

itself so that advances multiply upon one another. There are no historical trends to extrapolate which can guide us in the exploitation of the truly explosive developments that lie ahead. Biotechnology lies at the epicentre of these changes, involving the transformation of people, animals and plants.

We live on the threshold of a new age but we need the vision and energy to recognise it. The elucidation of DNA in 1953 was an academic *tour de force*. The mapping of the human genome was first recognised as possible in 1978, but only in the last few years has direct study of human DNA been actively undertaken. Already the gene sequence responsible for Huntington's disease has been located. Once mapped, any genetic aberration could eventually be prevented by the manipulation of the structure of DNA. Swinburne's final haunting refrain in his Hymn of Man, "Glory to man in the highest! for man is the master of things", is at least more literally plausible at the end of the twentieth century – although the blasphemy is not lessened by the passage of time!

Molecular biology research by New Zealand industry and corporations overseas has the potential to create whatever is desired: Jurassic Pine is merely a fun label suggesting the truly enormous opportunities that lie ahead. Furthermore such research is not prohibitively expensive. There are literally thousands of laboratories spending billions of dollars in the quest of the mundane. The fact that there is a CBOE Bio-Tech stock index demonstrates its financial viability, and it is from this sector that the IBMs and Microsoft Corporations of the future will come. The only emphatic point to make is that this is not idle speculation. Few could bridge the conceptual gap between the Wright brothers' flimsy plane and the modern jumbo jet. The type of innovations that we can conceive will hardly power the economy over the next 30 years, so it is in the realm of the improbable and inconceivable that new technologies will arise. Slowly at first and then with increasing pace. The telephone needed a network before it could be of any real value to the subscriber, but subscribers are needed to build a network: economic constrictions are greatest in the early stages of any Progress. Science fiction writers have had more acute vision of the future than any politician or scientist.

And what visions? The Progress is sufficient to corrupt the noblest dreams. A Californian engineer says that he has fallen in love with his virtual reality female facsimile whom he designed to his own specifications. "She is more beautiful, exciting and stimulating than any woman I've ever known. My imagination

is the only limitation to what she will do." I blush to suggest the possibility, but perhaps this is the Last Frontier to which the urban halitosed and brain-dead will trek to be refreshed – recreational therapy for Grey Wolves? It gives new promise (ersatz?) to the pleas of Nan Fairbrother (New Lives, New Landscapes) and we won't even have to plant a single tree! Progress is frivolous as well as profound.

It is in this context that I see the advocacy of growing *Robinia pseudoacacia* for ground-durable posts as offering the solutions of the nineteenth century for the neuroses of the twenty-first century. This doesn't acknowledge the future, it ignores it. In a similar vein the case for growing Douglas fir has never been objectively argued. Many years ago the NZ Forest Service noted that there was little difference in the mechanical properties of New Zealand-grown Douglas fir and radiata pine. Neither does second-growth Douglas fir on the West Coast of the United States share the pre-eminent position enjoyed by old-growth Douglas fir. The only desirable characteristics of old-growth Douglas fir were that the trees had enormous girth, the timber was often free of any defect, and the wood was close-grained and stable (to which one might add that it was sold cheap). It was well suited for a basic commodity such as plywood: incidentally, kauri could have done

that job just as well. None of these characteristics of Douglas fir carry over into second-growth and new plantations. It is at the very least questionable whether 50 years hence the American consumer will continue to pay a premium for an imported reminder of a fading slice of their cultural heritage – which is after all the *raison d'être* for growing the stuff. Heaven forbid – for the validity of my argument – there is always the possibility that someone will prefer to grow Jurassic Fir, by pinching the most endearing characteristics of radiata pine and switching these on in Douglas fir! More likely the most desired characteristic will be something totally different – the ability to coppice? There the problem is that one looks into the genetic gain of yesteryear just when technological change is accelerating!

One can cavil at the details of the science, but never forget that it is our conventional time-frame that becomes less relevant when confronted with non-linear change. Huxley nailed it when he said of time "there seems to be plenty of it" (The Doors of Perception), which is something all foresters should appreciate. In case you are appalled, be consoled by the fact that some things will not change. People will still fall in and out of love, poets will tilt at windmills and farm foresters will beautify their land with trees.

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## Health of Forestry Research in New Zealand

Colin O'Loughlin

On January 10, 1994 The Dominion (Wellington) carried an article about the CRIs titled "Science institutes can't survive says report". The article supposedly reported the contents of Ministry of Agriculture and Fisheries briefing papers and indicates that it was unlikely that the current ten Crown Research Institutes will be viable in the long term. The problems associated with being a viable business, while at the same time maintaining core competencies in science, limited client bases which restrict support for the CRIs, inability to act in a real company mode and an expected loss of key research competencies in the near future, are some of the reasons presented for the rather bleak outlook for the CRIs. This article prompted several people with interests in forestry to enquire about the present and likely future health of the New Zealand Forest Research Institute Limited, the forestry CRI that presently carries out about 90 per cent of New Zealand's total

effort in forestry and wood products research and development.

