Orchids of New Zealand

Gems From the Alpine Meadows

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THE alpine herb-gardens of both islands—but especially of the South—are well known to trampers and wanderers for the wealth of wild-flowers found in them. Many have become well known for their simple loveliness: *Ranunculus lyallii* in the South Island, the Celmisias of both Islands, the Helchrysums, and the Gentians; all of these are mostly white, but there are also plenty of yellows—the Senecios, Chrysobactron, and other species of Ranunculus. Unfortunately, there are very few wild flowers coloured other than yellow or white. In such a case as this we could expect to fall back upon whatever orchids are found growing in these localities to provide us with a little more interest and colour, but this is not the case.

The mountains of Marlborough, Canterbury and Otago often look so dry, barren, and uninviting as to frighten many would-be tourists off to the West Coast. Indeed, in a hot, dry summer, when the streams dry and the tussock goes a shining brown, these mountains very nearly become a dust-bowl. Like oases in the Sahara, however, there are numerous well-watered glades lying at the heads of valleys and streams, dotted with symmetrical beech trees, and frowned upon by grey, sombre, and crumbling crags. In such sheltered places can be found the relatively few alpine orchids.

Caladenia lyallii was mentioned last month. It is a lovely thing, and when above the bush-line usually grows on sunny clay banks that are nearly devoid of grass. Its predominant colour is white, and one variety has a lovely scent.

Prasophyllum colensoi is another very abundant orchid, often growing in very large, thick colonies, from sea-level to 4,500 ft., and was described in a previous article. It has a wide colour range in the yellow-green-brown series, and some forms are of a very rich cocoa colour. It is a pity that it is so rarely tall.

Adenochilus gracilis is an ambiguous species, growing in deep dark rain forest or open highland tussock. Its two dissimilar forms correspond to the conditions it grows in. When in rain forest it is a delicate, slender plant up to ten inches high, with a leaf shaped like an arrow head. The leaf lies near the base of the stem, and is a dark, polished green. The flower is small and dainty—rarely more than ¼ in. wide, coloured mostly white, and is clearly related to the Caladenias. A little colour is present on the lip, and though this is sharply recurved at the tip, it is held so erect that it is impossible to see the column without forcing the lip down. Purple streaks are present on the underside of the lip, and two rows of golden glands on the upper side. The highland form is usually shorter, slightly downy, with dull green leaves.

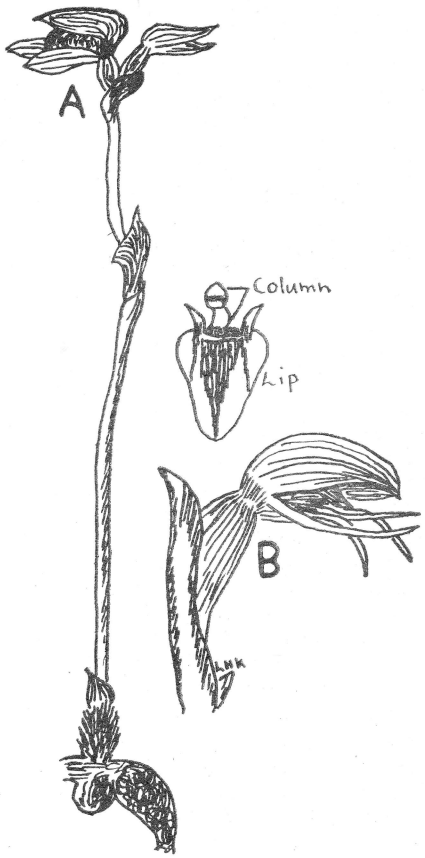
Aporostylis bifolia is an orchid that is very easily confused with the above species. It also grows in moist bush or alpine meadows, but is more common in the highlands where it is sometimes found in great abundance, particularly about the western half

of the Southern Alps. One great distinguishing factor is the invariable two leaves of flowering specimens; both leaves are low to the ground, and the lower one is the larger. Their shape varies from a form similar to Adenochilus gracilis to a much longer, narrower shape, and they are often netted with purple. The whole plant is sometimes downy. In suitable situations the flower can be as much as an inch across when fully expanded, and is usually tinged with pink. All the lateral sepals and petals are narrow, and like Adenochilus gracilis, the flower is protected by a small hood. The lip is nearly round and spreading, with two rows of yellow glands near the base.

