**IAWA Bulletin New Series - Volume 12(1)**

|  |  |
| --- | --- |
| **Author(s):** | John Brazier |
| **Title:** | **Bernard J. Rendle** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 3-4 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001198](http://dx.doi.org/10.1163/22941932-90001198) |

|  |  |
| --- | --- |
| **Author(s):** | M. Trockenbrodt |
| **Title:** | **Qualitative Structural Changes during Bark Development in Quercus Robur, Ulmus Glabra, Populus Tremula and Betula Pendula** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 5-22 |
| **Keywords:** | Populus tremula L; bark development; Betula pendula Roth; Ulmus glabra Huds; Quercus robur L; bark anatomy |
| **Abstract:** | The development of bark structure of Quercus robur L., Ulmus glabra Huds., Populus tremula L. and Betula pendula Roth is being described. Profound structural changes can be observed during the first years after secondary growth has started. In all four species the epidermis is replaced by a periderm, the cortex shows intensive dilatation growth, and the groups of primary bark fibres are pushed apart. The collapse of sieve tube members starts with the second year. With proceeding secondary growth, the specific formation of sclerenchymatic tissue, especially sclereids, and the dilatation growth are processes which strongly affect the bark structure of Quercus robur, Populus tremula and Betula pendula. In addition, wide, fused phloem rays develop in Quercus robur. The structure of Ulmus glabra bark is affected by the formation of phloem fibre-/sclereid-like cells and mucilage cells and by dilatation growth. The histological pattern of Ulmus glabra bark stabilises to a great extent after the first few years, the other barks investigated show further developmental processes over many years. In all species the formation of a rhytidome is the last distinct modification of bark structure. |
| **DOI:** | [10.1163/22941932-90001199](http://dx.doi.org/10.1163/22941932-90001199) |

|  |  |
| --- | --- |
| **Author(s):** | Mitsuo Suzuki; Lajmina Joshi; Tomoyuki Fujii; Shuichi Noshiro |
| **Title:** | **The Anatomy of Unusual Tracheids in Tetracentron Wood** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 23-33 |
| **Keywords:** | unusual tracheids; vesselless dicoty1edon; Tetracentron |
| **Abstract:** | Unusual cells are reported for mature wood and branchwood of Tetracentron. They are thin-walled tracheids, rectangular in cross section, much shorter and a little wider than normal tracheids, and arranged in conspicuous radial files. They have crowded, alternate, circular to elliptical bordered pits in the tangential walls. Their radial walls are devoid of pils, except in crossfield areas and very rarely in limited areas of the walls touching normal tracheids. In contrast, normal tracheids have scalariform and circular pits confined to the radial walls. In earlier reports the unusual tracheids have been observed in twigs and roots, but in our materials they are a regular feature of mature wood samples as well. Their possible functional and phylogenetic significance is discussed. |
| **DOI:** | [10.1163/22941932-90001200](http://dx.doi.org/10.1163/22941932-90001200) |

|  |  |
| --- | --- |
| **Author(s):** | Narcisana Espinoza de Pernia; Regis B. Miller |
| **Title:** | **Adapting the Iawa List of Microscopic Features for Hardwood Identification to Delta** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 34-50 |
| **Keywords:** | wood identification; Wood anatomy; computer-assisted descriptions; DELTA |
| **Abstract:** | The IAWA List of Microscopic Features for Hardwood Identification was adapted to DELTA (DEscription Language for TAxonomy), a package of computer programs for generating taxonomic descriptions and interactive species identification. The quality of our natural language descriptions generated by DELTA are suitable to prepare a first-draft manuscript. In specific taxon descriptions, minor changes to wording and syntax are more easily accomplished with a word processor, but all taxon changes to format, syntax, and wording are best accomplished with DELTA. As the user becomes more familiar with DELTA, the descriptions become more refined and fewer changes are necessary. The highly sophisticated interactive identification (INTKEY) program is flexible and versatile with many options to meet the needs of wood anatomists engaged in wood identification. |
| **DOI:** | [10.1163/22941932-90001201](http://dx.doi.org/10.1163/22941932-90001201) |

