March 1991 further material was obtained from the British Forestry Commission and quarantined at Lincoln using a specially-built propagation unit. Twelve cuttings rooted over a six-month period and, having passed health checks, were released from quarantine on October 25, 1991. The material is now being multiplied by DSIR Fruit and Trees prior to general release and evaluation as a shelter and timber clone.
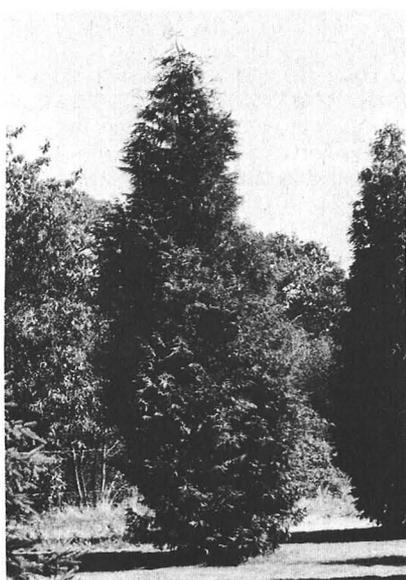


Clone 5 at the Forestry Commission's Southern Research Station, Surrey.
Photo: J.W.Sturrock

In Britain, clone 5 is presently virtually confined to the Clonal Bank at the Forestry Commission's Southern Research Station. However its habit and timber potential has begun to attract attention. The tree appears to have a strong main axis. Alan Mitchell, formerly with the Forestry Commission, considers this clone to be the most useful of the remaining and unexploited clones and worthy of receiving a cultivar name.

J.W. Sturrock
DSIR Fruit & Trees
Lincoln

## LETTERS

## Tax change effects

Sir,
Your correspondents in the November 1991 issue of New Zealand Forestry made some useful comments regarding my paper "Tax changes – how real are the incentives?" (Katz, 1991). I agree with Mark Bloomberg that the tax changes affect the relative returns on land between forestry and non-forestry uses, and given land availability and with everything else being equal, are therefore likely to affect planting rates. The point I argued was that higher land prices and lower values for immature forests will in fact reduce the real value of this perceived benefit.

Horgan devotes much of his comments to criticising the use of tax-dependent discount rates in after-tax valuation of investments. He states: "There seems to be little in the way of logical reason for varying the discount rate with tax rate." Yet Campbell and Colletti (1990) wrote that "post-tax cash flows and a post-tax discount rate must be used if the effects of taxation are to be correctly incorporated into an investment analysis". Samuelson (1976) (whom, Horgan claimed, I inaccurately referenced) wrote: "If marginal tax rates are (say) 50 per cent, a 12 per cent yield before tax is a 6 per cent yield after tax. It would seem to make quite a difference for optimal rotation decisions whether we must use a 12 or 6 per cent discount rate...", and went on to state that the pre-tax discount rate can be used to make optimal decisions "provided that the income tax authorities really do tax true money income at uniform prices" (emphasis added). Chisholm (1975), wrote "...the opportunity cost of capital to firms is thus reduced in precise proportion to their tax rate". All of these writers rec-ognise a relationship between tax and the discount rate.

So what is the basis of Horgan's arguments? Horgan is concerned that a discounted valuation with a tax-dependent discount rate may not be consistent with an accounting measure of national wealth. However the issue of interest is one of how policy influences investment choices. Therefore general investment criteria must be considered if the analysis is to shed any light on this problem. To investors the discount rate is a numerical standard that must be earned in forestry if they are not to employ their land, labour and disposable funds in other more lucrative uses. This standard is directly affected by the rates of return achieved in other investments, the cost of capital, and hence tax. If we ignore these factors, then we will not be able to identify how investment behaviour may change in reponse to a policy shift.

Horgan described my practical definition of income tax neutrality as "original", but Chisholm (1975), in the respected journal Economic Inquiry, defined it as a tax that "if applied uniformly over all sectors of the economy, has the characteristics that the before-tax and net-of-tax present discounted valuations of all investments; and, hence, optimisation decisions are independent of the tax rate to which each firm is subject." The definition in my paper is therefore hardly original; furthermore it is also not inconsistent with the one Horgan quoted.

I am grateful to Horgan for pointing out that the divisor in equation (6) in the Appendix should have been d(1-q) and not (d-q). The observant reader would also have noted that the costs represented by $C_2$ in the first term in equations (7) and (8) should have been individually compounded to the end of the rotation, i.e. multiplied by $(1+r)^{n-}$. The conclusions regarding the disincentive for trading immature forests remain the same. As for some of Horgan's other concerns, a more careful reading would have revealed that "a" was indeed defined from t=k to n, i.e. from the seller's perspective, and the "B" had been defined in section 1b of the Appendix.

### References
Campbell, G.E and J.P. Colletti. 1990: An Investigation of the Rule-of-Thumb Method of Estimating After-Tax Rates of Return. Forest Science, 36(4): 878-893.
Chisholm, Anthony H., 1975. Income Taxes and Investment Decisions: The Long Life Appreciating Asset Case. Economic Inquiry, Vol XIII, Dec 1975, pp565-578.
Katz, A. 1991: "Tax changes – how real are the incentives to forestry?" NZ Forestry, August 1991. pp18-22.
Samuelson, P., 1976. Economics of Forestry in an Evolving Society. Economic Inquiry, Vol. XIV, Dec 1976, pp466-492.

**Andres Katz**

## Australasian Corrosion Association Symposium

The Auckland Division of the Australasian Corrosion Association New Zealand Branch is planning a half-day symposium of particular interest to the Pulp and Paper Industry, to be held at the Forest Research Centre, Rotorua on Thursday, July 2, 1992.

This symposium will feature six speakers, including a special guest from Singapore, and will cover several aspects of corrosion concern to those in the Pulp and Paper Industry, such as corrosion in condensate lines (the feature paper), preparing steel for painting, degradation of concrete, material selection in severe conditions, and problems with water treatment.

All the speakers are experts in their field and the symposium provides an excellent opportunity to learn from and to question these experts on any corrosion problems you may have.

An application brochure will be issued shortly and will be available from the Secretary, Auckland Division ACA, P.O. Box 5961, Auckland, or telephone / fax (09) 5755 871. Please contact him if you would like more details.