**IAWA Bulletin New Series - Volume 7(1)**

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| **Author(s):** | John Wilkes |
| **Title:** | **Anatomy of Zones of Ring Shake in Eucalyptus Maculata** |
| **Source:** | IAWA Bulletin NS, Volume 7, Issue 1 |
| **Publication Year:** | 1986 |
| **Pages:** | 3-11 |
| **Keywords:** | ring shake; wound response; Eucalyptus; fracture |
| **Abstract:** | Zones of ring shake and the tangential surfaces of such fractures were examined using light microscopy. The shakes occurred predominantly in bands containing abnormally large amounts of axial parenchyma, traumatic parenchyma and/or vessels. These cells, of low Runkel ratio, usually separated by some form of transwall failure, exposing the cell lumen. The failure thus followed a path entailing minimal fracture of actual cell wall substance. The zones of abnormal tissue are probably formed in response to cambial injury and/or environmental stress. |
| **DOI:** | [10.1163/22941932-90000429](http://dx.doi.org/10.1163/22941932-90000429) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Reviews** |
| **Source:** | IAWA Bulletin NS, Volume 7, Issue 1 |
| **Publication Year:** | 1986 |
| **Pages:** | 12-12 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000430](http://dx.doi.org/10.1163/22941932-90000430) |

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| **Author(s):** | Christopher J. Starbuck; John E. Phelps |
| **Title:** | **Induction of Compression Wood in Rooted Cuttings of Pseudotsuga Menziesii (MIRB.) Franco by Indole-3-Acetic Acid** |
| **Source:** | IAWA Bulletin NS, Volume 7, Issue 1 |
| **Publication Year:** | 1986 |
| **Pages:** | 13-16 |
| **Keywords:** | plagiotropism; cuttings; Auxin; Douglas-fir |
| **Abstract:** | A study was conducted to determine if exogenously applied indole-3-acetic acid would stimulate symmetric or asymmetric compression wood formation in stems of rooted cuttings of Pseudotsuga menziesii (Mirb.) Franco. Dormant two-year-old rooted cuttings were decapitated one cm below the terminal bud and treated with IAA in lanolin emulsion. Plants treated with IAA at 1 or 10 mg/g concentrations produced up to 25 rows of new xylem cells during the three week treatment period, while control plants produced essentially none. Compression wood formation was greater on the upper (originally adaxial) than on the lower side of the stem. The results support the hypothesis that basal curvature of rooted Douglas-fir cuttings is the result of a system developing a transverse gradient in auxin content in the stem leading to asymmetric compression wood formation. |
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| **Author(s):** | K.C. Yang |
| **Title:** | **A Proposal for a New Indicator for Expressing the Metabolic Activity of Living Sapwood Ray Parenchyma Cells** |
| **Source:** | IAWA Bulletin NS, Volume 7, Issue 1 |
| **Publication Year:** | 1986 |
| **Pages:** | 17-20 |
| **Keywords:** | Pinus banksiana; ray cells; nucleus; vigor |
| **Abstract:** | A more reliable indicator for expressing the metabolic activity of a living sapwood ray parenchyma cell is proposed and is compared with the old nuclear slenderness ratio (NSR) indicator. NSR is defined as the length of the nucleus divided by the width of the nucleus. The new indicator, the nuclear elongation index (NEI), is defined as the length of the nucleus divided by the length of the ray parenchyma cell multiplied by 100. The validity of the NEI and difference of the use of the NSR and NEI are compared and evaluated. |
| **DOI:** | [10.1163/22941932-90000432](http://dx.doi.org/10.1163/22941932-90000432) |

