(*d.*) *The Old Neck.*

The dunes are about 45 ft. high. They have been much modified by the grazing of sheep and cattle. *Euphorbia glauca, Scirpus frondosus, S. nodosus, Geranium sessiliflorum, Acaena Sanguisorbae, Hydrocotyle novae-zealandiae, Cotula Traillii, Pimelea Lyallii, Plantago Raoulii* are common.

On the seaward side of these dunes are cliffs, and here the blown sand, underlain by rock, is covered with a scrub of *Senecio rotundifolius* and *Olearia angustifolia*, now partly destroyed. The new open ground is occupied by *Poa pratensis, Trifolium repens, Ranunculus plebeius, Hydrocotyle novae-zealandiae, Sagina procumbens, Cotula Traillii, Epilobium pedunculare, Plantago Raoulii, Brachycome Thomsoni*, and a species of moss.

(*e.*) *Wilson Bay.*

At Boat Harbour, the only part of the bay visited by me, is a flat piece of ground, with a sandy shore and small low dunes up to the forest. Here there has been a Maori settlement at one time.

On the sandy shore is the shore-dock (*Rumex neglectus*) and some shore-buttercup (*Ranunculus acaulis*). The dunes are flat, and have wettish hollows. They are quite covered with vegetation. *Scirpus nodosus* is dominant, but it is frequently mixed to nearly an equal extent with the holy-grass (*Hierochloe redolens*), which spreads extensively by stolons. The wetter hollows contain much *Hydrocotyle novae-zealandiae;* and in the wettest, where swamp-conditions prevail, is abundance of *Carex ternaria* and some *Carex secta.*

On the seaward slope *Aciphylla intermedia* is abundant, and beneath the shelter of certain shrubs is the punui (*Stilbocarpa Lyallii*). Everywhere the common mint (*Mentha spicata*) is naturalised, and there is a good deal of a species of *Brassica*, probably *B. Rapa.*

3. Coastal Scrub.

(*a.*) *General.*

As already pointed out, the wind factor determines the composition of that shrub-belt which in most parts of Stewart Island clothes the coast-line, forming the outer limit of the forest-mass. Where subject to a certain degree of exposure the puheritaiko (*Senecio rotundifolius*) appears, and as the exposure increases becomes dominant, until it, in its turn, where the full fury of the gale is felt, gives place to still better equipped wind-resisting shrubs.

The *Senecio* scrub is by no means of uniform composition everywhere. Where the wind is not specially excessive, as within the inlets in many places, it is composed of *S. rotundifolius, Dracophyllum longifolium, Metrosideros lucida, Veronica elliptica*, and, on the shores of Port Pegasus, *Phormium Cookianum* also.

In more exposed positions, as on the islets in the ocean, on headlands of the east coast, and possibly on much of the west coast, the teteawaka (*Olearia angustifolia*) and *O. Colensoi*, one or both, appear in quantity, and may become dominant. Also, mixed with the above true scrub-shrubs are frequently more or less of the forest-shrubs—that is, there are all kinds of intermediates between true *Senecio* scrub and low forest.

To the formation under consideration is given the popular name of "mutton-bird scrub" by the settlers of Stewart Island. The scrub may be divided into the *Senecio rotundifolius* and *Senecio-Olearia* associations.

(*b.*) Senecio rotundifolius *Association.*

This association, made up of quite a few species, and to which the name "mutton-bird scrub" is sometimes limited, forms a narrow belt round the inlets, and in other parts of the coast, extending from the margin of the forest proper to high-water mark, some of its constituents jutting out from the cliffs or banks on which they grow right over and almost into the water. It is made up of the following species: (Liliaceae) mountain-flax, *Phormium Cookianum;* (Myrtaceae) southern rata, *Metrosideros lucida;* (*Epacridaceae*) inuka, grass-tree, *Dracophyllum longifolium;* (Scrophularinaceae) *Veronica elliptica;* (Compositae) puheritaiko, *Senecio rotundifolius.* Besides the above, many of the forest-shrubs may enter into the combination, and in places may altogether replace the true scrub.

The association grows usually upon rocky ground overlain with peat, but it is not infrequent on flat ground fronted by a gravelly or sandy shore.

Senecio rotundifolius, which is from nine to twelve feet in height, is easily dominant, its spreading habit, many naked branches covered with smooth brownish bark, and especially the thick and rounded or somewhat flat head of large round leathery leaves shining bright green but rather pale, and clad beneath with buff-coloured tomentum, render it very conspicuous (Photo No. 14). Seen from the sea, the roof of the association is flat, but there projects through it the erect yellowish *Dracophyllum.* Behind, forming an inner belt, or extending outwards, are the dark-green southern ratas, not with distinct crowns, but each branch system forming a small and flattish head to itself, and these at some distance from one another. Patches of green standing out here and there on the outer part of the scrub denote the presence of *Veronica elliptica*, the relative amount of which varies greatly.

On wind-swept headlands, narrow necks of land, moderately exposed islands, such as those at the openings of Port Pegasus, the association under consideration may extend far into the forest, the general colour of which is then changed.

Within the scrub are many stout prostrate or semi-prostrate trunks and stiff entangled branches, after the manner of the subalpine scrub. On the floor are the ferns *Asplenium obtusatum* and *Blechnum durum.*