

There are occasional gorse (Ulex europeus) and broom (Cytisus sp.) bushes, and three shrubs of spindle tree (Euonymus europaea), two small gooseberries, and a few plants of blackberry.

At first there was a fairly dense growth of cocksfoot (Dactylis glomerata), as there has always remained outside the enclosed area. In 1971, although some grass remained, the ground was almost bare. Today there is again a good growth of cocksfoot. Other herbs present are chickweed (Stellaria media), daisy (Bellis perennis), cleavers (Galium aparine), shepherd's purse (Capsella bursa-pastoris), bluegrass (Agropyron scabrum), and a species of Bromus. A small patch of bracken was seen in 1971.

Horses certainly seem to have been held in the enclosures, at times, but sheep seem to have been the most damaging to the vegetation.

Here a small native tree, matipo, has spread of its own accord under a canopy of introduced trees, eucalypts, along with an abundance of a naturalised shrub, barberry. Some 12 miles or so away, on Great Island, as members will remember from the trip led by Dr. Molloy some years ago, matipo grows wild as part of the original vegetation. One must at least ask whether the matipo under the blue-gums descends from an original vegetation close at hand, or whether they derive from Great Island by transport of the sticky seeds by birds. The answer would seem to be "No" to both questions. According to Mr. Wilkinson family tradition has it that "there was not a tree in sight" when his uncle took up land there, but that there had once been a hedge of matipo near the homestead. The hedge is by far the most likely source, for the matipos grow most thickly and all the oldest trees are a little way to the north of the farmhouse while at the limits of the blue gums the matipos are small and sparse. Also the barberries and the spindle trees certainly, and most probably the gooseberries, have spread from the homestead.

There was almost nothing under the pine trees except at the northern end of the road, on a lower and later terrace, where Viburnum tinus and cherry plum (Prunus cerasifera) were common. The pines there are now being felled.

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#### OUT IN THE OPEN

One cannot pass silently the azure flowers of the giant Forget-me-not, the Chatham Island lily (Myosotidium nobile), in addition to the lovely tint of the large blossoms it rejoices in splendid shining foliage of deep green. The heart shaped leaves, traversed by bold parallel veins, reach noble dimensions, over thirty inches in length, with a breadth of twenty inches at the widest part.

A well grown, luxuriant tuft of this grand Forget-me-not is a gem of the flower border, one is in doubt whether blossom or foliage asserts the prior claim to admiration.

Smooth, soft to the touch, with a subdued satin-like sheen, the leaf's paler underside contrasts with the brilliant glossiness of the deeply virid surface. Native of a humid climate, and often washed with showers of salt spray, or bedewed by heavy mists off the sea, the structure of the foliage, gracious in its sweeping curves, appear especially adapted for the collection and rapid transmission of moisture. It is a funnel with the polished surface fluted by strong veins, these are channels that unite together and lead the gathered moisture to the deep groove that furrows the upper side of the stalk, widening at the base to a broad duct. On the underside stands out in its fullness and strength the stoutly ribbed framework that firmly supports this expansive catch-water.

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## ASPECTS OF THE VEGETATION OF THE WAIPARA GORGE REGION

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The Middle Waipara Gorge dissects uplifted tertiary strata. The most prominent features are two bands of limestone which run in a north-east to south-west direction. The parallel escarpments of limestone face north-west and consequently are subject to considerable drought due to high sunshine and exposure to north-westerly winds. The western escarpment consists of a white limestone which weathers into massive blocks with deep fissures between the blocks. The eastern escarpment is formed by a yellowish shelly limestone which weathers much more finely producing small fissures and a mineral soil on the rock ledges. The western escarpment is lower and is cut by the Waipara River to form a deep narrow gorge. Downstream the gorge widens but still remains precipitous before cutting through the eastern limestone and out on to the Plains. The eastern escarpment is higher and has several named features: Mt. Brown (south of the river) and the Deans (three hills north of the river rising to about 500 m, the river being at about 150 m).

The climate of the gorge is ameliorated by down-valley winds at night which reduce frost incidence. This permits Myoporum laetum and Dodonaea viscosa to grow near the Deans homestead, surely the most southerly inland locality for Dodonaea. The other shrubs of interest which occur in several places on the river gravels from the gorge almost to the coast are Coprosma brunnea (usually regarded as more typical of montane situations) and Muehlenbeckia astonii.