Professional forestry education in Australasia - looking from the past to the future

Roger Sands*

Introduction

Max Jacobs was a professional forester and a pioneer educator in forestry. He graduated as a Bachelor of Science in Forestry from the University of Adelaide in 1925 and was one of the first Fellows of the Institute of Foresters of Australia. He was also made an Honorary Member of the New Zealand Institute of Foresters (anon. 1979). He lectured at the Australian Forestry School prior to the Second World War and in 1944 was appointed Principal and Lecturer in Silviculture at the Australian Forestry School, a post that he held until 1959 after which he became Acting Director-General and then Director-General of the Commonwealth Forestry and Timber Bureau (Anon. 1979). During this period, Dr Jacobs presided over the forestry education of many New Zealanders as well as Australians. There are some at this conference (both New Zealanders and Australians) who were at the Australian Forestry School during Dr Jacobs' tenure and they can attest to the quality and stature of the man. I am not old enough to be in this elite group. I did meet him though in 1964 because he still attended Forestry School dances even though he was then Director General of the Forestry and Timber Bureau.

The rationale therefore for using the MR Jacobs oration to discuss forestry education at a combined New Zealand and Australian Institute Conference is that Dr Jacobs was primarily a forest educator who presided over the forestry education of senior foresters in both New Zealand and Australia and therefore influenced forest practice in both countries. Forestry education is a broad continuum from basic bush training though to PhDs. In this paper I am confining myself to university programmes that offer bachelors degrees in forestry. Inevitably my paper will be more heavily weighted towards New Zealand because this is my more recent experience.

The past

Australia

I have relied heavily on Carron (1985) for the early history of forestry education in Australia. Inevitably the history of forestry education in Australia involved considerable agreement and disagreement between states. Indeed discussions on forestry education preceded federation. The Victorian Forests Department secured land at Creswick in 1898 for the purpose of establishing a school to train field officers but it was not until 1910

that the School commenced operation. A School of Forestry was established at the University of Adelaide in 1911 which operated until 1926. However, discussions between states decided that there should be a national school rather than separate state schools and after considerable discussion over many years on the nature and location of this school, it was finally resolved, in 1925, that the Federal Government should establish the Australian Forestry School in Canberra and that this should be supported by the states sending to Canberra a guaranteed number of students each year.

The first year of operation of the Australian Forestry School in 1926 was at Adelaide University but in 1927 the new premises were opened in Canberra. Students spent two years in a science-based course at their home state university prior to coming to the Australian Forestry School for a further two years to be awarded a Diploma in Forestry. Creswick graduates were also eligible for direct entry but differences of opinion about the equivalence of a Creswick graduate resulted in the Victorian Forestry Commission sending no more Creswick graduates to Canberra after 1930, choosing instead to forge closer links with the University of Melbourne. In 1949 the first New Zealand nominees arrived at the Australian Forestry School and this continued for a further 20 years until the establishment of the New Zealand School of Forestry at the University of Canterbury in 1970.

By 1940 the state universities in turn agreed to accept the Diploma in Forestry from the Australian Forestry School as sufficiently meritorious for the state university to confer a Bachelor degree. However, in time, the state universities associated with the Australian Forestry School became increasingly concerned about their lack of influence over curriculum and the perceived negative impacts of having a close-knit but isolated professional group separated from the cross-disciplinary advantages and academic freedom associated with a normal university degree. This culminated in the Australian Forestry School being incorporated into the Australian National University in 1964/65. The complex pathway to this eventuality is well described by Carron (1985).

