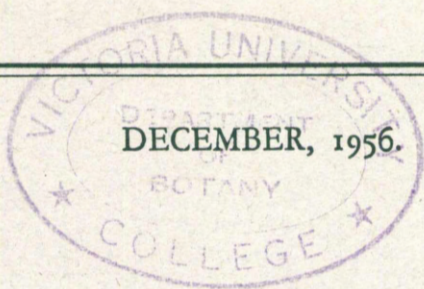


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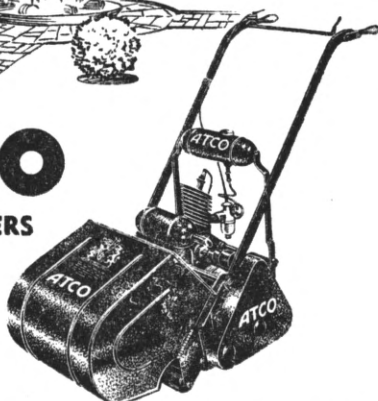
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NEW ZEALAND PLANTS AND GARDENS

The Official Journal of the Royal New
Zealand Institute of Horticulture (Inc.)

Volume 2

DECEMBER, 1956

No. 1

POLICY

The first matter that must receive attention, when one assumes the editorial duties of an important horticultural journal, is the question of policy.

"New Zealand Plants and Gardens" must, first of all, meet the requirements of the members of the R.N.Z.I.H. (Inc.), but not in an elementary sense; that is already provided elsewhere. Yet the nature of its contents must be of an exoteric rather than an esoteric kind to meet the modern demand for information with a minimum of obscure technicality.

The emphasis must be on modern horticultural development over the widest possible field. To provide this there must be specialised writing by eminent authorities on the various genera. In order to present a journal that will be in accord with the dignity of the Royal New Zealand Institute of Horticulture (Inc.), the articles on practical horticultural procedure will be provided only by those who are able to write by virtue of their own experience and observation. Such contributors will have been horticulturalists long before they took up the pen and, on that basis, their contributions will carry authority. No contributor will be invited to write on any subject with which he or she has not had practical experience over a period of years. Whenever possible, the preference will be given to specialists who possess an international reputation.

Gardens of outstanding beauty and possessing unique interest throughout the Dominion will provide important and pleasing subject matter and it is hoped that equal attention will be given to gardens of both North and South Islands. Well-known horticultural specialists from Britain, the U.S.A., South Africa, Australia and other countries overseas will write on their own specialised subjects or provide a resumé of horticultural activity in their particular country. These should serve as a valuable guide to the way various genera have responded to cultivation in climates that may differ considerably from that of New Zealand. It is in the hands of our own horticulturalists to translate this information into the terms of their own climate and environment.

It is hoped that the Superintendents of the Parks and Reserves throughout the Dominion will contribute regularly notes concerning plants of particular interest that have flowered in their locality during

the three months prior to publication of the Journal. By so doing they will provide an adequate idea of the varied flora it is possible to cultivate from Northland to the Bluff.

Variety, even in a journal of this character, is essential. The horticultural bibliophile will find interest in the attention that will be given periodically to the important horticultural literature of a past age. Even today it is possible to find sound guidance in the treatment of various plants from authors like Glenny, Hogg and Burbidge, writers of a century ago whose thoroughness may well be taken as an example by many a modern writer on gardening. Attention to recently published gardening books will be given in each issue of the Journal, but the Editor will not undertake all the reviews. Wherever possible, specialised books will be reviewed by specialists in the particular subject of which they treat, so that a true evaluation may be achieved.

Finally, the Editor will always have in his mind those words of Reginald Farrer that deserve to be emblazoned in every horticultural establishment throughout the world, be it nursery, laboratory or editorial office:

"It is impossible to codify cast-iron rules for the successful cultivation of each plant. Only the fool or the tiro dogmatises; the further one progresses in knowledge, the more certain one grows of one's own ignorance."

GEORGE A. R. PHILLIPS,
Editor.

LODER CUP AWARD

Mr. Frank Singleton Holman, F.R.I.H.(N.Z.), of Whau Valley, Whangarei, has been awarded the Loder Cup for 1956.



Over a long lifetime, Mr. Holman has maintained a great interest in native plants and has devoted much time to their study. As a boy, he had the advantage of having accompanied the late Mr. T. F. Cheeseman, one of New Zealand's most distinguished botanists, on his excursions. This provided him with an excellent grounding in botany, which has been of great service to him in later years. Since 1902, Mr. Holman has been collecting native plants. His collection gradually increased in size and scope until, in 1926, he was able to supply 17,000 native trees, all from seed. He still continues this work, and among the plants he now grows, there are a number of rare forms and hybrids that he has collected from time to time.

As superintendent of the Whangarei parks and reserves for the past eighteen years, Mr. Holman has over 3000 acres under his supervision. Outside Northland his influence has been no less marked, for he has supplied many thousands of native plants to other parts of New Zealand, Australia and overseas. As a member of the Whangarei Forest and Bird Protection Society, Mr. Holman has been its honorary ranger, taking a regular and active part in Arbor Day celebrations and addressing school children on plant lore.

The Whangarei District Council of the R.N.Z.I.H. (Inc.) in nominating Mr. Holman, stated that his work could hardly be over-estimated. For over fifty years much of his work has been voluntary and the results of this have been widespread, effective, permanent and beautiful.

A WHANGAREI HILLSIDE GARDEN

HILDA GIVEN

Although most of the residential area of Whangarei is relatively flat, the town is surrounded by hills and many houses are built on the hillsides.

The garden about which I am writing is on a steep slope facing east, overlooking the harbour and facing the Whangarei Heads. When the owners moved in ten years ago the section was covered in bracken fern, tea-tree and gorse stumps, the only high shelter being a clump of puriri and karaka trees at the bottom of the slope. No other houses were near, the wind had free access from all directions and most who saw the area at that time thought it impossible that any but the toughest plants could be grown there.

The house was built at the top of the section near the road, and after building, the first work was the covering of the fences with netting and brush. Inside the brush on the south side, *Jasminum primulinum* and *Spartium junceum* were planted. On the north side were planted mostly abutilons and climbing plants such as *Pyrostegia venusta*, which climbs over the garage, and *Bignonia tweediana*, which is a mass of yellow bells in early summer. The 70 feet front fence was planted with veronicas (hebes) spaced about 5 feet apart with *Lantana sellowiana* in between. This is now a thick hedge dominantly of the lantana, which flowers for most of the year. These plants are given a light sprinkling of blood and bone with superphosphate about twice a year. Inside, a few native trees grow well above the hedge. These are, *Libocedrus bidwillii* (Kawaka), *Nothopanax orboreum* (Whauwhau), *Pittosporum tenuifolium garnettii*, *Plagianthus betulinus* (Ribbinwood) and the south-west corner is rounded off with three trees of *Metrosideros villosa*, which, being clothed close to the ground, give good protection from the cold winds. *Nerium oleander splendens* and *Viburnum japonicum* give further protection, particularly to a fine bush of *Rhododendron* "Ivery's Scarlet", streptosolen (browallia) and climbing gelsemium.

The gate is at the side from where an unbroken stretch of lawn runs the entire length of the lantana hedge. House, path and lawn are united by a border of shrubby plants. Tall begonias, large-flowered clematis, luculia, iochroma, *Calliandra pulcherrima*, *Hovea celsi*, hardenbergiass, *Jovellana violacea* flourish here, while at a rounded end of the border a good, bushy plant of *Strelitzia reginae* flowers profusely. In a tub near the house, a 5 feet specimen of *Euphorbia splendens* is never without flowers.

I have raced on over the years and have not mentioned the many temporary plants grown for protection and long since removed, or the bit of fence that used to be blown down with every south-easterly gale.

The fine grass in the lawn did not stand up to dry conditions when water was not plentiful, so *Dichondra repens* was planted in the grass and in one place herniaria was added and has remained green through a severe dry spell. The dichondra has spread and made a good lawn.

On the north side of the house succulents are growing well, the sea air and warm situation apparently intensifying the colour of both

foliage and flowers. On the south side of the house Lily-of-the-valley flourishes and at the back of the garage facing east and the sea, four plants of *Hibiscus rosasinensis* 6 to 8 feet high make a good background for a border of nerine and other bulbs. Hibiscus is one of the specialties of this garden, there being over twenty different ones including species and varieties, and they still have a few flowers at the beginning of August.

This is a good winter garden as few frosts are experienced. The owner endeavours to maintain a fairly uniform display of colour throughout the year and to do this many foliage plants are used as well as some which have a long flowering season. Winter flowering plants include luculia, pink and red poinsettia (now called euphorbia), *Lantana selowiana*, iboza (*moschosma*), *Heterocentron* (*Heeria*) *roseum*, veronicas (hebes), tall begonias, *Daphne odora rubra*, *Daphne odora*, echeveria, impatiens, *Pyrostegia venusta*, *Datura sanguinea*, abutilons, *Magnolia stellata*, cydonias, hibiscus, Iceland poppies, anemones, etc. On the first day of August, a white form of *Magnolia soulangeana* opens its first flower. It is in a sheltered spot and is a beautiful specimen. Nearby, *Rhododendron* "Sir Robert Peel" and "Christmas Cheer", *Azalea* "Cocade", a brilliant cerise kurume, *Magnolia parviflora* and *purpurea* come later, followed by *Rhododendron* "Pink Pearl" in October. These are all at the bottom of the garden against a background of native trees.

The slope facing the sea is fairly steep with paths zig-zagging between banks, down to the bush trees below. The banks are thickly planted, mostly in shrubby plants which will hold the soil which is light and inclined to run away. They also shelter one another, wind still being a problem. When the banks also shelter one another, wind dug amidst the bracken fern and as the plants grew, the bracken was pulled out by hand. The fern gave shelter to the new plants and its roots held the soil. Most shrubs and trees seem to do well in fern country.

Under the bush trees at the bottom of the garden, Nikau Palms (*Rhopalostylis sapida*), Pongas (*Cyathea* species), King Ferns (*Marattia fraxinea*) and others are growing well. On the bank above the ferns, hydrangeas, magnolias, etc., are growing along with a fine specimen rimu (*dacrydium*).

The next bank up supports *Albizzia julibrissin*, *Jacaranda acutifolia* and *Idesia polycarpa*, with low cover of azaleas, kalmia, impatiens and other plants. From the landscape window of the house both the trees and the low shrubs and plants beneath them can be seen. From here, the albizzia flowers, which are massed on top of the tree, are seen to advantage as also is the lavender-blue of the jacaranda. The idesia is a joy in winter when it is dripping with scarlet berries, although this tree is attractive at all seasons.

The warmest spot is alongside the jasmimum hedge where a steep slope is made into shelves to hold hibiscus, *Grevillea glabrata*, poinsettias, *Azalea mollis*, *Daphne burkwoodii*, *Monstera deliciosa*, *Tecoma australis*, *Rondeletia amoena*, *Ceanothus burkwoodii*, *Acer palmatum* car. Seigan, *Plumbago capensis* and many other good specimens.

A lemon tree and Morrison's Seedless grapefruit grow on the north side of the section and these are a picture at present, massed with their golden fruits. Two paw-paws and a banana help to give a sub-tropical look and *Bougainvillea magnifica trailii* and "Mrs. Butt" make bold masses of colour in the early summer, while luculia, lagerstroemia, hibiscus, masses of gerberas, bouvardias, carnations anemones, ranunculi and Iceland poppies make this the most colourful spot in the garden.

The slope below the house between the two wide side borders has a bank of fuchsias in semi-shade, a good bush of prostanthera, fairy bamboo, beschorneria, russelia, gardenia, a corner of perennials and rock plants leaving room for dahlias, perennials and annuals in season.

Leschenaultia biloba is a recent introduction which flowered last year and promises well for this year. It really is a glorious blue, which reminds me that brunfelsias make a good show in summer. There are so many fine plants in this garden that I have selected some only, to give an idea of the plants being grown in Northland.

TRENDS IN RHODODENDRONS

DR. J. S. YEATES, Ph.D.(Cantab.), Ph.D.(N.Z.), A.H., R.N.Z.I.H.

Now that more than a century has passed since the Himalayan rhododendrons were first brought from Sikkim by Hooker, it is an opportune time to take stock of the position so far as it concerns this very large and interesting group of plants.

The Rhododendron genus is in many respects a most cumbersome one, because it includes something like one thousand species—not to mention the garden varieties of these species nor the countless hybrids which have been raised by plant breeders.

The original Himalayan rhododendrons were mostly of the larger-growing types, such as *R. arboreum*, *R. grande*, *R. falconeri*, and *R. thomsoni*. As an example, one tree of *R. arboreum* grown at Stonefield, Argyll, Scotland, from Sir Joseph Hooker's seed, is reported by Dr. Macqueen Cowan to be 42 feet high, with a stem 74 inches in girth. The large-leaved group of species allied to *R. grande* not only grow to large trees, but in suitable conditions have handsome leaves 2 feet or more in length. In contrast to these forest giants, we have the small-leaved prostrate *R. repens* and other dwarf species; there are also the many deciduous rhododendrons, commonly called azaleas, and the evergreen azaleas including the dwarf Kurume types and the many larger evergreen azaleas which are especially popular in the U.S.A.

The plant collectors have been very busy during the last forty years, and the new species introduced from the East particularly by Forrest, Kingdon-Ward and Rock, have amounted to hundreds. With all these species to work with, the plant breeders, especially the amateurs who control large gardens in England, have vied with one another in producing new hybrids.

To the rhododendron enthusiast, all this is most interesting, even exciting; but to the average gardener the results are simply bewildering.

ing. There are so many species and hybrids available that he does not know which to choose. We hope in this article to give at least some suggestions that will help him in choosing and growing his rhododendrons and azaleas.

The history of rhododendron growing is largely the history of England's great gardens—Exbury, Bodnant, Caerhays, to name three of the best known. These gardens were maintained as the country estates of wealthy men who could afford to spend lavishly to help the plant collectors and to maintain the large gardens. In these gardens there was ample scope for landscaping on a grand scale, and woodland conditions could be created for growing those rhododendrons which required them.

How different things are today! High taxes and death duties have resulted in almost complete stoppage of such development. The existing great gardens have often to be commercialised or transferred to public organisations in order to maintain them. New planting of rhododendrons must therefore generally be done in smaller gardens where the woodland conditions are difficult to create. How lucky is the farmer who happens to have already the waste land and trees suitable for rhododendron planting! Public parks and gardens too, are able to maintain in some measure the idea of rhododendron growing in the old English tradition, but the average gardener with an acre or so of garden must pick and choose his plants carefully to suit his more exacting conditions. It is with some of the problems of planting rhododendrons in the smaller gardens that we are here concerned. Moreover we are not so much considering the rhododendron enthusiast as the ordinary keen gardener who will grow only such rhododendrons as he thinks will suit his garden better than any other plant.

