

Korea (where there are severe climatic restraints). So the species are known in these two additional markets. I am aware of the Japanese production potential and its costs and problems.

A similar case could be made for growing some of the numerous Japanese hardwoods here too. There are, admittedly, abundant good temperate hardwoods in the USA, but there could be sufficient bias towards their own species to persuade the Japanese to at least install trials here. There seems likely to be a continuation of a rural labour supply in NZ, as against the falling population in Japan, which would be a mild help in evaluation.

I once wrote: "Quality log production plus some freedom of thought provides a likely source of comparative advantage ... " (NZJ For. Sci. 2(3) p.387). The prolonged ordeals over the radiata schedules, and assessing the current species, has prevented further plantation extensions until now. In fact there has been a great deal of no doubt valuable detailed work on radiata silviculture while the basic concepts of silviculture direction have been forgotten. We are now 25 years late in starting. So I at least applaud the idea of evaluating alternatives.

2. Radiata clearwood regime

These have been mentioned in another letter. Despite the research in radiata silviculture, it has not been tested fully as far as I know. It is a matter of testing the interaction between stocking, wind damage, volume, and clearwood production from trees **uninodal above the pruned section. One further log length is probably sufficient.** The drop-off in mortality has, I assume, enabled higher stockings to be retained. There is much less need to accept the restraint of a substantial log diameter if uninodals are used.

I have been sent a paper by M.J. Carson which is on this topic. I will have to work through the paper, and see what the conclusions are.

3. A lack of data

I still do not think NZ has adequate and well-designed species trials established to give growth data and material for wood quality testing. This is the best diversification measure. We resemble more the developing countries I work in, making extrapolations from bits and pieces.

4. Douglas fir again

This has been commented on in my reply to Dennis Richardson's article. "A triumph of hope over experience" (Johnson) I'd say.

5. Crops for hardwood chips

I have the corrected data on world chip

trade and have been following chips since 1977 (Fiji Pine Commission days). I think it is improbable that this crop would pay off as a main crop in New Zealand. It may be sufficiently attractive for some smaller schemes. I would be interested to see the figures. It is granted that the future of Australian supplies is uncertain, but the Indonesian plans for hardwood pulp production are underway and could well affect world hardwood pulp markets. (The Indonesian plans are for hardwood pulp production, based largely on *Acacia mangium* plantations.)

6. Who are these committees and how/who do they decide on these things?

R. Fenton

77 Forrester Drive, Tauranga

Alternative species

Sir,

I can't help but respond to Paul Smale's letter "Species diversity" in your February 1994 issue.

I will not debate the radiata issue. It is a marvellous species. Its growth, ease of processing, and the range of end uses for which it is amply suited make it an exceptional investment choice.

There are, however, a few points of order and Paul should not escape too lightly.

Firstly there is the matter of biological risk, a subject we usually dismiss. The risk to a single hectare may be increased by establishing another species. However, perhaps it is the risk of losing our entire estate that we should be more concerned with. The following analysis is crude and simplistic but there is a lesson here. Supposing the risk of losing the entire radiata estate was 0.1% over one rotation. Now suppose a second species with a different set of potentially virulent pathogens has the same 0.1% risk. The risk then of the total destruction scenario is increased 1000 fold by having only radiata compared with a 50:50 split of the two species.

Secondly, are we not getting a little parochial about our superb radiata? Perhaps if we ventured to our Asian market place and examined the prices and perception of radiata 'at the bottom of the heap' versus the fine-grained softwoods (*Cupressus*, *Chamaecyparis*) at the 'top', our enthusiasm would be somewhat dampened and rekindled in another direction.

Further, what of our other hopeful species? Let us consider *Cupressus macrocarpa* and *C. lusitanica*.

- Between them they will grow almost anywhere radiata will grow (except the hardest sites).
- Yields for many sites are likely to be as much as two-thirds of radiata's at

around 30 years and this proportion may increase on longer rotations.

- They can be harvested on a similar short rotation to radiata; perhaps even more successfully since there is no 'low quality' stem centre, thus allowing better grade recovery from smaller piece sizes.
- Stable, low shrinkage and constant radial density gradient without the heavily spiralled grain core of radiata.
- Naturally durable, etc, etc.
- Able to replace radiata in most end uses (not as pulp) and surpass radiata in many more.
- Now for appearance – "completely in another league". No further comment required.

Referring to Paul's letter. The comments "... diluting it by research on species ..." and "Before investing large sums on research on alternative species ..." and so on leave me wondering if I have missed something. We seem to have invested comparatively little on other species research but perhaps there is some new company-led research initiative about to happen. I wonder about the gain that may result say even from a little genetic research into canker and fluting in macrocarpa.

Paul makes the point that the large 1.3 million hectare radiata estate can drive a substantial radiata research programme and this programme is diluted by thoughts of other species. However, it is the next two million hectares of commercial plantation that we appear to be on the threshold of planting that should excite us all with possibilities.

Alan Somerville

Mea culpa!

Sir,

Mea maxima culpa – but like a venal sin to an old man it was worth it! To have provoked that greyest of Grey Wolves, John Ure, to an appearance in print in a technical journal is an achievement to which few could lay claim during his professional career. And I will willingly assume whatever obloquy may be necessary to prompt a repetition.

I have no excuse (except incipient dotage) for referring to poison-thinned larch: unlike pine and Douglas fir, larch needs no such intervention to provide autumnal coloration. But there is more than meets the eye to the story of the Redwood Grove (as Neil Cooper intimates) and perhaps one day John may be prevailed upon to tell us more.

What, Sir, is *Schleichwirtschaft*?

S.D. (Dennis) Richardson

(More letters on page 48.)