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NEW ZEALAND PLANTS AND GARDENS

The Official Journal of the Royal New
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Volume III.

SEPTEMBER, 1959.

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PLANT ASSOCIATIONS

One of the great arts of garden planting is the harmonious association of plants. It has been said that there is something of the artist in each one of us and it is this latent faculty that must be brought to life if a garden is to be planned imaginatively and with an eye for beauty in what has been aptly called 'garden pictures.'

A carpet of *Crocus* planted in natural drift formation beneath the naked branches of silver birches. They may be gold, blue, white or any shade but one colour only should be used, mixtures having too mottled an appearance. I have never seen *Cyclamen coum* look so well as when planted at the foot of the gnarled trunk of an aged oak. There it will remain for many years, continuing to flower merrily each winter.

Trees and shrubs with ornamental bark, like the red barked maples and dogwoods, are always seen to best effect if they are placed where they may be seen against the sombre green of some conifer. Shrubs, like azaleas of the *mollis* group, that are leafless in winter can be planted with a carpet of ericas of the *carnea* group that will bloom through the hardest winter and bring colour to an otherwise bare plantation. I can imagine a very pleasing effect from planting the winter flowering *Erica darleyensis* as a groundwork to some of the deeper yellow forsythias.

Wisteria and *Laburnum*, white madonna lilies and sky blue delphiniums, the rich purple flowers of *Tibouchina* species neighbouring the yellow *Hypericum leschenaultii*, *Iris reticulata* amid a mass of *Crocus susianus* — these are a few associations that come to mind.

The scope is endless and gardeners, as their knowledge of plants increases, can always spend profitable leisure in planning the association of suitable plants.

G. A. R. PHILLIPS,

Editor.

INTRODUCING BROMELIADS

H. L. MARTIN (Auckland).

To some, the family name of Bromeliad probably brings to mind only the pineapple, billbergias, and perhaps an isolated *Tillandsia*. However, I would like to introduce you to some other members of this large group of plants which is now so popular in America, although some of them have been grown as houseplants in Europe for over a century. The illustration shows an interesting group with the pineapple *Ananas comosus* in the background, the others from left to right are *Aechmea miniata* var. *discolor*, *Vriesia caranata* and *Vriesia splendens* var. *major*. Trailing among the pots is *Tillandsia usneoides*, the Spanish Moss.

It seems that the father of modern botany, Linnaeus, established the genus *Bromelia* in 1754 in accordance with the rules we now follow in making scientific names. The name was taken from the family name of Olof Bromelius, a Swedish botanist. Since Linnaeus was also Swedish, we might at first suppose he named the genus for a friend, but Bromelius died before Linnaeus was born. Actually it was Plumier, the early French explorer of the West Indies, who first had the idea of renaming for Mr. Bromelius the genus that previously had gone by the Indian name of Karatas. But, strangely, it is by no means certain that Bromelius ever laid eyes on a single plant of the great group that bears his name. Later, in 1805, the French botanist, St. Hilaire, defined *Bromeliaceae* and formed the family name from the genus *Bromelia*.

Every known species, except one, of the bromel family is native to some part of the Americas, ranging from the southeastern tip of Virginia in U.S.A. to about 700 miles south of Buenos Aires in Argentina. Now that is about 36deg. N. to 45deg. S.—the same latitude as Oamaru. The one exception was found in 1937 in French West Africa and is called *Pitcairnia feliciana*. From sea-level around Rio de Janeiro, where *Quesnelia quesneliana* lives happily with the high tide fiddler-crabs running over its basal roots, up to where *Puya fosteriana*, across the continent in the Andes, endures an altitude of 14,500 feet, this family enjoys quite a variety of climatic conditions. Some members, such as the Spanish Moss, are to be found right through this vast area—others are confined to very limited island areas, such as the Lesser Antilles.

Systematically the bromeliads have their position in Class I of the monocotyledons. The order is *Farinosae*, and the family of course is *Bromeliaceae*, which is divided into three sub-families, namely *Pitcairnioideae*, *Tillandsioideae* and *Bromelioideae*, with 46 genera, and approximately 1700 species.

In the evolution of bromels the earliest forms and most primitive species are found in the sub-family *Pitcairnioideae* containing *Dyckia*,

Puya, *Pitcairnia* and *Hechtia*, and of these the *Dyckia* is perhaps the commonest. Some of them are stoloniferous and form quite a useful ground cover. They thrive even although at times neglected, and have the ability to withstand low temperatures and full sun. Their small flowers are generally yellow or orange with petals fused into a tubular cup and borne on tall slender stems.

Puyas are for the most part quite large plants, in fact the largest plant of the whole family is *Puya raimondii*, a 30ft. giant from the high Andes of South America. Puyas will stand a few degrees of frost and seem quite happy in our Auckland volcanic soil. They do best in the full sun. Colours of the tubular flowers range from the metallic blue-green of *Puya berteroni-awa* (formerly *P. alpestris*) to greenish-yellow in *P. chilensis*, while others are white.

Pitcairnias, generally speaking, require more moisture and more shade than most other terrestrials. They do well outdoors here, while in the greenhouse they make good foliage plants. Their tubular flowers are predominantly red or yellow with a few orange or white and they remain colourful over a long period.

Hechtias can take plenty of sun and thrive among the rocks. The leaves of some become rosy-bronze in the right conditions and make a splendid rosette, often up to 3ft. across. They are grown more for their form than for their flowers, which are generally small and whitish on a thin 2-3ft. stem.

With a few exceptions all the members of this sub-family are terrestrial or saxicolous and have a whorled rosette of stiff spiny leaves.

In *Tillandsioideae* there are only six genera, but they account for nearly one-half of all the known species of bromeliads, and the tillandsias themselves are at the top of this list with over 400 species. The *Vriesias* come next with nearly 150 known species, while *Guzmania* and *Catopsis* account for most of the remainder. The leaves of all the members of this group have smooth spineless margins. They vary in length from $\frac{1}{2}$ inch to 6 feet. They may be flat and glossy or round and tomentose. Most of the plants in this group are epiphytic but a number of the larger species are terrestrial or saxicolous (rock-growers). Their flower colours vary from violet-blue to red. Seeds of the *Tillandsioideae* have little silky, feather-like parachutes often attached by a silken cord, so that when the dry fruits mature and burst open the seeds are expelled, caught by the breeze and carried off to a new location.

Taking the tillandsias first, we find that while most of them are epiphytic, some, like *T. grandis*, are saxicolous. Incidentally, the inflorescence of this latter can reach 10ft. Quite a number will grow equally well on rocks, on trees or in well drained soil, e.g. *T. lindenii* from Peru. It is not at all fussy and does well outdoors under the trees in volcanic soil. There is also a distinct xerophytic group which is found almost exclusively in the tree-tops or on deciduous trees. They

are almost all heavily covered in gray peltate scales and as they have no central water reservoir so they must depend on heavy fogs or dew, in the absence of rain, for most of their moisture, which the scales are able to suck up, acting like miniature sponges.

Most of these species do not develop a heavy root-system, because, in the wild, their roots are principally hold-fast roots and do not serve as food organs. You can see the extreme case in *T. usneoides*, or Spanish Moss, where there are just no roots at all. This is the plant, by the way, that one sees hanging in festoons from trees in pictures of Florida. It is almost a pest there, people paying good money to have their trees de-mossed.

Turning now to the vriesias, we find that in general they are shade-loving plants, their leaves being thin, glossy and spineless. Most are epiphytic but some can establish on the ground and do very nicely. I know of one large species, *V. bitumentosa*, growing in an Auckland garden which is about 3 feet high and wide. All the species have leaf reservoirs for retaining water. Flower spikes of vriesias are usually flat and feather-like in shape—hence the common name 'Painted Feather'. Yellow is the predominating colour of those that bloom in the daytime, while those that flower at night are generally white. Many vriesias hold their showy inflorescences for from 4-6 months, and are therefore extremely useful for decorative work.

And lastly in this group we have the *Guzmania* and *Catopsis*. Here again the leaves are thin and smooth, similar to the vriesias. Nearly all are epiphytic also, but the flowers are quite different, being in two rows on a single rosette or in several cluster branches. Colours are again yellow to white. The guzmanias are usually characterised by fine longitudinal brown lines in the leaves.

Next we come to the third sub-family, the *Bromelioideae*. This group contains the greatest number of genera—nearly 30—and therefore has the greatest range of plant forms. Their fruits are berry-like, usually in clusters of separate fruits, but are welded together in the pineapple and false pineapple. Some of the giant aechmeas have large compact heads of pineapple-like fruits but they are not actually welded together. This group lives variously on the rocks, in the ground or on trees. Most of them have liberal water reservoirs at the base of the leaves, but those such as *Ananas*, *Cryptanthus* and *Bromelia* are strictly terrestrial plants and so have no reservoirs at their leaf bases. Most of this third group develop a rather strong root system and also have a greater adaptability when grown in pots. Most of the billbergias are epiphytic, and while they will grow well in osmunda fibre, they have adapted themselves quite successfully to soil culture and do well when grown in a good porous mixture.

Now of course the best known plant of this sub-family is the pineapple itself, *Ananas comosus* (formerly *Sativus*). As far as is known, the pineapple was first discovered on the island of Guadeloupe by

Columbus on his second voyage to the New World in 1493. Since then it has travelled far and wide and is today big business in several countries. In Hawaii between 400,000,000 and 500,000,000 fruit are produced each year from the five islands on which there are plantations. In area these amount to about 70,000 acres, or $\frac{1}{4}$ of all the cultivated land on the *whole* territory, and return about 110,000,000 dollars to the islands annually. The largest of the eight packing companies, named Dole, owns the entire island of Lanai and transports the fruit to its cannery at Honolulu, 60 miles away, by powerful ocean-going tugs. This company packs 40% of Hawaii's production in the world's largest fruit cannery, which occupies 39 acres of floor space. Their record pack for one day was 4.7 million cans of fruit and juice. Limited commercial production, from the fibrous stump of the fruit, has been started on bromelain, a protein digesting enzyme. These enzymes have a number of uses, chiefly in brewing, meat-tenderising and in medicine. Now the *Ananas* and the *Pseudananas* (that is the false pineapple) are rather large for house culture, with the exception of *Ananas ananasoides* var. *nana*, which is rare and is the smallest of all the pineapples.

The popular billbergias, named after the Swedish botanist, Billberg, are easily handled and require little attention. Their flowers are among the showiest of the family, although they are of short duration.

Next we have *Aechmea* (from the Latin *aichme*, a point, referring to the rigid points on the calyx), with 'Foster's Favourite', the first bromel to be patented in America. *Aechmeas* are interesting companions and usually showy, being in flower for much longer than the billbergias, with the colourful bracts and berries lasting for months.

Two more names which are rapidly becoming common are *Nidularium* and *Neoregelia*. At one time they were grouped together, but recently those having a central flower cone have been given the name *Neoregelia* while those having little nests of flowers among the central leaves are called *Nidularium*. Though naturally epiphytic, they respond well to soil culture, especially *Nidularium fulgens*. The colour effect produced by this plant is primarily due to the central leaves, these having changed from green at the onset of the flowering period. They remain thus for some months.

A word now about the *Cryptanthi*. These are quite small plants by comparison with the rest of the family but they are nonetheless attractive. The flowers are white and almost hidden (the name means hidden flower) but the leaf patterns and colours of these 'earth stars' endear themselves the year round to the plant lover, *Cryptanthus zonatus* and *C. acaulis* are two examples.

The last of the more commonly known genera is *Bromelia*. Among the bromelias are some of the most spectacular members of all the flowering bromels, most are excessively large and spiny, and should

be grown outdoors for maturing to flowering size. *B. finquin* has scarlet leaves up to 6ft. across with white or pink flowers.

Apart from the pineapple itself, at least two other plants have economic value. One is the caroa (pronounced car-wa) or *Neoglaziovia variegata*, a fibre plant of the North East of Brazil. This fibre now practically replaces the jute which was formerly used for sacks in which cotton and castor beans are shipped. This has given Brazil an industry which has made an immense saving over the purchase of bag fibres from other countries, as the local process for preparing the caroa is very inexpensive. The other plant is the ubiquitous Spanish Moss. When dried it is used for the stuffing of upholstery and recently, I believe, a useful wax has been extracted from it before drying.

Of course it is their decorative value that we are most interested in, and as houseplants bromeliads are truly remarkable for they can almost take care of themselves. Go away on a week's holiday and you will find them on your return as fresh and pert as ever. Though they may have come from the tree-tops of a Brazilian jungle, they are quite content to settle down on a corner of your mantel. Put them in a pot that is not too large, give them a soil that is light and porous and on the acid side, keep their natural vase filled with water, give them a little mild liquid fertilizer once a month, and they will do all they can to make you glad that you have adopted these members of the pineapple family in your garden or taken them into your home.

In conclusion, I would like to mention the Bromeliad Society. The Society was formed in 1950 in Los Angeles and is international in its scope, issuing a bi-monthly bulletin. Our president is Mr. Mulford Foster of Orlando, Florida—a man imbued with an extraordinary amount of that wonderful human quality for which there is no substitute—enthusiasm. This is directed primarily to bromeliads from whence it fans out over many diverse activities—exploration, landscaping, photography, writing, painting, lecturing, hybridizing, and maintaining a collection of over 400 species. He has discovered on his exploring trips at least 175 species of bromels new to science and many others are awaiting description and publication. He is very ably assisted in all these efforts by his wife, Racine, who is an inspiration not only to her husband but to all those with whom she comes in contact. Quite a number of plants have been named for these two as witness the *Aechmea* 'Foster's Favourite,' *Aech. fosteriana*, *Aech. racinae*, and so on. They are truly a remarkable couple. In New Zealand, Mrs. M. Waterman, 22 Otakau Road, Milford, would be pleased to give information regarding the Society to any interested enquirer.

CAMELLIAS OF THE RETICULATA GROUP

T. E. Y. SEDDON (Wellington).

There is magic in the word '*Reticulata*' to the cultivators of camellias, and deservedly so, for the beauty of the blooms of this species excels the loveliness of the flowers of the other eight species of the genus *Camellia*. There is mystery too and romance in the introduction to our gardens of the *Camellia reticulata*. There is an interesting history of how the different forms of this species arrived in America, in England and in New Zealand.

H. H. Hume in his book *Camellias — Kinds and Culture* states that *C. reticulata* was introduced to Western gardens around three incidents — (1) Bringing the species to England in 1820 and 1834; (2) arrival in the early 1950's of what was described later as a rare double form; and (3) finding the wild single flowered form in China and collecting its seeds in 1912-1913, 1924 and 1925.

Hume ascribes to John Reeves the credit of importing the first *Camellia reticulata* to England from China in the years from 1812-1831. John Reeves was located at Canton, China, as Chief Inspector of Tea for the East India Company. However, it is known that ships commanded by Captain Richard Rawes brought the first *Camellia reticulata* to England in 1820.