In these smaller gardens, the size, particularly the height of a rhododendron, is one of the most important things to be considered. A great many of the finest rhododendron hybrids raised in English gardens, are plants suitable for growing in woodland conditions. There, fine old oaks and other such trees provide shade and shelter which will still protect the rhododendrons when they grow maybe 20 feet high. If we plant these tall growing sorts in our smaller garden, we shall generally end in trouble, because they will in time grow too tall to be given the required shade and shelter by the smaller trees which can be accomplished in a small garden. It is true that in some few favoured localities in New Zealand an abundance of humidity, of shade from cloud, and little wind, do allow many rhododendrons to be grown right in the open. Also, in a small garden the owner may choose to plant rhododendrons knowing that they will ultimately out-grow the situation, but quite content to enjoy them while they can be kept within bounds.

However, few gardeners would dispute the advantages of growing rhododendrons which will continue in maturity to find suitable conditions in his garden, and we propose to make some suggestions as to the types of rhododendrons likely to prove satisfactory to the average keen gardener, rather than to the specialist who wants to grow the newest, most beautiful and most delicate. The smaller-growing rhodo-

dendrons, in common with many other shrubs, do help greatly in making a garden which is easy and cheap to maintain. If the ground, especially near the front of the border, is fairly well covered by them, and if the rhododendrons are interplanted with other suitable material, an attractive and tidy garden can be maintained throughout the year without continual planting and maintenance of annuals or of herbaceous perennials.

Although we advocate in general the growing of smaller rhododendrons in the garden, it is not by any means suggested that only low growing types should be used. For instance there is likely to be at least one area where a larger tree gives enough protection for one or two tall growing sorts, and against the southern wall of a house is an ideal spot where a fairly tall plant or two can be grown. The use of taller but more hardy types like *R. yunnanense* or deciduous azaleas also serves to give variety in height and texture to the shrubbery.

When one comes to the point of choosing the lower-growing types suitable for any particular garden, it is not easy to find out what will be the approximate final height. Where the species are concerned, a good general idea can be obtained by intelligent use of the Rhododendron Handbook of the Royal Horticultural Society. (Incidentally this is published each five years and the next issue is due in 1957). The Handbook lists all the species, giving for each one the approximate height. The parentage of hybrids is given in another list, and if one allows for the hybrid being intermediate between its parents, one will not be much in error. The book "Rhododendrons" (1956) published by the American Rhododendron Society, includes excellent lists of species and hybrids and for each one gives the approximate height in ten years. "Loderi", for instance, is shown as reaching 7 feet in that time. The moderate or smaller-growing sorts reach 3 or 4 feet in that period.

Two good examples of alternative tall or dwarf types come to mind at once. *R. arboreum* is about the finest early red rhododendron, flowering in August-September. Its ultimate height is 30 or 40 feet. *R. delavayi* is an almost identical species and the form of it which is common around Palmerston North has reached only 5 or 6 feet in thirty years. Perhaps it should be recorded that these plants were from Forrest's 1924-1925 expedition, the seedlings having been raised and generously distributed by the late Mr. Peter Black. The varieties of the beautiful hybrid "Loderi" are another example of a much favoured plant, which in thirty years can be expected to grow to some 15-20 feet high. The varieties of "Naomi" are rather similar but make low spreading bushes not likely to exceed 5 or 6 feet in the same time.

Amongst the species there are a fairly large number of good garden plants which are definitely of the dwarfier types. *R. williamsianum* is a good example. A bush of it growing in Stratford (N.Z.) at between thirty and forty years of age, is a compact cushion about 3 feet high and 5 feet across. Its heart-shaped leaves—an attractive coppery colour when young—and its delicate pink flowers make it a great favourite wherever it is known.

A recently introduced species of dwarf, compact habit is *R. yakusimanum*. Its height in ten years is given as 2 feet. It is a very hardy,

vigorous species with attractive foliage and produces its pale rose flowers very freely. *R. sperabile* is a dwarf-growing species with scarlet flowers, and reaches a height of about 2 feet also in ten years. It grows well at "Ilam", Christchurch, and in the Dunedin Botanic Gardens. *R. repens* (*R. forrestii*) is a beautiful dwarf-growing species which in some forms is completely prostrate, reaching no more than 6 inches in height. Although its flowers are beautiful scarlet bells, it does not grow well except in favoured spots. Other beautiful but difficult dwarf red-flowered species such as *R. didymum* could be mentioned, but generally they are mostly of interest to the plant breeder.

A lavender-blue species which is easy to grow, dwarf, and very free-flowering, is *R. scintillans*. As I write at the end of September, my own plant of it, some eight years old, is a complete ball of small blue flowers, about 18 inches high.

The charm of *R. moupinense* should not be overlooked. This small shrub (2 feet in ten years) produces good sized flowers of white or pale pink just after midwinter. The late Edgar Stead used to keep some outdoors in large (about 10 inch) pots and bring them indoors about early July, to give a most welcome foretaste of spring. *R. leucapsis* is another extremely early flowering dwarf species with white flowers (1 foot in ten years). It is highly regarded in England, but so far does not appear to have been introduced to New Zealand.

It is among the dwarf hybrids that the greatest range of choice lies for the gardener who wants bright colours and easier-to-grow small plants. "Elizabeth" F.C.C. is perhaps the best example to take. This is a hybrid between the difficult dwarf *R. repens*, and the larger-growing *R. griersonianum*. The hybrid is a vigorous-growing bush which appears to reach a height of about 3 feet, but develops a wide spread. It flowers very freely, its colour being described as a light blood-red—a very good garden plant.

"Dainty" is a somewhat similar dwarf, also bred by Lord Aberconway and awarded the F.C.C. (First Class Certificate) by the Royal Horticultural Society. It is a result of crossing "Elizabeth" and the hybrid "May Day". "Dainty" is a dwarfer hybrid than "Elizabeth" and its red colour is excellent.

"Ethel" F.C.C.—the third of this group of dwarfs from Lord Aberconway—is a cross between *R. repens* and "F. C. Puddle". "Ethel" is a very dwarf plant, reaching at Massey College a compact height of about 15 inches in six years. It is not so free-flowering as "Elizabeth" but its flowers are a very good red. "May Day" is an excellent dwarf hybrid (3 feet in ten years), which has in its usual form, bright orange scarlet flowers.

R. williamsianum has already been mentioned as a species. It is also one parent of some excellent dwarf hybrids. "Bow Bells" (4 feet in ten years) at Massey College has grown to less than 2 feet in six years, and makes a compact bush which has numerous pink flowers. "Jock" (*williamsianum* x *griersonianum*) (2 feet in ten years) is a beautiful dwarf with rose-pink flowers.

In the bluish or lavender shades there are a number of hybrids such as "Blue Tit", "Blue Diamond", "Ilam Violet", and others, which

are not tall growers and should not exceed 4 feet in ten or twelve years. Moreover, these blue types are capable of tolerating more exposure than most rhododendrons.

Creamy and yellow to orange shades are much sought after in rhododendrons, especially in dwarf types. A good form of the species *R. burmanicum* is fairly yellow, and *R. aureum* also is satisfying; but these are not the larger-flowered types which most people prefer. Two or three species *R. campylocarpum*, *R. dichroanthum*, and *R. scyphocalyx* have definite orange or yellow flowers, but these species are not easy to grow in most gardens. "Icarus" is one English hybrid which has excellent flowers of a coppery colour. In six years at Massey it has made a cushion about 2 feet high and the same in diameter. It promises to be a dwarfish plant. "Ilam Orange" is a cross from *R. dichroanthum* raised by the late Edgar Stead. The original plant growing at Ilam, is at about twenty years, a compact bush some 2 feet 6 inches high and 5 feet across. Its flowers open a coppery yellow and fade to a rich butter yellow. It is a really good thing. "Ilam Apricot" is a similar hybrid, but its flowers are beautifully flushed with apricot colour. "Ilam Canary" is a yellow *campylocarpum* hybrid, of creamy yellow colour, but unfortunately it has not proved an easy plant in most gardens.

The yellowish Slocock hybrids which are in the trade are compact, rather low-growing bushes, which have buds tinged with pink or red, opening to pale yellow or cream. "Souvenir of W. C. Slocock", "Mrs. W. C. Slocock", "Elspeth", and "Keay Slocock" are the best known. "Keay Slocock" is a particularly good garden plant, hardy in full exposure to sun, and very free-flowering. "Idealist" is another beautiful pale cream hybrid (5 feet in ten years).

As a final thought in these low growing types, two New Zealand raised sorts should be mentioned. One is a really excellent pink-flowered variety of *R. kingianum* raised at Massey. It is now, at about ten years of age, a very compact bush some 2 feet high and 4 feet across. In most years its attractive leaves are almost completely hidden by its fine trusses of pink bloom. This plant has been propagated and distributed. The other is a dwarfish scented variety we know is an Ilam hybrid which the late Edgar Stead called his "assamicum hybrid". The parent bush at Ilam some twenty or thirty years old, is about 6 feet high, and ours at Massey are less than 2 feet 6 inches at about ten years. This hybrid roots readily from cuttings, quickly makes a compact bush 1 foot or 2 feet high, and flowers very freely, its white flowers carrying a delightful spicy scent, reminiscent of that of the well known hybrid "Fragrantissimum". Scent is a most important thing in a garden, and "assamicum hybrid" dotted here and there is a great aid in this respect and as a foil to the stronger colours.

The Kurume azaleas are fairly well known. They are forms of *Rhododendron obtusum* var. *japonicum*, and will mostly not exceed a height of 3 feet in twenty years. These azaleas can be bought in many colours, which are best inspected while in flower. The naming of the varieties is so chaotic that such inspection is the only way to ensure that the gardener secures what he wants. They grow readily from cuttings, so that they are cheap to buy, and for massed planting they

are excellent. Groups of the different colours arranged at random in a large planting, blend very well with one another. It is important, however, to ensure that all the varieties selected flower at the same time. If they are planted 2 feet apart in each direction, they will soon cover the ground entirely. To extend the flowering season a few lily bulbs (*L. regale*, for instance) might be planted amongst them, or in a large planting an occasional small tree giving only light shade (e.g. maple) will give some effect of relief. Clipping the azaleas with hedge clippers just after flowering helps to promote young active growth and to maintain free flowering. In Windsor Great Park, a mass planting of more than 50,000 has been made with excellent results.

Although we are dealing with rhododendrons for smaller gardens, it is worth emphasising that even where there is insufficient room to grow much tall shade and shelter, there are some taller, larger rhododendrons that are hardy enough to succeed in many situations; and in districts blest (or accursed!) with much summer cloud and high humidity, many less hardy sorts will thrive in the open.

Of the hardier types which will tolerate fairly much exposure, we have such well-known hybrids as "Unknown Warrior", "Pink Pearl", "Britannia", "C. B. Van Nes", "Earl of Athlone", etc. "Fragrantissimum" is one old hybrid which should be at least tried in almost every garden. It is cheap, hardy, and its fragrance in flower is ample reward for growing it. "Countess of Haddington" also is cheap, easy, and beautifully scented.

There are a large number of smaller-leaved rhododendrons which can be grown in fairly open situations. Of these *R. yunnanense* is typical. It grows into a thin, twiggy bush about 8 feet high, and bears great masses of white to pale pink flowers. *R. lutescens* is of this type but has pale yellow flowers in September, and bronzy young growth; *R. augustinii* and *R. chasmanthum* have "blue" flowers, and there are a number of other species such as *R. oreotrephes* of which Kingdon Ward sent us back some interesting types from North Burma in 1954. Those who expect "typical" rhododendron flowers in this group should be warned. The flowers are small and butterfly-like (about 1½ inches across) and though borne freely are not in large heads as in the better-known types of rhododendrons.

The deciduous azaleas make up a group of the larger-growing but hardier rhododendrons which can tolerate full exposure to our sun. to most gardeners they are all "*Azalea mollis*", but the *mollis* types are only a small part of this group. The latest and most spectacular are the Ghent-type hybrids, the main breeding of which was carried on by the Knaphill Nurseries in England, and later by Rothschild at Exbury, and Stead at Ilam, in Christchurch (N.Z.). The *mollis* types flower in late October at Massey, the Exbury and Ilam hybrids about two weeks later. They can be expected to reach 8 feet in about ten years, and a fifty year old plant at Ilam was 18 feet high. The newer hybrids from Ilam and Exbury are extremely beautiful, many with large heads containing twelve or more blooms, each of which may be 4 or 5 inches across. Texture is excellent and most varieties are beautifully scented. Colours range from yellow through flame to a

rich coppery red, but also include some pink and salmon shades. Many of them have fine autumn colours in their foliage.

While thinking of deciduous azaleas, do not forget the old species still called *Azalea pontica* (rightfully *Rhododendron luteum*). It is very hardy, bright yellow-flowered, and its scent is magnificent. For very early flowering deciduous types a good form of the pale pink *R. schlippenbachii* or the beautiful pinkish-lavender *R. mucronulatum* should not be overlooked.

HORTICULTURAL HIGHLIGHTS OF 1956

WILL INGWERSEN (*England*)

When my good friend George Phillips asked me if I would contribute occasional articles to this Journal, of which he was undertaking the editorship, I felt greatly honoured, but was uncertain what to write about. I have no practical experience of gardening conditions in New Zealand and it would be more than presumptuous of me to attempt any sort of "horticultural guidance" to readers who are doubtless faced with as many problems as we are here in Britain, but of a nature necessarily different from our own. Finally I decided to start off with a brief review of my own gardening experiences during the past twelve months. I am fortunate enough to live and work at the very hub of British horticulture, visit every important flower show during the year, and many of our finest gardens. I am also, perforce, in close touch with commercial plant growing in this country, although the fact that I am a plantsman by choice and a nurseryman by necessity will probably make itself abundantly clear to those who have the patience to read further.

Every year, for every gardener, contains certain highlights which live in his memory, and, although 1956 will be remembered largely by British gardeners for its consistent climatic misery, it has not lacked its brighter moments. My own most pleasant recollections commence with the flowering of *Iris winogradowii* in the early spring. This choice bulbous iris, a native of the Caucasus, was first introduced to Britain in 1927, and remains a great rarity. It is slowly becoming more widely distributed and there is every reason to hope that in a few more years it will become fairly generally available. The small bulbs, clad in a densely reticulated tunic, are very much like those of *I. reticulata*, but the flowers are carried on shorter stems. The standards and the wide-lipped falls of the blossoms are of a rich, clear yellow, the colour being enhanced and purified by a heavy spotting of greenish-bronze marks on the falls. The bulbs, planted 3 inches deep in sandy loam, have proved indestructibly hardy and have endured sub-zero temperatures unharmed. The flowers, which possess splendid lasting qualities, seem immune to damage from the storms of rain, hail and snow which battered them this year.

