

Last Word

Derrick Rooney¹

A debate continued for several weeks during the late winter in the correspondence columns of *The Press*, Christchurch. This was over the role of native plants in the future development of parks, roadsides, and riverbanks by the Christchurch City Council. It raised some important questions about the intrinsic value of our native flora, and its future role and relevance in designing and landscaping our increasingly multi-cultural cities and other urban areas.

Unfortunately, these questions are ethical, political, and philosophical. If they had been horticultural ones they would have been easier to dispose of.

One of them is whether we should practise ecological apartheid in landscaping our public places. Advocates of this approach have been saying we should progressively replace exotic trees and shrubs in urban streets and parks with native ones, because the native flora is a unique expression of New Zealand's natural heritage. Its exclusive use would give our towns and cities a more distinctive regional flavour.

From a philosophical stance, this proposition is debatable, but defensible. As a horticulturist, on the other hand, I see it as a sort of Henry Ford edict. It's like telling an artist to paint with any colour, as long as it is black.

There are two problems here. One is that contemporary New Zealand is increasingly a multi-cultural society made up of diverse ethnic groups with similarly diverse needs and aspirations. The other problem is that compared with those of many other countries in the world, the native New Zealand flora is short on diversity. At about 1,800 species, give or take a hundred or two, the number of indigenous plants is relatively small. Introduced plants

currently contribute more diversity, as we shall see later.

The natural flora does include a relatively high percentage of what botanists call endemics: that is, species that do not occur in any other country. In that sense, part of our flora is unique, but given that New Zealand is an oceanic island a very long way from the nearest continent, and the process of evolution and adaptation has been going on for a very long time, this is no more than we should expect. High levels of species endemism are a common element in the floras of oceanic islands.

New Zealand has only about 230 native trees, plus 1,500-odd native shrubs, climbers, and non-woody plants, give or take a hundred or two still undescribed species. This is a fairly small number on the world scale. Biodiversity hot spots like Madagascar or the Central American rain forests might have more tree species in a few hectares than all of New Zealand's forests. I recall discussing this very subject more than 20 years ago with a botanist recently returned from South Africa, where in one relatively small reserve he saw more plant species than exist in the whole of New Zealand.

Many of our iconic plants attain higher levels of biodiversity elsewhere. Our forests include five species of southern beech, but there are another 30 in Australia, Papua New Guinea, French Polynesia and South America. The podocarps, of which New Zealanders are so proud, reach a higher level of diversity elsewhere in the Pacific and South America. The kauri, perhaps our best-known forest icon, has close relatives in Australia and the Pacific Islands. Eight species of our national floral icon, the kowhai, grow in this country, all with yellow flowers, but in its genus, *Sophora*, about 50 more

species grow elsewhere in the world, with a wider range of form and flower colour. The floristic icon of our northern coastline, the pohutukawa, belongs to the myrtle family which is common to many countries in both hemispheres. We have two species of pohutukawa, and maybe a dozen of its close relative, rata, but this level of diversity fades when compared with that of their close relatives, the Australian eucalypts, of which there are about 700 species.

Hebe is probably our most distinctive and bio-diverse woody genus, with about 100 recognised species in habitats ranging from the sea coast to the permanent snowline, plus an undefined number of undescribed species. But even hebe is not exclusive to New Zealand. Our three native fuchsias include the world's tallest and the world's smallest, but floristically they do not even begin to compete with the fuchsias of Central and South America. Perhaps the only genera in which New Zealand does out-diversify other countries are the buttercups (*Ranunculus*) and the forget-me-nots (*Myosotis*). With about 40 species New Zealand has some 10 per cent of the world's buttercups. We have more than half of the world's species of *Myosotis*. But these are not exactly street trees, are they?

Step up to family level, and the New Zealand flora suddenly looks much less diverse. While we have plenty of endemic species, there are few, if any, endemic families.

