

THE 2004 BANKS MEMORIAL LECTURE

New Zealand needs new plants

*Peter Cave*¹

The 2004 Banks Memorial Lecture was presented at the Hamilton Gardens as part of the RNZIH Annual Meeting in Hamilton on 30 October 2004.

The Banks Lecture commemorates Sir Joseph Banks who accompanied Captain James Cook on his first voyage of discovery to New Zealand in 1769. Banks was a great promoter of science in Britain in the late 18th and early 19th centuries. He later became President of the Royal Society, London for many years and controlled the Royal Botanic Gardens at Kew.

Banks was particularly interested in plants that could be used for practical purposes. He encouraged the introduction of such plants into other countries for possible commercial use, and he fostered the exchange of plants and animals then being made known by exploration between the Old World and the New Worlds.

It is, therefore, fitting that the 2004 Banks Memorial Lecture dealt with the role of introduced plants in New Zealand. In our agriculture, our horticulture, and our forestry, New Zealand is almost completely dependent on introduced plants. Ultimately, we depend on them for our livelihood. Yet it is fashionable for introduced plants to receive a bad press, often being portrayed as unwelcome aliens, inappropriate for our landscape.

The presenter was Peter Cave, well known grower, traveller and surfer. Peter Cave is a nurseryman from Cambridge who specialises in novel, cool-temperate plants, especially those from Asia. Peter is not a narrow-minded plant chauvinist. He believes that we should take advantage of the enormous diversity of plants available to us, and that we should choose to use the very best of plants irrespective of their country of origin.

In his lecture he discussed the need to introduce new plants to New Zealand. He relayed his own experiences in plant hunting, following in the footsteps of some of the great plant explorers, and finding the plants that should do well in this country. He then described possibly the hardest part of his work in this area: negotiating the many regulatory hurdles to the introduction of new plants.

In the good old days, in New Zealand, you could import absolutely anything. You could bring in any amount of soil and type of plant. The only limitations were your available finances, slow transport resulting in plant death (obviously initially everything came on ships), and lack of plastic to wrap plants. Wooden cases were originally used for the sea transport of plant material, and there is a

long history of this plant trade. But initially, as far as plants coming into New Zealand, anything went, and you could do whatever you liked.

In the early days, Douglas Cook at Eastwoodhill Arboretum brought many plants into New Zealand. He was able to do this because he had a good source of income: he sold off half of his property to finance planting the rest of it. Douglas

Cook was able to import a large range of plants, and like all of us, he also lost many through transport. In more recent times, many of the plants that I have brought in myself from overseas (when it was easier to bring material in) were actually plants that Douglas Cook had already imported, and then lost. So, there are plants that have repeatedly been imported into New Zealand.

¹ Cave's Tree Nursery, Pukeroro, RD3, Hamilton

When I began importing plants, particularly when I was at Massey and soon afterwards in the 1970s, the quarantine procedure involved checking a list of plants that were banned. Everything else you could import, so long as it was inspected and went through a quarantine procedure. So, if it was a plant, it usually had to be grown in quarantine for a period of time and inspected by the Ministry of Agriculture and Forestry (MAF) before release. During that time, I imported dozens of species every year, and considered it was my job as a horticulturist to bring in whatever I could.

Native plants have not been used in New Zealand in any significant way for a commercial return, so it has been necessary for New Zealanders to bring in all the plants they require from overseas. There have been a few exceptions, like flaxes (*Phormium tenax*), which until about the 1960s formed the basis of the flax fibre industry. Poroporo (*Solanum laciniatum* and *S. aviculare*) was used for birth control pill production for a time, sphagnum moss is being exported, and there have been a few other examples. More recently, New Zealand native plants have been exported as ornamentals, such as *Hebe* cultivars, but we cannot live off our native plants for food and forage. So, everything we need has had to come in from overseas.

In recent times, the Biosecurity Act of 1993 and the Hazardous Substances and Noxious Organisms Act of 1996 (HSNO) have controlled the entry of plants into New Zealand. I love this HSNO Act. The emotive words suggest that rather than bringing in a new plant, you are importing a "noxious

organism". You are pretty much doomed before you even start, aren't you?

Now, we have a list of all the plant species that are supposed to be already here, in theory at least. I am told by experts that this list names only 80% of the plants that are actually in New Zealand.

Everything that is not on that list we cannot bring in, unless we are prepared to pay huge quarantine fees and risk assessments. It is very difficult to correct this list, and there is a suspicion that you are trying to cheat and somehow hoodwink the system if you try. If you can get a plant onto the list it means you can import it again, which to me seems strange logic.

