

# Growing New Zealand Alpines

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Alpine and rock gardening in New Zealand seems, to this writer, and other enthusiasts who have established such gardens, to have received much less attention in horticultural circles than this particular form of gardening undoubtedly deserves.

Therefore before moving to the specifics of the cultivation of our indigenous alpine flora, it might be helpful for aspiring alpine gardeners if we set out a number of the advantages of this most satisfying of all garden pursuits.

The contemporary trends towards smaller urban properties. For those who wish to utilize the limited space available to the best advantage, an alpine garden ensures that "the greatest number of choice and interesting plants can be grown in a comparatively small space"<sup>1</sup>.

Many larger properties with banks or slopes at present covered with ugly and undesirable weeds, or with a steep lawn difficult to maintain, can be converted to an attractive rock garden. In this position it is possible to grow not only some of our choice alpines, but also a range of many attractive native plants such as flaxes (*Phormium spp*) *Astelia spp.* and a wide range of small shrubs like hebes, *Leptospermum* (manuka) clones, and various unique NZ divaricates.

The hilly or rolling landscapes of many of our urban areas are ideal for the creation of truly outstanding alpine gardens.

I can vouch for the fact that once established, the management and maintenance of an alpine or rock garden is less laborious and time consuming than a conventional garden.

In well-designed and constructed alpine gardens, plants impossible to grow in ordinary garden conditions can often be successfully cultivated.

The design, construction and maintenance of such a garden provides for those seeking some satisfaction outside the daily routine, "*a most beneficial blend of mental and physical activity.*"<sup>2</sup>

In 1999, the conference New Zealand plants and their story" celebrated the contribution made by Dr Leonard Cockayne to the understanding of our incomparable indigenous flora. It is therefore appropriate that when considering what plants to cultivate in our new alpine garden some consideration should be given to the place of native alpines in the enterprise. The following words of Cockayne himself may (as in my own situation) prove decisive in the choice of plants.

*"Apart altogether from that beauty of flower, or of form, which entitles the indigenous plants to occupy a foremost place in the gardens of this country, it must ever be remembered that they are peculiarly a New Zealand production .. they are part of ourselves — they are our very own!" and again "in our gardens, of all the trees or shrubs or herbs which we cherish, none can ever rank quite as high as those which slowly took their shape on New Zealand soil in the far distant past"*<sup>3</sup>

There have been periods, when the value of our native plants has been either grossly undervalued or worthy of serious consideration as desirable garden subjects. It is also a fact (not alas confined to plants alone!) that our indigenous flora has been highly valued overseas, but at home almost totally neglected. This applies particularly to our alpine plants. Cockayne again "*Our flora is famous the world over*"<sup>4</sup>. Prophetic words indeed, written as they were in 1923! For while there are many outstanding collections of New Zealand alpines grown in their country of origin, there is a suspicion that many of the finest examples of our mountain flora are to be found growing in northern hemisphere alpine gardens.

Cockayne's description of our alpine flora as ... "*most precious of all - which dwell near the perpetual snows*" has been an inspiration and a point of origin, not only for many alpine gardeners in this country, but has been a major influence on the work of many ecologists and botanists. The late A.P. (Tony) Druce, that incomparable New Zealand field botanist, freely acknowledged his debt to Cockayne.

For those therefore who have now decided to become a convert to this branch of gardening, of which a renowned horticulturist of the past wrote "*- there is no branch more fascinating than the cultivation of alpine plants, and the management of rock gardens*"<sup>5</sup> it is important to realize that certain principles must be applied, and a number of myths be dispelled if one is to successfully cultivate alpine plants.