Planted on the same north-facing terrace of a retaining sandstone wall as the iris, is a colony of *Arum creticum*. I have a liking for

aroids of all descriptions, which I have to defend fiercely at times in the face of strong criticism from those who condemn many of them as mere botanical curiosities. The fact that some of them add to their bizarre appearance what can only be described as a hideous stink, sometimes leaves me standing on a very shaky plank. My footing becomes firmer, however, when *Arum creticum* is in flower, for it is a truly handsome plant and attracts instant admiration. Soon after the handsome, arrow-shaped and brilliantly glossy leaves appear above the ground, the blossoms appear, like those of the common "Lords and Ladies" in any English hedgerow. They expand into beautiful rich yellow arums, standing a foot or more in the air on stout stems, the spathe generously wide, and the spadix boldly upstanding. In spite of the fact that it comes from the island of Crete, and grows at no great elevation, it has proved completely hardy. The great bulb-like roots have been frozen solid on many occasions but have never shown the slightest sign of resentment to conditions which must be extremely foreign to them in their native habitat.

An event which I await each year with keen anticipation is the flowering of the earliest of the species tulips, *Tulipa kauffmanniana*. The large flowers, so like those of nymphaea that it has been named "Water-lily Tulip", are gleaming chalices of creamy-white and butter yellow and fully 4 inches wide when they expand to the warmth of the spring sunshine. There are now many named varieties of this fine tulip, and startlingly beautiful hybrids between it and other species, but my deepest affection is reserved for *T. kauffmanniana* itself, and no newcomer, however lovely, can oust it from my idolatry.

A few years ago Mr. A. P. Balfour, of Messrs. Sutton & Sons, was inspired to cross-fertilize the two South African composites, venidium and arctotis. From this marriage has risen a race of bigeneric hybrids which are known as *Venidio-Arctotis* and which have made a very considerable impact on the garden scene. The large, long-rayed flowers, as shapely as those of a gerbera, are carried in profusion on long stems above handsome, jagged-edged silvery foliage and the flowering season extends from late spring until the first autumn frosts warn us to lift the plants and take them under cover. There is a wide range of colour, from clear pink through shades of orange and red to deep mahogany.

Lilies have given very uneven results this year. Any species which are normally susceptible to attack by botrytis have been, in my garden, an almost complete failure, and especially *L. auratum* and *L. candidum*; even my particular favourite *L. speciosum rubrum* has been attacked. The outstanding success among lilies, however, has been the white Martagon. A colony of *L. martagon album* which I planted three years ago in a rather dark and sunless border which has always been a problem have established themselves very contentedly and give me immense pleasure each year. Their tall stems are posed against the sombre bronze-green of a hedge composed of *Cryptomeria japonica elegans* and the twenty or more pure white flowers which each stem carried showed

with sharp perfection against this backcloth. The soil is heavy clay, but I prepared a foot wide and deep hole for each bulb, and planted them in a compost of loam, sand, peat and very, very old manure. Each year they are given a summer mulch of oak or beech leafmould which is repeated in the spring just as the fat noses appear through the ground. Apart from this they receive no attention at all and are increasing in vigour each year.

I am fond of all kniphofias and have assiduously collected them over the years, but many of them have always seemed to me to be rather ponderous and to lack grace. This is why my affection has turned most strongly towards the more elegant species, such as the lovely flame-coloured, late flowering *K. galpinii*. I was greatly taken with a newcomer, which received an Award of Merit when shown in London. It is named "Maid of Orleans" and carries its cream-white flowers in slender heads on erect, two-foot-high stems. Doubts were at first felt as to its hardiness, but it has come through two of the worst winters in living memory in my garden without turning a hair.

I have no hesitation at all in saying that I consider the "novelty racket" is being overdone, and is definitely against the best interests of horticulture. The constant spate of new varieties, many of which are scarcely distinguishable from the varieties they are supposed to supersede, give gardeners no time to grow and appreciate the fine varieties already in existence. Just now and then, however, a plant turns up which really is first-rate and will undoubtedly persist. A new bigeneric hybrid between *Tiarella wherryi* and one of the heucheras, which has recently received a well deserved Award of Merit, is a definite acquisition and will undoubtedly become a valuable garden plant. It is intermediate in general appearance between the parents, with handsome foliage; leaning in form towards the tiarella parentage. Slender stems of 15 to 24 inches carry loose showers of dainty rich pink flowers, and the plant blossoms from May until November. It is handsome in the border, invaluable when situated on its own, and is, furthermore, a fine cut flower, standing well in water.

From the same source as the above—which, incidentally, I see I have omitted to name, and is known as *Heucherella* "Bridget Bloom"—comes a new race of erigerons owing much to an infusion of *E. aurantiacus* into a number of the best dwarf garden hybrids. These represent a real "step forward" in erigerons and may be identified in catalogues without difficulty as all the varieties so far named end in "ity". There is "Charity", "Dignity", "Felicity", "Festivity", "Dimity" (a particularly neat and compact variety), "Sincerity", and so on.

A plant which brought me up "all standing" when I saw it for the first time this summer, is the new *Anchusa* Loddon Royalist. It is claimed by the raiser to be one of the outstanding novelties of recent years among hardy perennials. It is not a tall growing plant, the sturdy stems seldom exceed 3 feet in height. The colour of the flowers rivals a gentian for purity, and the individual blossoms are unusually large and well formed. There have been one or two definitely false starters among anchusas of recent years, but this one is a winner.

My final surprise in a year which has been filled with unexpected happenings in the garden, is the magnificent display made by *Nerine bowdenii*. I have a long, narrow, sun-baked border at the south-west side of my house which is crammed with bulbs of this beautiful autumn flowering plant. I had anticipated a poor showing this year, after weeks of unending rain and low temperatures, but to my astonishment they are flowering as they have never done before and have obviously found the wet and sunless summer very much to their liking. Bang goes another illusion, for I have always thought they required a long summer baking to give of their best.

SOME OLD FLOWER AND PLANT BOOKS

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

The first book, dealing exclusively with plants, to be printed in England was an anonymous volume, without illustrations, published in 1525. It ran into about ten editions, but only a few copies survive in some of the great libraries of Britain. A facsimile of the first edition, represented by a copy in the British Museum, was published in New York in 1941.

medle it togyder and anoynte thy heed therwith/a thou
shal be holic therof.

¶ *Edera terrestris.*

¶ This is an cethe Juy. It hath leues lyke *Lacympte* / but they be not so moch. And it hath a reed flouie. The vertue of it is yf it be sothen in swynes grece / it is good opntment fo: all maner aches.

¶ *Euforbium.*

¶ This is called *Clarev*. This herbe hath leues lyke to *Sauge* but the leues be hoder and couder. His vertue is yf it be put in potage it wyll make þ fleshe tence.

¶ *Elleborus albus.*

¶ This is *Belletour* of Spayne: longe woite. This herbe hath leues moche lyke to *Bedelyon* / but they be not so moche spete without / and it hath a flowe as i were a *Pasney*. His vertue is yf it be put into the nose: ch:ylles of a man it wyll make hym to nose. Also it healeth scabbes the mo:sewe and ceters. Also it purgeth a man of wyched coloures / of the newme / and of þ *Emeraldes* / yf it be layde to the place that is dyscaled. Also fo: þ coth ache it is good if it be sothe in *Hyvel* / & kepe it as hote as he may suffre it in his mouth. And it is good to purge a mannes stonake and his wombe. Also the powder therof put in gruell shall slec wormes. And the soye medled with myke shall slec flies. It is hote & dry.

¶ *Elleborus niger.*

¶ This is called *Bedelyon*. His leues be moche lyke to *Longe woite* / but they be not so whyte. And it hath a hode flowe & a blacke rote. His vertue is yf it be made in powder / it wyll destroy & slec ratces. And this herbe is hote and dry.

¶ *Epatica.*

¶ This herbe is called *Lycworte*. His vertue is to de-

The title-page runs as follows, "Here begynneth a newe matter / the whiche sheweth and treateth of ye vertues and propyrtes of herbes / the whiche is called an Herball." There are 35 leaves and the last page concludes, "Imprynted by me Rycharde Banckes / dwellynge in Lōdō / a lytel fro ye Stockes in ye Pultry. 25th day of Marche. The yeare of our lord 1525." The origins of this book are quite unknown and, because it is anonymous, it has come to be known as the Banckes Herball. Some authorities think it may have been an original work while others believe it may have been a transcription of an old mediaeval manuscript, now lost. In any case it is of great interest because it gives a glimpse of the herbal lore of England in pre-Reformation times. Thinking you might like a taste of it I have had one of the pages in my copy photographed. The last entry at the bottom of the page deals with *Elleborus niger*, better known as the Christmas Rose. "This is called Pedelyon. His leues be moche lyke to Longe worte / but they be not so whyte. And it hath a brode flowre & a blacke rote. His vertue is yf it be made in powder / it wyll destroy & slee rattes. And this herbe is hote and dry."

We cannot leave the old herbals without some mention of Gerard's Herball, published in 1597. He emerges as a bit of a scamp who got a half-finished translation to complete, said he lost it, and later published it as his own. He was a true Elizabethan with all the feeling for words so characteristic of the age. Fancy being able to give the name "Travellers' Joy" to the wild clematis that festoons the hedgerows of southern England because he "esteemed it only for pleasure, by reason of the goodly shadow which they make with their thicke bushing and clymbing, as also for the beauty of their floures, and the pleasant and savour." It was he who gave the name Pasque Flower to *Anemone pulsatilla*, whose "purple floures do grow plentifully in the pasture or close belonging to a parsonage house of a small village six miles from Cambridge, called Hildersham: the Parson's name that lived at the impression hereof was Mr. Fuller, a very kind and loving man, and willing to shew unto any man the said close." A rascal, but an engaging rascal, and one feels one would have liked him much more than the prim and proper John Evelyn whose "Sylva, or Discourse on Trees," was first published in 1664. My own is the 1679 edition and I feel that I cannot do better than give the comment written in pencil on the front end-paper. "This work is universally known and is one of the most valuable books on the economy of forest and fruit trees that has ever appeared. A new and splendid edition, enriched by numerous notes, was published in 1786 by the late Dr. Hunter of York.

Mr. John Evelyn was one of the original members of the Royal Society, and one of its greatest ornaments. He was born in 1620 and died in 1706. He was very active in promoting the Restoration and on that account was honoured with particular marks of attention both by Charles II and James II." We may not have quite such a high opinion of it today, but how many books have received such a tribute about 150 years after publication. That tribute is dated November 7, 1812, and signed "R.E."

John Parkinson is usually regarded as the last of the British herbalists, but his best known book is more of a gardening book than a herbal. It is "Paradisi in Sole Paradisus Terrestris," a punning title that may be translated as "The Earthly Paradise of Park-in-Sun." It went into two or three editions but is best known by the facsimile published in 1904.

One of the most charming books of the following century is Thornton's "Temple of Flora", a flamboyant but yet fascinating volume on account of the coloured illustrations which often sacrifice realism for atmosphere. The Night Flowering Cereus, *Selenicereus grandiflorus*, for example, has a mysterious background with a full moon, a silent stream, and an owl perched on the clock-tower, and one feels, the clock should be tolling midnight. There is a very disappointing reproduction of this plate in Sygne's "Plants with Personality". "The Group of Tulips" on the other hand is truly delightful, set in a scene whose flavour is vaguely Dutch. They take us back to the days when broken tulips were all the rage. "Most prominent in our group, you see a tulip, named after the unfortunate French Monarch, Louis XVI . . . it rises above the rest with princely majesty, the edges of whose petals are stained with black, which is the true emblem of sorrow. . . . The next Tulip in dignity has six petals of a firmer structure . . . bordered with dark purple, so the most rigid critic might excuse the fancy of the florist who named this after George Washington. Beneath these is La Majestieuse, whose edges are clear, but possesses a blue purple stripe in the centre of each petal. The Carnation Tulip is called by botanists La Triomphe Royale, which for the beauty of its pencilled stripes triumphs over all the rest. Beneath this is Gloria Mundi, whose yellow ground is the emblem of sublunary perfection. Its decisive dark purple lines at the edges or in the centre of the petals, at their top . . . sufficiently characterise this individual. The two remaining Tulips . . . named after two very distinguished patrons of this work . . . Duchess of Devonshire and Earl Spencer . . ." As you see, it has the flavour of the 18th century although it appeared in parts between 1799 and 1807.

When our old home in Aberdeenshire was broken up in 1920 all the old gardening books that belonged to my great-grandfather came to me and I was very proud of them because the latest was the 1842 edition of Loudon's "Encyclopædia of Gardening". Among them was a copy of Millers "Dictionary of Gardening", a work that had the distinction of being the main authority for about a hundred years in both Europe and America. I do not remember which edition I had, but I know it was not the first. There was a copy of Justice's "Scots Gardeners Director" and Hill's "British Herbal", both from the middle of the 18th century. But the one that became my pride and joy was Andrews' "Engravings of Ericas and Heaths", three superb volumes of coloured plates with botanical descriptions published from 1802 onwards at a time when the cultivation of South African Heaths was something to marvel at.

I thought a lot of my old books until I went to Kew and found they were small beer, in fact very small beer. Unfortunately mine was not the coloured edition of Hill's Herbal, and anyway I soon found he was considered to be nothing but a nit-wit. On the strength of an award of some sort from the King of Sweden, I think, he went around calling himself Sir John and everyone laughed at him, treating his activities as a joke.

Then I made up my mind to go round the world, working my way and taking ten years or so on the way, and felt I couldn't trail around a lot of old and useless books. So I sold the lot, little knowing I was to spend the greater part of my life in a land that worships its grandparents and feels that most of what happened before 1840 belongs to the prehistoric ages. I had a sale, but it was not much of a success, the customers were keen but were all young men like myself, with very little money. So I took Andrews and a few others up town to Charing Cross Road. Well do I remember Foyles. Then as now they advertised a stock of three million books and when you looked in you thought they were all there, lying on the floor. It seemed madness to try to sell books there, and it was. I got a few pounds for my "Heaths", apparently it lacked the scarce and valuable fourth volume. In a recent London catalogue I see this work offered for £58/10/- and not a word about the "scarce and valuable" fourth volume.

The reason for this steep rise in prices is that towards the end of the 20's and before the slump of the 30's there was a craze for the magnificent coloured plates of these old gardening books. The old books were barbarously broken up for the plates which were mounted for use as table mats or framed and sold in antique shops in London and New York. In a recent letter a friend discusses this very subject. "You could buy a complete set of Maund's "Botanic Garden" for £10 then. I paid £35 for mine and the price has risen since. I could have bought a copy of Elwes' Monograph on Lilies for £30 in 1936, now it is over £100."

He mentions other books, including Maund & Henslow's "Botanist" which is thought to have appeared about 1830 when the art of plant illustration had reached its greatest achievements. Flower painting was then a popular hobby for ladies and there were dozens of beautifully illustrated works on the market. Like many another fashion this seems to have arisen in Paris, where the greatest exponent of the art, Pierre-Joseph Redouté took pupils. He had been Draughtsman of the Cabinet for Marie Antoinette, but she had little interest in painting, although there is a story that she sent for Redouté to paint a cactus plant that attracted her attention during the weary weeks of imprisonment at the Temple. With the rise of the Napoleonic empire his fortunes changed. The Empress Josephine was a generous and enthusiastic patron who spent untold wealth on her garden at Malmaison, and on the publication of magnificent folios to record her new and rare plants for posterity. To this period belongs Redouté's greatest achievements, the eight wonderful volumes of "Les Liliacées" of 1802-16 and the better and more famous "Les Roses" of 1817-24. The Napoleonic empire has long since

been swept away, but these books remain to remind us of a great lady who did not live to see them completed. Those who are interested in Redouté and his roses will delight in the new series from his work published in 1954 and this year by the Ariel Press, they are superb and will become collector's pieces because the plates are to be destroyed after simultaneous publication in several European countries and in America.

