**IAWA Bulletin New Series - Volume 8(2)**

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| **Author(s):** | J. J. A. van der Walt; E. Werker; A. Fahn |
| **Title:** | **Wood Anatomy of Pelargonium (Geraniaceae)** |
| **Source:** | IAWA Bulletin NS, Volume 8, Issue 2 |
| **Publication Year:** | 1987 |
| **Pages:** | 95-108 |
| **Keywords:** | Geraniaceae; Pelargonium; ecology; wood anatomy; taxonomy |
| **Abstract:** | The wood anatomy of 12 species of Pelargonium, nine of the section Pelargonium and three re1atively woody species of three other sections, is compared. |
| **DOI:** | [10.1163/22941932-90001036](http://dx.doi.org/10.1163/22941932-90001036) |

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| **Author(s):** | Syoji Sudo; Tomoyuki Fujii |
| **Title:** | **Latex Tubes in the Rays of Pimelodendron Amboinicum Hassk. (Euphorbiaceae)** |
| **Source:** | IAWA Bulletin NS, Volume 8, Issue 2 |
| **Publication Year:** | 1987 |
| **Pages:** | 109-112 |
| **Keywords:** | Euphorbiaceae; Papua New Guinea; Wood identification |
| **Abstract:** | Latex tubes in the wood rays of Pimelodendron amboinicum from Papua New Guinea are described in detail for the first time. They seem to constitute a reliable diagnostic feature for this hardwood species. |
| **DOI:** | [10.1163/22941932-90001037](http://dx.doi.org/10.1163/22941932-90001037) |

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| **Author(s):** | Jun Ohtani; Kazumi Fukazawa; Tomonori Fukumorita |
| **Title:** | **Sem Observations on Indented Rings** |
| **Source:** | IAWA Bulletin NS, Volume 8, Issue 2 |
| **Publication Year:** | 1987 |
| **Pages:** | 113-124 |
| **Keywords:** | indented rings; SEM; abnormal rays; trabeculae; Picea sitchensis Carr; abnormal tracheids |
| **Abstract:** | The anatomy of indented rings in Sitka spruce (Picea sitchensis Carr.) was examined using SEM. The tracheids and rays in these rings differed from those in nonnal wood in both morphology and arrangement. Moreover, trabeculae were commonly found to occur in their tracheids. These anatomical features are illustrated by SEM micrographs. |
| **DOI:** | [10.1163/22941932-90001038](http://dx.doi.org/10.1163/22941932-90001038) |

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| **Author(s):** | Shuichi Noshiro; Mitsuo Suzuki |
| **Title:** | **Fossil Root- and Stemwood of Chionanthus Retusus Lindl. Et Paxt. from the Late Pleistocene of Akashi, Japan** |
| **Source:** | IAWA Bulletin NS, Volume 8, Issue 2 |
| **Publication Year:** | 1987 |
| **Pages:** | 125-133 |
| **Keywords:** | Late Pleistocene; Chionanthus retusus; rootwood; stemwood; central Japan; fossil and recent wood |
| **Abstract:** | Fossil root- and stemwood of Chionanthus retusus has been found from the Late Pleistocene stratum at Akashi, Hyogo Prefecture, central Japan. The woods of fossil and extant C. retusus are described and compared. The fossil rootwood closely resembles that of the extant individuals in being ring-porous with large pores arranged in one layer in the earlywood, and small pores that gradually decrease in diameter from the earlywood, and are arranged in a flame-like pattern in the latewood. It differs from the wood of the extant species in the larger diameter of wide pores, the quite gradual decrease in vessel diameter from the earlywood to the latewood, and the narrower and lower rays. The fossil stemwood is quite similar to the stemwood of extant C. retusus in being ring-porous with large pores arranged in one or two layers in the earlywood, and small pores .that abruptly decrease in diameter from the earlywood, and are arranged in a flame-like pattern. It differs from the wood of the extant species in the larger diameter of wide pores, and the lower rays. Based on their similarity, these fossil woods are identified as the rootand stemwood of C. retusus. |
| **DOI:** | [10.1163/22941932-90001039](http://dx.doi.org/10.1163/22941932-90001039) |