Significantly, indigenous plant species are now heavily outnumbered by naturalised plants, of which we have more than 2,600. The rapidity with which some of these introduced plants, such as gorse, broom, lupin, and nodding thistle, have colonised huge areas suggests either that there are numerous ecological niches for which no

¹ PO Box 43, Hororata, Canterbury

indigenous species are available, or that many indigenous plants are poor competitors doomed to disappear anyway.

Another argument raised in favour of native plants over introduced ones on the city streets and riverbanks is that because they are indigenous they must be best adapted to the New Zealand soils and climate. If this were true, why are native species heavily outnumbered by introduced ones? Anyone who works with native plants should quickly realise that native plant species in the wild often exist at the extreme limits of their climatic tolerance. Want evidence of this? On our own property, the native bush was extensively damaged last Christmas, and again in February, by unseasonable frosts. Six months earlier it had been smashed about by snow. In the next gully, radiata pine grew on, unharmed.

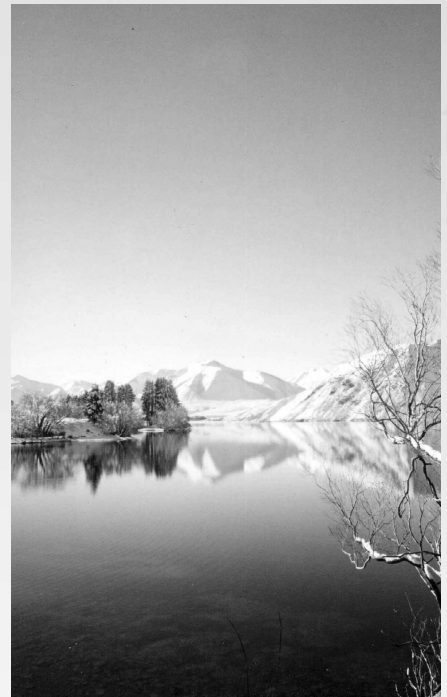
It is true that the New Zealand flora and fauna, along with the mountains, rivers, lakes, volcanoes, floods, gales, and earthquakes, are defining natural characters of this country. However, as noted earlier, New Zealand is no longer a complex of isolated, densely forested, uninhabited oceanic islands but a modern and increasingly cosmopolitan nation with diverse cultural origins. Our success in making this country's urban areas pleasant places to live in will depend on our ability to absorb and express this ethnic diversity in our landscapes. We as horticulturists, with the plant resources of the entire temperate world to call upon, should be able to do better than we are currently doing.

It is at best misguided to attempt to convert the whole of Christchurch (or any other urban area for that matter) into a mirror image of Riccarton Bush and the forest remnants of the Port Hills. There is no good aesthetic argument to support such a campaign. The clock cannot be turned back. The little bits of primeval survivalism are very important, scientifically and historically, but I guarantee that

springtime tourists leave Christchurch with stronger memories of Hagley Park's blossoming avenues of Yoshino cherries than of Riccarton Bush's kahikatea trees.

No sane person could deny that we have ethical and social obligations to preserve and restore examples of our primitive flora and fauna. But the so-called "English" trees and shrubs (most of which originated in Europe, America, the Himalaya, or China, which is home to some 60 per cent of the world's woody plants) that have been a dominant element in the parks, gardens, and streets of urban New Zealand since the middle of the 19th century also have social and aesthetic values that reflect the cultural heritage of many in the population. These too must be worthy of preservation.

Derrick Rooney is a life member of the Royal New Zealand Institute of Horticulture. He has written a booklet about native plants suitable for use in farm shelter and has had papers and articles printed in professional and popular journals. He has written a weekly column about plants and gardening in The Press, Christchurch, since 1979. Native plants on a property that he and his wife own in South Canterbury are protected by a Queen Elizabeth II National Trust covenant, but there are pine trees in the next gully.



Lake Heron in winter, complete with Corsican pines on the peninsula. Mt Sugerloaf on the right and Lagoon Peak in the background.