

Orchids of New Zealand

The Greenhoods, the Largest Genus

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THE Greenhoods, or the genus *Pterostylis*, is the largest orchid genus in this country, and also the most interesting. Some of the species hybridise so extensively that classifying them is like looking for a needle in a haystack; strangely enough, there seem to be several centres where hybridisation occurs to a far greater degree than elsewhere. The Waimakariri River basin is the most important centre, and here hybridisation occurs to an exceedingly great degree, and there are even several species that do not occur elsewhere. One (*Pt. cynocephala*) was discovered a few years ago, and another (*Pt. areolata*) was rediscovered at about the same time.

The genus is distributed fairly evenly through all the country, though perhaps there is a slight predominance of species in the North Island. They are definitely more common in inland areas, particularly upon upland country over one thousand feet and under three thousand feet. Some species grow in tussock country, others in scrub (particularly manuka) or in thin bush, and often on the edges of bush. Representatives of the genus are only absent from the bleakest and most barren areas, for they cannot stand dryness or strong winds.

At least twenty-two species and varieties grow in New Zealand. Most of these also grow in Australia, for the genus is Australian by origin, and it will be possible to describe only the most important ones here.



1. *PTEROSTYLIS AREOLATA*;
2. *P. BARBATA*.

Apart from six odd ones, all the species are divided into three main groups. Firstly, there is the *Australis* group, which is confined to New Zealand, and hybridises extensively within itself.

Pterostylis banksii is the commonest native greenhood, growing in scrub, light bush, and bush edges through the whole country. It is a compound species, containing at least two forms.

Pterostylis banksii var. *banksii* is a very handsome and well-known variety, up to 21 inches high, and in the past it has been greatly confused with other varieties and species. It has a stout, straight stem, with up to eight leaves arranged up it. Each leaf is narrow, pointed, up to seven and a half inches long, and wider at the base. The flower is large and usually solitary, up to $3\frac{1}{4}$ inches high, including the long, slightly curling tails the helmet and lateral sepals. Var. *patens* is similar generally, but has shorter and broader leaves, but the tail of the dorsal sepal is very greatly incurved, while those of the side-sepals are very greatly recurved, meeting behind and just below the flower. It presents a most peculiar appearance.

Both varieties are endemic, while the latter is found at a generally higher altitude, and both have a variable amount of red in the flower, particularly in the upper sepal.

Pterostylis australis has many forms close to *P. banksii*, but the type has much wider and shorter leaves, with a slightly silvery tinge. The flower is looser, and has coarse streaks of green and white, while the tails are much shorter, with the lateral ones being very sharply recurved within a few days of opening.

In the two main islands it is rather local, growing up to 4,500 feet, but in Chatham and Stewart Islands it is quite common. Generally it inhabits light bush or tussock.

Pterostylis graminea cannot easily be distinguished from other allied species, but the whole plant is very slender and almost grassy. The flower is small with rather short tails, but the stem rarely reaches the height of *P. banksii*. It is not uncommon in scrub or upon the forest floor.

Pterostylis montana is a compound species of two forms which were formerly included in *P. graminea*.

Pterostylis montana var. *montana* is up to seven inches high with five spreading leaves, and a solitary flower, which is usual in this group. The flower is up to one inch high, with the top and side sepals pointed and not tailed. It is a fairly common species, growing upon the forest floor. Var. *rubricaulis*, apart from the flower, which has tailed side-sepals, the whole plant, to a greater or lesser degree, is suffused with red.

It is obvious that many species of the *Australis* group could only be told apart by a fairly experienced person, as crosses are more frequent than true species. The scientist classifies the Greenhoods and most other orchids by the structure of the flower, particularly the column and the lip. Otherwise there is much difficulty in telling which species is which. In the "Transactions of the New Zealand Institute", Vol. 77, pages 234-246, there is an article by Mr. E. D. Hatch giving detailed descriptions of nearly all the *Pterostylids*. These descriptions are very authoritative and complete, for Mr. Hatch has done a great deal of work upon our orchids. Also, the writer of this article is quite prepared to answer any questions that are put by interested persons.

The *Falcata* group has just one New Zealand member; it is *Pterostylis falcata*, which is a compound species of two forms, one of which is confined to New Zealand and the other is found in both Australia and this country.

Pterostylis falcata var. *micromega* has up to eight leaves and is up to seven inches tall, with the lower leaves loosely arranged just above the ground. Each leaf is $1\frac{3}{4}$ inches long by $\frac{1}{2}$ inch broad and is sharply pointed. The flower is very pale, solitary, about $1\frac{1}{2}$ inches high, with long tails to the lateral sepals. Var. *linearis* differs in having fewer leaves and a much smaller flower, which

has shorter tails. It is abundant in the central plateau of the North Island in bogs, while *var. micromega* is found locally through the North Island and the Chatham Islands. The juvenile stage of *P. furcata* is a plant with two to five broad, oval leaves.

The third group is the *Obtusa* group, which is essentially an Australian group, with four species found in this country.

Pterostylis trullifolia is a compound species of three forms, all of which are delicate, beautiful and rather rare.

Pterostylis trullifolia var. rubella is erect and slender, three to four inches high, with two to three leaves at the base of the stem, each leaf being about one inch long. The flower is solitary, large, fat and up to 1½ inches long. The helmet is sharply pointed, while the lateral sepals have tails which are about 2 inches long. The plant is often tinged with red. *Var. gracilis* is taller, with leaves up most of the stem. The side-sepals are not tailed, and there is usually no red in the plant. *Var. alobula* has darker green flowers than *var. rubella*, which it otherwise resembles.

Hybrids between *var. rubella* and *gracilis* are not uncommon. *Var. rubella* is not uncommon in the North Island, *var. alobula* is found in North Auckland and about Wanganui. Until recently *var. gracilis* was also supposed to be confined to the North Island, but it has since been found along the western edge of the Hammer Plains. All these forms grow in tussock land.

Pterostylis Xirsoniana is the only other species of this group that I will describe; it is, perhaps, the most symmetrical species of all our Greenhoods. The plant is up to eight inches high, with one to six very long, narrow and spreading leaves, which overtop the flower. This is solitary, up to one inch high, and is con-

spicuous by the very fine, regular green striping upon the outside of the flower, and the equally fine red etching upon the inside of the lateral petals. The lateral sepals have tails up to one inch long, and these are curved back rather sharply.

The species is found, locally abundant, through much of the North Island and the west of the South Island.

Other species which I have not described are:—

P. barbata, which has a golden beard hanging from the mouth of the flower.

P. mutica, which is a tiny species, bearing several flowers at the top of the stem.

P. cynocephala, which is like *P. mutica*, only much larger. It is found only near Springfield and Cass in Canterbury.

P. nutans, which has a nodding flower.

There are also several other species which are distinguished by differences that are too complex to mention here.

Next month I will describe a group of orchids that contain many beautiful and easily-grown species—those that grow in tussock country.

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