**IAWA Bulletin New Series - Volume 13(1)**

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| **Author(s):** | Sherwin Carlquist |
| **Title:** | **Wood Anatomy and Stem of Chloranthus; Summary of Wood Anatomy of Chloranthaceae, with Comments on Relationships, Vessellessness, and The Origin of Monocotyledons** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 1 |
| **Publication Year:** | 1992 |
| **Pages:** | 3-16 |
| **Keywords:** | endodermis in stems; Hedyosmum; Piperales; wood anatomy; Ascarina; Sarcandra; Chloranthaceae; vessel evolution; Chloranthus; monocotyledon origins |
| **Abstract:** | In contrast to the monopodial Ascarina and Hedyosmwn, Chloranthus and Sarcandra are sympodial. Sarcandra and C. erectus have woody canes of finite duration, whereas other species of Chloranthus have shoots of one year's duration ; these latter species have second year wood only on rhizome s, not on upright shoots. Rhizome portions transitional to upright sterns were selected for study. Chloranthus erectus has abundant septate fibretracheids, C. japonicus none, and two other species a few. Chloranthus (and Sarcandra) have rays of two distinct sizes in wood: rays that are extensions of primary rays, and uniseriate and biseriate rays in fascicular areas . Wood anatomy of each of the four genera can be characterised, and is summarised in the form of a key. Except for primitiveness of vessels, wood of Chloranthaceae is very similar to that of Lactoridaceae and Piperaceae, and this probably indicates a close phyletic relationship. The large rays of chloranthaceous wood, little modified from primary rays and with upright cells predominantly , are indicative of some degree of herbaceousness and some degree of secondary woodiness. Scattered bundles and multilacunar nodes, characteristics of monocotyledons, are absent in Chloranthaceae but present in Piperaceae. The sympodial habit of Chloranthus and Sarcandra, and the presence of vessel s in roots but not in sterns of Sarcandra are conditions like those basic to origin of monocotyledons. The possibility that Chloranthaceae are close to Piperales and that these groups are close to origin of monocotyledons should be considered. Some cladists have hypothesised that secondary vessellessness is polyphyletic in dicotyledons. While these cases are theoretically possible, the histological and ecological seenarios that must be hypothesised for these events are ignored by cladists; most of these seenarios are unlikely for reasons explored here, although a few are still worthy of consideration. Stern endodermis is reported for three species of Chloranthus. |
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| **Author(s):** | R. Vijendra Rao; R. Dayal; B.L. Sharma; Luxmi Chauhan |
| **Title:** | **Reinvestigation of the Wood Structure of Thottea Siliquosa (Aristolochiaceae)** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 1 |
| **Publication Year:** | 1992 |
| **Pages:** | 17-20 |
| **Keywords:** | Thottea siliquosa; wood anatomy |
| **Abstract:** | An accurate deseription of the wood structure of Thottea siliquosa is presented for the first time. Earlier deseriptions for this species were based on ineorreetly identified sampies. Wood is diffuse-porous with distinet growth rings. Vessels are small , solitary, in radial multiples and also in clusters, forming a distinet radial pattern. Perforations are simple, intervessel pits small, alternate without vestures. Vaseular traehe ids are present. Axial parenehyma is diffuse and diffuse-in-aggregates. Rays are very high and broad, heterogeneous. Fibres thick-walled and non-septate. Oil eells are absent. |
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| **Author(s):** | Shu-Yin Zhang; Pieter Baas |
| **Title:** | **Wood Anatomy of Trees and Shrubs from China. iii. Rosaceae** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 1 |
| **Publication Year:** | 1992 |
| **Pages:** | 21-91 |
| **Keywords:** | Rosaceae; wood identification; Maloideae; comparative wood anatomy; Spiraeoideae; Rosoideae; Prunoideae |
| **Abstract:** | The wood anatomy of 162 species from China, belonging to 30 genera of the Rosaceae is described. The structural diversity is documented in a survey of characters, a family description, generic descriptions and tables. A key to the genera or groups of genera is presented. A number of genera is described wood anatomically for the first time. Vestured pits noted in some Spiraea species are newly recorded for the farnily . The phenomenon of fibre dimorphism in Spiraea is analysed in detail. |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Reviews** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 1 |
