THE RHODODENDRON YEAR BOOK

1953

Acknowledgements

TO THIS ONLINE EDITION

The volumes of the *Rhododendron Year Book* issued between 1946 and 1953 could not have been published online without the generosity of others.

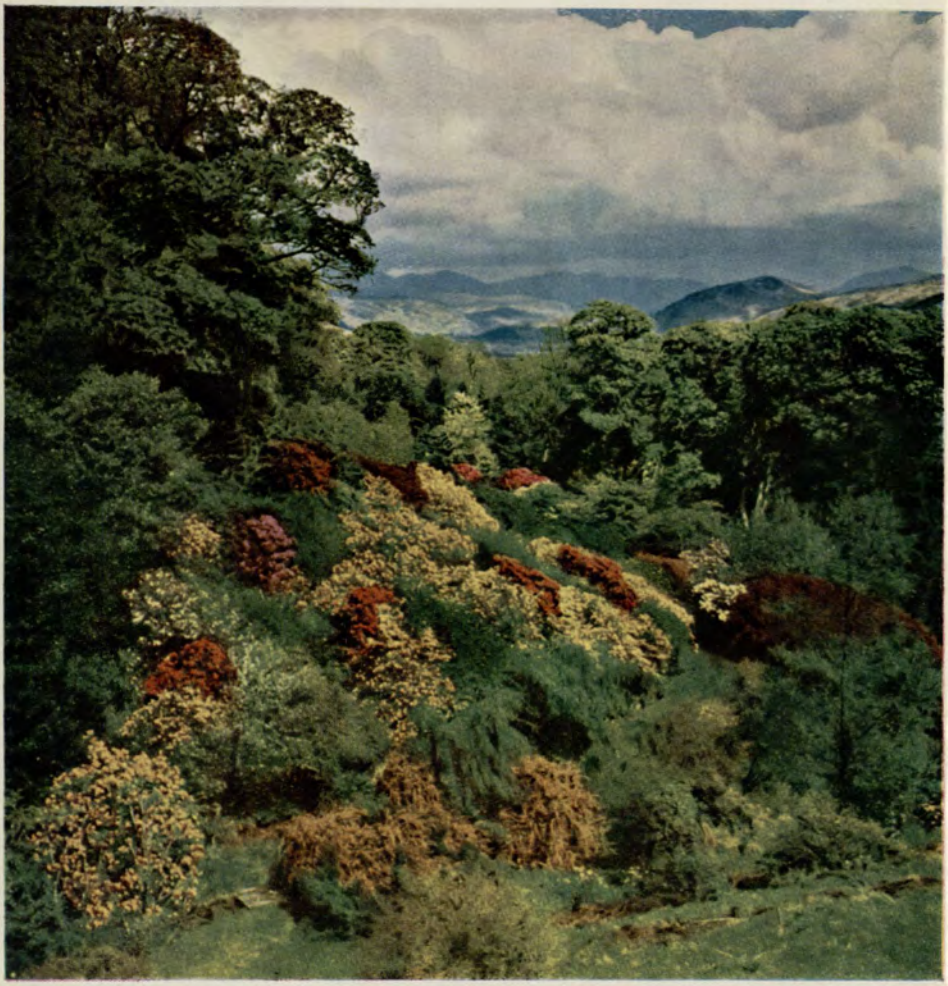
The Rhododendron, Camellia & Magnolia Group extend their thanks to the descendants of the contributing authors, and others who are now responsible for the copyright, for permitting those words to be reproduced in this format.

Despite our diligence in seeking the current copyright holders, there may be authors whose work is still in copyright who we were unable to trace, for which we apologise. The Group's 'Takedown Policy' may apply in this case; please visit
http://www.rhodogroup-rhs.org/takedown-policy

for details.