John Lindley described the new species in the *Botanical Register* 1827 and named it *C. reticulata* 'because of the clearly defined veining of the leaves.' The form introduced by Captain Rawes is the type of the species we know in England and in New Zealand. It is now generally known as *Camellia reticulata* 'Captain Rawes.' Very early this species was introduced to New Zealand and splendid specimens were grown in the gardens of Mr. MacGregor at Fordell, Mr. Russell Grace in Wanganui and Mr. Stevens in Bulls, and by Mr. Peter Black in Palmerston North.

Robert Fortune, well known as a plant collector in China for the Royal Horticultural Society, will ever be remembered for *Rhododendron fortunei* (parent of *R. 'x. Loderi'*), and many other plants of outstanding merit. In the early 1850's he collected, probably in Canton, a camellia and introduced it to England. It was called *Camellia reticulata florepleno*. What became of it was a mystery until, in 1950, Mr. Ralph Peer discovered it in Portugal. *Reticulata flore-pleno* also reappeared in that world famous garden of Sir Giles Loder in Sussex.

George Forrest, the famous plant collector in China from 1904 until 1932, discovered and sent to England for the enrichment of English gardens, many species of rhododendrons and magnolias. In Yunnan he collected seeds of a single flowered *Camellia* that grew in pine woods and thickets. The late Mr. J. C. Williams, in his garden at

Caerhays Castle, Cornwall, had it flourishing and setting seed in abundance. A new race of *Camellia reticulata* may spring from this active single form.

The beauty of the *Camellia reticulata* 'Captain Rawes' excited the interest of camellia growers the world over for it was felt that in the recesses of China there must be similar, or at least some more forms of this entrancing family. The difficulty about acquiring knowledge of these treasures was heightened by the fact that the highly esteemed *Camellia reticulata* was not for sale. It was the treasured possession of the conservative and of the wealthy families. Its presence and its cultivation was in Kunming, in the province of Yunnan in South Western China. Conservatism, difficulty of access and rumours of war, were barriers to any progress in the search for these forms of *Camellia reticulata* in the 1930's, but in the mid-40's three enthusiasts, working separately, were determined to win for garden lovers the world over the prizes that so long had been cherished only in China. These three horticulturists were Dr. Lammerts of America, a scientist; Mr. Walter Hazelwood of the 'Camellia Nurseries' in Sydney, New South Wales, and Mr. Ralph S. Peer, of Hollywood, California. The Director of the Yunnan Botanical Institute at Kunming was Dr. Te Tsun Yu and with his help these three gallant gardeners were able to obtain shipments of the treasures from the Institute gardens. Over twenty varieties of *C. reticulata* were known to be growing in these gardens. Dr. Lammerts obtained a shipment for America but it is with the importation to California of Mr. Ralph S. Peer's consignment that we are particularly interested. It is to Mr. Peer we are indebted for his courage and determination to win for gardeners these treasures. What disappointments he must have endured he will never tell. What loss of time and money he suffered were compensated by the success which he eventually achieved in procuring a whole set of these forms of *Camellia reticulata*. Sixteen of Mr. Peer's priceless *C. reticulata* died as the result of the treatment meted out to them on their arrival in America due to the stringent quarantine regulations about importing to the United States any additional diseases. Like Bruce's spider, the intrepid Mr. Peer tried again and eventually succeeded in obtaining eighteen forms of *C. reticulata* and introduced them into nurseries and gardens in America.

Mr. Peer travels the world in search of new camellias. In 1952 he wrote to me about camellias in New Zealand and in the same year he visited the Dominion and saw some of our gardens and nurseries. He was very disappointed to find we in New Zealand were so backward in knowing and cultivating the newer and the more beautiful camellias. In America there were enthusiastic Camellia Societies — most lively and enterprising societies spreading the cult of the *Camellia* and enriching many a garden and highway.

In 1954 I was the guest of Mr. Peer in Hollywood, and through him met, in Pasadena, the leading authorities on camellias at the

Descanso Gardens, the La Canada Gardens and the Huntington Gardens. Blooms of the newer forms of *Camellia reticulata* were shown to me and they certainly were breathtaking in their beauty. To Kew Gardens Mr. Peer generously presented Kunming camellias. To gardens in France he has been exceedingly generous. Two years ago he sent to me for the Wellington Botanical Gardens fifteen forms of the Kunming *reticulata*. With bated breath I awaited the news of the survival of these gifts for these plants were subjected to rigorous treatment — treatment meted out to all plant immigrants by a strict Agricultural Department. All soil was removed from their roots and then a cleansing process was applied. Twelve plants have survived. I have to thank Mr. David Goudie of Harrison's Nurseries for the skill and kindness with which he tended these poor plants and nourished them and brought them to a healthy state.

These are the names of the survivors:—

Name	Catalogue Description
Buddha - - - -	Rose madder. Very large irregular semi-double with erect wavy petals. Vigorous upright growth.
Butterfly Wings - - (Hoyeliticchih)	Light crimson. Large irregular semi-double with broad wavy petals.
Chrysanthemum Petal - (Tsuban)	Light carmine pink. Medium large rose form to formal double.
Lion Head - - - - (Shihtzetou)	Deep Turkey red — striped and blotched white. Large to very large semi-double to heavy form. Vigorous growth.
Moutancha - - - -	Light crimson to bright carmine marked with white at veins and on inner petals. Large to very large, irregular paeony form with wavy and spiral petals.
Osmanthus Leaf - - - (Hsiaokueiyeh)	Light crimson. Sometimes marked white on inner petals. Medium large semi-double to heavy form.
Pagoda - - - - - (Sungtzelin)	Dark scarlet red, large rose form to formal double; slender growth.
Purple Gown - - - - (Tzepao)	Oriental red to dark purple when opening. Very large, rose form to heavy paeony form.
Shot Silk - - - - - (Tayinhung)	Brilliant spinel pink, large loose semi-double.
Takeiyeh - - - - -	Deep carmine. Large semi-double to paeony form.
Tali Queen - - - - (Talicha)	Turkey to oriental red, lightly splashed white — large irregular semi-double.
(Liuehyinhung)	Light spinel pink. Large, irregular semi-double with wavy petals.
Willow Wand - - - -	

In the course of a few days these Kunming forms of *Camellia reticulata* will be handed over to Mr. Hutt, Superintendent of the Wellington Botanical Gardens. The beauty of the blooms which were for centuries jealously cherished by favoured Chinese will now gladden the hearts and the eyes of visitors to the Wellington Botanical Gardens.

Wellington gardeners, I am sure, will appreciate the generosity of a world famous plant lover, Mr. Ralph S. Peer, President of the American Camellia Society and accord him when he visits New Zealand, probably this year, our thanks and our appreciation.

SOUTH AFRICAN SHADE LOVERS

F. R. LONG, A.H.R.H.S. (South Africa).

Gardeners often ask what they can grow in a shaded position, thinking perhaps that it is an awkward place where the usual plants will not succeed. They should, of course, consider themselves lucky that they have some shade where unusual plants will only succeed well under such conditions.

This thought prompts me to discuss several little known or little cultivated South African plants that succeed under shady conditions.

Three aspects or conditions come to mind, namely:—

- (a) Shade provided by tree foliage, often dappled shade.
- (b) A south facing (southern hemisphere) slope with shade giving bushes.
- (c) Shade under and between rocks, with and without water.

(a) *Shade under trees.* My mind is at once thrown back to the wild garden on the slopes of the gardens of the Government Union Buildings in Pretoria. There, a low spreading evergreen tree, a Melkbo-shout, (milk tree wood), *Sideroxylon inerme*, with its shiny dark leaves, provides a low canopy of shade under which was planted, quite close together, that lovely red-orange flowered *Clivia miniata* the St. John's or kaffir lily. It is also known under the botanical genus *Imantophyllum*. It is found wild in the moist forests of Natal (hence St. Johns — a port between East London and Durban). The broad dark leaves with the 2 ft. high flower stalks, each bearing clusters of 10 - 15 brilliant orange-red tube-like flowers, make a brilliant and everlasting display. I say everlasting because, when once planted they go on for years without the need of replanting. This bed I have in mind is 30 feet wide, with 2 feet of soil, more or less, above ground level, supported by a circle of bold rough stones, the soil was a good average garden soil with plenty of leaf mould, peat and compost. On the outside where less shade and more sunlight could creep in, clumps of the dwarf *Agapanthus* and *Dietes grandiflora* could be planted, the whole making a very attractive and permanent feature.

Clivias may be produced from seed or by division. The roots are matted and they do not relish disturbance. We had in Port Elizabeth, for the Plant Conservatory in St. George's Park, some 50 plants of clivias in 5 gallon oil drums. These went on year after year with only an annual top-dressing of manure. They were plunged in a bed of ashes under a large cypress tree for 10 months in the year and brought into the cool conservatory to flower, after which they were returned to their ashes. Repotting or re-tinning is only necessary every 4 or 5 years. They flowered prolifically every year. This gives one the idea of the toughness of this lovely lily-like plant.

There is a pure yellow variety — var. *flava*. Another species of *Clivia* is *C. nobilis* or cape clivia. This has denser umbels of flowers and enjoys complete shade.

Similar in habit, shape and colouring, is *Vallota purpurea*, known as the George or Knysna or Scarborough lily, well worth growing under similar conditions.

Other shade trees for this purpose are *Harpophyllum caffrum*, (kaffir plum), *Ekbergia capensis* (Essenhout), *Podocarpus* spp. (yellow wood) and many others. Avoid pines and gums.

Many of the *Agapanthus* do well in shade or partial shade as well as in full sun. They remain year after year without transplanting, and are ideal for the carriage drive under avenues of trees. They flower well without much water although to flower really well they should receive plenty of moisture during the pre-flowering months; in all they are just the ideal garden plant.

The tall *A. africanus* (*A. umbellatus*) is the well known blue and also white Christmas flower, this is followed a month or so later by the dwarfer and paler blue, *A. longispatus*, an ideal plant, 2 feet for semi-shady places.

Whilst on the subject of *Agapanthus*, don't overlook a favourite of mine, *A. inapertus* with drooping, pendulous, deep ink-blue flowers. There are also two deciduous species, *A. pateus* and *A. pendulus*.

They are all hardy and will stand some frost, easily raised from seed or by division after flowering.

(b) *A South facing slope with shade giving bushes.* The bushes could be that lovely *Burchellia bubalina*, *Sparmannia africana*, *Ochna pulchra*, *Plectranthus berrii*, *Phygelius* spp., *Favetta bowkerii* or *Rhigosum obovatum*. There should be a clear space under the bushes, say at a height of 3 to 4 feet. Under such shade where there would be leaf soil and moisture, the lovely *Veltheimia viridifolia* would grow (see illustration Vol. 11, between pp. 66 and 67). This is found wild within 2 miles from where this article is being written. It is an evergreen bulbous plant which does not seem to enjoy a complete resting period. It has soft pink flowers and can be raised from seed.

Another and somewhat similar plant is the *Eucomis undulatus*, the pineapple flower, requiring more sun and the bulbs should be planted

on the surface. These also may be raised from seed. Another species *pole evansii* must be mentioned here but is *not* a shade lover, a lovely outstanding plant with flower stalks 6 feet in height, a real treasure.

On the edge of such groups of shrubs should be planted *Haemanthus magnificus* (yellow) and *H. katherinae* (scarlet) with their paint-brush flowers, up to 6 inches in diameter and on stalks $1\frac{1}{2}$ to 2 feet tall. These like shade and moisture before flowering and are what might be called permanent bulbous plants. I know a plant of *H. katherinae* in a somewhat neglected half shady rockery that has been flowering annually for twenty years. There are other *Haemanthus* such as *H. Puniceus* but this grows in full sun, in gravelly soil and dies down completely, then flowers and the pair of flat leaves follow. The *Haemanthus* are unique and lovely.

Mention must be made of *Crocoshmia aurea* (also placed under *Tritonia*), a gem of a garden bulbous plant in the *Montbretia* class, easily grown in shade with morning sun, with orange red flowers up to 3 feet. When well established they do not need transplanting. There is a natural variety *maculata* with bands of chocolate across the petals.

If there is a stream or a pool of water near at hand, also in the shade or part shade, try the scarlet river lily, *Schizostylis coccinea*, also a pink form. This is found growing in tall grass on river banks with bulbs about 1 foot above water level. Clumps of bulbs may be transplanted after flowering but time must be given for them to settle down, otherwise an easy plant to grow.

Still another Cape plant in this class of attractive flowering bulbs is *Chasmanthe floribunda*. (formerly known as *Antholyza*) with yellow-orange flowers. These should be grown in bold clumps in partial shade with afternoon sun.

Other plants are *Impatiens capensis*, the common arum lily (*Zantedeschia aethiopica*), then *Gloriosa virescens* and *G. superba* but these should have their flowers in some sun but roots in the shade. For ground plants there are several species of *Asparagus*, many ferns and a *Lycopodium* and *Selaginella*.

(c) *Shade under and between rocks.*

If one is so fortunate in having rocks in one's garden or a well constructed rock garden with shade and moisture, what a collection can be made of unusual and interesting South African plants! It is true that most of our country enjoys intense sunlight, very dry seasons and almost desert-like conditions but there are exceptions. I allude to the forests on the coast between Cape Town and Port Elizabeth; the forest and bush areas in the East London district; along the Natal Coast; the escarpment of the Drakenburg Mountains and parts of Eastern Transvaal. Here there are extensive areas in which are many outcrops of shady and moist rocks.

Starting at home (Port Elizabeth) some 50 miles on the Zuurberg Mountains, we have two delightful *Streptocarpus* species, *S. parviflorus* (now *S. meyeri*) and *S. rexii*. The former is found with its flat rosette of leaves on moist rocks in a perpendicular posture (like *Ramonda* of Europe), in deep shade. *S. rexii*, the main parent of the glorious greenhouse hybrids with its longer tubes of mauve flowers, is found in many parts of the country. Both these are raised by seed and like leaf mould, peatmoss and sandy soil — this applies to all species.

Other species with larger flowers but only ever having one leaf, sometimes up to 3 feet in length, are *S. dunnii* with reddish port wine coloured flowers, *S. grandis*, a showy purple Zululand species, *S. wendlandii*, its single leaf sometimes $2\frac{1}{2}$ feet long by 2 feet wide with a couple of dozen deep blue violet and white flowers — a real gem. Finally the white flowered *S. vandeleurii*. This latter and *S. dunnii* I have collected in the Transvaal with its dry frosty winters, hidden in rocky, shaded nooks. They all seed freely, but look out for the long pods which suddenly twist, open and scatter their seeds. A collection of *Streptocarpus* alone would be an absorbing hobby. The one leaf species are fascinating.

Another interesting plant liking these conditions is *Begonia sutherlandii* which I have found in the forests near Kokstad, Cape Province, a lovely species with salmon flowers. There are two others, *B. natalensis* and *B. dregei*. These three can be grown like the ordinary garden Sultan *Begonia*.

For showy masses in blue, try some of the *Lobelia*; they love moisture and some shade. *L. erinus* is easily raised from seed.

I mentioned the *Calla* or arum lily, or to give it its correct botanical name, *Zantedeschia*. If dry conditions can be assured during the dormant season, it is well to try the lovely small arums namely *Z. rehmannii*, which vary in colour from white to a dark purple, also another *Z. pentlandii* with its golden yellow flowers, but these should have some sun. Beware of allowing the roots to shrivel in the winter. Store them in moss or vermiculite.