Meanwhile a similar progression was occurring in Victoria. In 1942 the University of Melbourne agreed to grant a BSc in Forestry to selected Creswick graduates who completed a further two years study at the University of Melbourne. In 1943 a School of Forestry was established within the Faculty of Science to achieve this. About 1965, the University of Melbourne established a four-year BScFor degree which ran in parallel with the

^{*} Professor and Head, New Zealand School of Forestry, University of Canterbury, Private Bag 4800, Christchurch.

arrangement with Creswick. In 1973 the University of Melbourne amalgamated the School of Forestry with the School of Agriculture to form a Faculty of Agriculture and Forestry and in 1980 the Victorian School of Forestry graduated its last group of Diplomates and entered into an affiliation with the University of Melbourne to offer a four year BForSc degree with two years spent at Creswick and two at Melbourne. Again, the pathway through these developments was quite complex and is given in more detail in Carron (1985).

Currently the Australian National University and the University of Melbourne offer BScFor and BForSc degrees respectively together with a range of combined degrees and postgraduate opportunities. Southern Cross University established a forestry programme in 1996 and offers a BAppSc(For) degree and postgraduate opportunities. The University of Queensland has recently (1998) offered a BEnvMan specialising in tropical forestry.

New Zealand

I have relied almost entirely on McKelvey (1991 and 1999) for the early history of forest education in New Zealand.

Following the State Forests Act of 1885, Kirk was appointed Chief Conservator of Forests in 1886. Kirk envisaged establishing a Forestry School at Whangarei and even procured land for the purpose, but there was a change of government in 1887 and the Forest and Agriculture Branch was abolished in 1888 (McKelvey 1991). McIntosh Ellis was appointed as the first Director of the State Forest Service in 1920 and forestry education was an important part of his vision. Subsequently two Schools of Forestry were established, one at the Canterbury University College in 1925 and the other at Auckland University College in 1926. McKelvey (1999) reported this as 'a triumph for parochialism, excessive compromise and illogicality to establish 'two underresourced schools when what was wanted was one strong one.' Under-resourcing ensured the closure of the Auckland School in 1930 and the Canterbury School in 1934. Even so, these Schools produced some prominent graduates. Priestley Thompson was a graduate of Canterbury and Lindsay Poole of Auckland.

Alex Entrican became Director of Forests in 1939 and, following the war, consolidated all Forest Service training at the Forestry Training Centre at Rotorua. Entrican envisaged that the Training Centre would produce both 'rangers' and 'foresters' and that they would have equal status and opportunity within the Forest Service. The initial idea was that those selected to be foresters should undertake a part-time BSc degree from the University of New Zealand (while working in the Forest Service) and that the University of New Zealand should subsequently provide a two-year postgraduate course in Forestry for BSc holders. However the postgraduate course never eventuated because Entrican insisted on more Forest Service influence in the course than the University was

prepared to contemplate. Consequently BSc holders were sent overseas to Oxford, Aberdeen, Edinburgh, Bangor, Nancy and Vancouver but most (about 40) went to the Australian Forestry School at Canberra (after 1964/65 the Department of Forestry at the Australian National University) (McKelvey 1999).

Ultimately though, the cost in foreign exchange of sending students overseas and the recognition that New Zealand forestry was developing in a different way to other countries led to the recognition that it was necessary to establish a Forestry School in New Zealand. The New Zealand School of Forestry was established at the University of Canterbury in 1970. The NZ Institute of Forestry was, understandably, closely involved with this development and the background can be found in the New Zealand Journal of Forestry (1966), volume 11(2).

Currently the New Zealand School of Forestry offers BForSc and a BEng(For) to Honours level and a range of combined degrees and postgraduate opportunities. Lincoln University introduced a BCom(For) in 1994 and Waikato University introduced a B.Sc(Tech)(For) degree in the 1990s which has since lapsed. The University of Auckland currently is developing a wood science degree in conjunction with Waiaraki Polytechnic. Some other universities also have programmes containing forestry-related subjects.

Common thread in New Zealand and Australia in forestry education

A common thread in both countries is that the initiative to establish education in forestry arose from within government Forest Services and that early education was strongly influenced by them. The handing over of this responsibility to universities was protracted and painful but inevitable. When the employer is also the trainer, the quality of the training is usually excellent and immediately relevant. However, an employee trained by her/his employer is also captured by that employer and locked into the employer's dogma and culture. A university education in forestry allows freedom of expression and exposure to ideas from a wide range of disciplines.