| **Publication Year:** | 1992 |
| **Pages:** | 92-92 |
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| **Abstract:** |  |
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| **Author(s):** | Fukuju Yamamoto |
| **Title:** | **Effects of Depth of Flooding on Growth and Anatomy of Stems and Knee Roots of Taxodium Distichum** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 1 |
| **Publication Year:** | 1992 |
| **Pages:** | 93-104 |
| **Keywords:** | ethylene; Taxodium distichum; flooding; hypenrophied stems; knee roots |
| **Abstract:** | Depth of flooding of Taxodium distichum trees influeneedin height and diametergrowth, formation of knee roots , and anatomy of sterns and knee roots. Height growth was progressively redueed and diameter growth was inereased as the level of the flood water was inereased. Formation of knee roots deereased as the depth of flooding inereased. Traeheids in the submerged portions of sterns of deeply flooded trees were shorter, slightly wider, and had thinner walls than traeheids of shallowly flooded trees. The inner bark of the submerged sterns of deeply flooded trees had wider phloemrays and more intercellular space than the bark of shallowly flooded trees. The xylem anatomy of knee roots resembled that of the xylem in the submerged portions of sterns of deeply flooded trees. Flooding stimulated ethylene produetion by stern bark and apieal portions of knee roots. An interaetive role of ethylene and auxin in anatomical responses of Taxodium to the flooding is postulated. |
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| **Author(s):** | Keiji Takabe; Shigeru Miyauchi; Ryuichi Tsunoda; Kazumi Fukazawa |
| **Title:** | **Distribution of Guaiacyl and Syringyl Lignins in Japanese Beech (Fagus Crenata): Variation Within an Annual Ring** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 1 |
| **Publication Year:** | 1992 |
| **Pages:** | 105-112 |
| **Keywords:** | Beech; guaiacyl lignin; ultraviolet absorption spectrum; syringyllignin; Mäule colour reaction; Fagus; microspectrometry |
| **Abstract:** | Microspectrometry is the most definitive technique for obtaining both ultraviolet (UV) and visible light absorption spectra from a very limited area, and this technique allows the determination of lignin distribution throughout an individual cell wall. It is generally accepted that hardwood lignin .is composed mainly of guaiacyl and syringyl moieties. Our microspectrometric investigations revealed variation of lignin distribution within an annual ring in beech (Fagus crenata). |
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| **Author(s):** | Roland R. Dute; Ann E. Rushing; John D. Freeman |
| **Title:** | **Survey of Intervessel Pit Membrane Structure in Daphne Species** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 1 |
| **Publication Year:** | 1992 |
| **Pages:** | 113-123 |
| **Keywords:** | Daphne; wood ultrastructure; margo; pit membrane; torus |
| **Abstract:** | Of 22 species of Daphne surveyed, 19 possessed tori in their intervessel pit membranes. The torus has a circular shape and is centrally-located on the pit membrane. The fibrils of the surrounding margo show a random arrangement. In some specimens, the fibrils are obscured by material that impregnates the margo, coats the torus, and lines the cell lumens. The margo has small pores. In those species without tori, the intervessel pit membranes, when intact, show randomlywoven fibrils and small pores. Air-dried membranes of these speeies tend to separate into two layers along the line of the middle lamella The presence of a torus is not correlated with evergreen or deciduous habit, but absence of a torus seems to be limited to species of the section Mezereum within the genus Daphne. |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Reviews** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 1 |
| **Publication Year:** | 1992 |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Wood Anatomy News** |
| **Source:** | IAWA Bulletin NS, Volume 13, Issue 1 |
| **Publication Year:** | 1992 |
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| **Keywords:** |  |
| **Abstract:** |  |
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| **Author(s):** | Editors IAWA Journal |
| **Title:** | **Association Affairs** |
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| **Author(s):** | Editors IAWA Journal |
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| **Title:** | **IAWA Bulletin** |
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