **Keywords:** | Thymelaeaceae; included phloem; Aquilaria agallocha; scented wood; Agar wood |
| **Abstract:** | Aquilaria agallocha Roxb., the sasi tree of Assam, is the chief source of 'agar' or 'eaglewood' of commerce which is highly prized in perfumery. However, the dark coloured scented wood, to which the name 'agar' is applied, is not found in all trees of this species, and the factors responsible for its occurrence in only a small percentage of trees are not properly understood. This paper compares the anatomical structure of the scented and unscented wood as a contribution towards a better understanding of agar formation. |
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| **Author(s):** | J.R. Bhatt; B.Y. Mohan Ram |
| **Title:** | **Development and Ultrastructure of Primary Secretory Ducts in the Stem of Semecarpus Anacardium (Anacardiaceae)** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 2 |
| **Publication Year:** | 1992 |
| **Pages:** | 173-185 |
| **Keywords:** | duct deve1opment; Semecarpus anacardium; epithelial cell ultrastructure; gum-resin secretion |
| **Abstract:** | Development and ultrastructure of primary phloem secretory ducts in the stem of Semecarpus anacardium are described. Ducts are formed schizolysigenously in the phloic procambium of the young stem just below the shoot apex. The cytoplasm of the epithelial cells is rich in osmiophilic material (resin), plastids, rough endoplasmic reticulum (RER), free ribosomes, polysomes, mitochondria with swollen cristae and golgi bodies. The plastids are of varying shapes, have an electron dense matrix and a poorly developed internal membrane system. They are highly contorted and invariably surrounded by a sheath of RER. Osmiophilic material is frequently observed in the plastid stroma. Epithelial cell cytoplasm and its plastids are the plausible sites of resin formation. The gum component of the secretion may be derived from the inner tangential wall (ITW). The secretory substances reach the apoplast principally by granulocrine and eccrine secretion. Epithelial cells are linked with each other and with the neighbouring cells by numerous plasmodesmatal connections. Some epithelial cells undergo lysis while others retain their secretory function. |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Review** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 2 |
| **Publication Year:** | 1992 |
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| **Keywords:** |  |
| **Abstract:** |  |
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| **Author(s):** | Nobuo Yoshizawa; Ikuhiro Satoh; Sinso Yokota; Toshinaga Idei |
| **Title:** | **Response of Differentiating Tracheids to Stem Inclination in Young Trees of Taxus Cuspidata** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 2 |
| **Publication Year:** | 1992 |
| **Pages:** | 187-194 |
| **Keywords:** | cell differentiation; excessive lignification; Taxus cuspidata Sieb. et Zucc; compression wood stimulus; helical thickenings; compression wood |
| **Abstract:** | Differences in response among differentiating tracheids to the stimulus of stem inclination were examined at three heights in stems of young trees of Taxus cuspidata Sieb. et Zucc. A change in the orientation of the helical cell wall thickenings from an S- to a Z-helix with a simultaneous absence of an S3 layer were the first anatomical responses to appear. These changes first occurred in differentiating xylem on the underside of the upper segment of the stem after 4 days inclination. The gravistimulus for compression wood formation was transmitted basipetally within the stem as the tilting period was increased. After 10 days, the xylem on the underside of the upper segment of the stem contained five mature cells with a Z-helix, indicating that deposition of the thickenings required 2 days. The present results suggest that the rate of cambial division and xylem differentiation differs longitudinally in an inclined stem. For Taxus cuspidata, a change in the orientation of the helical thickenings should be a useful marker for deciding whether or not the differentiating cells have perceived the stimulus for compression wood formation. |
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| **Author(s):** | Guillermo Angeles |
| **Title:** | **The Periderm of Flooded and Non·Flooded Ludwigia Octovalvis (Onagraceae)** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 2 |
| **Publication Year:** | 1992 |
| **Pages:** | 195-200 |
| **Keywords:** | Ludwigia octovalvis; periderm; hyperhydric tissue; flooding |