There are several succulents that need shade and are found on sloping rocks. Several *Haworthia* species come to mind. *H. cymbiformis* is a translucent species often found in large flat clusters of anything up to 50 tightly packed rosettes, growing in full shade in a well drained bank in leaf soil, under a shrub, or an *Aloe* or *Euphorbia*, the latter being in the sun. *H. planifolia* is very similar. Other species of *Haworthia* found under shade giving rocks are *H. pilifera*, *H. dielsiana* and *H. laetivirens*.

Other succulents found growing in the shade of shrubs and rocks are some of the species of *Gasteria*. These are most attractive with their mottled leaves, tall pink flower spikes, tipped green. They take a lot of killing when once established providing they are not over

watered. Some species, like haworthias, must have sun. But I must reserve my special subject — Succulents — for a separate article.

A good filler between rocks and as a ground cover is *Crassula multicava*. A showy soft wooded perennial with gay mauve flowers is *Hypoestes aristata* which can be raised from seed. *Sutera grandiflora* is found in half shade in the Transvaal; the writer recently came across it in Swaziland on the roadside in a dense pine forest.

It is realised that many plants have been named and many can be raised from seed. Much of the seed cannot be bought on the market but most of them can be obtained from the National Botanic Society of South Africa, Kirstenbosch, Cape. Members (30/- per annum) are issued with 15 packets of seed free every January. The seed list is most comprehensive and of course reliable and true to name.

ROSA CHINENSIS AND ROSA CHINENSIS MINIMA (II)

NANCY STEEN (Auckland)

Throughout New Zealand, the most familiar red China rose is 'Cramoisie Superieure' (1832) which can be purchased in its dwarf and climbing forms. It was raised at Angers in France by an amateur grower, and later was distributed by the French breeder, Vibert. It has abundant glossy dark green foliage with reddish brown tones in the young shoots and double, cupped, dark-red blooms in small clusters. These hold their colour amazingly well during really hot weather. Given a warm wall, the climbing form will travel great distances and provide a feast for the eyes off and on all year. As the flowers have the typical weak 'neck' of the China roses and are inclined to nod, this rose looks its best when seen from below.

'Fabvier' (1832) was bred in France from *chinensis* var. *semperflorens*, and called after General Fabvier who fought under Napoleon, and later, for Greek independence. Finally, he entered parliament where he fought to combat excessive taxation. This 18 inch rose, with dark reddish green foliage, wiry stems, and continuous habit of flowering, makes a wonderful rock garden shrub, as well as being useful as a bedding plant or to form dwarf hedges. The vivid crimson-scarlet flowers are practically fadeless, even during the hot summer months in Auckland and have fewer petals than 'Cramoisie Superieure', a bunch of yellow stamens showing when the flower opens fully. The unique hybrid perpetual, 'Roger Lambelin' (1890) with a white frosting round the uneven edges of its deep crimson-purple petals, inherits this touch of white from its tiny ancestor 'Fabvier', though in the latter rose the white appears as a stripe down the centre of some petals. *Campanula carpatica* in its various colours, *Dianthus* 'Waithman Beauty' and *plumarius* and *Gypsophila repens rosea* look well growing around the edge of the bed of 'Fabvier' with pink freesias for additional spring colour and *Zepheranthes rosea* to add interest in the summer.

'Mrs. Bosanquet' (1832) is to be found in some old gardens, but not in this Auckland one. Judging by the fine colour plate of this rose in Dr. Julius Hoffman's 'The Amateur's Rose Book', published in 1905, this rose has similar colouring to the Bourbon, 'Souvenir de la Malmaison', though not the size of flowers or number of petals. This is not surprising as Laffay of France raised it by crossing 'Old Blush China' with a Bourbon—in fact, like 'Hermosa', it is listed in some old books under Bourbons, though modern books consider it as a China. Apparently, it is a strong grower and produces an abundance of waxy-looking pale blush flowers in sprays.

'Hermosa' or 'Armosa' (1842) is an exquisite pale pink many petalled rose which opens flat, rather like a miniature 'Souvenir de la Malmaison', except that the blooms deepen with age on the outside. This is not remarkable, as 'Hermosa' has some Bourbon in its ancestry though in its dwarf stature, leaf, and wiry, twiggy stem, it is pure China. For a front border, rockery, or bedding plant this rose is ideal. The late Queen Alexandra was very fond of it and grew it in quantity at Balmoral Castle, another of her favourites being 'Old Blush China'. 'Hermosa' is exquisite in miniature flower arrangements as it mixes well with old fashioned pinks and unusual small bulbs. A carpeting of dwarf pink and blue forget-me-nots can be planted underneath it and the small pink flowered *Fuchsia* 'Bridal Bouquet' looks well in the same bed. A group of bushes of 'Hermosa' was seen in Ngaruawahia cemetery recently. They were flowering well; but the foliage was rather ragged and the blooms inclined to ball, as the weather had been wet and very boisterous. In this exposed position, the outer petals had turned very red, and the flowers did not show the delicate colouring that prevails in a sunny, sheltered garden. Too much rain mars the blooms; but, apart from this, 'Hermosa' makes a healthy and desirable bush. A climbing form is listed in some overseas catalogues.

R. viridiflora, the 'Green China Rose', is also known as *Rosa monstrosa*. In fact, where some people admire its strange flowers, others dislike it on sight, and can find nothing to recommend it as a garden plant. It was known to be in cultivation as early as 1743; but it was not sold commercially till 1856. Like all the China roses it does extremely well on its own roots, and soon makes a densely clothed, upright shrub from which flowers can be cut all year. Many deeply serrated enlarged sepals make up this remarkable bloom. At first, the colour is a rich clear green; but later, bronze and russet tones appear and at this stage, the flowers remain on the bush for weeks. They do not wilt or droop, are carried in upright sprays, and finally just dry off. It pays to cut off a number of the older blooms from time to time as this forces fresh growth for the winter. These flowers are lovely in green and white arrangements, with variegated foliage, or with old roses. Charming and unusual shoulder sprays and posies can be made with them and they possess the great advantage of not fading or wilting easily. Tall fuchsias, such as the rich coloured 'Queen Mary', 'General

Montgomery', 'Aunt Juliana' or 'Othello' trained up a wall behind the green shrub, add interest, and the ground around can be carpeted with Juliana primulas, *Astilbe crispa*, *Viola hederacea*, and tiny azaleas and ericas.

A charming rose, 'Fellenberg' (1857) which Miss Willmott describes and Alfred Parsons, R.A., illustrates so well in 'The Genus Rosa' as *Rosa chinensis* x *multiflora*, was known in France as 'Le Belle Marseillaise', and afterwards, enjoyed great popularity in England, where it was considered one of the freest flowering of all roses. So far, except for our own plant, we have not seen it in New Zealand though it does possibly survive in some old gardens. It very closely resembles the China roses and, on its own roots, grows into a handsome shrub, which produces large corymbs of glowing carmine-pink cupped flowers. In George M. Taylor's 'Book of the Rose', he describes what he calls an impressive shrub, which, on closer inspection, he found to be 'Fellenberg'. It was growing in a Huntingdonshire garden and the owner told him that it was a large bush when he came to live there 25 years previously. In all those years, it had never failed to be smothered with flowers; and he suggested that its health and vigour were due to the fact that it was growing on its own roots. Except that it is more vigorous than the pure China roses, 'Fellenberg' resembles closely that side of the family, rather than the *multiflora*.

'Le Vesuve' (1887) as it is listed in present-day catalogues, or 'Lesmesle' or 'Vesuvius' in older ones, grows into a sturdier bush than 'Old Blush China' with larger, paler green leaves and fuller flowers. As these open, the centre of the bloom is a pale pink with the outer petals showing a rosy toning on their edges. By the next day, the colour is all rose-red and by the third day, it is a dark-red. This gives the plant a striking appearance. In some books, this rose is considered to be the same as the one illustrated by Redoute under the title, *Rosa cruenta*. Judging by the plants in this garden, that does not seem possible as there is no hint of the pink or changing colour in his painting—in fact, it more closely resembles the 'Crimson China'.

Rosa chinensis mutabilis, or 'Tipo Ideal' as it used to be called, is one of the unusual forms of the China rose. Its real origin is shrouded in mystery; but it would be interesting to hazard a guess that one of the several names by which it is known, *Rosa turkestanica*, gives a slight clue as to its history. The single yellow rose from Turkestan, also known by this name, could have been carried from its native home, by the slowly moving armies of Genghis Khan, the Mogul ruler who twice conquered China and roved as far afield as Europe. In the hinterland of China it could have met the single red-flowered wild form of *Rosa chinensis* as this grows not far from the Mongolian border. In *mutabilis*, the single 2 to 3 inch flowers open a soft yellow, change to buff rose, and finally turn crimson. The modern *floribunda*, 'Masquerade', has similar but slightly harder colouring. If

its wiry stems, clothed with hooked thorns, are near some support, it will climb up through a shrub as does the wild type from which it probably came. In England mention is made of a climbing form which grew up to the eaves of a tall house. As it is continuously in bloom, the light and airy chameleon-like flowers look well against a background of green foliage, or a softly mellow brick wall, as the colours blend well with such soft tones. *Mutabilis* requires a rather special spot in the garden, as a modern rose growing beside it would look quite incongruous and ruin the effect of gaiety and brightness created by this treasure.

There are white and near white China roses and these can be found here and there throughout the country; but there is also a lovely creamy white which is rare and unusual. This is 'Rival de Paestum'. In the days of Nero, Greek gardeners settled at Paestum in the Gulf of Salerno to grow roses in great quantity for the markets of those days—in particular, a lovely remontant rose, the 'Autumn Damask', was cultivated there. Perhaps 'Rival de Paestum' acquired its name by being considered a rival in beauty to those roses of old. The blooms are larger than some of the earlier types of China roses—the petals having the wonderful texture and colouring of a piece of old ivory. Mahogany coloured young shoots set off to perfection the loosely formed, nodding flowers of this rare beauty. These are seen to advantage on a raised part of the rock garden, with *Lithospermum* 'Heavenly Blue' and *Hypericum moserianum tricolor* growing nearby, as well as the dwarf white *Armeria* and the double white *Arabis*. White *Muscari* and dwarf *Scillas* give spring colours when interplanted with *Anemones sylvestris* and *appenina* and mossy *Saxifrages*. Ground cover is most essential in a hot climate.

'Comtesse du Cayla' is a hybrid China rose which has a romantic association as it was named in honour of the lady who was the mistress of Louis XVIII. It has semi-double nodding flowers of a warm coppery-pink—the base and reverse of the petals being lightly tinted with yellow. The wiry stems need very light pruning and new growth springs up from the base periodically, so, when the plant is well established and making plenty of new wood, it is an excellent plan to remove an old, tired branch right from the ground level each season. The flowers of the 'Comtesse du Cayla' blow open far too quickly in the hot weather to be of much use indoors; but in the winter, especially if picked in the bud, they make excellent cut flowers and look charming with coppery foliage. Bushes of this China rose are frequently seen in old gardens.

An uncommon rose, *chinensis serratipetala*, was discovered in a French garden in 1912, and given the name of 'Rose Oeillet de Saint Arquay'. It grows strongly and as tall as the best forms of 'Old Blush China'; but the flowers are fuller, crimson on the outer petals with the inner ones of a lovely soft shade of pink. Each petal is veined

with a deeper shade and serrated and fringed like those of picotee. This adds great charm to the flowers which come in rather large upright sprays. Though horticulturists recognise this name, it has no standing botanically as a type. Dianthus make good edging plants to grow in front of *serratipetala*, and *Oxypetalum caeruleum* or *Tweedia*, does well nearby—the grey foliage of both being attractive and the sky-blue velvet-like flowers of the latter making a charming contrast to the pink of the roses.

'Indica major' is not a pure China, being a first generation cross between 'Old Blush China' and an unknown non-remontant species—such a hybrid never flowers more than once in a season, even though one parent is as perpetual flowering as *Rosa chinensis*. On the other hand, by the second generation, remontancy generally reasserts itself. 'Indica Major' is to be seen growing wild in many parts of New Zealand; but there is no record of how or when it was introduced here. It is a charming plant, much taller than the pure China roses, with similar foliage and small curved thorns, but much fuller flowers. These come in small clusters all along the arching stems and a large bush in full bloom is a charming sight. The bushes grow up to 10 feet in height and quite as wide and look most effective when seen dotted over a green field with sheep and cattle grazing alongside. The close proximity, in one area, of a large railway viaduct with trains rushing by day and night, leaving trails of smoke in their wake, does not seem to worry these roses at all as they look extremely vigorous and healthy in that district. From early November till the middle of December, this rose is in full flower. As the buds begin to open, the outer petals have a distinct flush of red on them; but the fully open bloom is a pale pink, crowded with masses of narrow veined petals. These pale and reflex a little as the flower ages—which is not typical of any pure China rose as they always deepen in colour as the blooms age, particularly in very hot weather. Many old gardens in the country have large bushes of 'Indica Major' growing up through their hedges and it is even to be seen occasionally in the older parts of Auckland city. Few people realise that it was and still is, used as a stock rose in parts of Australia and on the Continent. Particularly is it grown along the Riviera and on into Italy and Switzerland. In many parts it takes the place of the hawthorn hedges of England. An Australian, Sam Atyeo, who lives in the south of France, and grows outdoor roses for the cut flower trade, uses 'Indica Major' as his stock. His plants produce hundreds of blooms daily for the Paris market—these having 3 feet stems. It is interesting to know that, at the present time, research work is being carried out on this rose in Switzerland.

The fine perpetual flowering modern roses owe a tremendous amount to these small, but still loved, China roses, which are cherished in gardens in many parts of the world. It is good to know that these modest, but generous, roses are not to be allowed to die out and be lost to posterity.

AUSTRALIAN PLANTS FOR THE ROCK GARDEN

DOUGLAS FIELD (*Adelaide*)

The rock garden has been filled with plants from the world over and has benefited immensely by bulbs from Europe, Asia and America, and other plants from China and Japan, but the accent has been on alpinists which require a cold winter as a rule. Many of the plants are not suited by the climatic conditions of the warmer districts of this country, but their places can be filled by plants from warmer areas. Australia has an amazing wealth of small shrubs and herbs admirably suited for this purpose. They may not be described as 'alpinists,' yet, nonetheless, they are welcome additions, and are very much at home in our rock gardens.

Among the toughest and most attractive shrubs, are the 'Australian Heaths.' These of course are not the true heaths, but are of a closely related family, *Epacridaceae*. There are about 21 genera in this family, and many of them occur in Australia, with a few extending to New Zealand. Many of them are useful in the rock garden, and the genus *Astroloma* is no exception. Winter flowering *A. humifusum*, the cranberry heath, is a most attractive mat plant for the rock garden, never becoming higher than 2in. and spreading from its central tap root to form a mossy looking carpet. In winter it is at its best with bright red bells sitting upright from the glaucous green foliage. The flame heath *A. conostephioides*, is a much larger shrub with long pendant bells. Again, like the former plant, it is in flower in the winter, and must rival *Erica* 'Winter Gem' for use and colour in the rock garden, and is not so particular in its soil requisites. *Styphelia exarrhena* is another heath, rarely more than 15in. in height. Like all the heaths mentioned here, it grows naturally in almost pure sand, and is common in the dry areas of the south eastern part of South Australia. In winter, it is a delight to see it smothered in pure white starry flowers, together with other Australian heaths growing naturally along the roadsides where it gets the run-off water from the roads when it rains.