|  |  |
| --- | --- |
| **Author(s):** | Ji-lin Wu; Bing-zhong Hao |
| **Title:** | **Vacuole Proteins in Secondary Phloem Parenchyma Cells of Three Meliaceae Species** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 51-56 |
| **Keywords:** | storage proteins in bark; Meliaceae; phloem; vacuole proteins; protein body |
| **Abstract:** | The secondary phloem in the trunk and branchlet of three species in Meliaceae, Swietenia macrophylla L., Chukrasia talularis A. Juss. and Melia azedarach L., was examined using light microscopy and electron microscopy. The vacuole protein bodies are found in most of the phloem parenchyma cells except companion cells. The protein nature of the bodies was demonstrated by the mercury - bromophenol blue reaction and enzymatic digestion with pepsin. Electronmicroscopical observations show that the protein bodies are electron-dense granules in central vacuoles. In the terminal branchlet, the protein bodies are extremely abundant before flushing in spring and most of them disappear in the inner phloem after flushing. This suggests that the vacuole protein bodies have a storage function. |
| **DOI:** | [10.1163/22941932-90001202](http://dx.doi.org/10.1163/22941932-90001202) |

|  |  |
| --- | --- |
| **Author(s):** | Roni Aloni; Carol A. Peterson |
| **Title:** | **Naturally Occurring Periderm Tubes Around Secondary Phloem Fibres in the Bark of Vitis Vinifera L.** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 57-61 |
| **Keywords:** | periderm differentiation; Vitis vinifera; Bark anatomy |
| **Abstract:** | The three-dimensional structure of periderm tubes, which normally occur in the bark of intact Vitis vinifera L. stems, is described. Each tube, which possesses several layers of mature phellem cells, differentiated around an individual strand of secondary phloem fibres within the bark. Following these peridermenclosed strands for their full length revealed that at one or two points the strand passed through a sheet of periderm and was exposed to the surrounding atmosphere. The tubes of suberised phellern within the bark isolated these strands of air-dried fibres from the living parenchyma cells around them and thus protected the bark from desiccation and pathogen attack. |
| **DOI:** | [10.1163/22941932-90001203](http://dx.doi.org/10.1163/22941932-90001203) |

|  |  |
| --- | --- |
| **Author(s):** | Simcha Lev-Yadun; Roni Aloni |
| **Title:** | **Wound-Induced Periderm Tubes in the Bark of Melia Azedarach, Ficus Sycomorus and Platanus Acerifolia** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 62-66 |
| **Keywords:** | wound response; Melia azedarach; Ficus sycomorus; periderm differentiation; Platanus acerifolia |
| **Abstract:** | Tubes of periderm were induced experimentally by wounding stems of Melia azedarach L., Ficus sycomorus L. and Platanus acerifolia Willd. This wounding stimulated the formation of periderm tubes around those strands of phloem fibres which were exposed to the outside atmosphere. The differentiation of periderm tubes inside the bark is a defence reaction by which the wound-exposed fibres are isolated from the living cells of the bark. The regulating factors of wound-induced periderm tubes are probably ethylene and atmospheric air. |
| **DOI:** | [10.1163/22941932-90001204](http://dx.doi.org/10.1163/22941932-90001204) |

|  |  |
| --- | --- |
| **Author(s):** | Karel J. M. Bonsen; Martin Walter |
| **Title:** | **Calcium-Layers in Xylem Vessels** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 67-69 |
| **Keywords:** | CaCO3,; Bacteria; Fagus sylvatica L |
| **Abstract:** | Additional layers on the inner vessel walls and on perforation plates in 'pathological' xylem parts were EDX-analysed. The layers contain high amounts of calcium. The origin of these layers in relation to bacterial activity is discussed. |
| **DOI:** | [10.1163/22941932-90001205](http://dx.doi.org/10.1163/22941932-90001205) |