| **Abstract:** | The periderm of Ludwigia octovalvis swells readilly when immersed in water. In non-flooded individuals the periderm is very compact, composed of typical brick-shaped, thick-walled phellem cells, without intercellular spaces, and a maximal radial length of 40 µm. The periderm of flooded individuals is very loose, with sausage-shaped, thin-walled phellem cells .reaching a maximum length of 280 µm and with long intercellular spaces between them. Phellem cells of flooded plants showed elongation very early in their differentiation from phellogen cells, forming slight protuberances which increased in size with increasing distance from the phellogen. The protuberances grew predominantly in the radial direction, centrifugally. Phellem cells of flooded plants just differentiated from the phellogen had dense cytoplasm and rounded nuclei with a more or less central position; those further away from the phellogen showed sparse cytoplasm and their nuclei were pulled towards either tip of the cells or laid against the cell walls. |
| **DOI:** | [10.1163/22941932-90001268](http://dx.doi.org/10.1163/22941932-90001268) |

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| **Author(s):** | Robert A. Blanchette; Elizabeth Simpson |
| **Title:** | **Soft Rot and Wood Pseudomorphs in an Ancient Coffin (700 Bc) From Tumulus Mm at Gordion, Turkey** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 2 |
| **Publication Year:** | 1992 |
| **Pages:** | 201-213 |
| **Keywords:** | pseudomorph; Biodeterioration; wood identification; wood ultrastructure; soft rot; wood decay; ancient wood; Gordion |
| **Abstract:** | An 8th century B. C. tomb at Gordion, Turkey, thought to be the burial site of the legendary Phrygian King Midas, contained a massive deteriorated log coffin, furniture, bronze vessels and many other works of an. This paper describes the micromorphological condition of the wooden coffin and the forms of deterioration that were found. Soft rot decay was the only form of biological degradation that occurred throughout the coffin. Advanced stages of soft rot were evident within the wood cells with numerous soft rot cavities located in the secondary wall layers. In areas of the coffin immediately adjacent to iron bars and nails, soft rot cavities were not observed. Instead, iron corrosion products were evident within these cells, and pseudomorphs (iron replicas) of wood cells were observed. A nonbiological type of cell wall deterioration was apparent in wood where iron corrosion products were present. These iron replicas provided an unusual opportunity to observe reverse images of tracheid cell walls. The importance to wood anatomists in recognising the morphological characteristics of soft rot also is discussed so that misidentification of ancient deteriorated wood can be avoided. |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Wood Anatomy News** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 2 |
| **Publication Year:** | 1992 |
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| **Author(s):** | A.P. Singh; M.E. Hedley; D.R. Page; C.S. Han; K. Atisongkroh |
| **Title:** | **Microbial Degradation of Cca-Treated Cooling Tower Timbers** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 2 |
| **Publication Year:** | 1992 |
| **Pages:** | 215-231 |
| **Keywords:** | wood cell wall; tunnelling bacteria; erosion bacteria; biofilm; degradation; soft rot fungi; Pinus radiata; Cooling tower timber |
| **Abstract:** | Transmission electron microscopy of decaying CCA-treated Pinus radiata timbers from an industrial water cooling tower showed the presence of a thick biofilm covering some areas of the wood. The biofilm contained various morphologically distinct forms of microorganisms embedded in a slime. The study provided evidence of the activity of soft rot fungi and tunnelling and erosion bacteria in wood cells covered by the biofilm. The extent of microbial damage to wood cells varied, with combined fungal and bacterial attack having the most damaging impact. |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **IAWA - Botanical Society of America Symposium "Bark: inside ' outside: its development, function and systematic utility"** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 2 |
| **Publication Year:** | 1992 |
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| **Author(s):** | Editors IAWA Journal |
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| **Source:** | IAWA Bulletin NS, Volume 13, Issue 2 |
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