Much use has been made in New Zealand of the grevilleas, and still more can be done. Although most of the genus consists of large growing trees or shrubs, some are quite dwarf. *G. lavandulacea* is an extremely variable species in both colour and form; its colour range is from pale lavender pink to deep red, while its habit varies from an upright form of about 3 feet, to a very low growing prostrate shrub of 6ins. The latter is a particularly useful form for the rock garden with its long arching branches, and comparatively large flowers borne all along the stem. It is well that these grevilleas are easily propagated from cuttings so that the various forms can be perpetuated in the garden. This species grows in varying soil conditions from clay to sand in its native habitat, and will withstand extreme conditions of heat and cold.

The Guinea Flowers, hibbertias, are grown in New Zealand gardens, and many will know *H. volubilis* the snake vine from N.S.W., but there

are many good rock garden plants of this genus which can be extremely attractive. *H. virgata* is one of the best from the eastern states, and South Australia. As the common name suggests, the flowers are bright gold and in the spring months, they are a mass of golden blooms of about 1 in. across. Other species are similar, and flower at the same time rarely exceeding 18 in. in height. *H. sericea* and *H. stricta* are similar and almost as good in flower. They are propagated by seed, and succeed in the poorest of soil, occurring naturally in limestone clay as well as rocky crevices and sand.

One little plant deserving a place in rock gardens is *Goodenia primulacea* or, as it was known to the early Australian settlers, Native Primrose. It belongs to the family *Goodeniaceae* (the same as the well known *Selliera radicans*) and is not too distantly related to such garden favourites as the lobelias and campanulas. This *Goodenia* is a low growing herb with radical leaves, and thrives along the roadsides of the Murray-lands and hillsides of South Australia. Its bright yellow flowers are conspicuous on long peduncles persisting in flower over long periods from July to January in its native habitat. It has been cultivated with success in Adelaide gardens, and is not so particular in its soil requirements.

A plant in the same family already gaining popularity in New Zealand is *Leschenaultia formosa*. Although not as famous as the blue *L. biloba*, it is, nonetheless a very good rock garden plant, and its habit is really superior to its much prized relation. The colour is by no means constant, and it is possible to get forms from a pale apricot through orange, to a brick red. One of the most famous Western Australian shrubs, it can be cultivated outside quite well in New Zealand and is easily propagated from cuttings, making it one of the most desirable of the Australian plants for the rock garden.

Australia is the headquarters for the family *Myrtaceae* and it is not surprising to find plants of that group making good rock garden specimens; in fact there is a large number including *Lhotskya*, *Calythrix*, *Micromyrtus*, *Thryptomene*, all of which have suitable species. *Baeckea crassifolia*, also a member of this family is a neat compact shrub of up to 15 in. in height, and in spring, its pale, lavender pink flowers cover the whole plant. It occurs in limestone clay as well as growing in almost pure sand of South East South Australia withstanding hot and dry conditions. Another myrtaceous shrub of considerable beauty is *Calythrix strigosa*. Undoubtedly one of the gems of the Australian flora, this plant is about a foot high, and in the spring and summer months it is outstanding with its mauve, starlike flowers which it bears in great profusion to cover the whole plant. It is from the storehouse of Western Australia and is a native of the sandy plains of that state.

It is worth noting that, although often these plants are apparently growing in pure sand, there is usually a heavy clay layer, sometimes several feet below, and the roots of these semi-desert plants can be found going straight down to the clay where it is comparatively moist.

It can be seen then, that although there is often a low rainfall in their native habitat, they have access to a fairly constant water supply in the clay, which retains the moisture over the dry periods. In New Zealand we have ample water but in order to give these plants suitable conditions, it is usually necessary to supply good drainage so that the plants are not waterlogged.

There are numerous plants from this country available for New Zealand gardeners to try for themselves. Some are already thriving in many of our gardens, but there are so many more not even in cultivation in Australia which are worthy of introduction.

EXOTICS AND ALPINES IN AUCKLAND

J. W. KEALY (*Auckland*).

Bananas and boenninghauseniass—as a matter of fact, I do not grow either. I have not sufficient space for the former, while the latter, which grows at fairly high altitudes in Sikkim, is a plant I have not so far been able to obtain. The names stand, however, both as a challenge and a warning — a warning of the dangers and temptations into which one falls when one forsakes the trodden paths and turns one's back upon the well established rules of gardening.

If you would have an easy life, study your soil, your aspect and your climate, and confine your planting to varieties which have been proved and tested and are known to thrive under conditions that your garden offers. This advice is sound, and I would recommend it to all those who wish to shine in garden competitions, and to turn each inch of space into a blaze of colour. Sound advice — but dull; in each of us, no matter how subdued, there lurks the gambler, and besides, as every herdsman knows, the grass the other side of the fence is always greener. Working against one's climate means hard going, and brings disappointment, but can bring triumph, too, and I am unrepentant.

This apologia springs from the fact that I have been requested to describe some efforts I have made to see if alpine plants can be induced to grow in Auckland. The expression 'alpine plants' is used in a loose sense to cover various perennials and bulbs (some from high altitudes, but others from the lowlands) which can most easily be made at home in the rock garden. Few, if any, of the species to be mentioned are newcomers to New Zealand; some are rare, but many will be quite familiar to most southern gardeners. Most of them, however, are not often seen quite as far north as Auckland, and their behaviour when attempted as 'warm climate' plants may be of interest.

Alyssum saxatile proves easy, as was to be expected — for it comes from southern Europe, and may be seen ringing the base of the Acropolis, in Athens. It appreciates full sun — even in Auckland.

Acaena. Such mountain species of the 'bidi-bid' as I have tried also prove easy and make pleasant carpeters. The weedy species are, of course, excluded. Sun, or partial shade.

Acantholimon glumaceum, from the cliffs of Ararat, can be grown without great difficulty, but, with me, has proved short-lived. Though placed in scree, it may have needed a much drier situation than I gave it.

Adenophora farreri, from the far interior of China, flowers well, and seems quite permanent. Growing 2 feet high, it is more suited to the border than the alpine garden. *A. potaninii* is similar.

Achilleas — all I have tried are easy, and the best of them well worthy of a place, in poorish soil, in sun.

Aciphylla. This genus can be grown, but is not easy, and is apt to be short-lived in Auckland. Scree conditions probably are best.

Aethionema includes some charming species. Coming from Asia Minor, they like sunny places, are extremely dwarf, and most attractive. Some have dainty bluish foliage. (*A. schistosum* is a good one, and is available here in New Zealand).

Allium trumpets a warning. *A. triquetrum*, our dread onion weed, is recommended by an English author for rock garden planting. Caution must be used lest other wolves find place under the cover of alluring overseas descriptions. Some, however, are both safe and charming. *A. cyaneum* is one which can be safely recommended. It is dwarf, and bears blue, bell-like flowers.

Alsine bauhinorum (syn. *Minuartia capillacea*) and its twin species *A. laricifolia* both do well with me. Reaching a height of but 4 inches they are attractive in or out of flower, and are quite excellent as 'cover' for dwarf bulbs, such as the better *Crocus* species. They come from the Alps of Europe, and are related to that dainty 'ramper,' *Arenaria balcarica* but like sunny places and are non-spreading.

Androsace — many not easy even in Europe — presents even greater problems in this warm and humid climate. *A. lanuginosa*, from the Himalayas, proves a definite success, however, and is charming both in flower and foliage. (Scree). I have had some success with *A. sempervivoides*, and have also grown *A. sarmentosa* but this last species quite refused to flower. (There are other alpine species which behave this way in Auckland, and the cause may be the warm winter, which denies them their accustomed season of dormancy).

Anemone is a vast race, and includes plants from many climates, and from varied situations. *A. palmata* has done well with me, staying extremely dwarf, and giving flowers of both white and brilliant gold. It comes from southern Europe and North Africa. *A. appenina* has done well, and, of course, *fulgens*. The pulsatillas can be grown, but do not flower freely, and the same applies to certain of the smaller wood anemones.

Aster, again, contains a wealth of species. *AA. alpinus*, *purdonii*, *farreri* (Farrer's 'Big Bear') have all proved quite successful. On the other hand one of the baby garden hybrids grows rampageously, but does not flower.

The little 'Marsh Rosemary,' *Andromeda polifolia*, is quite at home, as also is *Ajuja* — the latter a genus it would be no great hardship, in my opinion, to do without.

The creeping Snapdragon, *Antirrhinum asarina*, is not difficult, but, contrary to expectation, was not happy in a dry hot place.

Apyllanthes monspeliensis, difficult in England, grows without trouble, and its small but delicately coloured lily flowers are quite surprising, growing as they do to all appearance on a rush.

The taller *Aquilegia* species seem to grow with ease, and flower to perfection. These include *AA. alpina*, *chrysantha*, and *longissima*. *A. flabellata* is attractive and grows freely, and likewise the tiny, spurless Japanese, with chocolate flowers, now known as *Semiaquilegia ecalcarata*. But I have not succeeded yet with *A. glandulosa*.

A plant which reached me under the name of *Artemisia pedemontana* var. *lanata* is a gem, with lacy silver foliage. Though from the mountains, it appears to love both heat and drought, and can become a dragged mockery of its bright self when winter rains are too persistent.

Asperula suberosa, from the summit of Mt. Athos, is so tiny that protection from encroaching weeds is an essential, but it proves permanent and flowers freely. Two companion species, slightly more vigorous, are also quite successful.

Bellium minutum ('Little Mary' to the ribald) is a tiny daisy from the rocks of Greece. Much like our native lagenophoras, it is quite easy in a gritty, not too sunny, scree.

Calceolaria is a vast genus, and it must contain dwarf species suitable for our conditions. Those I have tried, however, have not proved successful — probably because the only ones obtainable commercially have been selected for their suitability to English gardens. Somewhere in the vastness of the Andes there must lurk a dozen forms that would be happy in our gardens — could we get them. (But our native jovellanas can be used as substitutes, and are most charming.)

Campanula, again, holds many species, some of which are perfectly at home in Auckland. None of the following need be despaired of: *carpatica* 'Miranda,' *barbata*, *aucheri*, *raineri*, *excisa*, *pulla*, x *pulloides*, *garganica*, *glomerata* var. *acaulis*, *portenschlagiana*, *isophylla*, *punctata*, *rotundifolia* (the 'Harebell') and its varieties, and x *stansfieldii*.

Celmisias I have found difficult. *C. spectabilis* is not impossible, and will flower, though sparsely. *C. laricifolia* proved a success, and there are others which, I think, could be made reasonably happy. *C. coriacea* has so far been a failure. Even in Britain it has been found

that this New Zealand genus, markedly successful in the north, is not at home in warmer southern counties.

Cerastium, the common 'Snow in Summer,' is too much at home, and can become a weed. It is quite good, however, when kept well away from choicer species.

Chaenorrhinum glareosum, from the high alps of Spain, prospered and flowered, and then 'died on me.' Most probably I should have planted it in scree, and not in richer soil.

Chrysanthemums, in my rock garden, are not shaggy monsters from Japan, but certain 3-inch daisylings from the high mountains of North Africa. *C. maxi* is pink and dainty, *C. catananche* is cream, and both like really sunny situations.

Convolvulus cneorum is a neat and gracious shrub, while *C. mauretanicus* has flowers of clear lilac blue. These species are not weedy. Many others could no doubt be grown — but caution warns that some might grow too well if set at large in this warm genial climate.

Cotula squalida makes a useful carpet for a poor and shady place, but might prove rampant given kindly treatment.

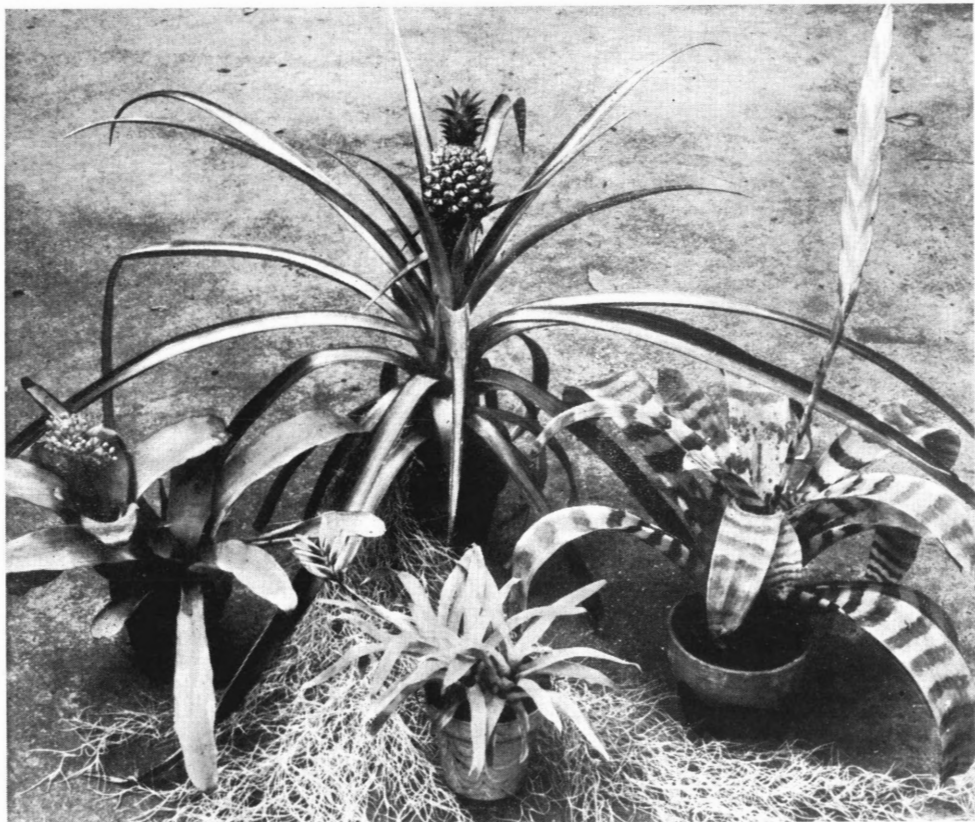
Crocus provided a surprise. The large Dutch hybrids are no use at all in Auckland gardens, so my pleasure was the greater when I found that many of the species grow and flower to perfection. I am still experimenting, but already I can claim the following as proven successes, namely: *asturicus*, *clusii*, *ochroleucus*, *salzamanni*, *zonatus*, *imperatii*, (never failing to produce its flowers in July) *niceus*, *longiflorus*, *aureus*, *medius*, *tomasinianus* and *tournefortii*. It is a pity that (with few exceptions) *Crocus* species are not readily available to gardeners, for they flower in succession through the dullest days of late autumn, and through winter. Colours range through white, mauve, purple, and assorted shades of yellow.