This is a very fragmentary account of some of the delightful old books that have come down to us from the past. I feel that writing an article like this is like going along a good herbaceous border trying to select a tiny nosegay, for every item taken there are dozens equally worthy of discussion.

OLD WORLD ROSES IN AN AUCKLAND GARDEN

(1) THE GALLICA GROUP

NANCY STEEN

There are a number of really old roses that grow and flourish in Auckland gardens in spite of extremely wet winters and hot humid summers. Perhaps it is because some of them have come originally from the Middle East that they thrive here, even if hoses are banned and the ground is dry and sunbaked.

From the twelfth to the twentieth century seems a far cry; but there are roses that grew in the reign of Henry II which still grace our gardens today and have come down to us unchanged through the years. Artists have faithfully drawn and painted these lovely roses; and, in old flower prints, it is easy to recognise gallicas, albas, Damasks and centifolias. How exciting to look down on a bush of the *gallica* "Rosa Mundi" in full flower and to realise that it was brought home from Syria by a Crusader for Henry II's mistress, Fair Rosamond, and called after her.

The *gallica* or French roses which we grow today have all been developed from *Rosa rubra* which came originally from Asia Minor, and was distributed throughout Europe and Northern Africa by succeeding waves of invaders returning home with the spoils of war, and the early Phoenician traders who roved all round the Mediterranean area. This was made possible because *Rosa rubra* set seed freely and suckered with gay abandon. It thrived so well when it was planted in the fertile valley of Provins in France that it found there a second home; and the essence distilled from its fragrant petals became the basis of a flourishing trade in rose conserves and scents, and was also greatly valued for medicinal purposes. Much later, it was taken to England by an Earl of Lancaster who adopted this red rose as the badge of his House and used it, as such, during the Wars of the Roses.

Of all the old roses, *Rosa gallica* is one of the loveliest and one of the easiest to grow. Because of its upright growth and medium height, it is eminently suited to the smaller garden. It has but one season

of flowering; but we do not banish other lovely shrubs because of that. Rather do we eagerly await the first sight of another season's bloom; and, when the flowering season is over, then there is the delightful dull green crinkled foliage to refresh the eyes during hot weather. Little pruning is required beyond a light tipping of the branches and the occasional removal of an old tired stem right from the base. They will thrive in any reasonably good soil and can stand a fair amount of shade in this northern part of New Zealand. Here they are budded on to a *multiflora* stock, though English growers use *canina* for shrub roses, as the Dog Rose is so used to fending for itself when growing along hedges and roadsides, that its roots are able to get ample nourishment in spite of any trees and shrubs in the neighbourhood.

To prolong interest in a section of the garden where old roses are grown, it is a good plan to use other small shrubs in between the bushes, and also to use a carpeting of low growing plants to cover the ground and help to conserve moisture during the hot summer months. Fuchsias, daphnes, azaleas and ericas are ideal for this purpose; whilst double and single primroses, the old "Jack-in-the-Green" polyanthus, *Myosotis* "Ruth Fischer" which flowers so well after a wet winter, and *Omphalodes verna* are useful carpeters. Other plants that thrive in semi-shade under the shrubs are the *Primulas obconica* and *sinensis*, *Aquilegias alpina* and *flabellata*, *Pulmonaria augustifolia*, and *Violas cornuta*, *sylvestris* and *hederacea*. Dwarf scillas, muscari and narcissi will thrive here also and give added interest during the year. A few of the taller growing gallicas are quite happy in association with larger perennials such as funkias, hellebores, megaseas and anthericums and the lovely leaves of these plants add a great deal to the garden layout. The main thing is to create harmony in colour and design so that the whole effect is restful and inviting.

Most old gallica roses have soft colouring, shading from pale pink to deep rose and red, from red to red-purple and slaty plum tonings, and some are striped in the same glorious colours. It is possible to get beautiful fuchsias to grow in close proximity to gallicas, albas, damasks and centifolias, but we shall deal here with those that are particularly suited to the unusual colouring of the French roses. An occasional lindane spray is helpful to keep thrips on fuchsias at bay during particularly hot dry weather and it will also deal effectively with any aphid on the roses.

The most widely grown of the really old gallicas is "Rosa Mundi," a striped sport from the Red Rose of Lancaster, *gallica officinalis*. If this rose is grown on its own roots, it sometimes reverts to its original red form. The stems are clothed in fine bristles, the crinkled leaves are a dark dull green on top, paler beneath as in most gallicas; and the semi-double flowers are held very erect. They are beautifully striped and splashed with pink on a light carmine ground and have a bunch of yellow stamens in the heart of the flower amongst small inward curving central petals. Grown under this are dwarf blue and pink Forget-me-nots, double primroses and pink violets. Fuchsias that are not too tall to associate happily with "Rosa Mundi" are the pink

and lavender "Treasure", and the new, but old-fashioned looked American fuchsia, "Lucky Strike". "Nancy" is a full two-toned one of pink and rose that is better to be re-struck each season.

A more modern rose with a very old-world look about it, is one that was bred in Holland about the middle of the nineteenth century and sent unnamed to Laffay in France. Its most unusual rich plum purple colouring which fades to a slatey shade, suggested an ecclesiastical name and it was called "Cardinal de Richelieu." It is taller than "Rosa Mundi" and opens its fat buds in an unforgettable manner. The outer petals, which have a touch of white at the base, reflex back leaving a tight balled bunch of purple petals in the centre. By the next day, when the flower is fully open, the petals appear to have a bloom upon them such as is seen on the skin of a perfect grape. Wide crinkled green leaves set off to perfection an unusual flower. The fuchsias "Fritz Kreisler", "Blue Horizon" and "Flirtation" are near "Cardinal Richelieu" with *Viola hederacea*, *Muscari azureum*, and *Hyacinthus amethystinus* underneath.

Taller still, but full of character is *gallica* "Charles de Mills". It has exciting flat and quartered flowers of a rich rosy purple that fade with age to a slatey mauve and is highly scented. A bowl of these old purple and striped roses is a thing to be marvelled at, and Constance Spry in her books on Floral Art strongly recommends them as cut flowers. Standard fuchsias, in the dark purple and red of "Victor Hugo" and "Othello", make grand companions for "Charles de Mills" with hybrid hellebores, astilbes, and *Primula obconica* in rose to purple shadings underneath. The blue *Omphalodes verna* is arresting nearby and *Muscari* "Heavenly Blue" can be grown amongst the perennials as well as scillas.

In his fine book "The Old Shrub Roses", Mr. G. S. Thomas says that the darkest of the gallicas, "Tuscany" or the "Old Velvet Rose", is another very old rose. It is the same height as "Rosa Mundi", between 2 and 3 feet, but the flowers are of an indescribable rich blackish crimson shading to purple with masses of heavy golden stamens. White Forget-me-nots, muscari and yellow *Narcissus bulbocodium* make lovely companions for this amazing rose.

"Camaieux" is a fine striped *gallica* whose flowers start off with Tyrian rose stripes on a blush pink ground and change with age to a lovely violet gray. Not a tall grower, this is another useful rose for the small garden when carpeted with pink forget-me-not and grown in conjunction with the dwarf pink and white fuchsias "Innocence" and "Rolla".

Two gallicas of more unusual colouring, but still not too large for a moderate sized garden are "Belle de Crécy" and "Jenny Duval". The former has full flat flowers of carmine pink shaded with mauve which turns to a soft grey violet in the hot sun: and the latter has semi-double flattish flowers of vivid carmine that fade to lilac, pink and grey tones. Mauve pink ericas and dwarf azaleas in the same shades make good ground cover, especially if interplanted with the blue and pink pulmonarias.

An interesting rose found in a southern garden and now growing in Auckland with a background of *Jasminum polyanthum* and the blue thunbergia, is one, although not positively identified as yet, that may prove to be *gallica* "Duchesse d'Angoulême" or the "Wax Rose", a name that suits the texture of the petals of this sweet pink cup-shaped rose. It is very floriferous and the wiry stems which are smoother than those of most other *gallicas*, arch to the ground when weighed down with bloom and create a charming effect. It cannot be pure *gallica* as the branches and leaves are smoother than usual; but it only flowers once in the year and has other characteristics of the *gallicas*.

Just as it is possible to use antique furniture in a modern home without striking a jarring note, and indeed, to obtain a delightful effect, so is it possible, with equal success, to grow old roses in the gardens of today.

The roses that have just been described are only a few of the better known *gallicas* grown today. Although their season of blooming is comparatively short, the unusual colouring and beauty of these roses is such that, in spite of the almost continuous blooming of more modern roses, they have survived and are grown today by an increasing number of enthusiasts.

SOME NOTES ON MORE RECENT DEVELOPMENTS IN INSECTICIDES AND FUNGICIDES, AND THEIR APPLICATION

R. ODINOT (*Therapeutant Specialist*)

Certain trends can be recognised in the development and application of the newer insecticides and fungicides and the effects that these and relatively older established materials are causing in the field.

Particularly in overseas countries, e.g. the United States, Canada, the United Kingdom and the Netherlands there is a growing awareness that many of the chemicals which are being applied to cultivated crops in an effort to control certain insect pests and diseases, bring with them other problems which are of economic importance.

Immediately after the second World War there was a most rapid development in the synthesis of new insecticides and fungicides. Every year a great number of additional chemicals were being put on the market indicating an impressive extension in the control of many of the economic pests and diseases.

Most of the insecticides which have been introduced in the post war period possess a very wide range of action, and the general consensus of opinion was that many pests could now at last be satisfactorily controlled.

This belief is not so strong today as it was in 1948 or 1949. Looking back it was apparent that at the start many insects for which control was claimed initially were in fact not controlled satisfactorily, while other insects which were controlled adequately soon developed

resistance to these chemicals. For instance, the extensive application of D.D.T. on fruit trees to control codlin moth has in many countries resulted in strains of codlin moth resistant to D.D.T.

A further complication has arisen in that certain insect pests which were of little economic importance before are major problems now, e.g., red mite as a result again from the extensive use of D.D.T. which will kill off the natural enemies of red mites without controlling the mites themselves.

Fortunately in New Zealand problems such as those instanced above have not yet become as pressing as in some other countries in the world, but these developments certainly point out the need for more research into the effects of extensive application of insecticides. A greater realisation has come about that although powerful insecticides are needed to control existing pests, they should be applied intelligently.

As a result research efforts are more and more being directed towards the development of agricultural chemicals which act specifically on certain species or families of insects and do not destroy many of the beneficial parasites. For instance, a group of chemicals has come forward, collectively termed the chlorinated benzene sulphonates, which act particularly against various species of mites without harming their natural enemies. Another group is the so called systemic insecticides, i.e. those insecticides which are taken up through the leaves, bark or roots into the sapstream of the plant and so render the plant toxic to sapsucking or leaf eating species of insects, without causing any great damage to beneficial insects.

Most of the systemic insecticides on the market today belong to the group of the so-called organo phosphorus compounds. The organo phosphorus insecticides such as parathion, ischradan, H.E.T.P., etc., are very poisonous to human beings and warmblooded animals. However, some of the more recently introduced insecticides belonging to this group are far less toxic to humans and livestock, notably Malathion, Metasystox, Dipterex, and Diazinon.

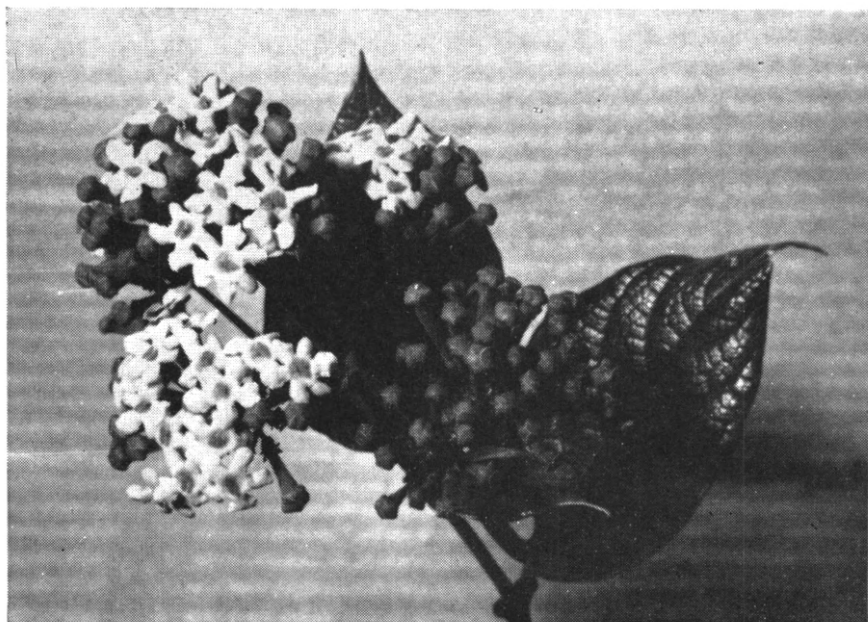
Research has also been able to avoid to some extent some of the hazards which go with the application of agricultural chemicals.

A certain amount of confusion to people less familiar with the many new insecticides and fungicides on the market is with the so called common names or coined names of a particular active ingredient. For instance in the early days B.H.C. was known as 666, H.C.H. (hexachlor-cyclohexane) and B.H.C. (benzene hexachloride) as well as by many trade or proprietary brand names under which B.H.C. was sold on the market.

Other examples are:—

thiram synonym — TMTD
 chlorfensone synonym — PCPCBS
 fensone synonym — PCPBS

Committees are at work in the U.K., U.S.A., and Canada to arrive at standardisation and a certain amount of success has already been achieved.



