# HIGH ALTITUDE TASMANIAN PLANTS WITH HORTICULTURAL POTENTIAL

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The State of Tasmania lies in the equivalent latitudes of northern Portugal and northwest Spain. The climate of the lowland areas, by British standards, is in fact very mild and pleasant with few extremes of temperature.

Tasmania is a small island of slightly more than 64,000 square kilometres (roughly the size of Ireland), lying in the path of moisture laden westerly winds. On reaching the west coast these are forced up by the mountains (1200 to 1600m), thus depositing much of their moisture. There is a marked rainfall gradient from over 4000mm in the mountains of the west to 560mm on the east coast. Much of the landscape is dominated by rugged mountains and even today many areas have not been fully explored.

Altitude has a great influence on temperatures, with some coastal regions experiencing only light frosts. However above 1000m frost can be experienced at any time of the year and snow lies for long periods in the winter months. The vegetation of these high and cold regions is restricted to shrubs and low growing species that can survive under severe conditions. Soils at these altitudes range from shallow, heavily leached podzols to deep, wet blanket bogs, and all are invariably low in nutrients and acid in reaction.

The term alpine and sub-alpine is often applied to these regions but they are in effect more like the wet western hills of the British Isles.

At the present time about 2000 species of flowering plants are known to occur in Tasmania, either native to the State or as naturalised introductions. More than 200 species are endemic. Some Tasmanian native plants have been introduced into horticulture within the State and a few have even reached the British Isles. However most of the highland plants are unknown to the gardening public even in Tasmania, where there has been an upsurge of interest in the growing of native plants in the last two decades.

The principal reasons for this are: *all* Tasmanian gardens are at low altitudes thus are warmer than the mountains and more prone to drying out in the summer. Until recently exotic plants were more popular and their conditions of culture better known; most of the highland plants do not grow well in rich soils and applied nutrients (particularly phosphorus) can be lethal; very fresh seed is needed for propagation. Some species require special techniques for vegetative propagation. Nevertheless I am convinced that many Tasmanian plants offer exciting possibilities for introduction into

cool temperate gardening. Indeed some of the low altitude species are probably ideally suited to the conservatory or the cool greenhouse.

I wish to consider a few of these Tasmanian high altitude species. The choice of plants is by no means comprehensive and is essentially a reflection of my own interests. Those who wish to gain a fuller understanding of this unique flora I would recommend that they refer to Cameron (1984) and Corbett (1984).

Tasmania has 11 conifers, 8 of which are endemic. The most well known are the *Athrotaxis* species, with *A. cupressoides,* ('pencil pine') being found commonly on the banks of highland streams and lake shores. Not so well known are the prostrate conifers, represented here by *Diselma archeri* and *Microcachrys tetragona*. Both of these species are common on the highest peaks, often in very exposed situations. The latter is most striking when the large red fruits appear on the female plant in summer, hence the common name, strawberry pine.

Ground-hugging plants are common on the exposed ridges where the peaty soil is usually shallow and dries out quickly even after heavy rain. *Pernettya tasmanica,* which is already fairly well known in the British Isles, is often found growing alongside *Epacris serpyllifolia, a species which forms carpets of white during the* summer months. Among the daisy-like white flowering plants in this situation, the most common are *Helichrysum milliganii,* with its large, papery inflorescences, and *Olearia ledifolia,* with its showy, solitary flowers.

*Geum talbotianum,* with its large single white flowers and ground hugging leaves, is restricted to a few wet mountains of the southwest. Also a typical inhabitant of these high exposed moors is *Isophysis tasmanica,* a member of the Iris family and endemic to Tasmania. The flowers are up to 8cm across and, although mostly a dark, purple-red, occasionally pale yellow forms are found.

On slightly wetter sites the Australian gentian, *Gentianella diemensis* is often found growing alongside *Anemone crassifolia,* both producing their prominent white flowers during the height of summer. One of the most elegant of Tasmanian plants is the Christmas bells, *Blandfordia punicea*. This spectacular member of the lily family occurs in wet heaths, on moors, and hillsides throughout the high rainfall area and its robust orange-red blooms are very showy.

Also endemic and equally striking is the mountain rocket, *Bellendena montana*. It is a small shrub growing to 40cm and is covered with creamy white flowers in summer and, as autumn approaches, these are replaced by spikes of spectacular, red coloured seed capsules which last well into winter. Although difficult to grow from seed it has proved suprisingly easy to propagate from cuttings.