Cyclamen is a delightful genus, and another which may be grown successfully in Auckland. *CC. neapolitanum*, *graecum*, *cilicicum*, and the wild form of *C. persicum*, have flowered. Young plants of several other species have yet to reach flowering size. *C. libanoticum* is proving difficult, there being high mortality among young corms, but I have hopes that it can be successfully established. *C. europaeum* still remains a doubtful quantity.

Cyananthus integer — or so my plant was labelled — is alas short lived, but can be grown and flowered. It is attractive, but demands care. (Semi-scrub, in not too dry or sunny a place).

Dianthus species mostly thrive. This is a genus, too, containing gems — especially *D. alpinus*, and some of the other very dwarf mat-forming kinds. *D. neglectus* can be vexing, but the trouble here is probably the hungry Auckland slug.

Daphnes are chancy creatures, and will die on you for no apparent reason. Notwithstanding this, *Daphne cneorum* is so charming a



An interesting group of bromeliads. Ananas comosus in the background with, from left to right, Aechmea miniata var. discolor, Vriesia caranata and V. splendens var. major. The Spanish Moss, Tillandsia usneoides, is trailing among the pots. (See page 142).



(Photo by Douglas Elliott.)

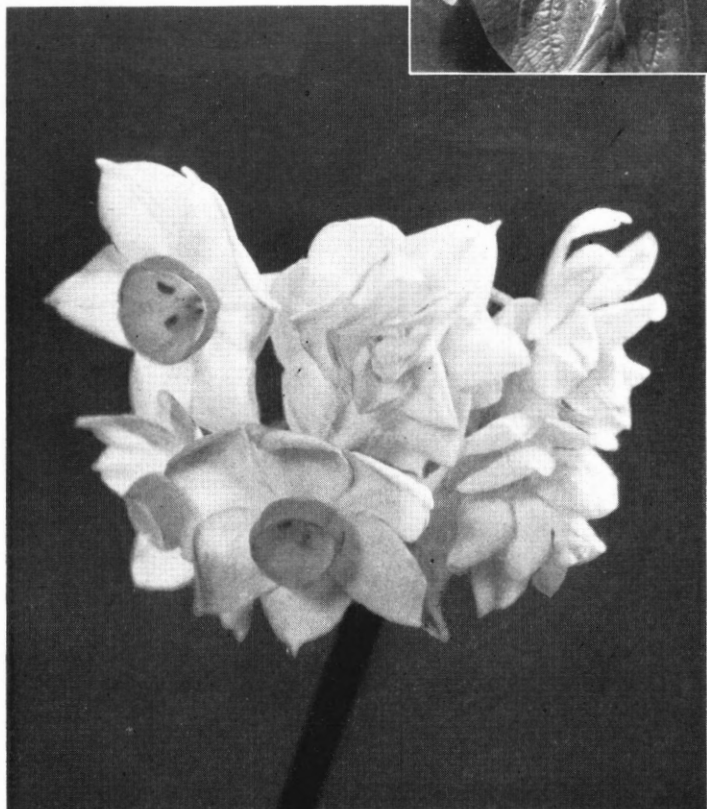
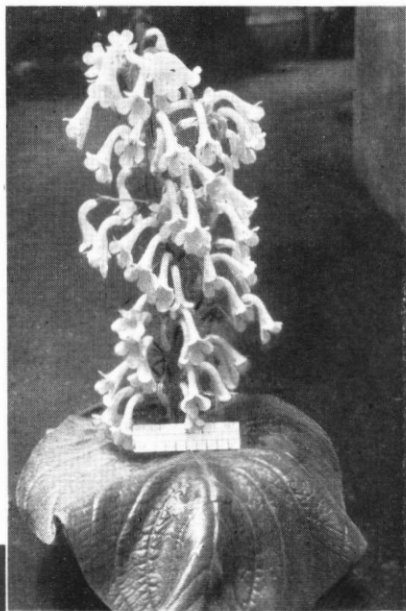
Alberta magna in flower (see page 181)



(Photo by Douglas Elliott.)

Alberta magna, bracts after flowering (see page 181)

Streptocarpus dunnii with
fasciated flower stem grown in
pot. (Note single leaf).
(See page 153).



Narcissus 'Earlicheer' showing both double and single flowers
on the same stem (see page 173)

small shrub that one is tempted still to persevere. *D. blagayana* lingers, but has not been tempted into flower.

Some of the drabas can be coped with, but need constant vigilance—mainly, I think, because they are so tiny and so easily submerged if watering or weeding is neglected. They have grace and charm, but a whole plant could be accommodated in a teacup.

Dryas octopetala, whose homeland is the European Alps, proves strangely easy. It seems happier in well drained garden loam than in a scree, and gives displays of pleasing fluffy seed heads when its flowers have withered.

Species of *Erica* are highly praised in Britain for their winter flowers. These plants (varieties of *E. carnea*) can be grown successfully in Auckland, and are pleasing. I have also found Scotch Heather quite at home. Even more showy, though, are some of the South Africans, and, if one's space is limited, these latter are a better proposition.

Erinacea pungens proved most difficult to come by, but not difficult to grow. It has not flowered yet, but that is not surprising as my only plant is small.

Erinus alpinus scarcely seems to miss the hills of Western Europe. It is easy both in sun and shade.

Such species of *Erodium* as I have tried, grow to perfection. They are colourful, extremely dwarf, and like a sunny place. *E. chamaedryoides* is pink. It can be had in both a double and a single form, and can be propagated easily from cuttings. *E. reichardii* is similar, but white (the former plant is said to be a hybrid from it) while *E. chrysanthum* has delightful silver leaves, and flowers of palest yellow.

Eryngiums I have found difficult. The fleshy root stocks seem to rot in winter.

Erythraea diffusa (*Centaurium scilloides*) seems to grow happily in any sunny place. Related to the gentians, it is a mat plant bearing waxy rose-pink stars.

Gentians are difficult in Auckland. *G. acaulis* will grow quite readily, but (as in England) may prove sulky when it ought to flower. *G. purdomii* will grow (with coaxing) in a sunny scree. *G. septemfida* though, can be made happy in a well drained sunny spot (with watering) and is most lovely. Nobody need be without a gentian. For the record, *G. verna* var. *angulosa* can be induced to grow, and bear a flower or two, but cannot truthfully be said to thrive.

Geranium (and I do not, of course, refer to *Pelargonium*) is represented in my garden by *G. sanguineum lancastricense*, with its thin stemmed dancing saucers of clean pink. This plant does well. *G. napuligerum* will grow and flower but has not proved a sound perennial with me, and this applies also to *G. pylzowianum*. The New Zealand species (such as I have tried) do well.

Geum montanum steadily refused to flower, but the hybrid *G. x borisii* does well. *G. rivale* also is at home, though not in the rock garden.

Gilia californica survives — but only just — for quite a number of small seedlings died. This is a case where scree conditions might provide the answer.

Gypsophila repens rosea is a free flowering and free growing dwarf trailer (for a sunny dry position) that may be safely recommended to those who have found 'Bristol Fairy' and 'Flamingo' too impermanent in Auckland.

Helichrysum bellidioides grows and flowers well in scree, while the rare *H. coralloides* and *H. selago* are quite happy under the same conditions.

Houstonia coerulea is almost prostrate, and its pale blue flowers make a splash of colour in a moist and fairly shady spot.

Hypericum reptans, from Sikkim, can be a shade too vigorous. It makes a splendid carpeter, with old-gold flowers, but it will not endure too long a drought. Other hypericums have also proved quite easy.

Iberis sempervirens makes a delightful little 6-inch bush — neat, and free flowering. (Sun).

Iris innominata is well known and easy. *I. gracilipes* is a most dainty Japanese, and is not difficult. *I. reticulata*, though it will grow and flower, is not really happy. The baby 'Flags' can be grown well, and no doubt many others. But a whole garden — or whole article — could easily be filled with iris.

Jeffersonia dubia seems to be thriving, but my plant has not yet flowered. Overseas descriptions seem to indicate a gem.

Leontopodium alpinum gives no trouble — though one's friends seem quite astonished when 'Swiss Edelweiss' is plucked for them in Auckland.

Leucojum (Acis) autumnalis is a tiny snowflake that will provide a mass of flower in early autumn. It is quite easy, and increases, in a sunny place.

Linaria alpina is another dainty plant that has proved easy. It is short lived, but sows itself in scree, never increasing to the point where it becomes a nuisance.

Linnaea survived for several years, and let me see its flower, but it has died. A better drained position (shaded) and more leaf mould might, I think, have saved it.

Linum monogynum, the 'true' New Zealand flax, grows easily, and is most generous with its white flowers. *L. arboreum*, from Crete, is no less easy, and its suns are golden. The blue flowered European flaxes (such of them as I have tried) are also easy and free flowering, but seem to be short lived. They probably dislike our winter wet.

Lithospermum petraeum (which, in its native home, saw Leonidas at Thermopylae) is permanent and pleasant. It is a tiny shrub with small blue trumpets. *L. prostratum* var. 'Grace Ward' seems to be most at home in scree. *L. oleifolium* survives at present, but may not come through the winter — though I hope it will.

Mazus pumilio and *M. radicans*, though I no longer have the former, are not difficult to please, and are both pleasing. Both are New Zealanders. *Mimulus repens*, a close relative, also proved easy, though my clump died out.

Meconopsis is so far among my failures — though I believe that, with appropriate conditions, some of the species could be grown successfully.

Muscari moschatum flavum deserves mention as a plant that English gardeners despair of. Though the flowers are a 'sad straw yellow' it possesses a delicious scent, and grows and flowers freely. On its performance in my garden it might well receive greater attention.

Morisia monantha is a little Corsican that gives a gleam of yellow very early in the spring. It has proved easy, and likes sun.

Nierembergia rivularis, from the River Plate, presents no problem as to growth, but does not always flower. Possibly it should be given poorish soil.

Onosma tauricum is found in Greece, and likes dry soil. I have it growing on a sunny wall, where it is happy.

Origanum hybridum is a small marjoram with aromatic leaves and coloured bracts. It is easy and attractive — in a sunny well drained place.

Ourisia macrophylla can be got to grow and flower in Auckland, but is not really at home. It will not stand much sun or dryness, and is apt to die out suddenly.

Oxalis, on the other hand, can be alarming. *O. lobata* — southern counsel notwithstanding — should be left out. It can become a weed. The same applies to many other species. *O. luteola* is a gem. *O. versicolor* is another one that does not spread, and flowers in winter. *O. adenophylla* and *O. enneaphylla*, beloved in England, both proved failures. They both lingered on, but would not flower.

Parochetus communis is another plant which grew too well, and had to be eliminated, pretty as it is. I did not want a garden full of *Parochetus*.

Pernettya macrostigma (syn. *Gaultheria perplexa*) is another New Zealand sub-alpine which does well, and bears its coloured berries freely. It is a first rate plant for the rock garden. (If one may digress, another 'find' as a rock garden shrub, is a dwarf form of *Cyathodes acerosa* which may be found at Waiotapu. Compact in growth, and free in fruit, which may be white or red, it grows with ease and is most

showy in the early winter. It may be 'dwarfed' still further, if desired, by being grown in lime-free scree).

Phlox subulata var. 'Vivid', has proved excellent, and likewise 'Camla'. Other varieties have not proved free in flower.

Phyteuma comosum flowered once, but — as I fear — has died. *P. hemisphaericum* is easier to keep, but not so willing when it comes to blossoming. Both are attractive species.

The platycodons should be planted more. One in particular, offered as 'Species nova' by an English seed firm, is extremely dwarf and should turn out a first rate rock plant.

Polygonum vacciniifolium is a spreading prostrate shrub that does not ask for special treatment. It is freely dotted with small rose-pink spires in autumn.

Potentilla is another genus that seems shy of bloom in Auckland. Several of the smaller species have thus disappointed me. *P. verna nana*, though, in scree, has flowered freely.

Pratia angulata should be planted more than it is. It may be grown and flowered easily, and is most dainty. *P. treadwellii*, less dainty, proved invasive.

Primula, of course, deserves a special article. Many of these do not, apparently, succeed in Auckland — or perhaps require a better gardener than I am. Even here, however, it is not always safe to prophesy — for two plants of *P. nutans* which were given to me have both flowered and are going strong. *P. juliae* succeeds, as well as several of the candelabra species. *P. marginata* was a failure. *P. acaulis rubra*, the attractive pink flowered eastern European primrose, is a success.

Ramondia is a failure. I have tried two species. Both will grow with utter ease, but that is all. I only wish I knew a way of coaxing them to flower.

Ranunculus (if one excludes the common buttercup) is also disappointing. Perseverance, though, would probably yield some success, for *R. gramineus* flowered quite well last summer, and is still with me.

Rhodophypoxis baueri is a delight, and should be very popular when better known. Compact, free flowering, richly coloured, easy, and in bloom for months, it is a perfect rock plant. I also have a plant I purchased as its white flowered form. An unkind visitor, alas, has recently cast doubts upon its parentage; but, whether rightly named or no, this also is a gem, and flowers in latest autumn.

Raoulias, the mat plants, not the 'Vegetable Sheep,' are easy and quite pleasing. Some of them are not long-lived with me, but *R. australis* stands full sun, and fairly dry conditions.

Rhodothamnus chamaecistus grew for several years, and flowered, but ultimately died. It is a most delightful baby shrublet.

Roscoea cauleoides, rather to my surprise, while not increasing much, both grows and flowers.

Saxifraga is a genus which is not at home in Auckland. 'Mossies' will thrive and flower, always supposing one does not forget to water them at first hint of dryness. The 'Encrusteds'—such as I have tried—grow easily, but never flower. Some others never flower and only seem to keep alive with difficulty. *S. x apiculata* deserves honourable mention as the exception to the rule. It is quite easy (given scree) and opens primrose buds in early spring.

Scabiosa graminifolia is permanent, showy and easy. *S. lucida* should be the same—but I have lost it.

Sedum is easy, but is not, in my view, specially attractive, and the same applies to *Sempervivum*.

Selliera radicans, picked up on a salt mudflat, proves, to my surprise, quite a good rock plant, seeming equally at home in wet or dry conditions.

Shortia uniflora ought to grow in Auckland, given the right conditions. I have twice imported plants, and each time they have died.

Silene schafta grows quite greedily, and blooms profusely. *S. alpestris* has not flowered at all.

Soldanellas also, grow quite readily, but will not flower. Lack of real winter cold is probably the trouble.

Spiraea bullata, a small shrublet of a foot, grows easily, as also does the infinitely smaller *S. decumbens*—a perfect miniature *Spiraea* bush which grows a full four inches high. *S. digitata nana*, highly praised in England, grows prodigiously, but flowers so sparsely as to be not worthy of the space it occupies.

Thymus species all prove easy, as was to be expected.

Species of tulips have been a disappointment. I have tried a number, but so far the only real successes have been *praecox*, *clusiana*, *chrysantha*, *saxatilis* and *sylvestris*.

Tunica saxifraga, from the South of France, is a 'no trouble' plant, well worthy of a place—in sun.

