

A PLANT COLLECTIONS SCHEME FOR NEW ZEALAND

MICHAEL R. OATES

Royal New Zealand Institute of Horticulture (Inc.)

P. O. Box 12, Lincoln University

Canterbury

There are few people today who are not aware of the major environmental problems facing the world. The greenhouse effect, loss of the ozone layer, and acid rain have become the major issues of the 1980s. Of particular concern to us as horticulturists, however, is the loss of genetic diversity in the plant kingdom due to the destruction of tropical rainforests and other natural habitats. To give you an idea of the magnitude of the problem a quote from a report written by Dr. Peter Raven, Director of the Missouri Botanic Garden, St. Louis, Missouri, U.S.A. is given below:

“...40,000 species, or about a quarter of those found in the tropics, will probably persist in the South American tropics and Zaire beyond the middle of the next century. An additional 130,000 species, however, occur in the tropics but not in these regions—only in areas where the vegetation will be demolished during the next few decades. Liberally assuming that half these species may be weedy or persist in small pockets of vegetation, we come to the horrifying conclusion that more than 60,000 species of plants—fully a quarter of the world’s total diversity are at risk of extinction in the tropics and sub-tropics during our lives and those of our children.”(5)

Sobering figures indeed! However, the prospects for garden plants are little better. In Britain some 100 cultivars of *Crocasmia* have been recorded over the years, yet today only 23 are commercially available. *Paeonia*, even worse, with about 800 cultivars recorded yet only 152 commercially available. Of garden plants still in cultivation, many are at risk because of their limited availability. For instance, in the Hardy Plant Society’s 1988 edition of the Plant Finder, 27,000 plants are listed as being available in the trade. Of these only 350 are listed as widely available (from more than 30 nurseries nationwide.)

This paper considers briefly the response of the world’s horticultural and botanical community to this crisis and then outlines initiatives taken by the RNZIH and others to conserve plants by establishing a National Plant Collections Scheme.

BOTANIC GARDENS CONSERVATION SECRETARIAT (BGCS)

The BGCS was established on 1 January, 1987 and is located at the International Union for the Conservation of Nature and Natural

Resources (IUCN) Plant Conservation Office at Kew Gardens, Richmond, England. The main objectives of the BGCS are:

- To promote the implementation of a ‘‘Botanic Gardens Conservation Strategy’’.
- To monitor and coordinate *ex situ* collections of conservation-worthy plants.
- To develop a programme for liaison and training between gardens and arboreta, especially between gardens in developing and developed countries.
- To arrange a Botanic Gardens Conservation Congress every three years.

At the present time four New Zealand gardens and arboreta (Dunedin, Timaru, Eastwoodhill, and New Plymouth) are members of the BGCS. Membership links these gardens into a worldwide network of over 150 gardens, and enables them to implement plant conservation strategies within a global framework. They will also have access to a database on the cultivation and propagation of threatened plants currently being developed.

NATIONAL COUNCIL FOR THE CONSERVATION OF PLANTS AND GARDENS (NCCPG)

The NCCPG is an independent charity based at the Royal Horticultural Society’s Gardens at Wisley, England. It was established in 1979 as a result of a conference on garden plant conservation organised by the Royal Horticultural Society.

The objectives of the NCCPG are concerned with the conservation of species, hybrids, and cultivars growing in British and Irish gardens. The work of the NCCPG covers many areas, and includes the establishment of National Collections. A National Collection aims to be a definitive collection of the species, hybrids, and cultivars within a particular genus or part of a genus. The reasons for establishing National Collections are threefold:

- To retain plants in cultivation regardless of their demand in the trade.
- To make it possible for keen gardeners to obtain plants that are otherwise unavailable. This may involve the collection holder cooperating with a nursery to make plants available to gardeners.
- For research use by horticulturists and botanists. For this to occur the collections must be well documented and comprehensive. Collections also assist in the correct naming of plants (especially cultivars).

There are currently about 450 national collections documented by the NCCPG and the number is still growing. Collections are held by botanic gardens, The National Trust, horticultural colleges, local authorities, nurseries, private individuals, and NCCPG member

groups. They cover a wide range of genera from *Narcissus* with 2000 taxa down to *Zelkova* with only six.