Firstly, let us establish whether in fact these plants are difficult to grow. I think it can be agreed that for far too long, gardeners have accepted as a fact that most of the indigenous flora comes into the "difficult" category. This is a myth. Cockayne himself wrote, "... it must not be thought that the majority are not amenable to cultivation. Quite the contrary is the case by far the greater number yield to the gardeners skill."<sup>6</sup> WB. Brockie, one time Director of Christchurch Botanic Gardens and later Curator, Otari Native Plant Museum confirmed this view "*Nearly all of our mountain plants*

can be successfully grown in a rock garden .."7. I feel that some contemporary experts have tended to overuse "easy" in describing the cultivation of certain indigenous alpinists. Perhaps this is merely a reaction to the long held, contrary viewpoint.

Another myth that needs to be dispelled is that these plants can be successfully grown by merely placing some rocks or large stones in a raised bed of standard garden soil. Much more needs to be done and learned, before one can claim to have established a viable alpine collection. Brockie very succinctly summed up what is required in this respect: "*....one of the healthiest of pursuits, and one calling upon the individual for physical and mental resourcefulness*" .8

The first step to successfully establishing a truly representative NZ alpine collection is to construct ones garden for the benefit of the plants themselves. It follows from *this* that some knowledge of the plants' natural habitats is absolutely essential. It will then soon become apparent that a diversity of environments or "micro-climates" will need to be created to satisfy the needs of a variety of plants from different "alpine" habitats. Rocks strategically placed along with tussock grasses, sedges, small shrubs, and the application of a suitable mulch will help greatly the establishment of the new garden.

Secondly, all alpine plants must have perfect drainage. More failures are attributable to poor drainage than to any other factor in the garden environment.

The garden site (which will be discussed in more detail presently) should be placed where there is sufficient airflow. Especially in the warmer, low altitude, humid areas of the country a "cool period" (shady for part of the day with a good airflow) must be provided, otherwise the plants ill adapted to such environments will die from heat exhaustion.

The site itself should if possible be part of the landscape, the more natural the better. Banks or slopes which are a part of most urban landscapes in New Zealand, lend themselves particularly well to our purpose. The aspect should be open and sunny (but see above) and in the warmer areas a southerly aspect is almost an essential.

The garden should not be constructed near large trees whose roots will inevitably rob your alpinists of both moisture and nutrients. The overhead drip from trees during wet weather is a major cause of rot to alpine plants. Hedges are another menace to the alpine garden as they too rob the soil of the same essentials.

It will be necessary to ensure an abundant and constant supply of water. Despite the remarks above concerning "airflow", care must be taken to provide shelter (see also above) from the dehydrating effects of strong prevailing winds, which if salt laden, can cause fatal damage. It will of course be necessary to eliminate from the site any persistent or noxious weeds

such as onion weed, oxalis, clover, tradescantia etc.

At this point it is necessary to state that a flat site can be converted into an attractive and viable alpine garden. Rock work here is of great importance, but making such a site part of the landscape is difficult. The bed must be raised using treated timber or old railway sleepers. Here "perfect drainage" is much harder to achieve than on a slope or bank.

For those who inevitably will wish to attempt to grow the "difficult" members of the alpine flora, and it has to be admitted, a minority of our plants fall within that category, especially those classified as "choice", it might be helpful to mention that the construction of a moraine could give the best, perhaps the only chance of success.

In nature a moraine is rubble left at the foot of a glacier. It is composed largely of glacier silt or "rock flour", rocks, shingle and gravel of various grades. A constant flow of water trickles or sometimes streams through this material. Such a feature can be constructed in the garden, either at the foot of the alpine garden, in a gully or as a special water feature.

It need not be elaborate, but the supply of water must never dry up. The alpinists planted thereon succeed because their roots are fed by a constant supply of flowing, not still water. The writer is able to supply detailed information on request.

It is of the utmost importance in constructing the alpine garden that the soil or medium in which the plants are to grow is a mix of those ingredients which will not only keep the plants alive and growing, but will produce in due course, the reward of flowers and a supply of seed. Over a long period I have proved that the following soil "recipe" will guarantee the desired result.