Veronicas, of course, are numbered by the hundred. Of the smaller species, *catarractae* may be mentioned, also *lyallii*. These are both floriferous and easy. Rather more difficult, but not impossible, is the diminutive *canescens*. The above species are New Zealanders. Some of the exotics also are quite good, and also easy.

Viola is a mixed bag. Some of the best are easy, but short-lived and need to be re-propagated regularly. I have lost *gracilis* by the

neglect of this precaution. Others are weeds — quite beautiful, but almost irrepressible; *labradorica* and *septentrionalis* fall (with me) into this category. Others, again, are gems — especially *V. hederacea*, which spreads widely by runners, but does not seem to set seed, and which bears its delightful, but scentless, blue and white flowers the whole year round. Two of the native species, *cunninghamii* and *filicaulis* can be kept alive in Auckland, but do not seem really happy, or flower freely.

Wahlenbergia albomarginata, or what seems to be a form of it, grows well with me, and flowers reasonably well. The Europeans, *pumilio* (syn. *Edraianthus pumilio*) and *serpyllifolius* (syn. *Edraianthus serpyllifolius*) have not so far been a success. *Waldstenias* (I have tried two species) grow quite well, and flower, but could quite easily be done without. They are not showy, though they have their uses as a carpet around shrubs.

Other species could be mentioned, but this list has grown too long by far already. The conclusion (if there is one) is that as a general rule plants from the warmer south of Europe mostly thrive in Auckland, some from North Africa and Lebanon dislike our winter wet, while many species from more northern latitudes, and from the Himalayas and the far interior of China, either will not grow or will not flower. That is the general rule, but if it had deterred me from experiment my garden would be poorer — for so many species have in fact proved a success which I would not have dreamed of planting had I not defied it. I believe the only over-riding rule for gardeners is — try.

NEWER HERBACEOUS PERENNIALS

R. E. HARRISON (Palmerston North)

In this country, much more so than in Australia, there is a keen and discriminating public demand for good, hardy, noteworthy perennial plants. A description is given of some of the more recent introductions of merit, while mention could also be made of a number of outstanding newer bearded irises raised and introduced in New Zealand, some of which have gained considerable distinction and popularity in America and abroad. The many new brightly coloured *Lilium auratum* hybrids, also raised in this country, by several of our enthusiastic growers, have already established healthy overseas enquiry, and are alone worthy of a separate report. Very interesting forms and colours in *Zantedeschia* (callas), particularly in *Z. rehmanni* and *elliottiana*, will shortly be on the market. In addition to lovely soft and bright pinks, some of these hybrids or selected forms produce blooms approaching scarlet or crimson. Some interesting work has also been carried out in *Agapanthus*, *Helleborus orientalis* and *watsonias*, and it is hoped that New Zealand will have something interesting to offer in these shortly.

Helianthus orgyalis, 'Golden Pyramid.' This is a new form of the popular late autumn-flowering perennial, which originated in the Hawera Public Gardens, and is considered by all who have seen it to be destined to become one of the best hardy perennials of recent introduction. Unlike the ordinary type, which is inclined to be rather leggy in growth and flops badly in bloom if not staked or headed back when young, this form is of stocky, compact growth, the whole plant seldom exceeding 30ins. in height, and 18ins. wide at the base. Before it comes into bloom, the plant with its rich, deep green, minute foliage has the appearance of a well-clipped pyramidal shaped box tree. It is during April transformed from a green to a solid pyramid of deep golden-yellow flowers, persisting its display for three weeks or more. For smaller gardens and exposed positions, this will prove to be a valuable perennial.

Hemerocallis. In America these hardy perennials have become very popular and reports indicate that areas of 30 acres or more, comprising hundreds of varieties are grown by specialists. In this country, some hybridising has been done with remarkable success, and it is considered that many of these are equal to or superior to many of the best overseas novelties. Elusive true pinks, good reds, ruffled yellows and other colours have appeared, and some of the best of these N.Z. raised varieties should be on the market soon. *Hemerocallis* have been dubbed by gardeners: 'the Lilies without disease,' and this seems to be a fair comment. No known diseases affect plants, they are bright-coloured, trumpet-shaped flowers 4-6ins. across or more, and a selection of varieties can provide for a display of bloom from October till March. The plants are most accommodating and will grow in almost any type of soil, full sun, or semi-shade.

Scabiosa caucasica. This hardy perennial is very popular in Europe, being very largely used as a florists' cut-flower as well as grown extensively by nurserymen for general sale. The well-known House's hybrids (England), of which there are a dozen or more named varieties, are amongst a range of colours grown from pure white, lavender and light and deeper blues. Several years ago, two named varieties were raised and offered for sale by two South Island nurserymen, D. Hughes and B. Jeffries, and these are known as 'Blue Mountain' and 'Mrs. Amy Jeffries,' respectively. It was not until a number of the English varieties were imported and flowered that it was realised that these locally grown forms were of really quite outstanding merit, different in colour and consistent in flower formation.

'Blue Mountain' is a very rich and bright blue, the well-shaped flowers continuing over six months, while 'Mrs. Amy Jeffries' is very deep blue, quite the richest in colour of any named varieties so far raised in New Zealand.

MORE NEW PLANT NAMES

L. J. METCALF (*Assistant Curator, Christchurch Botanic Gardens*).

Continuing the article in the December 1957 issue of 'New Zealand Plants and Gardens,' there are several more plants commonly cultivated, the names of which have come in for attention by some overseas authors and subsequently have been altered. Reference to *Gentes Herbarum* 8, (1953), in the article by G. H. M. Lawrence brings to light the following.

Mandevilla laxa, (Ruiz and Pav.) Woodson. This beautiful climbing plant is known generally as *Mandevilla suaveolens*, Lindl., and the change in name is based on a plate of Ruiz and Pavon in the Flora Peruviana which is accepted as being the same as the plant described by Lindley. Therefore on the basis of priority *Mandevilla laxa* becomes the correct name for this plant.

Stachys olympica, Poir. Usually known as *Stachys lanata*, Jacq., or more popularly Lambs' Ears, it has been discovered that the latter name is a later homonym because it was used earlier by Crantz for a different plant. Therefore the next earliest available name is *Stachys olympica*.

Osteospermum ecklonis, (D.C.) Norl. This plant is a sub-shrubby perennial sometimes growing 3 or 4 feet high and it has handsome flowers the ray florets of which are white above and bluish-purple beneath and to gardeners is known as *Dimorphotheca ecklonis*, D.C. However, Norlindh in Sweden recently studied the group and found that with *Dimorphotheca ecklonis* the achenes are all alike (triangular in cross section) which warranted transferring this plant from *Dimorphotheca* to *Osteospermum*. Other distinguishing characters between the two genera are in *Dimorphotheca* the stigmatic branches of the exerted styles of disk flowers are divergent to recurved, whereas in *Osteospermum* and *Gynoeceium* is sterile and stigmatic branches are very short with commissural faces more or less appressed and not divergent nor reflexed. *D. ecklonis*, (D.C.) therefore becomes *Osteospermum ecklonis*, (D.C.) Norl.

Schlumbergera bridgesi, (Lem) Lofgren. Popularly known as the Christmas Cactus or Crab Cactus this plant is widely grown in New Zealand as *Epiphyllum truncatum* or *Zygocactus truncatus*. However, that plant although similar is quite different. In *Gentes Herbarum* 8, 328-45 (1953) Ried Moran discusses certain epiphytic cacti and describes the differences between the plant commonly grown as *Zygocactus truncatus* and the true plant which is entitled to that name.

The origin of the Crab Cactus is open to dispute, it being attributed to either Bolivia or Brazil and it also has been described as a hybrid, however, the cytological evidence is against the latter theory. So for the present its origin must remain a mystery.

Apparently it has been misidentified in gardens all over the world for over 60 years, being grown under the two names already mentioned and several others.

The principal botanical characters of *Epiphyllum bridgesii* are the articulation of the stems, the naked short obconic ovary, the solitary flowers, the exerted stamens, of which the first series is united to the middle with the tube, etc., all these characters except the articulation of the stems differentiate it from *Schlumbergera* which also has regular flowers with the stamens included and free.

It is further pointed out in the article that although *Epiphyllum bridgesii* was originally considered to have sufficiently distinct characters from *Schlumbergera* there are no characters which justify its exclusion from that genus. It therefore becomes *S. bridgesii*. So the correct name for the plant known to New Zealand gardeners as *Zygocactus truncatus* is really *Schlumbergera bridgesii* and the true *Schlumbergera* (*Zygocactus*) *truncata* must be considered very rare in cultivation in this country.

THE ORIGIN OF NARCISSUS EARLICHEER

JEAN STEVENS (*Wanganui*).

More than a quarter of a century has elapsed since the double *Narcissus polyanthus tazetta*, 'Earlicheer,' first made its appearance in the garden of Mr. Gardiner, of Huntly.

Mr. Alan Gibson, of Marton, saw the plant in flower in 1934 or 1935, and was so impressed with the quality and beauty of the flowers that he acquired the bulb and all its increase. It was put on the New Zealand market under the name of 'Cheerfulness.' Then, when it was realised that a double hybrid *Narcissus* was already on the European market under that name, this new plant was given the name of 'Gaiety.' It was quite a few years before it was discovered that the name 'Gaiety' was also pre-empted for another — again a European — variety. So about ten years ago, after the New Zealand bulb had been grown in England, it was registered as 'Earlicheer.'

According to Mr. Gardiner, amongst whose *Narcissi* bulbs it first appeared, it was a seedling which, self-sown, had appeared in his garden. Many have been the conjectures as to its parentage, and of recent years some of the early conjectures have been published as factual. It is therefore very gratifying, as well as surprising, that *this* year, 1959, incontrovertible evidence has turned up proving the true origin of 'Earlicheer.'

Mr. Gibson was aware of my interest in early flowering *Narcissi*, and sent me a bloom stalk, in perfect condition, the first year he was able to offer 'Earlicheer' in his catalogue. For several years following its introduction my husband and I purchased every surplus bulb Mr. Gibson could spare us from his stock. It was due to this that we have been able to grow this still by no means common variety, by the thousand. Even this year, though we have in the last few years reduced our stock, we have had somewhere in the region of 10,000 flower stems.

I have never felt satisfied with the suggestion that 'Earlicheer' was either of hybrid or of seedling origin. After the first few years, during which I became very familiar with every characteristic, the appearance of the bulb, its behaviour in wet and dry seasons, its foliage, its flower scape, and, not least, its scent, I became more and more convinced that it was neither more nor less than a double sport of the old *N. polyanthus tazetta* 'White Pearl.' Perhaps, though there was little prospect of success, this is the reason why in picking the blooms year by year I have always watched for any variation. This year amongst the stock which, since we purchased it had never had any 'rogues,' there appeared one bloom stem on which every flower was single, and the flower stem was a typical stem of 'White Pearl.' This was both exciting and satisfactory — except that despite our rogue-free stock it might have been open to doubt in some minds that a bulb of 'White Pearl,' even though I do not grow this form, *might* have become mixed with the stock. But the almost incredible occurred. Two weeks later *another* bulb produced the single blooms, but this time only three of the six blooms were single, the other three on the stem were double! The accompanying photograph shows clearly both forms on the one stem, and shows too, the single as completely characteristic of 'White Pearl.'

It is, I should imagine, a rare occurrence that the true origin of a reputed hybrid can have been so truly determined only after so many years of culture.

CHARLES FRASER — AN ELUSIVE PLANT HUNTER.

A. W. ANDERSON, A.H.R.I.H. (N.Z.).

It is but justice to the memory of Mr. Charles Fraser, Colonial Botanist, of Sydney, to notice the visit of a day by that indefatigable and generous traveller to the Bay of Islands, New Zealand, in 1826, in one of His Majesty's sloops of war, then stationed at Port Jackson. In the passing stay of a few hours, that laborious botanist collected specimens, making an interesting selection of the plants of the shores, taking up many living examples of the vegetable products to establish in the Botanic Gardens at Sydney.'

Allan Cunningham named two species of our plants in memory of Fraser. They are the ubiquitous *Leucopogon fraseri*, and the daintiest of all our tree-ferns *Blechnum fraseri*, and it was this that first led me to take an interest in this little known plant hunter. Fraser was not the first to find *Leucopogon fraseri*, the Pa-totara of the Maori. It was found by Banks and Solander and almost every other collector, and no wonder, because it is one of the commonest of our plants. Abundant

in open sunny places from sea-level to about 5,000 ft. it is usually a somewhat scraggy-looking object growing through grass, but when flourishing on a sunny bank it forms large heath-like cushions of bronzy-green foliage, about 6 inches high, and covered in the spring with waxy, white florets that are followed in due season by pretty little orange-yellow drupes.

The *Blechnum* is one of the elite of our flora. It is a very handsome and distinct species which at its best forms the most charming of fairy landscapes with miniature tree-ferns from 1 to nearly 4 feet in height with dark, chestnut-brown stems about the thickness of a walking stick. The dark green fronds are about 18 ins. long and unlike most other blechnums the barren and fertile ones look very much alike when seen from above. It prefers to grow on a rotting tree trunk but may cover large patches when really happy. For long it was believed to be confined to this country, in the warmer parts of both North and South Islands, but within recent years a closely related variety has been found in the Philippines and Sumatra.

In the passage quoted above, which is taken from Hooker's *Companion to Botany*, we are told that the visit took place in 1826, whereas in the *Handbook of the New Zealand Flora*, Dr. J. D. Hooker (later Sir Joseph) has a slightly different version. In 1825 Mr. Charles Fraser, then Superintendent of the Sydney Botanical Gardens, landed for one day in the Bay of Islands, and made a small collection of dried plants. He, however, procured more living ones, some of which were among the first plants of the islands which were introduced into European gardens. You will notice that the learned Doctor differs from his father in both the year of the visit and the designation of the plant hunter. He was mistaken about the date and there is no doubt whatever that the visit took place in 1826, but Fraser's official position was a very ambiguous one.

An Elusive Character

I have found Fraser a very elusive character, and am greatly indebted to the Mitchell Library in Sydney for the little I have been able to piece together about him. There is every reason to believe that he was a Scotsman who arrived in Australia as a private soldier, but like everything else, one cannot be sure which was his regiment, as we shall see later. He appears to have some botanical and horticultural training before his arrival in Australia, and W. W. Froggatt, in a paper on the *Curators and Botanists of the Botanic Gardens, Sydney*, which was published in the *Journal of the Royal Australian Historical Society* notes, 'He is said to have acquired the knowledge of practical botany in the Edinburgh Botanical Gardens, where he had an opportunity of seeing the greater number of Australian plants then in cultivation, and with which he became familiar both as regards their names and their culture.'

There is some evidence to suggest that Fraser may have been in some position of responsibility in what are now the Sydney Botanic Gardens as early as 1816, but its beginnings are vague in the extreme and there can be no doubt that for many years it was no more than a vegetable patch, run by prison labour for the benefit of the military. Of course, there had always been a keen interest, in official circles, in the native plants of New South Wales, ever since Captain Cook dropped anchor in 1770, and the two naturalists who accompanied him, Dr. Solander and Mr. Banks, began plant hunting at Botany Bay. But no botanical work of any kind was carried out in Australia. Until well on in the 1830's all specimens were dried and packed up to be sent off to England at the first opportunity, where they were examined at the British Museum or at Kew.

