

PROCEEDINGS OF INTERNATIONAL SYMPOSIUM ON MULTIFACETED ASPECTS OF TREE RING ANALYSIS, LUCKNOW, 15-19 NOVEMBER 1999.

Guest Editor A. Bhattacharyya, Birbal Sahm Institute of Paleobotany, Lucknow
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It is customary to associate tree-ring analysis with boreal species where marked seasonal temperature contrasts are reflected in the growth pattern of ligneous material, but also with its value as a high resolution tool for calibrating conventional ^{14}C ages to Calendar years. It is also one of the rare techniques giving access to annual scale resolution of past environmental phenomena in a wide range of continental settings. The Anniversary Volume devoted to Multifaceted Aspects of Tree Ring Analysis [*The Palaeobotanist*, v. 50(1), 2001] brings together contributions presented at a 1999 conference in Lucknow on this topic and allows us to discover emerging aspects of tree-ring studies and their potential for understanding late Holocene palaeoclimatic change. Other than temperature, the rainfall parameter can also be constrained through X-ray densitometry, with a particularly novel application to a small number of tropical tree species such as *Tectona*, *Cedrela* and *Toona* (Meliaceae). This is of particular promise as most tropical species are not known to exhibit the clear ring pattern found in boreal species, hence a sore gap in our knowledge of seasonal climatic variations in the tropics. This gap is only beginning to be filled, as shown by six papers in this volume covering past monsoon variability in Myanmar, Thailand, and the Himalayan region, one paper on the remaining progress to be made in our understanding of the relationships between cambial activity, radial tree growth and climate in tropical species, and two further studies on the potential of densitometry analysis of tropical trees in Latin America.

Other papers in the volume consist of case studies from China, Korea, India, Central Asia, Estonia and the western

USA. Each of these provides an illustration of what information can be obtained from tree-ring analysis, usually on a time scale not exceeding 5 to 6 centuries, on topics as diverse as fossil Permian wood, glacier advance in alpine valleys, forest fire history, and environmental conditions at a resolution finer than annual when combined with patterns of carbon isotope ratios in tree-ring cellulose. This volume thus covers a broad, though not exhaustive, spectrum of the palaeoenvironmental applications of dendrochronology, showing that the discipline involves far more interdisciplinary skill than just the counting of rings, and that more work needs to be achieved in studying modern and well correlated analogues in various tree species in order to extrapolate these to patterns and features observed in older material.

Other direct applications of dendrochronology not covered in this volume are the use of tree rings in archaeology, in other natural hazards such as the return period of snow avalanches, landslides or other debris flows, and in dating historical alluvial terraces or other deposits based on the age of trees growing on them.

In summary, the Volume is a useful collation of recent work presented by world-class specialists. It remains chiefly a research volume and falls short of representing a fully comprehensive cross-section of existing applications of dendrochronology, which could have turned this Anniversary Volume into a landmark publication giving it a textbook quality and hence an appeal to an even larger audience.

Université de Paris France
Email- gunnell@idf.ext.jussieffr

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