

pressed closely to the stem. The most widespread one is *H. intermedium* which appears as blackish patches on the bare cliff faces. *H. coralloides* is confined to Marlborough and resembles coral as the name suggests. Its grey-green branches are as thick as a little finger, and their very tips support bright yellow flower clusters, not unlike tiny sea anemones. Many other daisies are herbaceous. *Ewartia sinclairii* has a restricted geographical distribution, but its small, soft, grey-green leaves and masses of white flowers often festoon moist, shady banks. *Raoulia cinerea* is another plant endemic to the north-east, that has only recently been divested of its rare and endangered status because it was found to be more common than previously thought. One has to look in precisely the right sort of site to find it; creeping amongst sharp, angular gravel on flat ridges and spurs at high altitude. More widespread at high altitudes are cushions of *Haastia pulvinaris*, literally Haast's cushion, but more commonly known as vegetable sheep. Their roots squeeze into nooks and crannies on the most inhospitable looking terrain, almost to the summit of Mt Tapuaenuku.

## Climbing plants

Despite the great range of forms and habitats occupied by members of the daisy



Rabbits, burning and overgrazing have transformed inland Clarence; hence the term "The Desert" to describe an area now dominated by introduced briar. Kanuka has only slowly returned to the area. Photo: P Williams

family on the Inland Kaikoura Range, none of them are scramblers or climbers. This life form is nevertheless important in montane regions, perhaps because there are extensive areas of open ground or low shrublands dominated by matagouri (*Discaria toumatou*), coprosmas, cassinias and hebes, and snow totara (*Podocarpus nivalis*) at high altitudes. These provide the weak stemmed plants with a diversity of "climbing frames". A few, however, seem less dependent on having support, and either form distinct mats or simply loll about on the landscape.

Creeping poheuhue (*Muehlenbeckia axillaris*) binds almost any stony ground, but *M. ephedroides* is more choosy. This strange plant produces masses of fine, whippy, leafless, dark blue-green branches that protrude vertically from coarse talus. Equally leafless at first glance, *Clematis afoliata* forms entanglements like springy balls of string. These hang from ledges or cliff faces quite unsupported other than by the mysterious, internal logic of the

clutching tendrils. These entanglements are yellow-green, and the whole mass can be covered with starshaped flowers of similar colour in early summer. Another species of leafy clematis also has similar coloured flowers, while a third has flowers of pale purple. The flowers of *Parsonia capsularis* are particularly colourful in these inland regions. They soften the spiny matagouri with a loose net of lilac hue. The three species of lawyer (*Rubus* spp.) may also be colourful, both in flower and in their barbs, but these are a horror to the traveller off the beaten track.

## Complex scree plants

When you do climb out of the gorges onto the open scree slopes, the effort will be rewarded with sights of some remarkable plants. Scree is a habitat of temperature extremes, but they have one less obvious feature that makes plant life possible; beneath the coarse rocks of the scree surface are finer gravels and sands through which cool water percolates. Thus moisture does not limit plant growth, and neither do temperature or light on the frequent sunny days. Photosynthesis and transpiration can therefore proceed at near optimal rates. To ensure they absorb enough carbon dioxide from the atmosphere, many scree plants have thin-skinned and finely divided succulent leaves. Their resilience and trailing rhizomes and roots enables them almost to move with the mobile scree. Many are annuals or biennials, so that even as they are destroyed over winter, seeds cast in the autumn lie poised to renew the populations come summer's warmth.

Many scree plants are found throughout eastern South Island, but several are special to the Kaikoura region. The handsome *Epilobium forbesii*, for example, sprinkles the fine grained scree with low rosettes of downwardly curved glandular leaves. These glistening clumps support pink flower buds that turn white as they open out to a full 1 cm diameter. Large flowers, up to 2 cm diameter, are sported by one of our two native species of convolvulus (*C. fracto-saxosa*), literally the one that grows in broken rocks. The flowers are a small version of the "granny pops-out-of-bed" we played with on the way home from school. But there the similarity ends. Rather than bright green the leaves of the rock convolvulus, covered in soft, greyish hairs, match their surroundings. The cryptic colour of these plants makes them difficult for us to see, but it does not deter the large alpine grass-hoppers, that leap and tumble about the scree, from feasting on the succulent leaves.

## Large reserves needed

These fascinating natural features and biota can all be found within the Tapuaenuku Ecological District, of which the Inland Kaikoura Range forms the high core. This land is nearly all Crown Lease and only one Scenic Reserve exists within this district, or indeed within the whole catchment of the Clarence River (Timmins and King 1984). This strangely irregular shaped reserve was gazetted in 1962 in recognition of the landscape values of the high

peaks. The biota are just as important to conserve, but reserves will have to be large, and cover a full altitudinal sequence. Ideally, they should link features such as the Hodder Gorge and Winterton Basin in the west with the Hall's totara forests and kanuka stands in the east. Then there should be corridors across the Clarence to similar large reserves on the western slopes of the Seaward Kaikoura Range — an area yet to be botanically surveyed.



Many of the plants of inland Marlborough are found in specific sites, such as *Raoulia cinerea* which creeps among sharp, angular gravel on flat ridges and spurs at high altitude. Photo: P Williams

It takes some effort to fully appreciate these landscapes and their inhabitants. Firstly, you have to make your way from the coastal State Highway 1 up the long dusty inter-montane valleys, to the lower reaches of the tributaries. Here you will have to take to the riverbed on foot, and be prepared for many crossings. But when you've experienced this remote, wild country, you will be able to share the sentiments of the early geologist McKay, when he reported on the Inland Clarence as:

"... impressing the explorer with the massive solidity and giant proportions of the great cliffs rising from the deepest part of the gorge. Yet high above in the sky these terminate in clear-cut pyramidal peaks, gables and roofs, massive below, light and airy above. Architectural in aspect, these vertical walls and steep slopes, bearing just a due proportion of flowering plants and gorgeous shrubs, may be seen and admired, but are not easily described; and when a peep of sky dropping west from the zenith is seen, filled by the glistening snows and jagged summits of Tapuaenuku, art may strive in vain to copy the beauty, the grandeur, and the majesty of the picture." ✎

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