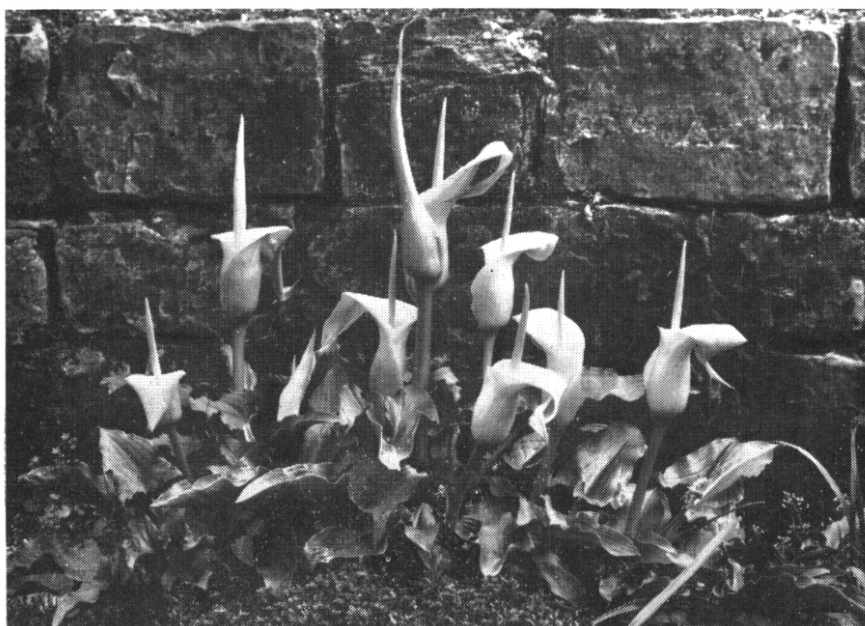
Rondeletia amoena (see page 4).



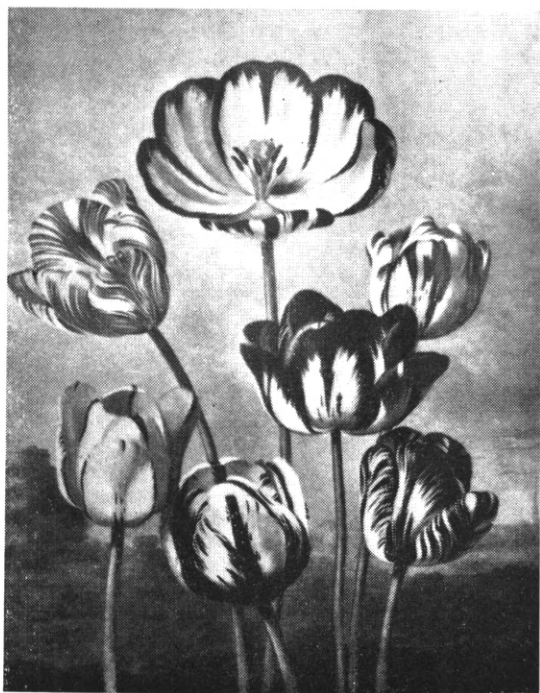
The Mountain Paw Paw (Carica candamarcensis) (see page 5).



Iris winogradowii (see page 11).



Arum creticum (see page 11).



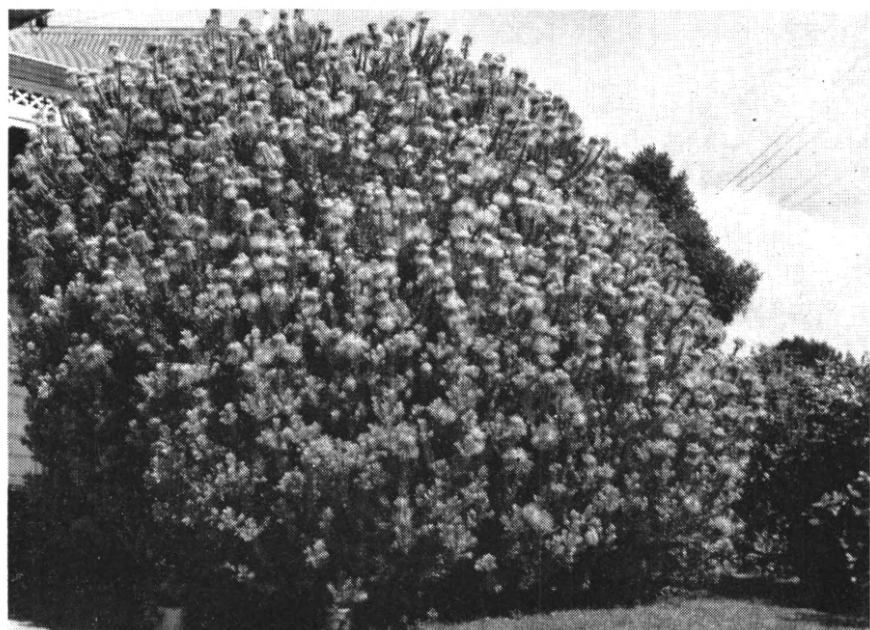
"A Group of Tulips" from Thornton's "Temple of Flora" (see page 16).



Old gallica rose "Rosa Mundi" (see page 19).



Protea cynaroides (see page 27).



Leucospermum reflexum (see page 28).

D.D.T. was the first of a group of insecticides which are now classed as "the chlorinated hydrocarbons."

B.H.C. was developed as an insecticide in 1942 in England by I.C.I. following the discovery of D.D.T. as an insecticide by the Geigy Co. in Switzerland in 1939.

Like many of the newer insecticides belonging to this group of chlorinated hydrocarbons D.D.T. and B.H.C. chemically consist of a number of isomers; the insecticidal effect varying with the individual isomer. For instance, it is the para para isomer (p.p.i.) which is the insecticidal isomer in so called technical D.D.T., or D.D.T. (mixed isomers).

Similarly with B.H.C. it is the percentage of gamma isomer (g.i.) which largely determines the quality of a particular B.H.C. product.

Lindane is a "purified" B.H.C. mixed isomer in which the gamma isomer is present at a minimum of 99 per cent.

To give a quantitative as well as a qualitative statement a declaration of the active ingredient on the label should therefore read in either of two ways:

- (a) Active ingredient: B.H.C. (mixed isomers) * . %
 * Equivalent to . . . % gamma isomer of B.H.C. and . . . % of other isomers of B.H.C.
- (b) Active ingredient: Lindane %

A fortunate coincidence with the gamma isomer of B.H.C. is that as well as being the most insecticidal one, it is also least liable to impart a musty flavour to rootcrops.

Other insecticides belonging to this group which were developed following the discovery of D.D.T. and B.H.C. are:—

Aldrin with its isomer isodrin, and dieldrin with its isomer called endrin.

These four materials are very powerful insecticides indeed and control a wide range of insect pests.

They do not impart the musty flavour of B.H.C. and are on the whole less phytotoxic.

Aldrin in particular has been preferred in controlling many soil pests such as wireworm while dieldrin so far has been mainly used as a foliage spray to control many insect pests. Dieldrin is also finding a prominent place in the control of insects on livestock and may be used more extensively in general sanitation as a residual spray against many household pests.

Most of the research on fungicides has been done by empirical testing. Fairly reliable methods have been developed for evaluating fungicides in laboratory and greenhouse so that field performance can be predicted within certain limitations.

Fungicides, with very few exceptions, are used as surface protective agents. These deposits, applied in anticipation of the appearance of the fungus, must be repeated as new foliage develops and the fungicides are lost due to weathering.

The fungicides can be divided chemically into two broad groups; inorganic and organic fungicides. Some of the fungicides belonging to the inorganic group are: Bordeaux Mixture, copper oxychloride, copper-oxides, lime sulphur, colloidal sulphur and mercuric chloride. All these compounds have been used for a long time and their properties are, on the whole, well known.

Together with the rapid and spectacular development of the number of organic insecticides have come most of the organic fungicides, although at a much slower pace. The main reason for the relatively slow progress in the development of new improved fungicides is to be found in the fact that biologically there is a far greater difference between insect and plant than between fungus and plant. Hence, when using chemicals, it is easier to kill an insect than a fungus without damaging the plant.

One of the biggest groups of organic fungicides to be developed over the last 20 years is the di-thio-carbamates.

The earliest work on these fungicides was conducted by the Du Pont Co. in the U.S.A. in 1931.

One of the first compounds to be made available for commercial use was ferbam, followed by thiram, nabam, zineb and maneb.

Some of these materials had been employed for many years in the rubber industry as accelerators. One of the great advantages of the dithiocarbamates is the fact that they are far less damaging to plant foliage than some of the inorganic copper compounds such as Bordeaux Mixture and copper oxychloride.

Their residual effectiveness, on the other hand, is not as long lived as the inorganic coppers and shorter intervals between spray applications are necessary. Apart from this disadvantage these fungicides are very effective and control a wide range of fungi such as late blight on potatoes, leaf mould on tomatoes, black spot on apples, leaf spot on celery, and rust on beans.

A fungicide which has received a great deal of attention over the last five years or so is captan which was developed in the U.S.A. under the names of SR 406 and Orthocide.

In New Zealand captan is finding a prominent place in the control of diseases such as brown rot on peaches, black spot on apples and as a seed disinfectant.

A great deal of attention has also been given over the last five years to the so called antibiotics. An antibiotic is a chemical substance produced by micro-organisms and capable of inhibiting or destroying the growth of bacteria or other micro-organisms.

Although it was known for more than fifty years that certain micro-organisms were able to destroy others, it was only just before World War II that Florey and Chain at Oxford began the investigation of penicillin, which was reported on by Fleming as far back as 1929, and succeeded in obtaining crude preparations which had remarkably high activity against many Gram-positive organisms.

Then followed the rapid and spectacular development in the manufacture and application of penicillin, followed by many other antibiotics.

The application of antibiotics in the control of plant diseases took about six years following their rapid and widespread introduction in medicine. One of the reasons for this time lag was the war and another was the cost of production of antibiotics and their limited number in the early days, which combined, precluded any chance of economic application to control various fungus or bacterial diseases attacking plants.

The antibiotics viridin and gliotoxin were reported on first in 1945 and although they were successful in controlling certain fungi they were not much heard of again.

Actidione, an isolate from *Streptomycin griseus* was probably one of the first antibiotics to be tried out on a commercial scale in the U.S.A. in 1948, for the control of mildew on beans. Although a highly efficient fungicide it was found that the margin between controlling a fungus and damaging the plant was too narrow to allow further wide-scale application in other countries.

It was really not until Zaumeyer in the U.S.A. in 1952 tested Streptomycin to control a bacterial disease called halo blight on beans, that antibiotics found a secure place along with the already established fungicides and insecticides in combating the many pests and diseases.

The use of Streptomycin was extended to control other bacterial diseases such as fireblight on apples and pears, and, more important, the control of Stone Fruit Blast, the latter an important bacterial disease on stone fruit in New Zealand.

A still more recent arrival in this field is Griseofulvin. In contrast to Streptomycin, Griseofulvin appears to be particularly useful in the control of certain fungus diseases such as botrytis, fusarium, etc. Griseofulvin has had little field evaluation as yet but looks a very promising compound.

From what has been said before it should be clear that many aspects have to be evaluated when introducing new agricultural chemicals to combat the many pests and diseases in producing high quality crops.

Through past experience it has been learned that the so called side effects arising out of the application of these materials are really of fundamental and paramount importance.

It is only through more intensive research and extended research facilities in investigating and evaluating the possible uses and limitations of this most desirable flood of new chemicals that a better and more effective use can be made of them.

PROTEACEOUS PLANTS

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

Strangely enough it is only within recent years that gardeners in South Africa have taken up the cultivation of proteas and the allied genera, leucospermums, leucadendrons, and serruria in the home garden and in public parks. Now it is possible to buy young plants from nurserymen and, I am pleased to say, the practice of growing them is becoming more general. There is a growing market for cut flowers as these flowers last several weeks in water.

Why this reluctance to cultivate these handsome, gorgeous and long lived shrubs, it is difficult to explain. Perhaps it was thought that they were difficult to grow. They certainly must have certain conditions but, like rhododendrons and azaleas, they can be cultivated successfully under varied conditions.

CONDITIONS. Most of these proteaceous plants are found in the western and eastern coastal regions of the Cape of Good Hope, that is to say they have winter rainfall, spring humidity and drier and hotter conditions towards the end of summer to quite dry in autumn. They are found usually on open sunny slopes, always well drained and in soil which is acid, say pH6-6.5. They cannot tolerate alkaline soil at all, so lime in any form is taboo.

Many of the species are found in poor sandy soil but with good supplies of leaf soil. Gravel or laterite banks with deep perfect drainage seems ideal. Many species are found at high altitudes (6000ft.) where exposure to wind and frost is considerable.

CULTIVATION. So it will be gathered that proteas will thrive in most garden soils that have no clay or lime. On the other hand they resent manure and it is advisable to use only very well decayed compost. Leaf mould and peat or peatmoss, mixed in the soil and also used as a surface mulch is very beneficial. Drainage must be perfect.

Here in South Africa plants are raised by seed. As far as my own experience covers, no other means of propagation is practiced, that is to say not by cuttings or layering.

All this group resent disturbance of the root, so it is not advisable to transplant from an open seedling bed. A good practice is to sow 2 seeds, one each side of a 2 lb. jab tin that has been well prepared with drainage holes, roughage and filled with light loam 1 part; peat, 1 part; coarse river sand $\frac{1}{2}$ part. As soon as the seedlings attain the height of, say, 3 inches, that is to say when still quite tiny, the tin is punched full of holes and the plants (if both seeds have germinated) are planted out still in the tin in their permanent quarters. Another method is to use tins with false bottoms and then the ball pushed out of the tin without breaking or disturbing the roots. Protection with a few sticks is advisable to mark the small plants. If plants are purchased, always select the small ones.

Planting seed in situ is also recommended if there is a good supply of seed. Seed of *Protea cynaroides* planted thus in August 1955. are now 2 ft. high and growing fast.

The young plants should be well rammed in, similar to the treatment accorded to carnations.

I find the best time to sow is in April-May, namely, after all hot weather is over, and then planted out in August-September, later if frost is experienced. They should be kept well watered until established, after then they fend for themselves. Seed may also be sown in late winter or early spring providing it is not too cold.

Germination is sometimes most disappointing and can remain so for a year or more. In any case, do not be over impatient for it takes sometimes 8 to 10 weeks for the seedlings to appear.

As regards cuttings, I am sure we have a lot to learn.

SITUATION. As will be gathered from the former paragraph on "Conditions", proteas and their allies like an open, sunny, north facing slope with perfect drainage. A large rockery is ideal. Areas around Port Elizabeth are undulating fields of poor sandy, often gravelly, soil. These conditions must be copied and then add leaf soil, old compost and/or peat for fertility.

In regard to exposure to wind, they seem to tolerate severe conditions. In regard to frost, I feel a good deal has to be learned in this respect. In Johannesburg Parks Department, in the lovely "Wilds", a rocky left over piece of land, with an altitude of 6,000 ft. and with anything up to 18 degrees of frost (but in a dry winter), many species have been established. Cultivation at sea level in the warmer parts of Natal has not been a success but at nearby Kloof, only a few hundred feet above sea level, some success has been achieved.

SEED SUPPLIES. No doubt the best source for seed of correctly named species is the National Botanical Society's Gardens, Kirstenbosch, Newlands, near Cape Town. Ordinary members (30/- per annum subscription) are allowed 15 packets free every year and the seed is distributed between January and April. There are also certain seedsmen who deal in the well-known species.

SPECIES RECOMMENDED. *PROTEAS*. Out of the 100 or so species found in South Africa, I would select the following:—

P. barbiger or the "Woolly-bearded Protea" with its large pink woolly flowers, found in mountains of 3,000 to 6,000 feet. This is truly a lovely species.