So far as I have been able to ascertain, Fraser made his first official appearance as a collector when he was attached to the expedition organised by John Oxley, Surveyor-General of New South Wales, for the exploration of the Lachlan River, in 1817. Another member of the expedition was Allan Cunningham, who had recently arrived from England to collect plants for Kew. He had just returned from a very successful plant hunting trip to the Organ Mountains in Brazil. On April 27th, 1817, Cunningham 'visited the left bank in company with C. Fraser, a private in the 45th Regiment, who had been sent as one of our party, in order to form a separate collection of seeds and specimens for Earl Bathurst. We were both well armed in case of attack by the natives. Fraser had been before on these hills, in his pursuit of flora, to which he is very much attached, during the period of time during which he had been at this depot, about one month.'

Explaining the object of the expedition, Cunningham says, 'This morning, about nine o'clock, the following persons, who composed this great expedition, left the human habitation westward, in order to survey the river down . . . (to) . . . the south-west coast: John Oxley, Esq.; Charles Fraser, private in the 46th Regiment, as a collector for Lord Bathurst, who was Secretary of State for the Colonies at this time.' You will have noticed that Cunningham refers to Fraser as a private in the 45th in one instance and in the 46th Regiment in the other. Just to tangle the skein a little more, Dr. J. D. Hooker who pays tribute to Fraser in his *Introduction to the Flora of Tasmania* refers to him as a 'soldier in the 73rd Regiment' who had enriched the gardens of Europe with many plants.

During the years from 1817 to 1828 Charles Fraser made many expeditions to different parts of Australia besides visiting Tasmania and New Zealand. In 1818 and the following year he again accompanied Oxley into the interior of New South Wales, and when Commissioner Bigge went to gather material in the interior of New South Wales and in Tasmania about the state of agriculture and trade, Fraser was included in the party. It was in 1826 that he came to New

Zealand in H.M.S. Larne, but beyond the fact that they arrived in New Zealand waters on 19th February and left on the 28th, I have been unable to find out why Fraser's plant hunting activities at the Bay of Islands were confined to 'a few hours.'

But perhaps the most far-reaching effect of all his labours was the settlement of Western Australia. It all began in 1827 when the redoubtable Dumont D'Urville put in at Sydney in the 'Astrolabe' after spending about a month in King George's Sound. The possibility of a French settlement somewhere in the region of the Swan River began to agitate the Governor and his advisers, so it was decided to despatch Captain James Stirling and Charles Fraser to survey the area and report on the possibility of planting a settlement. They spent the month of March there and came back with glowing accounts. Captain Stirling had found the anchorage very satisfactory while Fraser reported that the soil was better than many parts of New South Wales, a hinterland of alluvial plains with good grass and timber, excellent for settlement.

Fraser's last expedition was up the east coast and into the interior of what is now Queensland. He was accompanied by Allan Cunningham again and the two plant hunters came back with a very good haul of plants, specimens and seeds. It is said that plants brought back to Sydney on that occasion are still growing in the Botanic Garden. Both must have enjoyed one of the tasks they had to undertake, the layout of the new Botanic Garden at Brisbane.

Many Titles

During all this time Fraser seems to have been in the unfortunate position of receiving gratuities, instead of a fixed salary, for the work he did in connection with his plant hunting. This may account for the vagueness of his position and the multiplicity of titles he worked under. He was appointed Superintendent of the Botanic Garden in 1823 but the grandiloquent 'Colonial Botanist' was apparently little more than an honorary appellation. Oxley in his *Journal of Two Expeditions* mentions our plant hunter three times, but if we didn't know any better we might think he was referring to three different men. There was only one Fraser in Sydney who was interested in Australian plants and there can be no doubt that Oxley's Fraser, the Botanical Soldier, and Mr. Charles Frazier, the Government Collector and Charles Fraser, Colonial Botanist, were one and the same.

In 1828 we find him pouring out his tale of woe. 'The Commissioner of Enquiry on more occasions than one made me donations, in all to the amount of £50 sterling, and ultimately recommended to the Governor the propriety of giving me a grant of land as an equivalent for my travelling expenses, when His Excellency was pleased to order me a grant of five hundred acres. On my appointment as Colonial Botanist, I was allowed a salary of five shillings sterling per diem, and a single ration, a computation for which has since been added to my

salary, and in January, 1826, an addition of two shillings per diem was made, amounting in the whole to £139/9/11, without any allowance, but quarters.'

As a result of this appeal the Secretary of State was pleased to announce that the 'Superintendent to receive £150 per annum, which includes the allowance for sending home seed, etc., with apartments.' This was later raised to £200 per annum with a grant of £150 to cover past expenses.

Fraser died rather suddenly at Parramatta on 22nd December, 1831, after having been taken ill while plant hunting on the Emu Plains. Nothing is known of his origin, but he appeared to be about 44 years of age when he died. Although he spent but a few hours plant hunting in this country Allan Cunningham has seen to it that Charles Fraser's name will always have a permanent place in our flora. But gardeners have another reason for remembering him. There can be no doubt he was the first to grow plants for their own sake in the Sydney Botanic Garden. His main job was overseeing the growing of vegetables for the military, but he began to grow Australian plants, because he liked them. Many of his plants may have found their way into the gardens of the British Isles, but enough were left to form the beginnings of something new in Australia.

In May, 1831, Robert Cunningham, brother of Allan, was appointed Superintendent of the Sydney Botanic Garden and the following is part of a letter he wrote to W. J. Hooker, on 25th August, 'on the ship, Mary, off Skegness.' 'By the earliest opportunity after my arrival at Sydney, I will report to you every particular that I have been enabled to obtain respecting the death of poor Fraser, which may be interesting to his sister or you, as you have kindly undertaken to point out a safe channel by which such articles of his property as I collect may reach her.

I fear however, there must be very little, as our Surgeon, Mr. Watt, with whom I consider myself fortunate in being placed in juxtaposition, and who left the Colony with General Darling, tells me the impression in Sydney was that, owing to his careless habits, Fraser died insolvent.' So, we take leave of this man, about whom so little is known, with a final question — What happened to the five hundred acres ?

NOTES FROM THE CHRISTCHURCH BOTANIC GARDENS

L. J. METCALF, N.D.H.(N.Z.), (*Assistant Curator, Botanic Gardens, Christchurch.*)

After a very wet May much improved weather has followed, and in both June and July the registered sunshine hours were records, while in June rainfall was the lowest since records were first commenced. However, generally temperatures have been low with numerous and often rather severe frosts and particularly in June heavy smog has been much more prevalent than usual. Soil temperatures have been lower than usual and practically all growth has been at a standstill. The smog has also had some effect on glasshouse plants, as after several very bad 'pea-soupers' the premature dropping of flowers on some plants was noticed.

During the winter months attention naturally centres on the glasshouses and there for a brief period the visitor to the gardens is transported to a world bright with tropical flowers and foliage. Particularly throughout the winter, many hundreds of people find enjoyment and interest in the glasshouses and it is the policy to display not only plants which are beautiful but also those which are interesting in other ways. Also where plants have some particular point of interest descriptive labels are being brought into use. Over the past 2 or 3 years, with the idea of making the glass house displays more interesting, several hundreds of new plants have been added to the collections so that many varied displays may be set out. A few interesting plants which may be seen in the glasshouses during the winter will here be mentioned.

Starting in the tropic house it is difficult to know where to look first, however one recently introduced plant commends itself. *Chirita lavendulacea* is a member of the *Gesneriaceae* and belongs to a large genus which comes from Eastern Asia. It is an upright growing plant about 2 feet high with large cordate leaves and axillary racemes of tubular lavender-blue flowers. One plant which is very outstanding when in flower is *Aeschynanthus grandiflora*, another gesneriad which comes from India. It is an excellent basket plant with strong stems and rather fleshy leaves, the flowers are borne in fascicles, orange-scarlet, and about 2 - 3 inches long. Other gesneriads of note are *Nautilocalyx lynchii* which has upright stems and bronzy-purple leaves, *Columnnea gloriosa*, an epiphytic plant from Costa Rica, with large hooded, scarlet flowers, *C. x. banksii* which flowers in August and September and is one of the most outstanding basket plants, and *Kohleria digitaliflora*. This latter plant has an upright habit and flowers which are pink in the tube and the green spreading lobes are spotted with dark indigo.

During this period a number of attractive bromeliads may be seen in flower and the one which always catches the eye is *Tillandsia lindeniana*. This species which comes from Peru and Ecuador has a rosette of bronzy-green leaves and produces a sword-like spike with

showy carmine bracts from which the large blue flowers are exerted. The flowers are only produced in ones and twos but the flowering proceeds over several months. *Aechmea weilbachii* is a larger growing species which has a red-bracted flower spike and red and blue flowers. Although the flowers fade quickly the calyx retains its red colour for a long time; *Vriesia carinata* comes into flower towards the end of July and flowers for 2 to 3 months. The spike is flattened and the bracts are scarlet at the base and yellowish green at their ends while the protruding flowers are pale yellow.

The *Araceae* is particularly well represented and quite a number of attractive aroids are to be seen in the house. *Anthurium scandens* is a small climbing member of the genus with ovate leaves and after flowering produces a spike of amethyst-coloured berries. Among the many species of *Philodendron* on display the most beautiful is *P. verrucosum* which comes from Central America and northern South America. The stems are bright metallic red and covered with soft greenish hairs while the leaf blade is marbled-green and polished with a taffeta-like sheen above. *Philodendron andreanum* has bold leaves up to 3 feet long, dark bronzy-green above, and pale veins; *P. panduraeforme* produces deeply lobed leaves in a variety of shapes and makes a rather attractive specimen, while among the self-heading species most make fine specimens but there is little to commend one from another as most are of similar form.

The brilliant *Clerodendrum fallax* has a large inflorescence of bright scarlet flowers and is always an outstanding plant; *C. disparifolium* is an attractive shrub from India with narrow dark green leaves and pendant racemes of creamy-white rather sweetly scented flowers. One plant which always interests visitors is *Laportea moroides* the giant stinging tree from Queensland. Safely housed from inquisitive fingers in a wire netting cage, it is quite an unusual plant with large heart-shaped leaves and bunches of bright red mulberry-like fruit. It has a powerful and very painful sting, the effects of which last for a period of up to 3 weeks.

In the Townend house the main displays through the winter are Cinerarias, *Cyclamen* and various types of *Primula*. The main ones being *Primula malacoides*, *P. obconica*, *P. sinensis* and its varieties, and *P. x kewensis*. One very outstanding plant which flowers in late winter is *Coleus thyrsoideus* from Central Africa. It grows 2 to 3 feet high and has long erect racemes of intense blue flowers. Another blue-flowered plant which flowers about the same time is *Pycnostachys dawei* which also comes from Central Africa, and has cobalt-blue flowers in crowded terminal spikes. And lastly there is *Veltheimia viridifolia* a liliaceous bulb from South Africa. This little known plant has wavy-margined leaves up to 1 foot long and a purple-mottled scape, on top of which is the dense raceme. The flowers are $1\frac{1}{4}$ - $1\frac{1}{2}$ inches long, like a *Lachenalia* and reddish with greenish tips.

To The Editor,
N.Z. Plants and Gardens.

EPIPHYTIC ORCHIDS

Dear Sir,

Please allow me to convey my thanks to your correspondent for his very exhaustive reply in your issue of March to my enquiry about epiphytism of native orchid species upon host plants of *Pinus radiata* and *Cupressus macrocarpa*. The instances cited by him, in conjunction with his magnificent supporting photographs, seem to me quite conclusive as to the spontaneous origin of the orchid plants on their adventive hosts and it is very gratifying to have such records published.

Since your publication of my original letter, I have had personal advice from another correspondent that natural epiphytism of *Earina* has been seen in Taranaki. It would seem therefore that the habit is developing in westerly districts of high rainfall: and that at least two species of introduced forest plants may be regarded as potential refuges for orchid species which might have been expected to become rarer with the depletion of native natural forests.

Wellington.

C. W. SMITH.

NOTEWORTHY PLANTS

Alberta Magna

DOUGLAS ELLIOTT (*New Plymouth*).

A recent introduction that promises to become really popular in New Zealand gardens is an evergreen shrub from Natal called *Alberta magna*. Little appears to be known about it in this country and the references in the overseas books I have referred to are not very helpful because they treat it as a 'greenhouse or stove' plant. Here it grows outdoors and appears to have the same resistance to cold as *Luculia*, which belongs to the same family (the *rubiaceae*) or Madder Family of which our native coprosmas are members together with such things as coffee and *Bouvardia*.

I ordered an *Alberta* after first seeing it in a local nursery. Much mutilated (all in the good name of propagation), it had managed to produce a few flowers: brilliant orange-scarlet tubes in thick clusters, looking at a distance somewhat like Chilean Fire Bush (*Embothrium*). This sort of thing is striking at any time but when it happens in the late autumn when few other shrubs are blooming, it is really something out of the ordinary.

My plant arrived two years ago. The first year it devoted to settling in. It grew, not very quickly, but definitely. Incidentally I rather like a plant that takes its time. These quick growers are

fine when you are in a hurry but they savour too much of the modern mad demand for speed at any cost and the cost in terms of horticulture is usually a fairly short life and a need for constant pruning to prevent legginess. Nor was I surprised or disappointed when it did not flower; I even thought it might have to be established for several years before it made the effort. But no. This last summer it started to build buds, thick masses of them at the tip of every stem, and in the autumn the buds opened into a brilliant display that lasted for at least six weeks with the peak in April when I took the photograph.

Just a note on the colour. The R.H.S. Dictionary of Gardening says 'reddish purple.' Now, I know colour is a tricky thing to put into words but I also know there's a big difference between orange-scarlet and reddish-purple, a difference that anyone but a colour-blind person can see at a glance; so perhaps the book description was based on a dried specimen which might presumably be misleading.

So far so good. The plant seemed very well worth having for its brilliant long-lasting flowers. But then I read somewhere — in fact it was a note by our Editor — that the flowers are followed by bracts, and sure enough where each tube had been, a pair of bracts appeared, about $\frac{3}{4}$ inch long and also orange-scarlet, fading to a lighter tint at the tips. Like most bracts they are more permanent than the flowers and remain fresh and pretty for months. They appear to indicate a good crop of seed; for a small fruit is forming at the base of each pair.

The leaves are thick, dark green, and glossy and unfortunately seem to be a tasty salad for some insect I have not actually seen in action. This can be controlled by spraying.

The habit of the plant is a mystery to me at present. The R.H.S. dictionary calls it a shrub or small tree; the nurseryman who supplied it said it would grow about 12 ft. high, frost-tender while young, hardy when mature. It is sending out small shoots from the nodes near the base of the trunk and so would seem to be planning bushy growth which will be a good thing seeing that the flowers are at the tips of the branches.