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| **Author(s):** | Nobuo Yoshizawa; Yujiro Tanaka; Toshinaga Idei |
| **Title:** | **Development of Vascular Cambium and Compression Wood Formation in the Shoot of Young Spruce (Picea Jezoensis Var. Hondoensis)** |
| **Source:** | IAWA Bulletin NS, Volume 7, Issue 1 |
| **Publication Year:** | 1986 |
| **Pages:** | 21-30 |
| **Keywords:** | Apex; secondary xylem; cell division; righting movement; tracheary elements |
| **Abstract:** | In the course of the righting movement in young spruce trees (Picea jezoensis Carr. var. hondoensis Rehd.) inclined at 45°, the occurrence of compression wood associated with the development of vascular cambium in the shoot was observed. In shoots, the recovery first took place at the mid point, a few days after inclination. The observations of serial cross sections taken from the apex downward revealed no appreciable difference in the development of the procambium-cambium continuum between the upper- and underside of the shoot. The formation and structure of primary tracheary elements were similar, irrespective of the site of the procambium in the shoot. No compression wood cells occurred before the vascular cambium cylinder was complete. The stimulus of compression wood formation is received only by the differentiating secondary xylem tissues derived from the cambium cylinder. |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Association Affairs and Announcement** |
| **Source:** | IAWA Bulletin NS, Volume 7, Issue 1 |
| **Publication Year:** | 1986 |
| **Pages:** | 30-30 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000434](http://dx.doi.org/10.1163/22941932-90000434) |

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| **Author(s):** | Sam Essiamah; Walter Eschrich |
| **Title:** | **Water Uptake in Deciduous Trees During Winter and the Role of Conducting Tissues in Spring Reactivation** |
| **Source:** | IAWA Bulletin NS, Volume 7, Issue 1 |
| **Publication Year:** | 1986 |
| **Pages:** | 31-38 |
| **Keywords:** | Betula; Fraxinus; Alnus; sap transport; bud swelling; Acer; vessels; Fagus |
| **Abstract:** | In winter, deciduous trees lack any means for transpiration, nevertheless their buds swell and increase in weight. It is known that vessels play an important role in spring reactivation and that phloem may be involved since buds fail to break when twigs are ringed. This study investigates water/nutrient translocation from winter until reactivation in spring for five North European species: maple (Acer pseudoplatanus L.), birch (Betula pendula Roth), alder (Alnus glutinosa Gaertn.), beech (Fagus sylvatica L.), and ash (Fraxinus excelsior L.). Accordingly emphasis is laid on the relative timing of onset of water conduction among the species. |
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| **Author(s):** | Jun Ohtani |
| **Title:** | **Vestures in Axial Parenchyma Cells** |
| **Source:** | IAWA Bulletin NS, Volume 7, Issue 1 |
| **Publication Year:** | 1986 |
| **Pages:** | 39-45 |
| **Keywords:** | reticulate thickenings; vestures; SEM; axial parenchyma cell; Lasianthus japonicus (Rubiaceae) |
| **Abstract:** | Axial parenchyma cells with vestures were found in the secondary xylem of Lasianthus japonicus Miq. (Rubiaceae). The vestures were always associated with reticulate thickenings. Their morphology is illustrated by SEM micrographs. |
| **DOI:** | [10.1163/22941932-90000436](http://dx.doi.org/10.1163/22941932-90000436) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Reviews** |
| **Source:** | IAWA Bulletin NS, Volume 7, Issue 1 |
| **Publication Year:** | 1986 |
| **Pages:** | 45-46 |
| **Keywords:** |  |
| **Abstract:** |  |
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| **Author(s):** | R. W. den Outer |
| **Title:** | **Storied Structure of the Secondary Phloem** |
| **Source:** | IAWA Bulletin NS, Volume 7, Issue 1 |
| **Publication Year:** | 1986 |
| **Pages:** | 47-51 |
| **Keywords:** | Ivory Coast; phloem parenchyma; phloem fibres; sieve tubes; evolutionary advancement; phloem rays; companion cells |
| **Abstract:** | The anatomy of the secondary phloem with a storied structure of 49 species of woody dicotyledons from the Ivory Coast, West Africa, has been studied. They belong to the families Bixaceae (1 species), Bombacaceae (3 species), Caesalpiniaceae (4 species), Papilionaceae (18 species), Sterculiaceae (16 species), and Tiliaceae (7 species). In the Bixaceae and Sterculiaceae only the axial system is storied whereas in the four other families usually both the ray and axial systems are storied. |
| **DOI:** | [10.1163/22941932-90000438](http://dx.doi.org/10.1163/22941932-90000438) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Current Research on Environmental Pollution and Wood Structure - 3 Addenda** |
| **Source:** | IAWA Bulletin NS, Volume 7, Issue 1 |
| **Publication Year:** | 1986 |
| **Pages:** | 52-52 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000439](http://dx.doi.org/10.1163/22941932-90000439) |