P. cynaroides or "King Protea", a grand flower, often found on south slopes, up to 10 ft. high, an easy "doer" here. Cut flowers find a ready demand.

P. compacta, another pink species up to 10 ft.

P. mellifera or "Honey-Protea"—pink or red, also a white form—flowers autumn to September.

P. nerifolia or the "Oleander Leaf Protea". This is an easily grown species and attains a height of 10 ft. The flowers are salmon to deep rose pink with a fascinating soft tuft of black hairs. This does well in black sandy soil on a north facing slope not 25 miles from where I am writing. Cut flowers last a long time.

P. compacta or "Bot River Protea". This is another pink species and is very prolific.

P. grandiceps has a beautiful flower of rose pink but is not a vigorous grower.

P. rosacea is a smaller shrub very suitable for the large rockery. It is found in the mountains in sandy soil.

The above eight species are perhaps the most attractive of the 100 or more known kinds but there are many more almost as desirable.

LEUCADENDRONS. Out of the 62 known species there are many very suitable for the garden. Several provide attractive foliage for house flower decorations. The plants are dioecious, that is, they have separate male and female flower bearing plants.

L. argenteum or "Silver Tree" is perhaps the best known with its long narrow silver hairy shiny leaves. It is only found wild in very restricted areas near Cape Town. It is a quick, upright growing tree reaching 20-25 feet, but it has not got a long life, say 20 years. It is doing well in local gardens exposed to much wind, soil being gravelly, not rich, in texture.

L. eucalyptifolium is a common shrub, about 3-4 ft. only, plentiful in the Port Elizabeth area, useful as a cut foliage embellishment.

L. discolor, a more colourful species, with attractive red centres, erect 7 ft.

LEUCOSPERMUMS. Out of the 35 known species, there are many really handsome shrubs, in fact it would be hard to find a more colourful display than a fully grown and full flowered specimen of *L. reflexum* or *L. nutans*. They thrive in most soils other than clay, providing the soil is acid.

L. bolusii—"Bolus' Pincushion", flowers from June to January but best in October, bright yellow to apricot and reaching 5-6 ft.; very handsome.

L. tottum or "Fire-wheel Pincushion", is another beauty but does not grow above 3 ft., spreading habit.

L. reflexum. This is a **must** as it is prolific and colourful, grows to 9 ft., spreads and makes a terrific show.

L. prostratum or "Creeping Pincushion", is a suitable subject for a rockery, has small yellow, turning to amber, coloured flowers, masses well.

Finally there is *Serruria florida* or "Blushing Bride", a most attractive plant with its nodding white, creamy, tinged pink, flowers. This has become a very popular winter cut flower. It attains a height of, say, 5 ft., and the flowering period is extended over a long period.

At one time it was lost but was rediscovered in Fransch Hoek mountains in the Cape. Now it is easily reproduced by seed and is being grown on the highveld and in Natal. A good soil with loam, sheltered from wind, is recommended for this dainty attractive shrub. It should flower two years from sowing and will last some six to eight years.

INTERNATIONAL SEED EXCHANGE

L. T. METCALF (Assistant Curator, Botanic Gardens, Christchurch)

Whenever it is announced in the local paper that some new or rare plant obtained from overseas is blooming for the first time in the local botanic gardens, most people imagine that this plant, along with most of the others growing in the garden, was purchased out of some unlimited fund which they suppose botanic gardens have for that purpose. However, very few people realise that the amount of money most botanical institutions can afford to spend on the purchase of new plants is very small, and fewer still realise the devious ways by which many places come by new plants. The commonest way of gaining new material is by exchange, and this article is concerned with one particular aspect of that, the International Seed Exchange Scheme.

This scheme, started before World War II, was largely abandoned during the war but now that most countries are back to more or less normal it is in full operation again. The scheme is simplicity itself and any institution wishing to take part has only to publish a list of seeds which it can offer for exchange and send it to any garden with which it is desired to exchange and in return ask for the exchange lists of the respective gardens.

The lists which come back are many and varied and long hours may be spent poring over lists trying to sort out the more desirable plants. This is where the layout of the list can be of great assistance but unfortunately not all places set out their lists in correct botanical fashion. To the gardener this may seem a trivial matter and he may say, "What does it matter?" However, after the writer had spent a few hours going through some of these lists the reason was quite obvious. Quite a large proportion of the plants offered in seed lists are not to be found in the usual reference works and if each plant is listed under its family, the gardener, when coming across an unknown name, at least has a slight clue as to what the plant may be like and whether it is worth trying. If the list is of the purely alphabetical kind, then choosing the seeds is done by a hit or miss method as without the facilities of an extensive library it is just not possible to get information on some of the things listed.

Synonyms are another source of trouble. It is not uncommon to find a plant listed under a very obscure synonym and after much care has been taken over the raising of it, it proves to be something which is already in the country or even a worthless weed, but under another name. The best method of working the lists is to evolve a system and concentrate on certain genera or certain types of plants and totally disregard the rest of the plants listed. In this way the rose species collection has been built up here.

The Christchurch Parks and Gardens Department corresponds with over 90 different botanical institutions throughout the world and so far the results have more than proved the worth of the scheme, not only have many plants of garden merit been added to the collections in the Botanic Gardens, but also plants of economic importance or

botanical interest are just as keenly sought. As well as adding to the collections in the Botanic Gardens the other areas under the control of the Christchurch Parks and Gardens Department come in for their share of new plants and any new trees that are raised are always viewed with regard to their possibilities as street trees as well as other uses. The Exchange Scheme knows no barriers and seeds are obtained from behind the Iron Curtain as easily as they are from England or the U.S.A. This year about 2000 packets of seeds have been handled by the Botanic Gardens and the Municipal Nursery, and to the layman this may seem to be an enormous number of plants to be subsequently handled. However, the viability of some seeds is very poor and by the time all the seedlings have been handled this number can be considerably reduced. Before going on to mention some of the plants obtained through the exchange it will be as well to mention something of the list put out by the Christchurch Botanic Gardens.

This list offers only seeds of indigenous New Zealand plants for exchange and this year somewhere over 400 different items were listed. Next year it is hoped that the list will be even more extensive. Seeds are mainly collected from plants growing in the Gardens and the list is supplemented by one or two collecting trips for plants not growing in the Gardens. The horticultural trainees are encouraged to go on these collecting trips as it all helps to further their knowledge of New Zealand plants. The most important thing is the careful checking of the identification of each plant to make sure that it is correctly named. This is done to eliminate any possibility of a mistake being made and the seed being sent out under a wrong name. Should a mistake occur then a correction is published in the following year's seed list. So far this year 1107 packets of seeds have been sent from the Christchurch Botanic Gardens to various parts of the world.

Of the seeds imported, not all the resultant plants are worth while and if after a reasonable trial a plant is not worth garden room then it is discarded. The collection of bromeliads is being steadily added to, quite a number of cacti and succulents (some imported as cuttings on the exchange) have been added to the collection ready for when it is put on permanent display in the new house, and many plants such as palms, hibiscus species, impatiens species, etc., are in the seedling stage. Palms and cycads are not popular with the propagating staff owing to the long time the seeds sit in the pots before germinating. One of the greatest successes to date has been the raising of ferns from spores and in time it is hoped to be able to display an extensive collection of exotic ferns.

In August of last year some seeds were received from Kew Gardens which were collected by the 1954 British Museum Expedition to Nepal. So far none of the plants have reached flowering size, but there appears to be some very interesting things among them. Of the 26 packets received only four failed to germinate and the only loss since then has been a batch of seedlings of *Abies spectabilis*, most of the other plants are as yet unnamed and are just listed under the genus and the collection number. Four species of *meconopsis* have been raised, and the

only one named is *Meconopsis regia*, so the flowering of the other species is awaited with interest.

A very interesting tree included in the collection is *Betula utile*, a Himalayan species which has a very beautiful trunk rather like *Acer griseum* and this in itself is quite an acquisition. Other plants include a viburnum species from 8,000 ft., a philadelphus species from 8,000 ft., and a beriberis species from 13,000 ft., all of which looks as though they may be worthwhile garden plants. On the other hand a species of rosa from 9,000 ft. looks suspiciously akin to the ordinary briar and does not show the same promise. A batch of seedlings labelled "*Clematis orientalis?* 11,500 ft." is being carefully watched and if they should prove to be the same as a variety of *Clematis orientalis* exhibited in England a year or two back, then it will be a very fine plant indeed.

Mention was made previously of the collection of rose species and this demonstrates just how the systematic use of seed lists can be put to good use in the building up of collections of certain groups of plants. The collection is situated in a very attractive area which is in the Woodland section of the Gardens, and although only a few years have passed since it was first planted there is already an extensive collection of the various rose species. As yet the area is not very well known by the public but as the plantings mature it should become better known. As is only to be expected with such a widespread and diverse genus and also due to the fact that all the roses have been raised from seed obtained from many different gardens there are a few problems in the nomenclature to be ironed out. Synonymy is one which can be solved fairly easily, although some of the synonyms are very obscure and difficult to trace and also quite a number of hybrids are given specific rank and these are sometimes very difficult to trace also. However, variation amongst the seedlings due to hybridisation is the worst problem and poses some very difficult questions.

Roses hybridise very easily and where they have been grown together as a collection the way is made easier for them, so that when a species has been raised from seed it is not unusual to find two or three widely varying types in the one batch of seedlings. The problem then is to find out which one is the species or which approaches it most closely and this has proved to be no easy task as it requires much time and patience to check all the characters of each individual. Fortunately not all genera are so lax with their morals and the majority of plants obtained on the exchange come true from seed.

The advantages of participating in the International Seed Exchange far outweigh any disadvantages that there may be, for not only does it help with the propagation of knowledge by the more efficient distribution of new and rare plants throughout the world but it also plays a small part in promoting greater goodwill between the various countries of the world.

PAEONY RING-SPOT VIRUS

J. P. SALINGER, Horticulturist, Department of Agriculture, Wellington.

A virus disease has been found on imported herbaceous and tree paeony plants grown in post entry quarantine. Typical symptoms of this disease occur on the leaves. Affected leaves show pale spots with rings of a lighter colour around the margin of the spots. Where an affected area meets a vein, the rings do not make a complete circle. These markings occur over most of the surface of the leaf.

Little is known of this disease which has been observed in Great Britain, most other European countries and the U.S.A. The actual method of transmission is not known, but as paeonies are propagated vegetatively, it is obvious that infected parent plants will produce infected divisions, even if no insect can also transmit this disease.

To prevent the importation of infected plants from Holland, the Horticulture Division of the Department of Agriculture has requested the Dutch authorities to inspect paeony plants during the growing season and to state that the plants are visibly free from virus disease.

In addition, all imported paeony plants are grown in post entry quarantine and are not released for propagation or distribution until Horticulture Divisional Officers in New Zealand are satisfied that the plants are healthy and free from virus disease.

As paeonies have been imported for many years, gardeners are recommended to examine their paeony plants carefully in mid-summer, as this disease may be present in old established plantings. There is no known cure, the only treatment being the removal and destruction of infected plants.

CARE OF GARDENIAS

JEFF. SNELL (Florida)

The Gardenia, or Cape Jasmine, *Gardenia jasminoides*, generally does better where the winters are cooler, not cold, as it stores more food and sets and develops buds better than under subtropical conditions. There are many fine varieties of gardenias and some bloom more consistently in certain localities than others. The following varieties are commonly planted in South Florida:

Belmont—best of the late varieties; large blooms.

Coral Gables—new large flowered; tight buds; somewhat temperamental.

Glaziers—mid-season (Easter); large blooms; centres closed.

Miami Supreme—mid-season; large blooms; open centres.

Mystery—mid-season; large blooms; open centres.

Perfection—new; similar to Coral Gables.

Veitch—early; small blooms; centre petals shorter.

GRAFTED PLANTS. The wild African Gardenia, *G. thunbergia*, is used as an under stock, on which to graft gardenias, because of its resistance to rootknot nematodes. However, the root system of the Cape Jasmine is usually more vigorous, withstands low and poorly aerated soils better, and the plant is more resistant to cold than the wild African gardenia. Nematodes are such serious pests that it is almost essential to use grafted plants for outdoor plantings in South Florida. Plants on their own root system require considerably more attention, i.e., more water, mulching and constant care to grow more roots than the nematodes can damage. Plants growing in pots may have nematodes unless all cuttings, soil, pots, etc., are thoroughly sterilized. The branches of grafted plants that touch the ground may become infested with nematodes, but this should not affect other parts of the plant. Plants on a high *G. thunbergia* graft are not recommended for more northern sections or cold locations, because of susceptibility of the exposed stem of the understock to cold injury.

LOCATION AND PLANTING. The same rules apply to preparing soil for gardenias as for other ornamental plants. Time spent in preparing soil before planting pays dividends in good growth later.

(1) Add up to 50 per cent., by volume, of peat or other type of decomposed organic matter to aid in holding water and fertilizer nutrients, improve soil aeration, and "condition" the soil.

(2) Mix or work some of the organic matter into the soil around the sides of the hole for better contact with the natural soil.

(3) Add about one quarter of a cup of 6-6-6 or 8-8-8 fertilizer for each bushel of soil and mix thoroughly.

(4) In planting, settle the soil mixture in and around the roots or ball of soil by watering thoroughly, rather than by packing or tramping.

(5) Leave a saucer shaped depression around the plant as you finish planting, and mulch with leaves, straw, shavings or some other material.

Gardenias will grow in most locations around the average home (in Florida). Direct and reflected heat from a wall, especially a white wall facing west, may cause sun scald or cold damage. However, it is a versatile plant and grows as well in full sun as in partial shade.

Gardenias like a moist soil but can be over watered, especially when in bud or blooming. Water thoroughly to the depth of 16-18 inches but do not drown them; this applies especially to potted plants. Allow the soil to dry out before watering again.

FERTILISING AND CARE. Do not let plants starve or turn yellow before fertilizing them. A small amount of fertilizer frequently is better than a heavy application given infrequently. During the growing season a complete fertiliser, such as 6-6-6 or 8-8-8 may be used at the rate of 1 to 1½ lbs. per 100 sq. ft., 2 to 3 ozs. per sq. yd., or 2 to 3 tablespoonsful for a 3 to 4 feet high plant. This is for each of four applications before growth starts in the spring, in late spring, in mid-summer, and in early winter after cold weather begins.

PRUNING. It is difficult to grow a fine specimen gardenia from a poorly shaped or "straggly" plant. A bushy, well shaped plant should be formed early, by repeatedly pinching the early flushes of bloom. After the plant is in its permanent location and the blooming season is over, usually about 1st June, each flush of growth may be pinched to produce a dense plant. Gardenias seldom require severe pruning except to rejuvenate old plants. Only thinning, pinching and light corrective pruning to shape are usually necessary.