Changes in the forestry sector and impacts on employment for graduates

There have been significant changes over the last 20 years in the forestry sector in both Australia and New Zealand that have affected the structure and type of employment of forestry graduates. Twenty or more years ago, forestry was still dominated by strong and focused forest services. Since then, forest services have been diffused into larger government conglomerates and production and non-production components have been separated. Considerable privatisation has occurred in the production sector. International corporations have become increasingly influential. Large forestry enterprises have increasingly contracted their employment to planning functions and have out-sourced much of their

management and silviculture to smaller contracting companies. There has been an increase in the number of small consulting companies and private consultants. Consequently there has been an increase in the need for business skills in graduates.

There has been a move towards adding value from growing to processing to product development to marketing. There has been an increase in the amount and scope of farm forestry. For example, in New Zealand, farm foresters and small investment units collectively own the largest parcel of plantations, greater than one-third (NZFOA 2002). Also there has been increased interest in the role of tree planting in the rural landscape for soil, water and biodiversity conservation, for salinity control, for wildlife conservation, for whole farm management, for rehabilitation of degraded sites and for amenity and recreation. The impact of climate change, carbon accounting and certification are current issues.

The impact of the environmental movement has been enormous. Some of this has been good but an element of it has been destructive. The impact of the broadening of environmental awareness in the community has been a mixed blessing to forestry education. It has broadened educational opportunities and theoretically should also broaden the employment opportunities available to forestry graduates. However, many in the environmental movement see forestry as having failed them and much and perhaps all of this increased opportunity (in New Zealand at least) is being absorbed by the proliferation of environmental science courses that has occurred in recent years.

Another factor that has caught foresters by surprise has been the inadequacy of scientific forest management alone to solve all problems. The profession of forestry, originating in Germany, is based on the premise that if we understand the science (maths, physics, chemistry, biology and associated applied sciences) that controls forest ecosystems and we develop appropriate technologies to use this scientific knowledge to achieve management objectives, we will ultimately prevail. This clearly is not so. Forest policy and practice is often determined by factors that completely disregard the science. We are often perplexed about why, for example, an issue pushed by an environmental lobby can prevail when it has no scientific merit whatsoever. Even today most foresters are limited by having been exposed to an education that is dominated by the sciences. It is now generally accepted that social factors (I hesitate to call this social science in this context) must assume a more important part in forestry curricula. We need graduates operating from a radically different paradigm. Most older graduates are incapable of making this shift.

Twenty and more years ago an average graduate in forestry was male, financially sponsored by government while at university, and guaranteed a career path in the forest service for life followed by retirement benefits. Today the average graduate will take out a loan to study at university, will not expect or even want a 'job for life,'

will be employed by a wide diversity of employers and often in small enterprises. (S)he (the proportion of female graduates has increased considerably over the last two decades) will need to know how to run a business and may operate as a private consultant. (S)he will need to be more attuned to social factors and less conditioned by the paradigm that technology will resolve all issues. (S)he may have quite a different perception about what is a 'professional forester' than those who graduated more than a decade or two ago. Perhaps it is time to readdress what is actually meant by professional forester and the relative importance of a generalist and a specialist.

Professional forestry

At the outset I should say that I do consider forestry to be a profession and that a professional education in forestry is the best to serve the sector. To what extent I may be deluding myself is for others to judge.

The general public has no trouble identifying medicine, dentistry and law as professions, whatever that means. The general public has no concept, though, of forestry as a profession nor indeed of the title 'forester.' Furthermore, many within the diverse forestry sector also have no concept of forestry as a profession and some indeed are dismissive and even antagonistic of the idea. This is particularly so of those who have come into forestry via routes other than a traditional forestry degree. Perhaps the only people who take the concept of forestry as a profession seriously are those in that exclusive club that call themselves professional foresters. Even those in the club are confused about it and the topic of professionalism keeps cropping up. Indeed it was the theme of the 25th Anniversary Conference of the New Zealand School of Forestry (Norton & Allen 1995) and the main subject of NZ Journal of Forestry volume 45 number 1, (2000).

