



Timaru Botanic Gardens have an outstanding record of propagating threatened native plants, with more than 100 in their collection.



Just one plant of Raoul Island's *Hebe breviflora* survived after goats had destroyed much vegetation on the island. Thanks to horticultural techniques and botanic gardens the future for this plant is more assured than it would have been.



Some commentators have proposed New Zealand become a "Noah's Ark" for endangered species from other countries. Already this is to an extent a reality, as with the cultivation of Britain's inland sand thrift at Timaru's gardens.

collections there would still be only one Kermadec Islands koromiko, and the species would be in dire straits.

Of course, not all plant species have horticultural appeal. Species such as kaka beak and the Chatham Island forget-me-not are not likely to be absent from horticultural collections – they are outstandingly attractive. In contrast, other critically rare plants such as *Hydatella inconspicua* (an obscure water plant) or *Lepidium kirkii* (a small herb of Central Otago salt pans) have little appeal to gardeners and gardens. Both are small and dull by comparison. Such plants do have to be brought into cultivation but perhaps as part of scientific collections held by experimental gardens or universities. *Hydatella* has actually been grown for some years in a high school biology department.

### Critically threatened species

In conserving critically threatened species three main choices are generally available. These are whether to immediately conserve the plant in the wild, possibly manipulating the wild habitat and its remnant populations, to concentrate on growing the plant away from its wild habitat and propagate increasing numbers of plant in gardens, or to use habitat restoration perhaps on an entirely new site.

The second and third choices require *ex situ* – generally botanic garden based – techniques, even when the ultimate aim is to put plants back into the wild.

Each approach has its own hazards. For example, taking seed or propagating material from an endangered species on a small island, growing large numbers of plants, and later replanting it into the wild sounds simple. But it is necessary to ensure that the plant material actually comes from the island, that it is not just from a single individual (unless that is all that exists), and that

in the process of propagating it diseases are not acquired in the nursery and transferred back to the original site. Thus there is need for extreme care in documenting plants, in garden hygiene and in selecting good sampling techniques.

The stumbling block uppermost in most people's minds will be finance and resources, particularly skilled staff. In one recent survey of botanic gardens the comment was made that "... local authorities are very much restricted by the limitations of their rate-derived budget ... and



Armstrong's hebe is one of the most endangered New Zealand plants in the wild. With the help of botanic gardens this plant is now being used to reinforce a wild population of the species.

most Council Parks Departments will plead workload". This needs to be overcome, perhaps by pooling resources, each botanic garden being modest in its conservation programme and being prepared to work co-operatively with other people and institutions with differing areas of expertise. As an example Botany Division, DSIR, now has an office at the Christchurch Botanic Gardens.

Although much remains to be done, there are very significant advances being made. The Nature Conservation Council has undertaken a survey of New Zealand threatened plants in cultivation – the first step towards a co-ordinated network of national collections of these plants. Collections of rare species are now maintained at several gardens with an ongoing policy of maintaining these in cultivation. In these collections importance is placed on growing plants of known origin. Threatened plants are being grown for long-term research at the experimental gardens of Botany Division, DSIR, Lincoln, and long term seed storage of some critically threatened species is under way.

### International level

At the international level an important step has been the formulation of a Botanic Gardens Conservation Strategy. This was launched at a conference on Botanic Gardens and the World Conservation Strategy, and its objects are encapsulated in the Declaration of Gran Canaria. One of the first steps has been the setting up of a Botanic Gardens Secretariat. Several New Zealand gardens are participating in this programme. As a country with a long tradition in horticulture and conservation, there are strong arguments for greater New Zealand support of these moves.

The Timaru Botanic Gardens under the direction of the late Graeme Paterson has