2024

RHS
Rhododendron, Camellia
& Magnolia Group



Colour Photo. P. M. Synge]

RHODODENDRONS AT MUNCASTER CASTLE

The view from the Terrace (*see p.* 58)

THE RHODODENDRON YEAR BOOK

1953

NUMBER SEVEN

THE ROYAL HORTICULTURAL SOCIETY
VINCENT SQUARE, S.W.1
LONDON

PUBLISHED NOVEMBER 1952

Made and printed in England by
STAPLES PRINTERS LIMITED
at their Rochester, Kent, establishment

CONTENTS

LIST OF ILLUSTRATIONS

FOREWORD

THE main topics dealt with this year in the *Rhododendron Year Book* are notes on hybrids and species drawn up by the late Mr. LIONEL DE ROTHSCHILD with his evaluation of many of them. These were being prepared by him for eventual publication when his untimely death put a halt to the work. Coming from such an expert, they are, of course, of great interest.

There is a description of Sir JOHN RAMSDEN'S garden at Muncaster, where an extraordinary number of Rhododendron species and hybrids are growing in a climate which is most suitable for them, and in the most picturesque surroundings.

There is a historical account by Dr. COWAN of the Rhododendrons in the Edinburgh Botanic Garden, and also an interesting and useful paper on the propagation of Rhododendrons from cuttings as well as some rather unusual suggestions on technique of Rhododendron propagation sent from America and New Zealand.

The increasing interest shown in the growing of Rhododendrons will make this issue of the *Rhododendron Year Book* attractive to very many readers, while the illustrations will be helpful.

ABERCONWAY.

SOME NOTES ON RHODODENDRONS

by the late

Lionel N. de Rothschild, V.M.H.

INTRODUCTION

IT was indeed a pleasant surprise when my son EDDY came across these articles written by LIONEL a short time before the war. They were found at the Rothschild Bank at New Court amongst their archives.

Reading them over brought back memories of the past. It seemed as though clouds were being torn asunder letting rays of the sun penetrate to earth in golden streaks reminding one of the interesting horticultural life of Exbury as it was in less stormy days.

Many people ask me how it came about that LIONEL deserted Buckinghamshire where his family lived, for Hampshire. The reasons were very plausible—climate and soil. As a child he was devoted to gardening, a love which grew tremendously with the years. In his early youth his ambition was to have one day a garden of his own—a beautiful garden he said, with many flowers and shrubs. But his aim was not reached till 1913. We had just been married a year and we moved into a delightful spot called Inchmery which lay at the mouth of the Beaulieu River. There LIONEL tried his hand at gardening, but only in a very small way. It was only in 1919 that his horticultural tastes began to develop. It was in that year that he acquired Exbury, which was then a derelict property. The house had been built at the beginning of the last century by the Mitford family—the war years of 1914–18 having played havoc with the estate.

Today it is hard to believe when seeing the Gardens of Exbury that little more than thirty years ago the pleasure grounds, although peopled with beautiful forest trees and brimming with natural beauty, were mainly composed of neglected coppice woodland.

In 1923 this wilderness had been transformed into a shapely garden. By that time we had moved into Exbury House and LIONEL's gardening hobby had really begun to take hold of him in earnest. And here I would like to say a word about the friendship he had for two keen Cornish horticulturists, J. C. and P. D. WILLIAMS—they became the godfathers of his garden and helped him a great deal with their sound advice. From them he learnt how to provide shelter before attempting any planting and how to blend the colours in the most advantageous

way. Another old friend, Mr. W. J. BEAN, Curator of Kew Gardens, imparted to him some of his vast knowledge about trees and shrubs. At first LIONEL seemed to prefer Rhododendrons—then evergreen and deciduous Azaleas came into the picture.