Collection holders must have a suitable level of knowledge on the genera they hold and agree to maintain the collection to an acceptable standard. The expense of maintaining a collection is borne by the collection holder and not the NCCPG. The NCCPG simply inspects and approves the collection initially and liaises regularly with collection holders from then on. The success of the scheme has been in its voluntary nature and resulting low cost structure.

The NCCPG also cooperates with other organisations such as the IUCN and recently began working through IUCN's rare and threatened plant lists to see how many of these plants were growing in British and Irish gardens. A search of the New Zealand list revealed that 27% (35 taxa) were in cultivation. Out of these, 15 plants considered garden worthy and hardy in parts of Britain and Ireland were chosen (Appendix A). Encouragement will be given to propagate these plants and make them more available to gardeners.

ORNAMENTAL PLANT COLLECTIONS ASSOCIATION (OPCA)

A scheme based on the NCCPG recently began operating in Victoria, Australia. The OPCA aims to maintain and increase the diversity of garden plants by registering reference collections of related plant groups. Of the many objectives, two of the most important are:

- To encourage and organise the reintroduction of ornamental plants lost from horticulture in Victoria and include them in plant collections.
- To facilitate the supply of propagating material from plants in reference collections to nurserymen, institutions, and other interested parties.

The association already has a part-time project officer working from the Royal Botanic Garden, Melbourne, who is helping to set up trial collections of ornamental plants. Currently there are 13 collections with three more close to establishment. Like the NCCPG they are developing a database which will be used by horticulturists, landscapers, and so on who wish to find information on particular species or cultivars.

The scheme is currently operating only in Victoria (although one collection is just over the New South Wales border), but it is hoped that similar schemes will shortly be established in other states.

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In New Zealand, there is an urgent need to co-ordinate our plant conservation efforts. While there are institutions and individuals

working very effectively in this area, there is no co-ordinated strategy to ensure that duplication and poor coverage are avoided, with expertise and resources available where they are needed. A Plant Collections Scheme needs to be established to cover collections of garden plants as well as threatened New Zealand plants. National standards for the development and maintenance of these collections will be developed along with a database of all collections and their contents.

The NCCPG concept is very exciting because of its capacity to include documented collections of amateur plant collectors and growers, within a network that accommodates public and private organisations of a professional nature. We envisage any scheme established in New Zealand would run along similar lines.

Many will, no doubt, say that this proposal is not new and, of course, you would be right. David Given, the late Graeme Paterson, Peter Heenan, and others, advocated, in different ways, the coordination of plant collections albeit for rare and endangered species (1, 2, 3, 4). Their efforts were largely unsuccessful. So what will ensure this scheme gets off the ground where others have failed?

- The commitment of a national organisation such as the Royal New Zealand Institute of Horticulture (RNZIH) and other organisations and individuals with an interest in plant conservation.
- Successful schemes operating overseas which can be used as the basis for a New Zealand scheme.
- Timing: As mentioned before, there is now genuine concern over global environmental problems. Such a scheme can be seen to address some of these problems and will gain wide-ranging support.

As a first step, the RNZIH convened a workshop in Hamilton, New Zealand on 13 October, 1989, to investigate the establishment of a Plant Collections Scheme. The keynote speaker at the workshop was Tony Lowe, General Secretary of the NCCPG. The workshop provided an opportunity for those with an interest and/or involvement in plant conservation to hear about the development of the NCCPG and help develop an action plan for a New Zealand scheme.

The concept is exciting, but we are realistic enough to know that for such a scheme to succeed, a long term commitment is needed from the horticultural industry and the people working in it. The RNZIH has made its commitment. I hope others in New Zealand will do the same.

APPENDIX A

The fifteen New Zealand plants that were selected are:

Celmisia haastii, var. *tomentosa*, *C. hookeri*, *Chordospartium stevensonii*, *Cotula rotundata*, *Grammitis rigida*, *Hebe gibbsii*, *H. insularis*, *H. raoulii* var. *maccaskilii*, *Myoporum laetum* var. *decumbens*, *Notospartium carmichaeliae*, *N. glabrescens*, *Pittosporum dallii*, *Pratia physaloides*, *Solanum aviculare* var. *latifolium*, *Tecomnanthe speciosa*.

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