From Cangshan to cultivation – Rhododendron collecting in China and establishment of plants at the Dunedin Botanic Garden

Doug Thomson[1]

It is now nearly ten years since I returned from an autumn visit to China in 1996. Based in Shanghai Botanic Garden as a sister city exchange visitor, the broad purpose of my visit was to help foster the existing relationship of our two cities by establishing contacts and friendships over a period of four months, by working, studying the Chinese language and collecting seed. It was with seed collecting in mind that we chose the months between August and November as most suitable.

I had many remarkable and interesting experiences, but none more memorable than the seed-collecting trip I made with the assistance of Shanghai and Kunming botanic gardens' staff, to Mt. Cangshan near Dali in West Yunnan. It was here that my time in China assumed its key purpose

Seed collecting in the mist on Mt Cangshan.
Image courtesy of Dunedin Botanic Garden

giving me the opportunity to collect wild seed for cultivation in the Dunedin Botanic Garden.

Amongst the seed collected were 13 species of *Rhododendron*. One of the invaluable aspects of being able to collect the seed personally was the opportunity to observe their natural growing conditions. The text book requirements of moisture retentive, free draining, acid soil were profiled clearly by all but one of the thirteen species which grew in a relatively thin humus layer over solid or broken gravelly rock in mixed scrub and pine forest. The exception was *Rhododendron neriiflorum* growing in deep loam in pine forest with bamboo understory.

Renovation in one area of the Rhododendron Dell and development of another allowed us to create space for the first seedlings vigorous enough to be planted out in the Dunedin Botanic Garden.

These included *R. decorum, R. edgeworthii, R. heliolepis, R. maddenii, R. racemosum, R. rubiginosum, R. scabrifolium, R. trichocladum* and *R. virgatum*. Some of these were quick to flower with some specimens of *R. edgeworthii, R. racemosum* and *R. scabrifolium* producing trusses within the first year whilst still in RX 90s (90mm pots).

Rhododendron decorum is renowned for its vigour but it was still gratifying to watch it produce up to 30cm of new growth which on one specimen was a startling 2cm in diameter, thrusting up from a PB12. It was even more rewarding to see the flowers open. Accustomed to *R. decorum* in its guise as a white flowered species, it was delightful to discover seedling variability offering white through to exquisite pale rose, flushed yellow in the centre, appearing through November and December. *R. decorum* is known also for its tolerance of hostile conditions and

Doug Thomson at Mt Cangshan with *Rhododendron taliense* in the background.
Image courtesy of Dunedin Botanic Garden

Rhododendron taliense gives way to *R. fastigiatum* near the summit of Mt Cangshan.
Image courtesy of Dunedin Botanic Garden

with seed collected from plants growing in pine litter on a rocky bank, with overhead pine shade, the resulting seedlings are doing well on a shaded bank under a *Quercus robur* canopy.

The greatest satisfaction of the seed-collecting trip was discovering a straggly specimen of *R. edgeworthii* growing amongst scrub on the edge of a moist shady rock face. With elliptic to ovate leaves, so far averaging 12cm long and 5.5cm wide, but with some up to 15cm by 6cm, the young plants now growing in Dunedin have more than lived up to the promise of the parent plant. They are a beautiful dark green with the current year's growth retaining vestigial traces of white tomentum along the midrib. The indumentum varies from orangey-tan to light fawn and persists on the stems in darkening stages of maturity along three years' growth. They exhibit a strong apical dominance, with usually one main stem and one or two laterals. At the base however, many also have a cluster of young growth that can be encouraged into vigour by cutting out the dominant stem. The flowers have the species' typical delicate beauty of mainly white flowers, yellow at the centre, with irregular splashes of light pink spreading towards the margins of two or three lobes.

R. heliolepis have yet to produce flowers, but have grown into 40cm

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plants of bushy habit, sending out red-brown shoots in the current year's growth. The scaly foliage is tinged bronze as it emerges, with the bronzing lingering around the apical margins on maturity. The leaves, typical of the Heliolepida Subsection are pungently aromatic when crushed.