|  |  |
| --- | --- |
| **Author(s):** | G. Daniel; T. Nilsson; B. Pettersson |
| **Title:** | **Poorly and Non-Lignified Regions in the Middle Lamella Cell Corners of Birch (Betula Verrucosa) and Other Wood Species** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 70-83 |
| **Keywords:** | lignin distribution; decay fungi; immunocytochemistry; TEM X-ray microanalysis; lignin mercurisation; middle lamella cell corner; Birch wood; lignin antisera |
| **Abstract:** | Middle lamella cell corners in birch wood frequently show a non-homogeneous structure and the existence of less dense (i. e electron- lucent) regions. Using a variety of cytochemical, immunological and mercurisation techniques in conjunction with electron microscopy, the distribution of lignin within these regions was studied. Results showed the regions to have a variable lignin content consistent with intermediate and incomplete stages of lignification. Observations on corner regions partially degraded by decay fungi further showed the electron-lucent regions to possess an elevated level of non-lignified components (presumably carbohydrates) with a fibrillar type structure. Examination of a range of other wood species (including hard- and softwoods) by TEM showed similar structural variations in middle lamella cell corner homogeneity suggesting a common feature. It is considered that this natural variation in cell corner density and lignification may lead to errors when lignin concentrations of cell corners are used in ratio estimates of lignin in secondary cell wall layers. |
| **DOI:** | [10.1163/22941932-90001206](http://dx.doi.org/10.1163/22941932-90001206) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Identifying Wood. Accurate results with simple tools. R. Bruce Hoadley, xv + 223 pp., illus., 1990. The Taunton Press, Newtown, U.S.A. Price: US$ 39.95 (hardback).** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 84-84 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001207](http://dx.doi.org/10.1163/22941932-90001207) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **A monograph of Wallaba, Mora and Greenheart. H. ter Steege, 141 pp., illus., 1990. Tropenbos Technical Series 5. Galvanistraat 9, 6716 Ede, The Netherlands. Price: Dfl. 25.00 or US$ 15.00 (paperback).** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 84-84 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001208](http://dx.doi.org/10.1163/22941932-90001208) |

|  |  |
| --- | --- |
| **Author(s):** | R.J. Murphy; K.L. Alvin; Y·F. Tan |
| **Title:** | **Development of Soft Rot Decay in the Bamboo Sinobambusa Tootsik** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 85-94 |
| **Keywords:** | soft rot; Sinobambusa tootsik; decay; fibres; Chaetomium globosum |
| **Abstract:** | The development of decay cavities caused by growth of the soft rot fungus Chaetomium globosum Kunze in the fibre cell walls of Sinobambusa tootsik (Makino) Makino ex Nakai was studied in culms of two different ages. Soft rot attack was found only in the cell walls of fibres; parenchyma and vessel elements remained unattacked. The extent of soft rot and cavity morphology were influenced by the position of the fibre bundles in the culm wall, culm age and the degree of lignification of individual fibres. Decay was greatest in the walls of those fibres which matured late in the course of culm development and in which the wall contained zones of low lignin content. It was least in the early maturing, uniformly lignified fibres and in very immature, thin-walled fibres. The results are discussed in relation to developmental anatomy and the reported ultrastructure of bamboo fibre walls. |
| **DOI:** | [10.1163/22941932-90001209](http://dx.doi.org/10.1163/22941932-90001209) |

|  |  |
| --- | --- |
| **Author(s):** | G. Hazenberg; K. C. Yang |
| **Title:** | **Sapwood/Heartwood Width Relationships with Tree Age in Balsam Fir** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 95-99 |
| **Keywords:** | heartwood width; Abies balsamea; sapwood width; tree age; sapwood basal area |
| **Abstract:** | On the basis of five response variables, the sapwood/heartwood relationships with tree age were studied in balsam fir [Abies balsamea (L.) Mill.] trees. One hundred and one samples, from a wide range of stand densities, were collected from the university forest near Thunder Bay, Ontario. The age at breast height ranged from 4 to 85 years. The five response variables measured were the number of sapwood and heartwood rings, sapwood and heartwood width and sapwood basal area. First and second degree polynomials in tree age were fitted for the five response variables and the best fit for each, based on the significance of the regression coefficients, was selected. The number of heartwood rings expanded quite rapidly to 0.81 ring per year, at the cost of sapwood ring expansion which averaged 0.19 ring per year. |
| **DOI:** | [10.1163/22941932-90001210](http://dx.doi.org/10.1163/22941932-90001210) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Index Xylariorum 3 - Addendum** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 99-99 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001211](http://dx.doi.org/10.1163/22941932-90001211) |

