the still-green old one and the same occurs with Spiranthes. In Spiranthes also, if the plant is too small to flower, it will go on growing and not die back until it has flowered at the end of the second season. Until, that is, it has built up sufficiently large tubers with enough store of food to flower on. Spiranthes can do this because of the swamp environment; 'dry' species are often forced to spend several seasons building up the tubers to flowering size.

In species which have different leaf-forms at different stages in their growth, for example the trullifolia complex in Pterostylis, the growth stage depends entirely on the size of the tuber, that is on the amount of nourishment available. In Pt. alobula tubers up to 3 mm. diameter will produce only rosettes, 4-5 mm. the intermediate flowering form with both types of leaves, while anything above 7 mm. will produce the mature flowering form with bracteate leaves only. Similarly in Pt. coccinea the rubicon is 12 mm. Anything below that will produce a rosette, anything above it a flowering plant. The rosette form which the small plants assume, provides a maximum area of green leaf for photosynthesis and results in the rapid formation of flowering-sized tubers. This variation in form does not affect species with basal rosettes (Pt. nutans, curta etc.) since maximum leaf development is always present. If the mycorrhizome of Pt. brumalis chances to develop in a congenial spot it will throw some tubers large enough to flower the following season, 2 years from seed to seed. But this is rare - the tubers are normally smaller and develop rosettes. I have done this experimentally and have also grown Spiranthes from seed and produced flowering plants in 3 years.

The form the plant takes depends upon the development of the leaves and the length of the internodes. Large leaves and short internodes produce conspicuous rosettes like those of Pt.curta or nutans; large leaves and long internodes forms like Pt. banksii. Scale leaves and long internodes give plants like Gastrodia and Yoania, while tubular leaves and long internodes give Prasophyllum and Microtis. The tall seeding peduncle of Corybas and Chiloglottis is a single internode. The structure is simple but the possibilities are endless, and so the Orchidaceae has proved.

Psilotum nudum (L.) Palisot-Beauvois.

In the July number of the News-Letter, members were asked for further records of Psilotum nudum in the urban area of Auckland. Here is one not without interest. When I was living in Maungawhau Rd, Epsom (a road that runs parallel to Mountain Rd), I noticed P. nudum growing on the roots of a large pepper tree (Schinus molle) in our front garden. I certainly would not have thought of looking for it in such a place! Later I have learned that it has been recorded in Northland (Merita Bay), growing on a pohutukawa, "up a deep gully three quarters of a mile from the shore." H.B. Mathews.

Miss M. Crookes.

A member of the University Grounds staff recently found a very healthy specimen of Psilotum at the base of a pohutukawa growing in Wynyard St. City in one of the University car parks. - Ed.