The ideal of a professional forester that we espouse is a person who has a broad and integrated knowledge of all aspects of forest management and forest products. A forester is somebody who has a commitment to multiple use forestry and sustainable management of forested ecosystems, somebody who can see the whole picture and can competently build a bridge, inoculate a soil with mycorrhiza, conserve sugar gliders and the kiwi, kiln dry timber and design furniture, and all this before morning tea. This is clearly a concept (not necessarily an ideal) rather than a reality. Also there is general agreement on certain qualities that are desirable in a graduate in forestry that include: ability to work in a team and network, planning and problem-solving skills, practical skills, numeracy skills, information systems skills, business skills, professional ethics, conflict management skills, people skills and political nous (Sample et al. 1999, Burley 2001, Sands 2002).

It is not possible to accomplish all of this within a four year degree programme. Furthermore, employers are increasingly likely to employ a civil engineer to build the bridge, a soil microbiologist to inoculate the soil, a

conservation biologist to conserve the sugar glider and kiwi, and a process engineer to dry the wood. However, these specialists would be better prepared if they had a wider and more general knowledge of forestry. A good case can be presented that a broad, generalist, management-oriented forestry degree followed by a specialist qualification is the best of both worlds and indeed employers in New Zealand (I have no knowledge here of recent Australian experience) are increasingly expecting and even requiring this. Forestry curricula need to be designed to encourage this and to increase flexibility and options. The New Zealand School of Forestry has approached this by promoting combined degrees (e.g. with Commerce, Science and Law), by developing a Bachelor of Engineering (Forestry) degree (accredited by IPENZ) with streams in forest operations and forest processing, by offering forestry subjects to a Bachelor of Commerce degree to give a solid emphasis in forestry, and by contributing actively in the Environmental Science degrees offered by the University.

Organisational structures

Increased flexibility and options depend on the ability and desire to collaborate. Inevitably this comes down to the vexed question of appropriate organisational structures and models for collaboration between cognate disciplines. Also, the nexus between education and research is critically important and this needs to be maintained at all costs. Restructuring is an addiction if not a disease among modern university executives. The current Australian forestry schools have all been part of organisational restructuring in recent times. The School of Forestry at the University of Canterbury will probably be restructured in 2003. The situation is so fluid that further changes are probable before this article goes to print.

No structural model is perfect. All have weaknesses and strengths. Kanowski (2001) compared three organisational structures: (i) a stand alone entity outside of the university system (the Victorian School of Forestry and the Forestry Training Centre at Rotorua are examples), (ii) a unitary academic and budgetary centre (the Faculty of Forestry at the University of Canterbury is an example) and (iii) a forestry programme within a larger multi-disciplinary entity (ANU, Melbourne, Southern Cross, University of Queensland and Lincoln University are examples). All structures can work well, but all are also vulnerable. It is unfortunate though if the word 'forestry' is eliminated from the title of the primary organisational structure.

Forestry has the disadvantage of being an expensive course to run (cost of field exercises, high staff to student ratios and low student numbers). Multidisciplinary collaboration can enhance educational quality but can also detract from it when used as an exercise to save money. Forestry often does not have a large voice in a university environment and there are several international examples of where previously strong

forestry programmes have been diluted through compromise to the extent that they have lost the respect of the profession and even have disappeared altogether. The corollary is that if Institutes of Forestry value professional forestry programmes then they have a vested interest in protecting them and accreditation of programmes is just one way of achieving this.

The most important variable driving organisational structures is money, which is determined by student numbers.

Student numbers

There is a general concern among forestry programmes in developed countries about falling student enrolments in forestry. There is a combination of probable reasons for this, some of which are universal but others of which are specific to the country or institution concerned. In order to address this it is necessary to revisit the reason why students choose forestry as a career, both in times past and today.