BUD DROP. Plants that are unhealthy because of insect or nematode attack or a deficiency of one or more of the plant food elements may drop the flower buds prematurely. Injury to unopened flower buds by insects, cold or dry winds, poor drainage, excessive drought and transplanting, especially when buds are forming, may also cause the buds to drop. These conditions should be watched and corrected if plants continue to drop buds.

CHLOROSIS. Chelated iron may be used to correct iron deficiency in the soil. Different commercial mixtures vary and the recommendations of the manufacturer should be followed. Generally 1 oz. of a 12 per cent. or 2 ozs. of a 6 per cent. EDTA iron chelate per 100 sq. ft. of area, or applied in 25 gallons of water, is adequate.

A mixture of 3 parts of dusting sulphur, and 1 part of finely ground iron sulphate is also a good mixture for acidifying the soil and correcting iron deficiency. A variation of this mixture that is useful, when the plants need additional nitrogen, consists of 1 part of ammonium sulphate, 2 parts of dusting sulphur, and 1 part finely ground iron sulphate. Sulphur and mixtures containing sulphur should not be used more often than two or three times per year, and one should allow 6 to 8 weeks between applications. It is not safe to use more than 1 oz. of this mixture per 4 sq. ft. of area, and the soil should be watered before and after application.

INSECTS. Soft scales, mealybugs, white fly and aphids are the principal pests, other than nematodes, that attack the gardenia. They suck out the plant juices and excrete a sweet, syrupy material known as "honeydew", which provides an excellent medium for the growth of sooty mould. This black fungus is of little importance except that it makes the foliage unsightly. Oil emulsion sprays will usually cause it to flake off.

A spray containing 2 teaspoonsful of 50 to 57 per cent. malathion emulsifiable concentrate (liquid), or 4 to 5 tablespoonsful of 25 per cent. malathion wettable powder per gallon of water will control most insect pests of gardenia. Two or more applications of malathion about three weeks apart may be needed to control scale and mealybugs. Oil emulsion sprays may be used for scales and white fly, and lindane or nictoine sulphate for aphids. A combination spray of malathion and oil emulsion is an excellent all-purpose spray.

For white fly, spraying may need to be done in March, April, June-July and September-October to catch the three peak broods, and it is important to thoroughly cover the underside of the leaves where

the immature stages of the white fly are feeding. Many instances of lack of control of pests, charged against the pesticide, are due to failure to spray correctly.

Note: Parathion and demeton (Systox) are excellent insecticides for control of most insect pests of the gardenia, but are recommended for use only by nurserymen, commercial spray operators and others who are properly trained and equipped to use the more toxic phosphate insecticides.

CAUTION: Injury may result if oil emulsion sprays are applied when the temperature is likely to sink below 40 deg. Fahr., or rise above 85 deg. Fahr., within one or two weeks after spraying. Do not apply oil emulsion sprays to new tender growths or to plants that are in need of water, as injury may result. It is a good practice to water or irrigate ornamental plants two or three days before applying pesticides.

NOTEWORTHY PLANTS

The Dwarf Manukas

The vast field of garden material available to horticulturists today is the direct result of painstaking study and cross-pollenating by plant hybridists throughout the world. Many of our outstanding plants, however, have been chance hybrids noticed by observant enthusiasts working in nurseries, where many thousands of seedlings are handled.

So it was with the dwarf manukas. They began fifteen years ago with *Leptospermum scoparium* var. *nanum*, which was noticed by chance in a batch of tall, thin seedlings of *L. scoparium nicholsii*; one tiny compact cushion plant with minute interlacing twigs. This was carefully potted up and in two years had only increased to the size of a tennis ball. It flowered most prolifically, the pale pink blooms literally covering the plant. It was named, very appropriately, *Leptospermum scoparium nanum* and was eagerly sought after as an excellent rockery plant. In recent years it gained the Award of Merit at the Royal Horticultural Society's Spring Flower Show at Chelsea. It was found that it set seed freely, many of the resulting progeny being even dwarfer than the parent.

After many seasons of selecting and re-selecting a group of these charming miniatures has been evolved that grow only about 1 foot high and smother themselves with flowers of all shades from white to deep red. They are now propagated from cuttings and are being distributed in some twenty varieties.

It seemed very unsatisfactory to know these gems only by number. Then the suggestion was made that they should be called after native birds. We wonder if it was quite by accident that the tiniest of them all, looking like a bronze coloured moss, was called Moa?

The Akakura

One of the loveliest of the Ratas is *Metrosideros diffusa*—the “Tall Bright Red Vine.” This is the name given to it by the Maoris because it always seemed to climb sturdily to the top of the tallest trees, there to flaunt its crimson beauty. Never a very common plant, it is now quite a rarity in the comparatively small patches of bush left by man in his advance with progress.

Predominantly a North Island plant, it is now restricted almost entirely to Taranaki and East Cape districts where, in September and October, it is a most brilliant mass of colour. In recent years *diffusa* was considered a misnomer and now it is called *Metrosideros carminea*, which is very appropriate.

Fortunately, it lends itself admirably to garden cultivation and requires only to be planted on the shady side of a support in moist compost soil. It enjoys a ponga on which to climb but will cling to concrete or brick on the shady side. The shoots creep slowly upwards and for three or four years are clothed in soft round immature foliage. The coarser adult leaves then appear and the plant begins to flower. It is perhaps the finest of all the red flowering, self-adhering climbers. In natural conditions young plants are protected by the surrounding bush and in gardens it should be treated as frost tender in colder districts until adult foliage appears.

BOOK REVIEWS

"MODERN RHODODENDRONS", by E. H. M. Cox and P. A. Cox (Thomas Nelson & Sons Ltd., London).

This new book on rhododendrons is of almost 200 pages. The senior author is well known as a grower, writer and explorer in connection with rhododendrons. His earlier book, "Rhododendrons for Amateurs", published over thirty years ago, is evidence of a long acquaintance with the genus. The junior author is his son.

Although the authors obviously know rhododendron gardens in many parts of Great Britain, they draw their main information at first hand from their own old plantings in Perthshire, Scotland; and the reader should quickly perceive that the book is written by keen practical gardeners who are at home with spade and fork. In spite of their own garden providing the bulk of the experience on which the writers draw, yet they take care to avoid any suggestion that the particular species and hybrids they choose for their own climate would necessarily be suitable for others also.

There are two chapters on cultivation and propagation—chapters which are worth reading and re-reading. Then follows a section, "The Species of Rhododendron in their Series", which occupies more than half the book. There is a wealth of information in this section, based on the authors' many years of growing and observation of the many species introduced to British gardens. It will quickly be seen that there is now a tendency to bring together as one species, groups of rather similar rhododendrons which have previously been subdivided into several different species. The authors' criterion in selecting plants for favourable mention, is gardening merit rather than mere botanical interest; an attitude with which most gardeners will agree.

One result of the publication of this book is sure to be a greater demand for some of the species given favourable mention, but unfortunately few are available from nurseries in New Zealand.

A section on Azaleas is well done. The kurume azaleas are particularly chosen for favourable mention as plants to grow in the warmer parts of Britain—a tip which many New Zealand gardeners should heed.

The section on hybrid rhododendrons is excellent so far as it goes, but we feel that this section could with advantage have included many more hybrid varieties than are in fact mentioned. Although the authors are, on their own admission, more enthusiastic about species than hybrids, nevertheless, they rightly credit hybrids from some species as being better garden plants than the parents.

Finally, there are valuable lists of species and hybrids suitable for various requirements as to size of plant, earliness or lateness of flowering, drier or moister, and warmer or cooler districts.

There are four very good colour plates and some twenty half-page drawings to illustrate features of different species.

We regard this book as the best and most modern of general books for the rhododendron grower, as an addition to the "Handbook" and the "Yearbook". The authors are to be congratulated on what has every appearance of having been a labour of love, carried through with most commendable thoroughness and judgment.

J. S. YEATES.

CURTIS'S BOTANICAL MAGAZINE, vol. CLXXI, part 1, edited by W. B. Turrill, D.Sc., F.L.S. (Published by the Royal Horticultural Society, England).

The new series that started in 1948 of this, the oldest and most valuable of all botanical magazines, maintains the high quality of its predecessors, both in quality of coloured illustration and reading matter. The plants illustrated and described in this part comprise the following: *Acacia howitti*, *Alyxia pubescens*, *Bessera elegans*, *Caioophora cernua*, *Corylus maxima* var. *purpurea*,

Daphne mezereum, *Echium pininana*, *Episcia lilacina*, *Eulophia quartiniana*, *Lilium oxypetalum* var. *insigne*, *Luculia grandiflora*. The last named *Luculia* resembles very closely the species grown in New Zealand under the name of *tsetensis*, and one wonders if these are synonymous. *Daphne mezereum* has long been a denizen of English gardens and it is strange that this is the first time it has been included in the Botanical Magazine. *Echium pininana* is an attractive variant of a herbaceous perennial that is fairly common in New Zealand gardens where the climate is mild. The Purple Foliaged Nut, *Corylus maxima* var. *purpurea*, is one of the most ornamental of those hardy shrubs grown mainly for foliage effect and it is already in cultivation in New Zealand nurseries. This magazine should be in the hands of all who are keenly interested in choice plants, their history, botany and cultivation.

SOUTH AFRICAN FLOWERS FOR THE GARDEN, by Sima Eliovson (Published by Howard Timmins, Cape Town, S. Africa).

Floras of various countries form a most important section of any horticultural library, where the owner's ambition is that it shall be as comprehensive as space and finance will permit. The flora under review, supplemented by that admirable journal "Flowering Plants of Africa", now in its 32nd volume, will provide the widest possible guide to the flora of South Africa. The size of the book is quarto. There are 305 pages, 407 coloured and black and white photographs and detailed descriptions of many hundreds of bulbous plants, trees and shrubs, perennials and succulents indigenous to South Africa. There are practical chapters on cultivation, gathering seed and plants for special purposes. So many South African plants grow particularly well in many of our gardens that this book will possess an especial appeal to New Zealand gardeners. In this book certain points rather contradict what it has been customary for us to accept. For instance *Adenandra uniflora* is rated higher than *A. fragrans*, although the latter enjoys greater popularity than the former. Yet, personally, I have always regarded *A. uniflora* as the better garden plant of the two, although *A. fragrans* is the more popular among florists. Mrs. Eliovson also states that although leucosperms prefer a light, well drained soil, they will grow well in Cape Province in clay soils. This is borne out by my own experience with *L. bolusii*. For the past two very wet winters I have had a plant growing in heavy clay. It has trebled its size, needed severe trimming back to keep within bounds and flowered in its very early stages, far earlier than *L. reflexum*, that requires four, five or six years of establishment before it will flower. The coloured illustrations, nine to page, are printed on art paper and are from direct colour photographs by Mr. E. Eliovson. If all are as true to colour and type as are those of plants with which I am familiar, they are an accurate guide. For its price of £4/4/- in New Zealand this book is extraordinarily good value.

ROSES 2, by Pierre-Joseph Redouté. Selected and introduced by Eva Manering (Published by the Ariel Press, London).

This is the second selection of rose painting, by the famous French artist, to be published by the Ariel Press. It contains twenty-four superb reproductions that depict admirably the work of one who was, without doubt, the greatest portrayer of roses by means of the brush of the artist. Had it not been for the Revolution of 1789, Redouté would have done his work under the patronage of Marie Antoinette. Under the unhappy circumstances, however, he enjoyed the patronage of the Empress Josephine, and his work on roses containing 170 coloured paintings, together with other similar works on lilies and fruits, was the result. From a selection of such pleasing prints it is difficult to choose any that are outstanding.

"*Rosa Damascena Variegata*" is particularly interesting to British readers as being the York and Lancaster rose. Many of us have grown this rose and will appreciate the trueness to type of this particular print. "*Rosa Eglanteria*", the yellow Eglantine, is another beauty that has been grown in gardens for many centuries; Shakespeare makes more than one reference to it. The rich purple colouring of the *gallica* variety "*Maheka*", the attractive off-whiteness of "*Rosa*

Muscosa alba", the subtle shadings of "*Rosa Gallica Versicolor*", the quaint miniature "*Rosa Indica Pumila*" are just a few taken at random. Particularly quaint is "*Rosa Berberifolia*" with five petalled single flowers, each with a brownish purple zone at the centre that suggests *Cistus formosus*.

This is a book for the connoisseur and it is hoped that not too many copies will be broken up, the plates framed and the reading matter cast aside. Too many of the most beautiful coloured flower books have met this fate, to the poverty of later generations.

FLOWERS AND THEIR HISTORIES, by Alice M. Coats (Published by Hulton Press, London).

The more we know of the habits of plants, the more we should want to know of their origin, their past history and the legendary lore ancient peoples gave them. A gardener of a literary turn of mind will dream of having his shelves packed with some of the wealth of garden literature that has developed down the ages, from the old herbals to the scientific works of today. But to gather together even a representative collection of gardening books from Gerard and Parkinson to William Robinson and Gertrude Jekyll and, even more recently, Bowles, Stern and Stoker, would prove a costly matter. This is one of the chief reasons why Alice Coats' book is so welcome and, to a measure, unique. Unique, because it covers a much wider range of subjects than have other books of a similar nature. It deals, in a very readable style, with the leading flowers of our gardens. There are over six hundred of them and, wisely I think, the author decided to omit hardwoods, alpine and exotic plants. May we hope that these will be dealt with similarly in a later volume.

There is an outline of the story of the famous Tulip Mania that occurred in Holland in the late sixteenth century. It is interesting to read that Clusius (the latinised name of the Flemish Charles de l'Escluse, Professor of Botany at Leyden in 1593) asked such high prices for his tulip bulbs that no one could afford to buy them. Then "plans were made by which the best and most of his plants were stolen by night . . . but those who had stolen the tulips lost no time in increasing them by sowing the seeds, and by this means the seventeen provinces (of the Netherlands) were stocked." A case, perhaps, for justifiable larceny! One could go on quoting many similarly interesting matters relating to plant history. There are the curious common names given to plants in the past. *Primula variabilis* was Pug in a Pinner, *Fritillaria meleagris* was Madam Ugly, Our Lady in a Boat meant *Dicentra spectabilis*; these are but a few of the quaint names that appear in the pages of this fascinating book.

Not the least interesting pages deal with brief biographies of the chief writers on gardening from Classical Antiquity, about 370 B.C., up to Reginald Farrer (1880-1920). But why have Wilson, Kingdon-Ward and other writers, equally as notable as Farrer, been omitted? Surely this is an oversight that should be remedied in future editions.

There are two further minor criticisms I have to make. The first concerns the illustrations. The colour work is excellent, but the result would have been infinitely more pleasing if they had been produced in the same style as the R.H.S. publication "*Asiatic Magnolias in Cultivation*" by G. H. Johnstone, V.M.H. The second concerns an omission. On page 70 it is stated that a Dutch grower raised a plant of *Delphinium belladonna* that produced five flower spikes, carrying blue and white flowers. But no mention is made of George Gibson, the nurseryman of Bedale, Yorkshire, who was the first man known to have saved seed from the hitherto sterile *D. belladonna*. It was this that provided the nucleus for the further development of this useful dwarf member of a giant race.