Space does not permit an account of all the magnificent shrubs that are found in the Tasmanian highlands but here are some of my favourites. Members of the genus *Cyathodes* have small white-bell flowers but their main virtue is the profusion of colourful, pinkish-red fruit which remain on the plant for many months. *C. straminea* is common on the highest moors. There are 10 species in the genus, all of which exhibit horticultural potential, and nine are endemic to the island.

*Leucopogon collinus* (bearded heath), *Lissanthe montana*, and *Phebalium montanum*, are all found throughout the high altitude area. Usually they are small shrubs growing to about 50cm, but in windy exposed situations they also become completely ground hugging.

*Boronia citriodora* (lemon-scented boronia) has very aromatic foliage and the pale pink flowers persist for a long time. It grows alongside *Orites milligani* which is also found on the very highest mountains. This latter shrub has holly-like leaves and creamy-white flowers in terminal spikes.

On rocky exposed ridges, *Coprosma moorei*, with its persistent bright blue fruits, is common amongst the boulders. On these same ridges *Dracophyllum milliganii* is a very small shrub to 50cm in height but in deep sheltered gullies it can reach 4m and produces a huge inflorescence.

In a similar fashion *Eucalyptus vernicosa* (varnished gum) is variable in height depending upon its landscape location.

In the flatter areas bordering swamps or near mountain summits where snow lies for several months the cushion plants are to be found. It is here that *Abrotanella forsteroides, Chionhebe ciliolata, Donatia novae-zelandiae, Dracophyllum minimum, Mitrasacme archeri* and *Pterygopappus lawrencii* form extensive colonies. These intriguing plants have enormous horticultural potential not only for their unusual form and foliage, but also for their brilliant floral display. There has been some success in introducing them to cultivation but only where the growing conditions simulate their natural environment. While propagation from seed is possible, all can be readily established by cuttings or division. They all clearly have potential for the wet alpine or bog garden and are worth trying out as container plants.

No discussion of Tasmanian plants would be complete without mentioning *Telopea truncata* (Tasmanian waratah). Not only does it have a long flowering period but also its foliage is attractive at all times of the year. There are I believe some very fine specimens to be found in southwest Ireland and this would encourage me to look at plants from the highest elevations in Tasmania to find greater adaptability to even cooler conditions.

Finally I wish to introduce you to two species that illustrate the principle of selecting the most suitable ecotype. *Banksia marginata*

(Tasmanian honeysuckle) and *Melalouca squamea* are both found at sea level in the State and introductions from that source would be most unlikely to survive outdoors in the British Isles. However, *Banksia* can grow at 1100m in an area that is exposed to very cold weather and *Melaleuca* can be found at 1350m on the edge of a highland bog. I would be very surprised if either of these ecotypes had ever been introduced into cool temperate gardens and, without doubt, this is where the source of increased cold hardiness lies.

## REFERENCES

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# THE FLOOD OF AMERICAN HYBRID RHODODENDRONS: AN EVALUATION

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Rhododendron hybridising started in Britain about 1800 when some of the European and North American species were first crossed. Important breakthroughs occurred with the introduction of red flowers from *R. arboreum* and the first group of what is known as the hardy hybrids were raised by the great Victorian nursery firms such as Waterers at Bagshot and Knaphill, and at Cunninghams nursery in Edinburgh.

Among the best known hybrids of this period, are 'Cunningham's White', 'Gomer Waterer', 'Christmas Cheer', 'Purple Splendour', and 'Cynthia'. The next phase was marked by the introduction of more Himalayan species such as the enormous flowered *R. griffithianum* and later, the yellow species *R. campylocarpum* and *R. wardii*. In German and Dutch nurseries, breeding was being carried out from 1890 until World War II, with the Dutch hybrids such as 'Britannia', 'Betty Wormald' and 'Kluis Sensation' becoming popular wherever rhododendrons were grown.

The Edwardian and Georgian eras in Britain saw the hybridising mantle being taken up by the aristocracy and gentry. Lord Aberconway, Lionel de Rothschild and several others directed armies of gardeners raising thousands of seedlings made from crossing the new species as they were introduced by Forrest, Kingdon-Ward, and others. Among the hundreds of worthless named hybrids many important breakthroughs were found and this