Why do students choose Forestry?

I have asked this question of students over many years and their answers have been simple, predictable and consistent. They enjoy nature and the wide outdoors and don't like the idea of working in an office. My experience though has shown a difference between New Zealand and Australian students. Australian students tend to choose forestry as a life style and New Zealand students as a career. Australian students tend to be more directed towards 'caring for the forests.' New Zealand students tend to be more pragmatic having been brought up in a relatively small economy in which forestry is relatively large, visible, aggressive and export -oriented. New Zealand students see forestry as a money-making business whereas no Australian student in my memory ever did forestry with the objective of making their fortune. My memory is that Australian students were more likely to choose biological and environmental subjects. By contrast, New Zealand School of Forestry students often choose business subjects as electives.

The two recent forestry programmes in Australia (Southern Cross University and University of Queensland) are parts of Schools of Environmental Science and Management and of Natural and Rural Systems Management respectively. By contrast the recent forestry programme in New Zealand (Lincoln University) is offered as a Commerce degree with a specialization in forestry. The favourite concurrent degree combination taken by New Zealand School of Forestry students is BForSc/B.Com. The forestry programmes at Melbourne and ANU are in Schools of Resource Management and Resource Environment and Society. By contrast, when the NZ School of Forestry is 'restructured' this year it will align itself with Engineering.

Are enrolments falling?

There is a general global trend towards falling

The Range of Forest Management

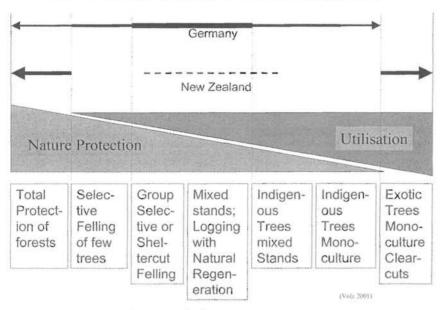


Fig. 1: Comparison between the forest management regimes in Germany and New Zealand as perceived by Volz (2001 unpublished)

enrolments in forestry. There are both universal and country-specific reasons for this. Burley (2001) summarises what he thinks are the causes in UK and most of these would be universal. There is the general impression that forestry is dominated by males who lack the intelligence to do more academically respectable courses and who have a penchant for cutting down trees in nasty even-aged plantations of exotic trees, and then only if they are lucky enough to get a job at all. This is an image problem that clearly needs to be addressed. However the situation in New Zealand is different because of the different nature of forestry in New Zealand. I therefore propose to speak specifically about the New Zealand situation. (Details of forestry at ANU and the

University of Melbourne are given in the full ANZIF Conference version of this paper).

The New Zealand situation

In New Zealand there is a demographic which shows that the number of school-leavers is temporarily reduced. In addition to this there is a swing towards trendy courses (e.g. computer science) and away from natural sciences in general and a trend away from the dirty end of natural sciences (agriculture and forestry) towards the high tech clean end (e.g. molecular biology). However, superimposed on all of this is the quite specific nature of forestry in New Zealand which is unlike that in any other country and certainly different to Australia.

When Karl Reinhard Volz came to the New Zealand School of Forestry to present a series of lectures on International Forest Policy he was greatly surprised by the

polarisation of New Zealand forestry compared to Germany and he captured this on a diagram (Figure 1). He considered that Germany had a continuum of forest management from complete protection on the left through to plantation monocultures of exotics on the right but with most activity near the middle. Most countries would identify more with the German model than the New Zealand model. The German model fits comfortably with the image of a professional forester who can manage forests right across this spectrum. Volz saw New Zealand forestry as being completely polarised with almost all native forest being 'protected' and virtually all production capacity being concentrated in plantations of

predominantly one species, and with nothing in between. Probably his diagram is too extreme but in general he is correct. This is further demonstrated in Figure 2 which shows that timber production from native forests is almost negligible in comparison. The polarisation is reinforced by the strong commercial plantation interests in New Zealand colluding with the environmental groups, on the basis of self-interest, to oppose management of native forests. Some would argue that the New Zealand model is the ideal example of environmental responsibility. Others would contest this and press strongly