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| **Author(s):** | J.R. Barnett |
| **Title:** | **The Development of Fibre-Tracueid Pit Membranes in Pyrus Communis L.** |
| **Source:** | IAWA Bulletin NS, Volume 8, Issue 2 |
| **Publication Year:** | 1987 |
| **Pages:** | 134-142 |
| **Keywords:** | pits; Pyrus communis L; xylem differentiation; fibre-tracheids; plasmodesmata |
| **Abstract:** | The development of fibre-tracheid pit membranes in Pyrus communis L. has been studied using transmission electron microscopy. Pit fields in the radial walls of cambial cells in transverse section contain isolated plasmodesmata. As cell enlargement proceeds, groups of plasmodesmata develop within thickenings of the future pit membrane. These thickenings are covered by amorphous, secondary-wall-like material (the torus-like structures found in mature pits by Parameswaran ' Liese, 1981) just prior to the end of differentiation and cytoplasmic autolysis. It is suggested that this cap of material acts as aseal, preventing passage of autolytic enzymes from a dying cell to its living neighbour via the perforations occupied by plasmodesmata. |
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| **Author(s):** | Josefina Barajas-Morales |
| **Title:** | **Wood Specific Gravity in Species from Two Tropical Forests in Mexico** |
| **Source:** | IAWA Bulletin NS, Volume 8, Issue 2 |
| **Publication Year:** | 1987 |
| **Pages:** | 143-148 |
| **Keywords:** | tropical rainforest; Wood density; Mexico; deciduous forest |
| **Abstract:** | The specific gravity of 220 woody species, half of them from a tropical rainforest, half from a tropical deciduous forest was measured. The two groups were compared using a Student t-test. The results show highly significant differences in specific gravity between the species from the two areas: woods from the dry deciduous forest tend to be much heavier than those from the rainforest. |
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| **Author(s):** | Peter Gasson |
| **Title:** | **Some Implications of Anatomical Variations in the Wood of Pedunculate Oak (Quercus Robur L.), Including Comparisons with Common Beech (Fagus Sylvatica L.)** |
| **Source:** | IAWA Bulletin NS, Volume 8, Issue 2 |
| **Publication Year:** | 1987 |
| **Pages:** | 149-166 |
| **Keywords:** | axial and rayparenchyma; normal and gelatinous fibres; dendrochronology; Aerial and root xylem; cell distribution; growth rings; water relations; vessel diameter; wood identification; cambial age; archaeology |
| **Abstract:** | Several aspects of the secondary xylem anatomy of oak (Quercus robur L.) branches, trunks and roots are investigated. These are. growth ring width and definition, vessel size (diameter), shape (eccentricity) and distribution, fihre type (ge1atinous or normal), and fibre, axial parenchyma and ray distribution. These observations are put in perspective by comparison with beech (Fagus sylvatica L.), and discussed in relation to their implications in wood identification, archaeology, dendrochronology and water relations of the tree. |
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| **Author(s):** | A.M. Babu; G.M. Nair; J.J. Shah |
| **Title:** | **Traumatic Gum-Resin Cavities in the Stem of Ailanthus Excelsa Roxb.** |
| **Source:** | IAWA Bulletin NS, Volume 8, Issue 2 |
| **Publication Year:** | 1987 |
| **Pages:** | 167-174 |
| **Keywords:** | etephon; Fungal infection; traumatic parenchyma |
| **Abstract:** | Traumatic gum-resin cavities develop in the secondary xylem of the stem of Ailanthus excelsa Roxb. in response to fungal infection and ethephon treatment. After infection or ethephon treatment, traumatic parenchyma in several cell layers develops instead of normal secondary xylem elements. It consists of unlignified axial and ray parenchyma cells. Vessels and fibres are absent. Gum-resin cavities in one or two tangential rows develop in this tissue by the lysis of its axial parenchyma cells. The cavities are bordered by an epithelium. A few layers of traumatic parenchyma cells adjacent to the epithelial cens become meristematic and appear cambiform. The epithelial cells undergo lysis and they evidently contribute to gum-resin formation. As the lysis of epithelial cens proceeds, the adjacent cambiform cens divide to form additional epithelial cells. The process continues for some time and eventually an the axial cells of the traumatic parenchyma break down forming a tangentially anastomosing network of cavities. The cavities do not traverse the ray cells, and the multiseriate rays remain intact like bridges amidst the ramifying cavities. |
| **DOI:** | [10.1163/22941932-90001043](http://dx.doi.org/10.1163/22941932-90001043) |

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| **Author(s):** | John Wilkes |
| **Title:** | **Effect of Moisture Content on the Morphology of Longitudinal Fracture in Eucalyptus Maculata** |
| **Source:** | IAWA Bulletin NS, Volume 8, Issue 2 |
| **Publication Year:** | 1987 |
| **Pages:** | 175-181 |
| **Keywords:** | fracture; Eucalyptus; wood anatomy; microscopy; moisture content; cell wall structure |
| **Abstract:** | The longitudinal surfaces of Eucalyptus maculata wood sampies fractured either artificially (splitting) or naturally (drying stresses) at a range of moisture contents, were examined under a scanning eleetron microscope. In those sam pies above fibre saturation point, a relativeIy clean surface was produced, since the cells either separated in the outer regions of the wall with minimal fibrillation (fibres, some ray parenchyma), or the fracture path travelled abruptly through the wall exposing the lumen (vertical parenchyma, vessels, so me ray cells). Below fibre saturation, particularly as the air dry condition was approached, a fibrous, splintery surface resulted, due mainly to fibrillation and delamination of the secondary walls in fibres and ray parenchyma. |
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| **Author(s):** | J.E. Phelps; J.G. Isebrands; R.M. Teclaw |
| **Title:** | **Raw Material Quality of Short-Rotation, Intensively Cultured Populus Clones. II. Wood and Bark from First-Rotation Stems and Stems Grown from Coppice** |
| **Source:** | IAWA Bulletin NS, Volume 8, Issue 2 |
| **Publication Year:** | 1987 |
| **Pages:** | 182-186 |
| **Keywords:** | Specific gravity; woodpulp; cell length |
| **Abstract:** | The coppicing ability of Populus hybrid clones after dormant season harvesting is weil suited to a short-rotation, intensively cultured (SRIC) growth system. stems formed from coppice exhibit a greater amount of growth than first-rotation trees during the juvenile stage. This research examines and compares properties, including specific gravity and fibre length of the wood and bark, of 3-year-old firstrotation stems (from cuttings) and 3-year-old coppiced stems of three hybrid Populus clones grown und er SRIC. Trees produced from coppiced stumps were 1.5 to 2.5 times larger (in height and diameter at the base) than first-rotation trees after 3 years of growth. Some of the wood properties of the first-rotation trees differed from those of the coppiced trees. For example, wood specific gravity was higher and wood fibres were longer in the sampies removed from the basal portion of the first-rotation trees. Although significant, these differences were small and not important from an industrial standpoint. The increase in woody biom ass after coppicing is likely to be more important to industry than any decreases in wood properties expected during short-rotation, intensive culture of Populus trees. |
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