|  |  |
| --- | --- |
| **Author(s):** | E.A. Wheeler |
| **Title:** | **The Plant Diversity of Malesia. P. Baas, C. Kalkman and R. Geesink (eds.), xii + 420 pp., illus., 1990. Kluwer Academic Publishers, Dordrecht, Boston, London. Price: Dfl. 125.00; US$ 74.00; UK£ 44.00.** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 100-100 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001212](http://dx.doi.org/10.1163/22941932-90001212) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Common commercial timbers and wood based products of India - a consumer guide. S.K. Purkayastha, iv + 184 pp., illus., 1990. Bishen Singh Mahendra Pal Singh, 23-A Connaught Place, Dehra Dun 248001, India. Price: US$ 12.50.** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 100-100 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001213](http://dx.doi.org/10.1163/22941932-90001213) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Dossier Scientifique et Technique (DOST) du CTBA. Issue 0, 1990. Centre Technique du Bois et de l' Ameublement, 10 avenue de Saint-Mand, 75012 Paris, France. Biannual publication of loose-leaf folders. Price per annum: FF 785.00.** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 100-101 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001214](http://dx.doi.org/10.1163/22941932-90001214) |

|  |  |
| --- | --- |
| **Author(s):** | Shu-yin Zhang |
| **Title:** | **The properties and uses of Malaysian commercial timbers. (In Chinese). Chen Jiabao (C.P. Chen), 307 pp., illus., 1989. The Chinese Material Publishing House, Beijing. Price: Yuan 4.90 (paperback).** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 101-101 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001215](http://dx.doi.org/10.1163/22941932-90001215) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **The structural biology of palms. P.B. Tomlinson, xii + 477 pp., illus., 1990. Clarendon Press, Oxford. Price: UK£ 60.00 (cloth).** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 101-102 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001216](http://dx.doi.org/10.1163/22941932-90001216) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Einführung in die Forstwissenschaft. R. Zundel, 359 pp., illus., 1990. Ulmer, Stuttgart. Price: DM 39.80 (paperback).** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 102-102 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001217](http://dx.doi.org/10.1163/22941932-90001217) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Mechanisms of forest response to acidic deposition. A.A. Lucier ' S.G. Haines (eds.), ix + 241 pp., illus., 1990. Springer Verlag, Berlin, New York, etc. Price: DM 98.00 (hard cover).** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 102-102 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001218](http://dx.doi.org/10.1163/22941932-90001218) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **The tree habit in land plants. V. Mos· brugger, v + 161 pp., illus., 1990. Lecture Notes in Earth Sciences 28, Springer Verlag, Berlin, etc. Price: DM 45.00 (paperback).** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 102-103 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001219](http://dx.doi.org/10.1163/22941932-90001219) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Stratification of tropical forests as seen in leaf structure. Part 2. B. Rollet, Ch. Högermann and I. Roth, xv + 264 pp., illus., 1990. Tasks for Vegetation Science 21. Kluwer, Dordrecht. Price: Dfl. 275.00, US$ 160.00, UK£ 99.50 (hardback).** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 103-103 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001220](http://dx.doi.org/10.1163/22941932-90001220) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Wood Anatomy News** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 104-104 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001221](http://dx.doi.org/10.1163/22941932-90001221) |

|  |  |
| --- | --- |
| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Association Affairs** |
| **Source:** | IAWA Bulletin NS, Volume 12, Issue 1 |
| **Publication Year:** | 1991 |
| **Pages:** | 105-106 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90001222](http://dx.doi.org/10.1163/22941932-90001222) |