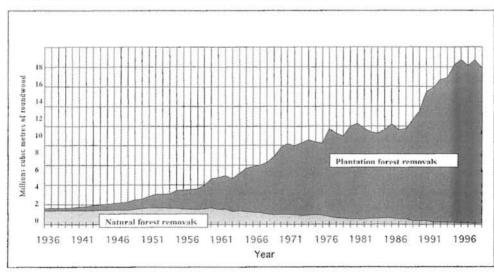


Fig. 2: Roundwood removals from New Zealand forests from 1936 to 2000 (data from various publications of the New Zealand Forest Service, the New Zealand Ministry of Forestry and the New Zealand Ministry of Agriculture and Forestry).

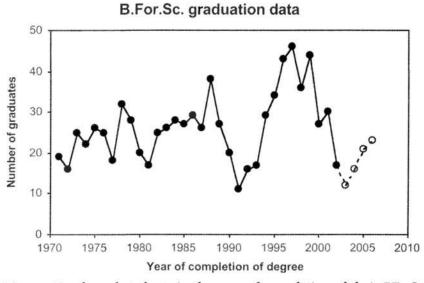


Fig. 3: Number of students in the year of completion of their BForSc science and engineering. degree at the New Zealand School of Forestry at the University of Canterbury. The dotted line represents anticipated numbers based on New Zealand (Figure 1) it is more difficult to current enrolments.

for a move in the direction of the German model. I am not here to provoke an argument. The situation though does have an impact on how forestry courses are taught in New Zealand, the nature of the curriculum and on the number and nature of students enrolling in forestry

Graduating numbers at the New Zealand School of Forestry are cyclic (Figure 3) and appear to follow a pattern of boom and bust that, perhaps, can be related to community perceptions of the health of the forestry industry in New Zealand. Forestry in New Zealand was in disarray in the mid 1980s with job losses and associated bad press. This coincided with the drop in completion numbers from 1988 to 1991. The rapid increase from 1991 to 1997 coincided with the spike in the price of radiata pine and the subsequent general feeling of euphoria about forestry in New Zealand. In retrospect this was an overreaction. The rapid decline

from these stellar levels from 1999 to 2002 coincided with the Asian crisis and 2003 to 2006 shows we are now in a recovery phase. The relationships may be coincidental but it is surprising how attuned New Zealand students are to the state of the industry. Also, during the period 1999 to 2002, the BForSc degree probably lost some students to other forestry programmes (see above) that have been developed within the School of Forestry or in collaboration with the School of Forestry and so these students have not been lost to forestry. Lincoln University has also graduated 60 BCom(For) students since 1994. Current research postgraduate numbers at the NZ School of Forestry (44 full time equivalents) are steady. Graduate employment is buoyant and commencing salaries exceed those for

Because of the polarisation of forestry in promote and justify the traditional concept of professional forestry (the horizontal path

in Figure 4). There is some feeling in New Zealand, probably shared by some at this conference, that forestry should concentrate exclusively on the production end and leave all the messy and controversial bits to others. They would argue that a broadly based forestry degree in New Zealand context should be the vertical path in Figure 4. Certainly New Zealand has a bright and promising future in value-added plantation forestry and, contrary to many other countries, plantation forestry is generally held in high regard and students enrol in forestry to be part of this enterprise. The core of our enrolment in the future will continue to come from students who seek a career in plantation forestry. know that some school leavers do not consider a traditional degree in forestry to be the appropriate degree for a career in which forests are managed for non-timber values. There has been a proliferation of other university

Marketing and trade			
Product development			
Secondary processing			
Primary processing			
Harvest and transport planning & logistics			
Intensively managed plantations of mainly radiate pine	Less intensively managed alternative plantation systems	Sustainable management of natural (non- plantation) forests for multiple uses including timber production	Sustainable management of forested landscapes for multiple uses not including timber production

Fig. 4: Vertical and horizontal pathways of integration in professional forestry education in New Zealand.

courses that are designed to attract these students and it is probable that we are losing students to these courses. It would be foolish to oppose this. Rather we should actively participate in these programmes to ensure that forestry is appropriately represented.