If you already have it in New Zealand, why do you want to import it again?

However, I heard recently of a case, from a forestry worker in Rotorua, where a species of eucalypt was in their plantings as a sample. Forest Research (formerly Forest Research Institute) discovered it had good potential. So, Forest Research decided to obtain it from other provenances in Australia, because the sample they had was not the best form. When they applied, the Environmental Risk Management Authority (ERMA) arrived to inspect the trees that were already there, and the gardener had actually cut them down - about a week or two before, I believe. Because that species was now no longer officially in New Zealand, Forest Research could not import it any more. So, a promising avenue of new material had effectively been shut down.

About five years ago, I applied to import a camellia species from

Australia and was informed, by fax from ERMA, that it would cost \$65,000. That would include their charge for a risk assessment of the new species. Talking to people who have actually used the system in the last six years since that piece of legislation came into effect, it would appear that there have been something like six plants officially introduced over that time. It usually costs around \$30,000 to actually get a new species into the country.

This is something I think is seriously wrong. New Zealand definitely needs to be able to bring in new plants to breed, so that we can keep up with other countries much more freely. But it's just far too expensive.

Another aspect that frustrates me is that some whole genera, such as the magnolias and camellias, are already well represented in New Zealand, with the many species and cultivars widely grown and not presenting any weed problems. Surely these could be exempt from the full quarantine procedure? It seems unlikely that a species new to New Zealand from these well known genera is suddenly going to become a huge risk to our environment. There is, I think, an unwillingness to consider these issues and apply discretion in the application of the ban - or what amounts to a ban - that we now have on entry of new plants. It is easier for people administering the system to have a complete embargo on new plants coming in, by and large, and to keep it that way. It makes it very safe; and their jobs are secure. We now seem to have a bureaucratic culture of safety, but I think this trend has gone too far. Without informed risks, there are none of the associated potential rewards.

Consider the plants that are commercial successes for New Zealand, such as *Pinus radiata*, kiwifruit, grapes, and asparagus. These are all plants producing major income streams for New Zealand. However, under the current regulations, if they were not already here, they would certainly all be denied entry into New Zealand because of their prolific seed production! So, where are we going to generate our income from for any new future crops?

There are some peculiar loopholes in the current legislation that allow large numbers of mature plants to be introduced, that is, of plants that are already here. They can come in, in large quantities, and some of these are actually posing quite a quarantine risk. At the moment, there are crops in the country worth around \$2 million that are being held in limbo while the government decides whether the virus that has been found in them was here before 1998. It's in all the horticultural trade press. Nobody wants to say, "Well it was, or it wasn't" because there are large amounts of money involved. The problem is called Badnavirus. It's quite strange that we are allowed to bring in large quantities of mature plants of species that are already here.

The best we can hope for, under current legislation, is to maintain

and exploit our existing genetic stocks. We may be able to breed new cultivars within the current genetic pool, but we cannot get new and potentially useful material in. We could attempt to produce new characters through inducing mutations by radiation treatment and mutagenic chemicals. However, it seems to me that plants that have been grown overseas and, "road-tested" for thousands of years as species in the wild have got to be a lot safer than plants that were developed three months ago by chemicals and radiation.

New Zealanders are particularly good at horticulture. We just seem to have a really good feel for it. We grow, breed, and market plants very well. It seems to me that it is one of New Zealand's strengths, and it is frustrating that we are denied access to new material for maintaining this lucrative tradition.

Each year, we get further behind, and Australia and other countries are gaining a commercial edge.

So we continually need new genetic material to stay competitive as a nation. We need to breed to improve current crops, and to develop new crops. New Zealand is slipping behind all the time, and the gap keeps getting wider each year with this restrictive legislation.

We need a legal and affordable method of entry for new species.

Since the Biosecurity Act of 1993, there have only been about six new species introduced legally. God knows how many species have been introduced illegally!

What can we do about it? Well, there's really only one answer: we can communicate. The government and the lawmakers represent us, and they are there to make legislative changes that benefit all of New Zealand. The horticultural industry has to let them know that the current import regulations are failing seriously. I encourage you to lobby your MPs now, because it is an election year next year. They need your vote. Let them know that there is something seriously wrong with the state of horticulture in New Zealand, and the fact that we cannot import new plants is gravely jeopardising our future.

Basically, that's my message. Talk about it. Contact people. Make a fuss. There is no point in railing at people in the Ministry of Agriculture and Fisheries, or ERMA, because they are there by Act of Parliament to do a job; to implement the law.

It is the law itself, and the implementation of it, that is the problem. We cannot get more plants into New Zealand, and New Zealand really does need more plants.