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Growth rings

Some of us who have visited the Sequoia Natural Park in California have been struck by sections of the giant trees with annual growth rings marked: Buddha was born, Jesus Christ crucified, Mohammed's flight for Mecca, etc. Red woods (the giant sequoia) live to at least 3000 years while bristlecones to 4500 years. All identified by the annual growth rings. Because the xylem cells produced in the spring of the year are large and those produced later are smaller and also because an interruption of growth occurs during winter the growth of wood for each year appears as distinct ring. Tree rings have been the playing field of archaeologists (dendroarchaeologist), climatologists (dendrometeorologist), environmental scientists, etc. The layman has often asked why is not this science used in India. Researchers felt that annual growth rings could not be formed in trees due to the lack of specific seasons in the tropics. Rings have been observed and it has been presumed that age determination has been unreliable. There have

even been reports that more than one ring is formed every year. In an article by A. Bhattacharyya *et al* (page 736) it is shown that the growth-ring analysis is possible in Indian tropical trees. Some tree rings can be counted back to almost 300 years in trees in different parts of the country. This is good news as the authors assure us that it can be used for climatological analysis. The reconstruction of the monsoons even over 200 years should prove invaluable to us.

New composites

A new generation of ceramic fibres was born following the development of silicon carbide fibre from poly carbosilane by Yajima in Japan in the seventies. This was commercialized very quickly. It now seems a standard practice to prepare an inorganic fibre through the organic route! Murthy and Lewis (page 744) report on a new silicon nitride fibre prepared from hydrido poly silazane (HPZ). This fibre has a tensile strength of 2.5 GPa and is claimed to be stable up to 1400°C. The authors have prepared a composite

of this fibre with a magnesium alumino silicate matrix by hot pressing. It remains to be seen if the composite will prove to be significant commercially and we look forward to further work, especially on oxidation resistance.

Indian monsoon

Study of monsoonal circulation in the Indian context continues to fascinate meteorologists. The article by R. Krishnan, S. V. Kusture and R. N. Keshavamurty (page 732) attempts to understand the relation between the equatorial 30–50-day oscillations and the variability of Indian monsoon. The authors have used the CISK mechanism (impact of cumulus heating) to study the northward propagation of the convective bands in the Indian summer monsoon region and axisymmetric version of the 5-level nonlinear global spectral model. Results of numerical integration indicate that the northward penetration is mostly in the lower and middle troposphere. There is no meridional propagation above the 500 mb level.