The New Zealand School of Forestry will continue to offer curricula, over a range of degrees and programmes, that serve both the horizontal and vertical paths in Figure 4. We certainly will not abandon the horizontal path. Personally I do not like the extreme nature of the New Zealand model (Figure 1) and would be happy to see more sustainable management of native forests for timber production, greater diversity of species in plantations and greater diversity in silvicultural systems. It is interesting to note though that the trend in many countries is towards the New Zealand model. In Australia for instance there is relentless pressure in all states to phase out timber production in native forests and to concentrate timber production in plantations.

Conclusion

In my opinion university based schools of forestry should promote learning rather than teaching, education rather than training, knowledge rather than information, questioning rather than accepting, participation rather than observation and the long-term interests of students rather than the short-term interests of employers. Forestry graduates have often done well in other

The Biggest Forestry Show in the Southern Hemisphere!

Three Day Equipment Exhibition — of logging and sawmilling equipment, trucks, trailers and industry services. Over 400 sites both indoor and outdoor — representing exhibitors from over 14 different countries. Special truck route.

Two Day Industry Conference — aimed at harvesting contractors, transport operators, sawmillers and forest growers. A practical conference discussing the latest equipment and technology for the industry. Special presentations on sawing young Eucalypt.

Two Day In-forest Equipment Demos — over 60 machines showing off the latest in harvesting, chipping and plantation establishment technology.

Field Trips — a range of tours to inspect forest operations (both hardwood and softwood), sawmills, processing plants and newly established plantations.

OTHER HIGHLIGHTS

Special One Day Seminar on 'Investing in the Forest Industries'
Farm Forestry Package — aimed at the "beginner" farm forester.

Big Social Program — including world championship woodchopping, Aussie barbecue, industry dinner and awards and country music concert.

For more information

Email: info@austimber2004.com Phone: +61 3 6248 5653
Website: www.austimber2004.com

areas of employment because of the management focus in their forestry degree. Long may this continue. Forestry programmes can be provided by a range of organizational structures. The key is that they meet professional criteria established by the Institute. The Institute has a responsibility here.

Acknowledgements

I thank Alan Brown, Peter McKelvey, Hugh Bigsby, Grant Wardell-Johnson and Bruce Manley for information and/or comment.

References

Anon. 1979: Dr Maxwell Ralph Jacobs, I.S.O. Australian Forestry 42:139-141.

Burley, J. 2001: Changing forestry education - a UK view. In 'Meeting of International University Education Leaders' University of British Columbia and FAO, Vancouver, BC, Canada, December 2001, pages 7-16.

Carron, L.T. 1985: "A History of Forestry in Australia". Australian National University Press, 355pp.

Kanowski, P. 2001: What is a Faculty of Forestry and do we need them? In 'Meeting of International University Education Leaders', University of British Columbia and FAO, Vancouver, BC, Canada, December 2001, pages 31-34.

McKelvey, P. 1991: Thomas Kirk in New Zealand forestry. *New Zealand Forestry* 35:16-22.

McKelvey, P. 1999: Earlier professional schools of forestry in New Zealand. *New Zealand Journal of For*estry 43:31-34.

Norton, D.A.; Allen, J.C. 1995: Professional forestryevolving issues in forest management. New Zealand School of Forestry University of Canterbury Paper No.23, 159pp.

NZFOA. 2002: New Zealand forest industry facts and figures 2002/2003. Jointly published by the New Zealand Forest Owners Association, the New Zealand Forest Industries Council and the New Zealand Ministry of Agriculture and Forestry

Poole, L. 1998: "Trees, timber and tranquillity". Mongiatti Publishing, Wellington, 144pp.

