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Nota di contenuto	Preliminary Material / Pieter Baas , Giovanna Battipaglia , Veronica De Micco , Frederic Lens and Elisabeth Wheeler -- Wood structure in Plant Biology and Ecology / P. Baas , G. Battipaglia , V. De Micco , F. Lens and E.A. Wheeler -- An overview of the hydraulic systems in early land plants / C. Strullu-Derrien , P. Kenrick , E. Badel , H. Cochard and P. Tafforeau -- Axial conduit widening in woody species: a still neglected anatomical pattern / T. Anfodillo , G. Petit and A. Crivellaro -- Hydraulic and biomechanical optimization in Norway spruce trunk wood-- A review / S. Rosner -- Review of cellular and subcellular changes in cambium / P. Prislan , K. ufar , G. Koch , U. Schmitt and J. Griar -- Visualizing wood anatomy in three dimensions with high-resolution X-ray micro-tomography (CT) -- A review / C.R. Brodersen -- ROXAS - an efficient and accurate tool to detect vessels in diffuse-porous species / L. Wegner , G. von Arx , U. Sass-Klaassen and B. Eilmann -- Quantifying plasticity in vessel grouping -- added value from the image analysis tool ROXAS / G. von Arx , C. Kueffer and P. Fonti -- Fire influence on Pinus hale pensis: wood responses close and far from scar / V. De Micco , E. Zalloni , A. Balzano and G. Battipaglia -- Age, climate and intra-annual density fluctuations in Pinus halepensis in Spain / K. Novak , M.A. Saz Sánchez , K. ufar , J. Raventós and M. de Luis -- Plastic growth response of European beech provenances to dry

site conditions / S. Stojnic , U. Sass-Klaassen , S. Orlovic , B. Matovic and B. Eilmann -- Evaluating the wood anatomical and dendroecological potential of arctic dwarf shrub communities / F.H. Schweingruber , L. Hellmann , W. Tegel , S. Braun , D. Nievergelt and U. Büntgen -- Does growth rhythm of a widespread species change in distinct growth sites? / M.S. Costa , T.J. de Vasconcellos , C.F. Barros and C.H. Callado.

Sommario/riassunto

At present the study of functional and ecological wood anatomy enjoys a vigorous renaissance and plays a pivotal role in plant and ecosystem biology, plant evolution, and global change research. This book contains a selection of papers presented at the successful meetings of the International Association of Wood Anatomists and the Cost-Action STReESS (Studying Tree Responses to extreme Events: a Synthesis) held in Naples in April 2013. Four review papers address (1) the hydraulic architecture of the earliest land plants, (2) the general phenomenon of axial conduit tapering in trees, (3) the hydraulic and biomechanical optimization in one of the most important plantation grown tree species, Norway Spruce, and (4) cellular and subcellular changes in the cambium in response to environmental factors. Three papers review or introduce new tools to observe the 3-D structure and functioning of wood, and novel tools for quantitative image analysis in tree ring series. Finally, five papers report original research on environmental effects on wood structure, including studies on plastic responses in European beech, effects of fire or late summer rains on Mediterranean Aleppo Pine, and the potential for using arctic shrubs or tropical deciduous trees in dendrochronological and climatological studies. Reprinted from IAWA Journal 34 (4), 2013.