Brockie called this mixture his "scree material" and the proportions of ingredients should remain constant and notwithstanding the size of the garden, the depth of the mixture in which the plants are to grow should not be less than 30 cm.

"To three barrowloads of — quarry waste, add three barrowloads of quarter-inch road metal and two barrowloads of sieved leafmould. If leafmould is not available, use the same quantity of fibrous loam —. These ingredients should be thoroughly mixed together"<sup>9</sup>. As fibrous loam may not readily be available, a satisfactory (substitute would be a good quality peaty compost). To this mix may now be added with some caution, either a proven slow-release fertilizer, boneflour or dolomite lime in combination or as a single additive.

After construction, the garden should be given a settling down period of some weeks. This allows the soil mixture to consolidate, with no damage to plant root systems when the alpinists are set in place, and also allows quick growing weeds to emerge and be re-

moved before planting begins.

Plant out the alpiners in the period late autumn to early spring when they are just beginning new growth. Losses will occur if the plants are unable to establish a vigorous root system before dry and warm weather arrives.

All alpine plants must have a cool root run to survive, and as not all the plants can be placed close to a large rock under which their roots will penetrate and find the required cool dampness they need, another method must be found to provide a substitute.

By far the best solution is to cover the entire area of the new garden with a mulch consisting of small rock fragments and stones of various sizes combined with a selection of road metal laid to a depth of about 5 cm. I collect so called "quarry waste" from a local quarry and have found that this material as well as looking "natural", gives really outstanding results.

I find maintenance of the alpine garden far less onerous than is the case with border or perennial beds. Once the scree has settled, small weeds appear from time to time, but are easily removed. An annual top dressing of the alpine garden is absolutely necessary, and is best carried out in the autumn. I use bone flour mixed with heavy sand, but success has also resulted from using leaf mould (if you are fortunate to have it) or a good organic compost in place of the bone flour.

For the more difficult or choice plants, only sand or gravel mixed with a little good soil should be used. Do not heavily top dress; a covering annually of about 1-2 cm is adequate. Do not apply artificial manure of any kind as this will result in unnatural coarse growth and more likelihood of disease and insect attack.

I believe it appropriate to conclude this article by quoting some words of Cockayne himself, and although these words were penned as long ago as 1923 they are just as relevant today. All those wishing to establish a garden for alpine plants should heed them.

*"Even in New Zealand itself, strange as it may appear, there is no place where every indigenous plant can be cultivated. Certain localities specially favour alpiners in others these grow either not at all, or with the utmost difficulty"*<sup>10</sup>

There are of course those gardeners who will still wish to grow alpiners despite the unfavourable environment in which they are to be grown. These people are the real enthusiasts of the alpine gardening world, and with the application of some of the principles outlined in this article, some limited success may well indeed be achieved, but as Cockayne put it *'the difficult will always remain the business of the enthusiast'*.<sup>11</sup>

In my own case, many have been the failures and disappointments encountered on the way to establishing a viable collection of New Zealand alpine plants, but great indeed is the satisfaction, when one at last achieves even a modest success. I do not know of any other branch of horticulture where ones endeavours are better rewarded.

## References

- 1 David Tannock FRHS 'Rock Gardening in New Zealand' Whitcombe and Tombs Limited 1924 Introduction p.5
  - 2 W.B. Brockie NDH (NZ) New Zealand Alpiners in Field and Garden The Caxton Press, 1945 - Introduction
  - 3 Leonard Cockayne. PhD FLS FNZ Inst FRS The Cultivation of New Zealand Plants, Whitcombe and Tombs Ltd, 1923 p.8.
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  - 5 David Tannock FRHS "Rock Gardening in New Zealand" Whitcombe and Tombs Limited, 1924, Introduction p.5.
  - 6 Leonard Cockayne. PhD FLS FNZ Inst FRS The Cultivation of New Zealand Plants Whitcombe and Tombs Ltd, 1923, p.7.
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