Sample, V.A.; Ringgold, P.C.; Block, N.E.; Giltmier, J.W. 1999: Forestry education: adapting to the changing demands on professionals. *Journal of Forestry* 97:4-11.

Sands, R. 2002: Forestería y Educación Forestal en Nueva Zelanda. Paper presented at the first Chilean Forest Science Congress, University of Chile, Santiago, October 2002, 10pp.

Waiariki Institute of Technology

New School of Forestry and Wood Processing

In April 2003 Waiariki Council decided to split the School of Forestry and Technology into three new entities; a School of Forestry and Wood Processing, a School of Engineering and Rural Studies, and a Commercial Sawmill. Dervck Shaw, Chair of Council, explained. "Waiariki now has a clear vision for each of the three entities. The new School of Forestry and Wood Processing will become the premier New Zealand centre for integrated vocational education and training in forestry and wood processing. The new School of Engineering and Rural Studies will become the lead regional centre for vocational education and training in automotive and mechanical engineering and rural studies. The Sawmill will be managed on a commercial basis to become a model for New Zealand sawmills. Strategic planning in the entities will now achieve those ends."

Waiariki's Council also recognised that the new School of Forestry and Wood Processing will need to review all of its delivery systems. There have been a number of staff changes since April. A new Head of School of Forestry and Wood Processing is yet to be appointed. Plans are underway to relocate FTC from Forest Research to new premises on the Waipa site for 2004. This new School Campus will be home to all our forest management and wood processing courses in the future. The campus will integrate delivery of practical forestry, forestry management, solid wood processing and eventually construction trades training. The "Radi Centre" - a new National Centre of Excellence in Learning for Wood Manufacturing will be a major part of this development. For more information on these initiatives please contact the CEO: reynold.macpherson@waiariki.ac.nz

National Diploma in Forestry (Forest Management)

Sixteen students completed the two and a half year programme in July 2003. Most have been absorbed into the workforce although good technical work opportunities are scarce in the current downturn.

We had a good intake into year one this year with a class size of 24 students currently. Seven of these are internationals from Fiji, China and India. The international market is growing and many of many are initially attracted to New Zealand to study English at our language school.

Recently Tim Thorpe and NZIF Council members hosted a barbeque lunch for our students and staff. This was enjoyed and successfully raised the profile of the NZIF. A number of students have since joined the Institute.

National Certificate in Forest Health Surveillance

The introductory course for the new cycle was run early in July. There are currently 12 industry people attending and the course cost is subsidised by Forest Industries Training. This is a post-graduate certificate

and the cycle will consist of 7 one week courses delivered over the next two and a half years. Topics include forest health and protection principles, insects and pathogens, aerial and ground surveillance, abiotic influences and urban forest health issues. These are will be delivered by a range of people including Forest Research staff. For more information on this course please contact mark.cleland@waiariki.ac.nz.

National Diplomas in Wood Manufacturing Level 5-6

Two Diplomas in Wood Manufacturing are being developed and will be offered by the Radi Centre in 2004. These are aimed at people with experience in wood manufacturing and who aspire to be industry leaders, in positions ranging from first line supervisors to more senior plant and operations managers. Some students may have already completed studies at a lower level in wood manufacturing while others will want to apply other technical or engineering training and their previous work experience to wood manufacture. For more information on these courses contact:

mark.stevenson@waiariki.ac.nz

Lincoln University

Field trip to Sarawak

Despite global events, the annual two-week field tour to Sarawak for final year Lincoln University forestry students went ahead during the Easter term break. Students had opportunities to learn about tropical forestry and wood processing, forestry and resource management issues in a developing country and use of wood in the tropics. In addition to the 'work' part of the trip, students also had an opportunity to learn about Asian food, customs and culture. Once again, the generous support of the Sarawak Timber Association in organising this tour is acknowledged.

Lincoln University students on their field trip to Sarawak.



Professional Masters degree

The first group of students in the Forestry Business specialisation of the Professional Masters degree at