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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Wood Anatomy News** |
| **Source:** | IAWA Bulletin NS, Volume 7, Issue 1 |
| **Publication Year:** | 1986 |
| **Pages:** | 52-52 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000440](http://dx.doi.org/10.1163/22941932-90000440) |

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| **Author(s):** | R. R. Chavan |
| **Title:** | **Analysis of Quantitative Sieve Plate Parameters in Some Members of Asteraceae** |
| **Source:** | IAWA Bulletin NS, Volume 7, Issue 1 |
| **Publication Year:** | 1986 |
| **Pages:** | 53-61 |
| **Keywords:** | Secondary phloem; Asteraceae; statistical analysis; sieve plates |
| **Abstract:** | Nine quantifiable sieve plate parameters in the barks of Dahlia imperialis Roezl., Gynura angulosa DC., Vernonia volkameriaefolia DC., and Xanthium strumarium Linn., have been statistically analysed for their interrelationships. Six of the parameters show a positive correlation with the number of sieve areas on the sieve plate, while three exhibit a negative correlation. A comparative study of the parameters in the different taxa indicates the trends in the evolution of sieve plates in secondary phloem. |
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| **Author(s):** | M. Trockenbrodt; N. Parameswaran |
| **Title:** | **A Contribution to the Taxonomy of the Genus Inga Scop. (Mimosaceae) Based on the Anatomy of the Secondary Phloem** |
| **Source:** | IAWA Bulletin NS, Volume 7, Issue 1 |
| **Publication Year:** | 1986 |
| **Pages:** | 62-71 |
| **Keywords:** | Bark anatomy; Inga; plant systematics; Mimosaceae |
| **Abstract:** | With the help of bark anatomical criteria the systematic position of 24 species of the genus Inga from Surinam was compared with existing subdivisions of the genus. Characters for the grouping of species into sections are the ratio of uniseriate to multiseriate phloem rays, the presence of secretory cells, crystals and thickened inner tangential walls of the phellem cells. However, the systematic value of some of these characters is low. In spite of the limited materials studied, it appears possible to support a few of the existing assignments of species into sections or series. However, the observed bark anatomical character associations of the majority of the investigated species run counter to the subdivisions of the species of Inga derived from flower morphological and wood anatomical data. |
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| **Author(s):** | S. Lev-Yadun; N. Liphschitz |
| **Title:** | **Growth Ring Terminology - Some Proposals** |
| **Source:** | IAWA Bulletin NS, Volume 7, Issue 1 |
| **Publication Year:** | 1986 |
| **Pages:** | 72-72 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000443](http://dx.doi.org/10.1163/22941932-90000443) |

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| **Author(s):** | Elisabeth A. Wheeler |
| **Title:** | **Vessels Per Square Millimetre or Vessel Groups Per Square Millimetre?** |
| **Source:** | IAWA Bulletin NS, Volume 7, Issue 1 |
| **Publication Year:** | 1986 |
| **Pages:** | 73-74 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000444](http://dx.doi.org/10.1163/22941932-90000444) |

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| **Author(s):** | Sherwin Carlquist |
| **Title:** | **Terminology of Imperforate Tracheary Elements** |
| **Source:** | IAWA Bulletin NS, Volume 7, Issue 1 |
| **Publication Year:** | 1986 |
| **Pages:** | 75-81 |
| **Keywords:** |  |
| **Abstract:** |  |
| **DOI:** | [10.1163/22941932-90000445](http://dx.doi.org/10.1163/22941932-90000445) |

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| **Author(s):** | Pieter Baas |
| **Title:** | **Terminology of Imperforate Tracheary Elements - In Defence of Llbriform Fibres With Minutely Bordered Pits** |
| **Source:** | IAWA Bulletin NS, Volume 7, Issue 1 |
| **Publication Year:** | 1986 |
| **Pages:** | 82-86 |
| **Keywords:** |  |
| **Abstract:** |  |
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