

In this issue

Scientific research careers: Diminishing interest

An index (arguably a poor one) of the health of a country's scientific establishment is the number of publications produced in the scientific literature. Ready access to many burgeoning databases has prompted many (and often, uncritical) analyses of publication profiles, leading to ranking of individuals, institutions and countries. A provocative analysis (Raghuram and Madhavi, *Nature*, 1996, 383, 572) suggested that India's scientific publication output was declining. To many observers this appeared to be correct with a general feeling that the recent past has witnessed a decline in the quality and quantity of new entrants to academic and research institutions. Interpretations of 'soft data' are most acceptable when they confirm our own prejudices. To many readers the results of Kumar *et al.* (page 20), that there is a declining trend in the interest of science students for doctoral and postdoctoral research, will not come as a surprise. The authors are bold enough to move from their statistics of the years 1989–1996 to suggest that the reported drop in scientific publications is 'because of the drop in the number of persons conducting doctoral and post-doctoral research'.

P. Balaram

Disease-resistant plants

Phytopathogenic fungi can cause devastating diseases of crop plants. The

spread of plant disease by fungal pathogen is a major hazard that is of considerable importance to farmers and plant breeders. In economically important crop plants, losses due to fungal attack can be crippling. It is not surprising, therefore, that strategies to minimize the impact of fungal infection of crop plants have focused mainly on chemical control. An alternative strategy is to develop disease-resistant cultivars through selection methods. On page 61 Venkatachalam *et al.* describe an approach to developing groundnut plants that are resistant to late leaf spot disease. In their study, culture filtrates of the disease-causing organism, *Cercosporidium personatum* are used in tissue culture systems to select for insensitive or 'resistant' calli, which are then used for generating plantlets. Interestingly, laboratory-generated plants when shifted to field conditions exhibited disease resistance. The authors also report that the resistance was inheritable while the molecular mechanisms by which disease resistance is mediated remain to be elucidated, some parallels to the multiple mechanisms by which bacterial cells acquire drug resistance may be stimulating.

P. Balaram

Seismotectonics of NE India

Northeast India is an important location in the seismological map of the world. Two great earthquakes ($M > 8$) have occurred here and it is

believed that this region holds potential for future damaging earthquakes. Over the years many 'seismic gaps' have been identified in the Himalaya, the Assam seismic gap (Khattri and Wyss, 1978) being one of them. Identification of seismic gaps in the Himalaya has mostly been based on the spatial distribution of earthquakes. Obviously, these deductions are constrained by the lack of measurements of strain. Identification of potential seismogenic zones using GPS measurements and strain modelling is yet to be done, although some fresh efforts have now been initiated in this direction.

The article on seismotectonics of northeastern India by T. N. Gowd and others (page 75) analyses the stress data (although restricted to P-axis orientations) to propose reactivation mechanism of faults in this region. Identification of stress orientations and faults favourable for reactivation is an important step in understanding the mechanism of earthquakes. The analyses by Gowd and others provide a good beginning. This study suggests that the Dauki fault, considered to be a prominent structure in NE India, cannot be reactivated because of the unfavourable nature of stress orientation and other failure conditions. The paper also puts forth a thought-provoking argument that the 'Assam seismic gap' proposed earlier does not qualify to be one in the conventional sense and it rules out large earthquakes in the upper Assam.

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