R. maddenii takes the prize for longest new shoots, with up to 40cm now quite common from this year's growth. Extending down from each leaf petiole on the current growth there is an alternating pattern of yellow-green and red-brown creating an attractive striped effect. The foliage is characteristically dark green, scaly, very glossy and glaucous underneath and like *R. heliolepis* is doing well in a sunny open site with considerable exposure. As growth is the apparent priority, flowering specimens have been few. Those flowers that have appeared are predominantly white, lightly flushed pink on the outside with that beautiful lustrous texture we associate with many of the Maddenia Subsection.

R. racemosum specimens grown from my collection on Mt Cangshan are at the pale end of the colour range for that species, and compared to a 1992 accession collected on the Zhongdian Plateau (in north-west Yunnan) by Alan Matchett (Dunedin Botanic Garden Team Leader), they are definitely the poor cousins. The new growth is mid pink lightened by yellowish lenticular speckling, with the buds offering a similar balance of colour that open as clusters of light pink. Alan's accessions on the other hand, which were collected from the margins of a dry stream bed, within the competitive root zone of adjacent birch trees, have rose pink flowers, and stems of deep burgundy of which not only are the buds infused with this colour but also the newest leaves. The foliage in general is darker than the Cangshan accessions and more glaucous underneath. Interestingly the Cangshan specimens have leaves nearly 5cm by 2.5cm whilst the Zhongdian accessions are only 3.5 by 1.5cm, the latter indicating a genotype adapted to the comparatively drier conditions in which it was found. It will be of continuing interest to watch how these accessions perform in the garden in coming years.

Returning to the Heliolepida Subsection, *R. rubiginosum* resembles a large *R. heliolepis* with dark green shiny leaves and striking red new shoot growth, currently averaging 15–30cm in length. To date, the plants have developed an open upright habit between 1–1.2m tall. Enjoying moist soil and shade from nearby karaka, lemonwood and mature rhododendrons, these have given us lilac-pink flowers with darker spotting.

Rhododendron racemosum grown from seed collected by Alan Matchett on Zhongdian Plateau.
Image courtesy of Dunedin Botanic Garden

Bringing variety of texture to groups of smaller species, *R. scabrifolium* have developed into bushy 40cm plants, pink in bloom with noticeably bristly new growth. The new leaves in particular are tinted bronze, complementing the orange-red new growth shoots. Although *R. scabrifolium*, with such bristly foliage, are well suited to drier conditions, we did lose a couple of plants in the dry summer of 2003 where prolonged sun and wind, plus competition from neighbouring native bush tipped the balance too far even for their adaptability. It is a good reminder that in their natural environment they spend much of their time benefiting from high altitude mist, rain and snowmelt with shelter from surrounding scrub and forest. As such, it is a mistake to assume they have tolerance of prolonged dryness.

R. trichocladum have also adapted to dry mountain slopes, not only by developing hairs or bristles, but also by adopting a deciduous habit. In autumn the light grey-green leaves turn pale yellow and fall away to leave twiggy little shrubs that five

Rhododendron virgatum grown from seed collected on Mt Cangshan.
Image courtesy of Dunedin Botanic Garden

years after planting have reached 20–40cm in their sunny border position. September brings the appearance of their greenish-yellow flowers just before or along with the newly emerging foliage.

R. virgatum is thriving in the damp end of a border in moist compost surrounded by pea straw mulch. Here they have formed loose mounds of foliage with leaves varying from recurved to flat to reflexed. All have lovely orange-red shoot growth and bronze tinged margins to the new leaves. This species has the intriguing habit of producing single light pink bells from the leaf axils along the length of strong shoots. On the laterals from these, the shortened internodes effect a clustered flowering.

In the coming years, further renewal and development in the Rhododendron Dell will allow us to plant out more of the above selections, along with *R. cyanocarpum, R. neriiflorum, R. taliense* and *R. wardii* also collected on Mt. Cangshan. In the meantime, this material is still growing on in the propagation unit of the Dunedin Botanic Garden.

Doug Thomson is Plant Collection Curator of the Dunedin Botanic Garden. His job involves looking after the four-hectare area called the Rhododendron Dell, and managing the grounds.

He says the end of September and October is when the Rhododendrons look their best and he enjoys seeing people's wonderment and receiving their feedback.

Doug received his National Certificate in Horticulture qualification in Scotland, and completed his National Diploma after gaining a job at the Botanic Garden shortly after he arrived in Dunedin, where he has been working since 1986.