GUEST EDITORIAL

Most of the papers published in this issue of the **New Zealand Journal of Forestry Science** were presented at the third meeting of the International Conifer Tissue Culture Work Group. The ICTCWG is an informal group which meets every second year to review progress in clonal propagation of forest trees by *in vitro* culture methods. In August 1985 the group met at the Forest Research Institute, Rotorua, New Zealand. The programme included review papers, presentations of original results, visits to field trials of cuttings and micropropagated *Pinus radiata,* and to Government department and industrial forest tree micropropagation laboratories.

In vitro propagation of most economically important forest tree species is an established fact, at least for material of juvenile origin. Early field trials of such material have reached the age where useful comparisons with normal seedling planting stock can be made. A common feature of such studies with *Pinus taeda, P. radiata,* and *Pseudotsuga menziesii* is the accelerated maturation state of the micropropagated trees compared with seedling controls, even though the former originated from embryos. This phenomenon, which does not always occur and is not yet fully understood, complicates attempts to rejuvenate older clones to produce vigorous planting stock.

Explants from mature field-grown trees are proving to be more recalcitrant than those of juvenile origin. Some progress is reported in papers in this issue and those attending the meeting were shown, in the Forest Research Institute nursery, rooted *Pinus radiata* plants that were micropropagated from buds off 20-year-old ortets.

Clonal forestry will require many more clones than is usual in horticulture. This will provide a degree of insurance against diseases that would threaten forests composed of a few clones only. The micropropagation of a large number of clones is a logistical problem for laboratory and nursery managers. Australian developments in computer-based management of clonal records are described in this issue.

Preliminary reports of somatic embryogenesis of conifers were discussed at the meeting, and papers presented here describe progress in understanding the growth of coniferous cells in liquid culture. Since the 1985 meeting, somatic embryogenesis has been reported in a number of conifers, and the subject will no doubt receive greater attention at future meetings.

At the 1985 meeting, some time was devoted to discussions on the use of micropropagated planting stock in forestry. With species where no breeding information is available, micropropagated planting stock may be economically viable – especially if used to provide nursery "stool beds" from which cuttings can be taken.

For species such as *Pinus radiata,* for which a great deal of tree breeding information is available, the role of micropropagation in tree improvement is not well defined. The final paper in this issue addresses the relative merits of conventional breeding programmes and clonal forestry using vegetative propagation to produce planting stock.

To meet the requirements of the Journal, all papers presented here were refereed and I am grateful to those persons who reviewed these manuscripts so thoroughly.

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