Little by little he became more and more of a connoisseur. Getting tired of the spectacular garden hybrids, he became interested in the fine art of gardening—Rhododendron species, rare trees and shrubs, attracted him greatly. The shrubberies became peopled with different collectors' treasures. Also his taste in colour evolved. To start with, such Rhododendrons as 'Ivery's Scarlet', 'Doncaster', 'King George', 'Ascot Brilliant', reigned supreme. Later on he found fault with the blue tinge in their red hue. By then some of his well thought out hybrids had come into being: 'Romany Chai', 'Grenadier', 'Gibraltar', 'Carmen', 'Exburiense', 'Kiev'. True pink Rhododendrons were also amongst his favourites. He was proud of his *discolor* hybrids, 'Antonio', 'Sir John Du Cane', 'Sir Frederick Moore'. Gradually his taste veered from pink to biscuit colour—'Naomi' (A.M.), pleased him much. At the time he considered this hybrid to be one of his best achievements. But all through the gardening period of his life LIONEL's chief object was to create a deep yellow flower. The nearest he got to his ideal was when R. 'Fortune' came into bloom. Although not the yellowest of his creations, 'Joanita' being of a deeper shade, 'Fortune' with its majestic beauty ranks high in the realm of his hybrids.

And now I feel I must end this preface as the reader will be anxious to peruse the original notes.

It is not perhaps for me to say, but the gardens of Exbury are still worthy of their creator—what a pity that he was not allowed to see the latest fruits of his efforts. But who knows? From the unknown land where he has passed on he may sometimes take a glance and then help to inspire those who carry on so worthily his great task.

Mrs. L. de ROTHSCHILD

THE PLACING AND PLANTING OF RHODODENDRONS

Rhododendrons, in which are included Azaleas, can be found in flower in suitable gardens in Great Britain and Ireland between the months of January and August. There is no section of hardwoods which has such an extensive range and though, of course, the early flowering species and hybrids are frequently cut by frost in many of our gardens when in full beauty, yet it is only the flowers which vanish, and the gamble of being able to enjoy their beauty often gives a real thrill to the happy owner.

After 1918 the fashion of our gardens changed considerably, hardwoods taking the place of herbaceous borders or bedding out plants in many of them; as the cost of their upkeep is infinitely less, it looks as if this trend will continue should there be any gardening in the future.

Luckily Rhododendrons and Azaleas are easily grown plants in the right situation. Their essential requirement is an acid soil: it is no good trying to grow them on chalk or on any soil which is even slightly alkaline. Even a neutral soil is not good for them, though the addition of acid leaf mould or peat to a neutral soil will enable them to be grown in a few specially prepared beds. But on an acid soil, whether it be sandy, gravelly, or even clay, they will flourish.

An ideal situation is open woodland, as a little shade from the hot summer sun will enable the flowers to last much longer and there will also be protection from wind and frost, which is so necessary for the big leaved Rhododendrons. There are some soils which only require trenching, such as the greensands in many of the gardens in Cornwall, Wales and the west coast of Scotland. The Bagshot sands also require little addition, though oak leaf mould or spent hops will help the plants to get a start. Hot dry gravelly soil requires the addition of leaf mould and a few spent hops as well if they can be obtained. Providing that sufficient leaf mould is added to an acid clay soil, contrary to general belief, Rhododendrons will flourish and require less watering than in many a light gravelly soil.

Now having discussed soil, what is the climate required? Along the sea coast from Cornwall to Oban sheltered valleys and woodlands form the ideal situation for a Rhododendron garden. But there are many situations in Sussex and Surrey, in Hampshire and Dorset, in Berkshire

and Cheshire, where, in gardens which do not suffer from excessive spring frosts, all but the most tender Rhododendrons will flourish, though the early flowering plants may not be so satisfactory. Low-lying districts, like the Knap Hill Nursery or the Royal Horticultural Society's gardens at Wisley, where frosts occur right up to June, are only suitable for the very hardiest.