Lyperanthus antarcticus, commonly called the Southern Dullflower, is an uncommon species, not often seen. It is up to eight inches high, with two to three leathery, sword-shaped leaves, and up to three small and rather untidy flowers coloured greenish. The lateral sepals and petals are narrow, while the dorsal sepal forms a broad hood over the flower. The lip is roughly oval and horizontal, with five or six longitudinal ridges upon it. This species is found in the upper forest margins, or in alpine meadows, flowering in summer.

The subject of orchid distribution is a very exhausting but difficult one. Little is known about it, but what does make it more intriguing is that our orchids display a closer relationship with the Australian flora than any other family of New Zealand plants. The orchids now are the largest family of flowering plants in the world, outnumbering even the Composites, so that the matter of their distribution becomes quite an important one, and facts realised may help to solve other problems.

Messrs. Rupp and Hatch have suggested a theory based upon conclusions reached by Cockayne and Marshall, that an antarctic continent in early Cretaceous time linked up (or



NEW ZEALAND ORCHIDS: (a) Townsonia viridis; (b) Lyperanthus antarcticus.

was linked to) Australia and New Zealand. Upon this continent there originated many of our orchid genera — Thelymitra, Aporostylis, Chiloglottis, Lyperanthus, Townsonia, Caladenia, Pterostylis. There are only two of these genera which are not found up the Australian continent: Aporostylis and Townsonia.

Aporostylis is a monotypic genus, that is, it is made up of only one species—*Aporostylis bifolia.* This species probably originated as a cross

between *Chiloglottis cornuta* and *Caladenia lyallii*, and for some unknown reason it never reached the Australian mainland.

Townsonia viridis hails from the rough, half-explored wildernesses of the Western Southern Alps, though it can also be found on Stewart Island and Mount Ruapehu. In height it may reach up to 6 ft., and is very slender, with a small roughly heart-shaped leaf. With flowering specimens the leaf, often much reduced in size, is placed well up the stem, but if the specimen has not reached the flowering stage, it is upon a thin leaf-stalk growing from the slender, creeping rhizome. The flowers are very small, rarely above ¼ in. long, and coloured greenish, and are born horizontally. The upper sepal forms a hood, crouching down over the flower. A small, undivided, and heart-shaped lip distinguishes it, while the lateral petals are very minute, with much larger and horizontal sepals. Its habitat is sub-alpine scrub or the edge of alpine herb fields, descending to lower levels further south.

Its distribution is very interesting, for the genus is only found in Tasmania and New Zealand. Theoretically it is supposed that its progress northwards into Australia was arrested by the formation of Bass Strait. The same species has obviously been isolated in Tasmania for some time, for it differs in many minor points from the New Zealand form.

Another important factor in the distribution of our orchids is the great trade wind-stream that sweeps across the Tasman, passing over Tasmania, South Australia, and Victoria. Orchid seeds are as light as dust, and could easily be borne over the Tasman Sea by the great nor'-westers of the South Island, extending often to the North Island. This explanation could account for many of our species that have otherwise no right to be here. It is evident that this means of dispersal is still effective. *Pterostylis cynocephala* is one example. This species has only been found recently, growing in only one comparatively small river valley near Springfield. Here it is found in great abundance within a mile of the main road, and is found nowhere else but in the south-east part of Australia.

New arrivals may still come, but these will be few and far between. New species will be found, perhaps rather more frequently. Our orchid population is quite large and is growing—New Zealand is a growing country; it is also attracting a fast-growing number of admiring collectors. Though these can help in many ways, they might also be quite dangerous. Some of our orchids are exceedingly rare, while others are found very locally in some places. It would therefore be much better if students either only removed the flower, or studied the plant *in situ*.

In Australia the Government has realised that a delicate plant like an orchid must have a delicate constitution, and has legally protected indigenous orchids. New Zealand could well do the same, for orchids are delicate, and do need some protection. Never mind he who says, "Orchids are everyman's hobby". They're not.

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