Alberta magna is one of the few plants that takes its whole title from one person; it is named after Albertus Magnus, a famous philosopher and theologian of the 13th century who wrote a treatise in 7 volumes called *De Vegetabilibus et Plantis*. (The only other example that comes to mind is *Victoria regia* and that appears to be out of date because the name-changers have called it *V. amazonica*). Only one other species is known in the genus, *A. minor*, which is cryptically described as 'smaller in all its parts than *A. magna*. Madagascar.'

1960 ANNUAL CONFERENCE
of the
ROYAL NEW ZEALAND INSTITUTE OF
HORTICULTURE INC.

CHANGE OF DATE

Members are advised that the 1960 Annual Dominion Conference
will now be held in ROTORUA on

THURSDAY, 18th FEBRUARY, 1960

Delegates and others intending to be present at this
Conference are strongly advised to make early application
for hotel reservations. Write for these particulars direct
to the PUBLIC RELATIONS OFFICER, Borough
Council, Rotorua.

K. J. LEMMON,
Dominion Secretary.

PUBLICATIONS RECEIVED

GARDEN DESIGN, by Sylvia Crowe. Illustrated. (Published by Country
Life Ltd. London).

New Zealand can justly claim to be a nation of gardeners, and with the
lack of qualified landscape gardeners, the average home owner must design
his own garden.

Many of the older homesteads have beautiful gardens, usually modelled on
the English pattern, but how seldom do we see a well laid out and satisfying
quarter-acre section.

The problem of garden layout is probably intensified by the fact that most
gardeners want to grow a large variety of plants, probably also a quantity of
specialised plants like roses or irises. As plant lovers we may admire the
plants, but taking a broader view, it is seldom that we can say that the garden
as a whole is beautiful.

Miss Crowe's book fills a long felt need in laying down the principles of
garden design, especially for the present-day garden. She gives very few
plans and then only to illustrate specific points. The emphasis is on the principles
basic to well planned and satisfying gardens.

The book is divided into four sections, and these are, history, principles of
design, materials of design and specialised design. The theme of garden design
being developed from its historical sources to its present day interpretation.

There are many books on the cultivation of all types of plants and too few on
the actual use of plants in gardens; *Garden Design* will help to fill this
need. Its study should assist gardeners here to develop a typical New Zealand
type of garden, satisfying in its appearance, serving the various purposes
demanded of it, and yet encouraging the cultivation of the wonderful range of
plants which can be grown.

—J.P.S.

CURTIS'S BOTANICAL MAGAZINE, Vol. CLXXII, Part III, edited by W. B. Turrill, O.B.E., D.Sc., V.M.H., F.L.S. (Published by the Royal Horticultural Society, London).

Among the eleven excellent coloured drawings of plants in this issue there is one that will be of particular interest to New Zealand gardeners. This is the white form of *Erica canaliculata* (syn. *E. melanthera*) named '*floribus albis*.' Although the pink form is common enough in our gardens. I have not, as yet, come across this white form which with its purplish red stamens appears to be most attractive. Our old friend *Campanula poscharskyana*, from Dalmatia, makes its first appearance in the magazine although it has been in cultivation since 1933. *Rhododendron sheriffii* appears, from the charming drawing by Margaret Stones, to be a most desirable species and I commend it to the attention of our Rhododendron Association. Other plants figured comprise *Anthyllis montana*, *Crocus sieberi*, *Genista sagittalis*, *Lacaena bicolor*, *Lomatia hirsuta*, *Papaver heldreichii*, *Prunus cyclamina*, *Silene schafta*.

AUCKLAND DISTRICT CARNATION AND GERBERA SOCIETY: Quarterly Bulletins — Nos. 1 to 6.

Probably the greatest service specialist societies extend to members and horticulture in general is the issue of regular bulletins giving, without gloss or flourish, practical information concerning the various genera to which they are devoted. Under the joint-editorship of Messrs. J. A. Robinson and R. W. Litherland the bulletins of this Society provide much detailed information, written from practical experience. Such aspects of carnation culture as propagation, recommended varieties, points for judging, and the art of cultivation are dealt with in easily understood terms.

The finest double gerberas in the world are bred in New Zealand and this colourful African flower receives a great measure of attention in these bulletins which extend from May, 1958 onwards. The tricky business of raising them from seed is explained with admirable clarity with due warning of the pitfalls that await the unwary. The time and method of propagation by division and the preparation of a site for gerberas provide valuable guidance to beginners. The recommended use of cloches for winter protection is very necessary where severe conditions prevail. In all a most useful and well produced set of bulletins that deserve a wide circulation.

DISTRICT COUNCIL REPORTS

NOTE: All reports from District Council for publication must be in the Editor's hands by 10th of the month prior to publication.

WHANGAREI

Chairman: Mr. E. Arcus, F.R.I.H.(N.Z.); Tel. 3905.

Hon. Secretary: Mr. W. A. Christiansen, C/- Box 147, Whangarei.

Editor: Mrs. M. M. Martin, F.R.I.H.(N.Z.); Tel. 3914; 17 Puriri Street, Kamo.

MAY—

The speaker at the May meeting was Mr. D. R. Purser, F.R.I.H.(N.Z.) and his subject — Climbers, Trailers, and Ground Covers — was of more than ordinary interest.

Mr. Purser said that good gardening did not consist wholly in obtaining good growth but in using it to the best advantage either in hiding what was ugly or in embellishing what was good; not only in the landscape but in architecture. Small clinging plants on basements soften hard contours, do not disintegrate mortar and their overlapping leaves shed moisture. Two useful plants for this purpose were the little climbing figs — *Ficus minima* and *F. stipulata*.

Other climbers could be used for getting quick shade, shelter from winds, privacy, and as screens between flower and vegetable garden, or for hiding dividing lines between sections.

When trellis was erected it should be substantial enough to support heavy climbers, otherwise collapse would occur when growth increased. Concrete posts to which the trellis could be bolted were adequate and permanent. Whilst waiting for the perennial climbers to cover the area, use should be made of annual varieties to hide the gaps. *Ipomoea* 'Heavenly Blue' and *Mina lobata* used in conjunction were useful in this respect and a pleasing colour combination.

For covering rocks, stumps and banks too steep for cultivation there was a good selection of plants. Two *grevillias* *G. fascicularis* and *G. obtusifolia* were recommended for banks, the first having tangerine flowers and the second bright red. For stumps and rocks *Lantana sellowiana* was excellent, and for rock or concrete walls *Ipomoea mauritanica* and trailing rosemary were effective.

Pruning directions were given and management of growths indicated. The growths should be spread facewise on the supports, and pruning done as soon as flowering finished. Cut out old wood rather than shorten back as the latter method tended to promote too much new growth.

Mr. Purser then showed a fine set of colour pictures which exemplified the points discussed in the lecture, and gave members some help and encouragement in the improvement of their gardens.

Noxious Weeds:

The Department of Agriculture has issued a special leaflet warning people of the danger of growing the so-called Cape tulip *Homeria breyniana* a bulbous plant which belongs to the Iris family and is not a tulip of any kind. It is poisonous especially to cattle and in light soils increases with amazing rapidity. The leaves are rather narrow, long and rolled, dying down in winter, coming up in spring and then it produces most attractive salmon flowers with a yellow eye. If you have it, make total war upon it, dig up every bulb and burn, but handle with care because of its poisonous properties even in the dry state, leaves stem and bulb.

Another plant has recently been declared a Noxious Weed in the Bay of Islands County, and will, I hope, be so declared in Whangarei and elsewhere where it is prevalent. This is a tall growing shrub up to eight feet high with large grey green leaves, mauve flowers rather like those of the potato (a relative) followed by pale yellow berries. A sure way to identify it is to break a leaf which emits a most unpleasant smell. A great number of plants grow along the Waiorohia stream below Stanley Street. It seeds heavily and plants come up in gardens in the neighbourhood. It is called *Solanum auriculatum* and came to us from Madagascar. It also, like many solanums, is poisonous.

JUNE—

The June meeting was addressed by Mr. Everett of the Department of Agriculture, Auckland and his subject was the Culture of Sub-tropical Fruits.

The sight of a long table laden with a wonderful and varied display of fruits grown either in this district or its not distant vicinity was an inviting overture to their detailed description. Mr. Everett divided the fruits into two classes — those which could be successfully and profitably grown in our climate and those which could not.

As part of the display came from the garden of our Chairman, Mr. Arcus, he gave a brief account of these, which included some lesser known species such as limes, fortunellas most attractively coloured mandarin sized juicy and fragrant fruit, and showed also a hybrid between a grape fruit and an orange.

Mr. Everett began by giving some details of the earliest known type of citrus and showed an Etrog, a fruit used in the religious ceremonies of the

Jewish Temple. Of the hundred varieties of orange known, there were certain that were suitable for our conditions. 'Carter's Navel' was the most consistent early cropper, and 'Harwood's' was a good late variety. The best strain of 'Best's Seedless' was also good.

As the rootstock strongly influenced the type of tree obtained Mr. Everett stressed the value of *Citrus trifoliata* as a stock for both sweet orange and grape fruit.

Among mandarins he recommended the Silver Hill variety of 'Satsuma' and 'Clementine.'

The Seminole Tangelo exhibited was of beautiful colour and flavour. The Tangelo is a cross between *Citrus nobilis* var. *deliciosa* and a grape fruit.

Of lemons there were two suited to the small garden, the milder flavoured 'Meyer' and the compactly growing 'Eureka' which fruited earlier and was a smaller tidier plant than the 'Lisbon.'

The Rangpur lime from a dwarf tree holding its fruit well was recommended for use as a lime. The Kumquat *nobilis* could be grown as an ornamental in pots or tubs, providing useful fruit as well.

Two varieties of Chinese gooseberry were shown the long, named 'Bruno,' and the short fat one 'Haywood,' larger but not such a heavy cropper. Both should be hard pruned in winter.

Feijoas should be of selected kinds, either grown from cuttings or grafted. Those recommended were 'Triumph,' 'Cooledgei' and 'Mammoth.'

Among Passion Fruits, the best was the ordinary Black Mammoth variety and for a later fruiting *Passiflora ligularis*.

Avocado pears of several kinds were shown. These did well in our climate, were hardy and cropped at six years. Mr. Everett described a nine-year-old tree as being 16 ft. high and 15 ft. across. Kinds recommended were 'Fuerte,' 'Nabal,' and 'Mexicola.'

Persimmons fruited well and kinds recommended were 'Surugaki,' 'Tanashi,' and 'Gayley.'

Loquats, if grafted on quince roots did well and cropped regularly.

Cherimoyas which are of many kinds with various popular names, though more generally called Custard apples were on show. All grew readily from seed and most seedlings were good but grafted plants could now be obtained from a Tauranga nursery.

Queensland nuts in New Zealand were all from seedlings. The nuts are excellent, but are not produced till seven years, but the trees are hardy and ornamental and can be grown as a hedge.

The mountain paw-paw was easily grown, fruited well, the larger fruits coming from the female flowers.

Rather uncommon and so little known was the White Sapota *Casimaria edulis* an ornamental tree from Mexico with an orange sized fruit of greenish yellow — soft and of a delicious flavour, to be eaten fresh as it does not store.

Pepinos take very little room, fruit well but are short-lived. The fruit should be sprinkled with sugar before being eaten.

If Olives are grown, the varieties 'Mission' and 'Verdale' were best.

A new pomegranate called 'Wonderful' does not split, a fault common in other varieties.

The Kei Apple *Dovyalis saffra* from South Africa has a fruit rather like a yellow gage but with a tart flavour and very good for jams and preserves.

Another African, known as the Natal plum, *Carissa grandiflora*, a thorny shrub up to 10 ft., bears large white ornamental flowers followed by 2-inch crimson plum-like fruits suitable for jams or preserves.

The plant is used for hedges in South Africa and could serve the same purpose here.

Other fruits not so useful in our climate were shown. Many new kinds and new varieties of old kinds were being tried out and would in time provide helpful information for the grower. Altogether it is evident that there is a wide choice of good and useful sub-tropical fruits for both the amateur and the professional.

WELLINGTON

On Monday, 13th July, members of the Wellington District Council assembled in the large lecture hall of the public library to hear a very interesting and informative lecture delivered by Colonel T. Durrant of Tirau on camellias.

Colonel Durrant is President of the New Zealand Camellia Society and cultivates the largest private collection of camellias in the country. He is undoubtedly an authority on the genus *Camellia*. The address opened with the story of the introduction of the first species to the Western world and the important part played by sea captains of the early 19th century. The traders were in search of the tea tree of commerce, *Thea sinensis*, which is a member of the camellia family, and the wily Chinese, realising this, substituted the tea camellia with plants of *Camellia japonica* and so this fine race of plants was introduced to England. The beautiful and much sought after *C. reticulata* 'Capt. Rawes' was named after the captain of the East India merchantman who secured it in Canton and nurtured it on the voyage home.

Many outstanding new varieties are becoming available and these together with many older favourites were shown on colour slides by Col. Durrant, whose extensive collection much impressed his audience. A new species has been discovered in Hong Kong which will open a new field for *Camellia* hybridising. Camellia flower forms are classified in 6 sections, viz. double, semi-double, single, anemone centred, paeony and rose forms. Col. Durrant described these and gave many examples. He also dealt with cultivation, pruning, pests and diseases, and explained the steps being taken by the N.Z. Camellia Society to enlist the co-operation of nurserymen in an earnest endeavour to alleviate the nuisance of wrongly labelled plants, which causes confusion, especially if they are stock plants used for propagation. The speaker concluded his lecture by describing the N.Z. Camellia Society and its aims and membership. He stated that all new members would be welcomed and his appeal met with a generous response.

Mr. E. Hutt proposed a vote of thanks to the lecturer and described some of the outstanding camellias he had seen recently in Britain. He appealed to Col. Durrant and to the N.Z. Camellia Society to restore law and order and introduce a system whereby the nomenclature of camellias in New Zealand could be revised.

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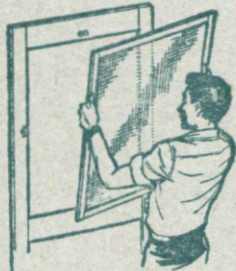
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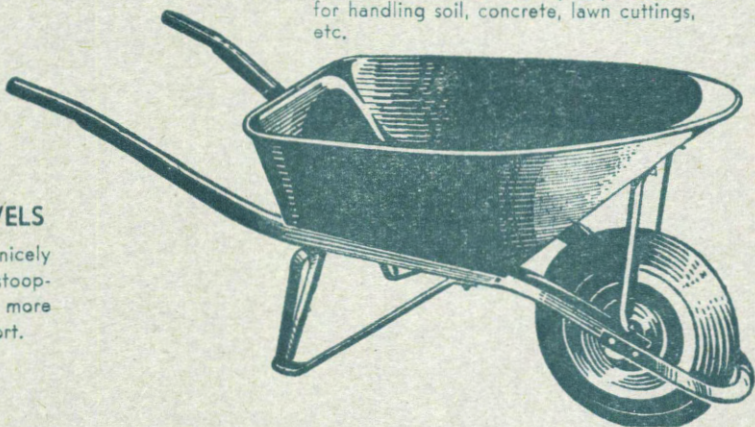
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