The newspaper article followed shortly after the release of the NZFRI's financial and science reports for 1992-93 at the end of 1993. The financial report indicates that despite the adverse effects of restructuring during the first six months of the CRI's operation, the operating profit for 1992-93 approximated \$1.5 million and exceeded budget. The FRI earned \$17.3 million from the Public Good Science Fund administered by the Foundation for Research, Science and Technology and \$11.5 million from non-PGSF sources (industry, central and local government agencies, private organisations, overseas organisations, technology licensing and product sales). The Chairman's and the Chief Executive's reports in the financial report suggest that the restructured FRI, with its strengthened business development and commercialisation skills, strengthened relationships with the fores-

try sector, new research directions, and an expanding forestry sector which is attracting considerable investment, combine to make the outlook for NZFRI very bright indeed.

#### Research Accomplishments

The NZFRI science report for 1992-93 provides a clear account of the Institute's research accomplishments which included the establishment of an international molecular biology team supported by industry and government, completion of an expanded pulp and paper fibre research facility, formation of a resource monitoring unit and development of an advanced fibre processing research unit. Other highlights were the formation of a joint venture company with Chemicca Ltd, and Tasman Forestry Ltd, to exploit the novel wood hardening technology developed at NZFRI, the commercialisation world wide of NZFRI's Greenweld technology and the advancement of the radiata pine embryogenesis project to a pre-commercial phase.

#### Wide Spectrum

It seems that NZFRI's clearly focussed and well balanced research programme and its emphasis on developing integrated research strategies across a wide spectrum of research areas encompassing forest establishment, growing and management, harvesting, wood product development and processing and environmental protection, will ensure that it remains a strong research provider. The newspaper article referred to above may have relevance to some other CRIs but it does not appear to provide a very accurate prognosis for NZFRI's future.

#### CONSULTANT RECOGNITION

The following has applied for a review of recognition as a general forestry consultant:

**Paul Molloy**

**Nelson**

Under the NZIF constitution, any members of the Institute may send objections in writing within 40 days of publication of the Journal to the Registrar, NZIF Consultants Committee, P.O. Box 1340, Rotorua.



## RECENT EVENTS



### 1994 new forest planting areas may double

The Ministry of Forestry has completed its spring survey of forestry nursery stocks. Sufficient seedlings were produced in 1993 for a "new forest" planting level of 60,000 hectares. This is additional to an estimated restocking level of 26,700 hectares. The 1994 new planting estimate is even more dramatic. There are sufficient seedlings established to plant an additional 120,000 hectares of new forest with a further 28,700 hectares being restocked.

Prior to this, the highest level of new planting was 56,000 hectares in 1985. The level declined through the late 1980s to reach a nadir of 15,000 hectares in 1991.

Radiata pine is still the dominant species at over 90% of the total new plantings but there is a strong resurgence in the planting of hardwoods, predominantly eucalypts. Douglas fir is the other preferred species.

The large corporates, together with the NZ Forest Service, were the driving force

behind the new planting levels up until the late 1980s. However, much of the new plantings since that time are on the initiative of smaller, independent growers (predominantly farmers and private forestry investors).

This growing diversity in forest ownership is a healthy development in the industry. The importance of the independent smaller grower should continue to increase, particularly as their level of harvesting rises, and they begin to organise collectively. The initiative of the South Otago Farm Forestry Association to establish a marketing company in anticipation of an increasing woodflow is one of the first moves in this direction. It should not be forgotten that the rural community has a rich tradition of organising very competent cooperative and commercial organisations, from dairy co-ops, stock and station firms to companies such as Fortex.

**Chris Perley**

### Dutch Elm Disease in Napier

A routine survey of Napier port environs by a Ministry of Forestry Forest Health Officer on December 22, 1993 discovered symptoms in elm trees in Sterms Gully Reserve, Bluff Hill typical of Dutch Elm Disease (DED). Samples were sent to the NZ Forest Research Institute, Rotorua and culturing confirmed the presence of the disease. Subsequent surveys by MOF Forest Health Officers and staff from the NZFRI over the Christmas period found no further evidence of the disease, or evidence of the bark beetle (*Scolytus multi-stratus*) that is the vector for the disease. NZFRI staff have set pheromone traps in the area but to date have not caught any beetles.

Six elms from the initial infection site were felled, treated by fumigation and disposed of by deep burial. To prevent the movement of possible infected elm, Napier City was declared infected for Dutch Elm Disease under the Forest Disease Control Regulations. NZFRI tests suggest that the fungus is the same as that present in Auckland, and samples have

been sent to the UK for confirmation by clonal testing.

At present the evidence suggests that the infection is an isolated one, but surveys and trapping will continue for the remaining summer and autumn. Napier's Bluff Hill has a considerable population of elms with a prolific number of elm suckers. At the discovery location the disease was transmitted to adjoining trees by root grafting, and, as there has been no evidence found of the beetle, MOF hope it has failed to establish.

Dutch Elm Disease was first discovered in New Zealand in 1989 in Auckland and had been confined to five suburbs. So far this year the location of infected trees represents a reduction in the area with infection and the Ministry of Forestry is still optimistic that eradication can be achieved. It is uncertain whether the Napier case is ex-Auckland or related to the port.

**Dave Kershaw**  
**Ministry of Forestry**