OFFICIAL ANNOUNCEMENTS AND DISTRICT COUNCIL REPORTS

THIRTY-FOURTH ANNUAL CONFERENCE OF DELEGATES

Notice is hereby given that the 34th Annual Conference of Delegates of the Royal New Zealand Institute of Horticulture (Inc.) will be held in the I.O.O.F. Hall, Norfolk Street, Whangarei, on Thursday, 28th February, 1957, commencing at 9.30 a.m.

Delegates and members intending to be present are reminded that accommodation reservations may be made through Mr. K. Haslett, Tourist Agent, Cameron Street, Whangarei. Early reservations are recommended.

The Annual Banks Lecture will be delivered at the 1957 Conference by Mr. R. H. Michie, F.R.I.H.(N.Z.) of Kaitaia, on the evening of 28th February.

The subject of his address will be "Distinctive Features of the Flora of the Far North".

This address will be open to the public and admission will be free.

K. J. LEMMON,
Dominion Secretary.

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DISTRICT COUNCIL REPORTS

NORTH TARANAKI

Members have enjoyed a busy and interesting programme for the first six months of the year.

The January meeting was to have been held at Mount Egmont, but arrangements had to be abandoned through the weather being too wet. In February a visit was paid to Mr. Carryer's garden at Rohutu, under the slopes of Mount Egmont, and everyone spent a most enjoyable day. At the Floral Festival in early March, the Institute's exhibit of a Pioneer's Garden created considerable interest. Later in March a visit was paid to "Inglewood", the beautifully kept garden of Mr. Sutherland. Lunch was taken at Everett Park, followed by a tramp through the native bush and a visit to see the fine dahlias grown by Mr. Dickson in his garden in Bristol Road; here afternoon tea was provided. The final visit was to Mr. Roy Bennett at Lincoln Road where there were many plants of interest that occupied the remainder of the afternoon.

The last day's outing took place in April to gardens in Hawera and district. During May, June and July meetings were held in the evenings to enjoy addresses by visiting speakers, also gardening films and lantern slides.

SOUTH TARANAKI

A party of 36 members of the South Taranaki District Council of the Royal New Zealand Institute of Horticulture (Inc.) visited North Taranaki garden properties yesterday. The first visit was paid to the property of the Pukeiti Rhododendron Trust, where the president of the trust, Mr. G. W. Williams, Ohangai, explained the more recent developments of the Trust property. He outlined briefly the objects of the trust, and stated that the overseas members were now drawn from seven countries.

Scenic walks amongst native bush were enjoyed by members. Some hundreds of native trees and rhododendrons had recently been planted out, and the nursery gardens contained many more. Morning tea and lunch were served at Pukeiti.

In the afternoon, a visit was paid to the garden of Mr. Russell Matthews, "Tupare", Mangorei Road. His flowering rhododendrons and azaleas were much appreciated by members. These gardens had an outstanding charm, especially as they are flanked by areas of beautiful native bush.

The thanks of the visitors were expressed to the various hosts by the South Taranaki president, Mr. John Houston. It was announced that the 1957 Anniversary Day week-end trip would be to the Masterton district.

WAIKATO

During Labour Day Weekend a very large party of horticulturists from North Taranaki visited the Waikato. Travelling by bus and car the visitors spent Saturday at Cambridge and, on the Sunday, were the guests of the Waikato District Council who conducted them through the city and inspected some of the outstanding gardens and places of interest in Hamilton.

The party was met at Hillcrest by the local committee and when the cars of other members assembled the long procession created considerable interest as it moved from place to place. Altogether, over 80 enthusiastic gardeners and horticulturists assembled.

Travelling through the State Hydro. Gardens at Claudelands the first stop was made at the attractive garden of Dr. Fea, where the miniature waterfall and rock garden were greatly admired.

The second garden visited was that of Mrs. Pollock, River Road. Here, the visitors were amazed at the transformation which had taken place in the space of four years, the native planted section sloping down to the Waikato River attracting much attention.

Some time was spent in visiting the spacious garden of Dr. Rogers in London Street, where morning tea was provided. The setting was a real surprise and the beautiful lawns and shrubs delighted the visitors.

A short stop at Parana Park to view the shrubs and Open Air Theatre and then on to the Lake Domain for lunch completed the morning schedule.

The first garden inspected after lunch was that of Mrs. Fear in Tainui Street. A particularly fine showing of the latest fuschia developments and irises in profusion but not yet in flower, caused many complimentary remarks.

The next stop was at the immaculate garden of Mrs. Creighton in Ulster Street. A profusion of flowers sparkled in the sunshine which, at this time, gave an added touch to the Waikato welcome.

Finally, the large party was entertained to afternoon tea at the home of Dr. Lamb overlooking the lake and the many remarkable trees on the lawn attracted attention from the visitors.

The Taranaki party was led by the President, Mr. V. C. Davies, O.B.E., and the local President, Mr. A. W. Green, and his wife received the guests and conducted them to the various points of interest.

The day was a memorable one and all present expressed appreciation of the arrangements and spoke in eulogistic terms of the beauties of the Hamilton gardens.

WELLINGTON

Regular meetings for members have continued, and a very interesting time was spent on the evening of 18th September when Mr. T. E. Y. Seddon gave a delightfully informal talk on camellias and rhododendrons, displaying a most comprehensive collection of the varieties he was growing in his own garden. Mr. Seddon is very well known for his knowledge of these two genera, and has such a charming manner of passing it on, that it proved to be one of the happiest evenings spent by local members. Each member went home, not only with more knowledge of camellias, but also in possession of one of Mr. Seddon's choice blooms, so extensive was his collection.

During the evenings Mr. J. C. Stirling, chairman, took the opportunity of conveying the congratulations of the Institute and presenting the certificates and diplomas recently awarded by the Examining Board (without examination) to the following persons: Messrs. J. H. Watt (diploma in fruit culture), F. B. Garlick, F. E. Cooper, L. F. Sired, G. Chin Ting, H. F. Mercer, K. A. Mallard, G. M. Russell (seedsman's certificates).

Mr. Stirling also congratulated Mr. J. O'More of Newlands, near Wellington, on his outstanding achievement at the Wellington Horticultural Society's Spring Show when he entered his daffodils in 58 classes and gained 58 first prizes. This was a tremendous effort, said Mr. Stirling, and one that has scarcely been equalled anywhere in New Zealand. It is interesting to note that the members of the National Daffodil Society, while in Wellington for the North Island National Daffodil Show this year, visited Mr. O'More's garden at Newlands and expressed their profound admiration of the extent of his collection, particularly of the seedlings raised by him. Mr. O'More is employed by the Post and Telegraph Department, and devote his spare time to the growing of daffodils and gladioli.

A further meeting was held on 29th November to hear an address on roses.

WHANGAREI

National Flower Show, 1957

In conjunction with the Dominion Conference, R.N.Z.I.H. (Inc.), the above committee is staging a National Flower Show. This will be staged in the Agricultural and Pastoral Hall, Whangarei, from 27th February to 1st March, 1957.

With an area of 28,000 sq. feet under cover, it will be largest flower show yet attempted in Northland.

An area of 7,000 sq. feet is to be used to display especially horticulture in Northland. This will be "Northland Garden", and members of the Whangarei District Council, R.N.Z.I.H. (Inc.) are all co-operating to make a very realistic garden.

Plants and shrubs, etc., are being grown in tubs and boxes and there is every indication that visitors will find a well-planned growing garden, from a patio garden through borders of flowers and shrubs to a patch of native bush complete with glow worms and waterfalls.

All plants will be named, thus making an instructive as well as a spectacular display. Enthusiasm is great; the main theme in garden visit conversation is "Will that bloom in February?"

Garden clubs from many districts throughout Northland are making special exhibits, members travelling as far as 50 miles to attend organising meetings. Many friendships are being made, and the inevitable "slips and pieces" exchanged.

Specialist exhibits are another feature; including:—

MAORI AGRICULTURE—showing the different plants used by the Maori, how planted and stored and various tools used.

A HOME GARDEN—showing vegetables, fruit, herbs, etc., which can be grown in the home garden.

A SUBTROPICAL EXHIBIT—with specimens of fruit, flowers and many growing plants, coffee, tea, bananas, etc., as well as tea prepared for use.

ECONOMIC, TROPICAL, FOLIAGE PLANTS, and other interesting specimens through the courtesy of the Auckland Parks and Reserves Department.

NATIVE FOREST BIRD PROTECTION SOCIETY—specimens of native flora of Northland.

DECORATIVE ART THROUGH THE AGES, and as inspired by well known paintings.

COMPETITIVE DAHLIA SHOW—schedules available from Secretary, Mrs. E. M. Sands, 6 Dundas Road, Whangarei.

DUNCAN AND DAVIES NURSERIES

We extend a cordial invitation to all visitors to New Plymouth to inspect our unique collection of trees and shrubs. Bring a pencil and pad with you and make notes of unusual trees and shrubs . . . as well as the old favourites growing in our gardens. Our experienced staff will be pleased to help you.

We are at the Terminus of the Westown Trolley Bus Route

Enquire about our Voucher System as presents . . .

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NEW PLYMOUTH

The Handy All Purpose Sprayer . . .

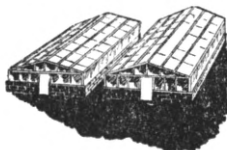
Solo

The one man Spray



DOUBLE ACTION CONTINUOUS SPRAYER

IN THE GARDEN: The Solo Sprayer makes light work of fruit trees, vegetables and rose spraying. Extension for tall trees, angle bend to reach underside of leaves. Filter unit excludes solid matter.



INSIDE THE GLASSHOUSE: Ideal for spraying glasshouse tomatoes, strawberries, grapes—the Solo Sprayer gives a fine, medium or coarse spray. Washes glasshouse panes too!

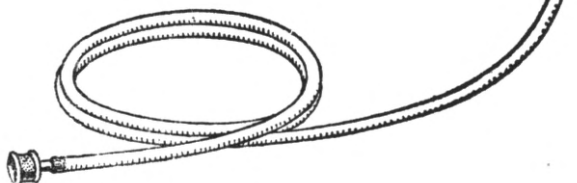


FOR SPRAYING OUTHOUSES: The Solo Sprayer disinfects outhouses, poultry houses quickly, effortlessly—gives maximum coverage. It can also be used for lime washing.

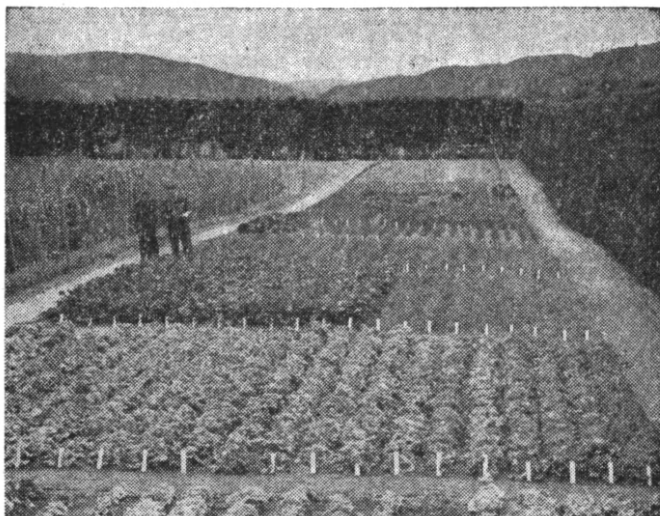


CLEANING WINDOWS: Handy for washing cars, cleaning windows, the Solo Sprayer has countless uses around the home—speeds up all creosoting jobs.

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Coopers have been growing, reselecting and developing their pedigree strains longer than anyone else in New Zealand.

SOW ONLY COOPERS OF COURSE

This photograph shows a small corner of one of Coopers extensive trial grounds.

All seeds packed by Coopers conform to the highest standard. Minimum analysis :
Germination - 90%
Purity - - - 98%

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**GARDEN SPRAYING WITHOUT
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Each bubble makes a gallon of spray! Mix the right amount every time . . . be sure of the right dosage for healthier gardens!

COPPER OXYCHLORIDE: Controls blight in tomatoes and potatoes and many other diseases.

LINDET: Controls chewing and sucking insects.

THIRAM: Controls Black Spot, Brown Rot and Botrytis Rot.

GRO-STUF: Foliage fertiliser makes super plants.

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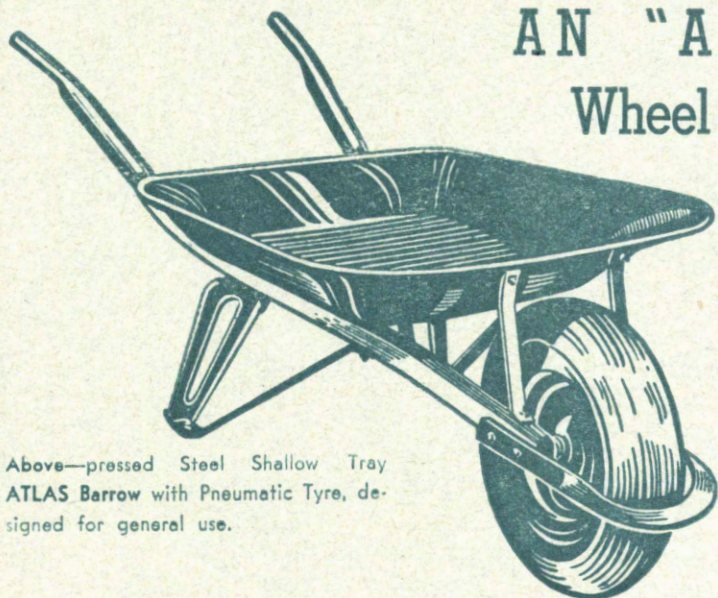
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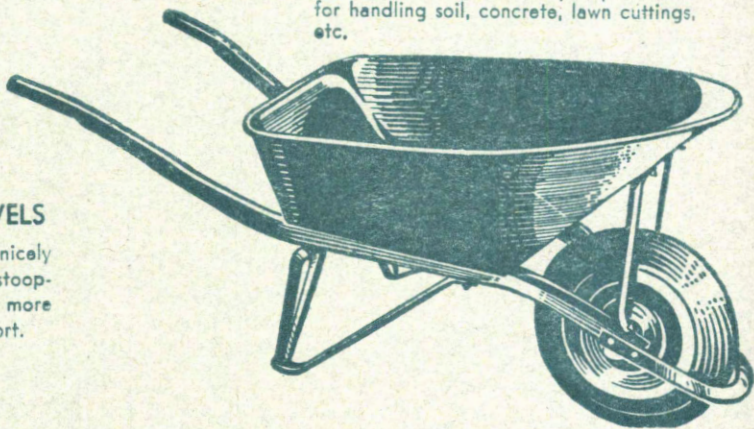
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ATLAS Barrow with Pneumatic Tyre, de-
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Below—Pressed Steel Deep Tray ATLAS
Barrow—with Pneumatic Tyre, preferable
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