Rainfall is also very important. Here again the west coast of this country enjoys a much bigger rainfall than, say, Kew, and perhaps the worst place of all for summer rain is either the east coast of England or that little strip of land along the Solent in which Exbury occurs, where the rainfall is so scanty that a great deal of watering has to be done to keep alive and in good health the Chinese and Himalayan Rhododendrons, which are used to the annual monsoon in their native habitat. Their hybrids also require more water than the hardy Rhododendrons emanating from the nursery trade. But fortunately not all gardens are as dry as Exbury and even in the New Forest (though the gardens, not being so close to the sea, may be colder) the rainfall is adequate without a great deal of attention. It is, of course, the newly planted Rhododendrons and Azaleas which require special attention; well established plants can look after themselves and only in an exceptional period of drought do they require attention. Wind, sun, drought and spring frosts are the greatest enemies of Rhododendrons. Shelter from wind is essential for healthy plants; a certain amount of shade is also essential. Oak trees give the best shade and their roots do the least harm. But I have seen Rhododendrons grow very well in open woodland where Scotch Fir predominate though their roots are apt to be a nuisance. Cherry trees—the wild Gean, or any other species or even the stronger growing garden hybrids: Magnolias, especially the tall growing ones: Beech trees or Spanish Chestnuts, although less good, will do, but the ordinary Horse Chestnut is poison as their leaves turn alkaline very quickly after falling. Roots of Elm or Ash take all the nourishment out of the soil for many yards around, so they are not much good, nor do I like Sycamores, though many Maples are suitable and nothing is prettier than a combination of Japanese Maples and Azaleas. In districts where honey fungus exists, the roots of the Birch tree are apt to suffer from this, though they are also pleasant trees in the woodland and the hardier hybrids flourish near them: not, however, the species.

Now if you own a piece of woodland and wish to make a Rhododendron garden there, what are the steps to take? First of all go through it carefully and cut down all inferior trees, grubbing out their roots or pulling them out with a monkey-wrench. Then make up your mind

where the path is going to be and where your main planting of Rhododendrons or Azaleas will be: and it is always better to keep Rhododendrons and deciduous Azaleas apart as it is very difficult to get the colour scheme right. When you have done this, if necessary take down some of the better trees here and there so as to give sufficient room overhead for the summer rain to get in and thoroughly wet your plants. Then in the winter bastard trench the open ground, keeping right away from the roots of the trees so as not to spoil them and being careful not to trench right under the shade of the branches. It is well known that a few Oak trees will even keep a certain amount of frost away when they are bare of leaves, and Scotch Fir will do the same: but if you do wish to plant one or two early flowering Rhododendrons with shelter of this kind you will have to look after them by watering them continually in dry weather and by seeing that the roots of the trees do not get right through the balls of their roots. Fortunately Rhododendrons as a rule are easily moved plants, and so are Azaleas, though when they come from nursery gardens their root ball is some times on the small side, and a few spent hops mixed with the soil which is put round the ball will help the roots to get out into it. When you have the ground ready, then comes the arrangement of the colour scheme and the planting.

Rhododendrons and Azaleas will fit into a garden of any size and even if the ground available is very small, dwarf Rhododendrons can be obtained and a great deal of pleasure gained from them. But their real home is, of course, the woodland where the ground can be explored in advance and the Rhododendrons need only be planted as the ground is ready or the plants can be acquired; indeed, in suitable localities they grow quickly and move easily, and so for some years after planting they can be thinned out and spread farther and farther apart. This especially applies to Azaleas which, to give a mass effect of colour, have to be planted fairly close: with care, and a little leaf mould or spent hops round them, they can safely be moved even if they have been some years in the same locality.

I have already stated that Rhododendrons and Azaleas do not as a rule mix well, though the big-leaved Rhododendrons, such as *Falconeri*, and the late flowering ones, such as *discolor* and *auriculatum*, would form a good evergreen background if required. Some of the evergreen Azaleas, however, form a good foreground to either species or some of the better coloured hybrids. For example, a few 'Hinomayo' in front of a plant or two of *Augustinii* and *campylocarpum* would make a pretty picture. As they can all be moved if a colour scheme is disliked, a mistake in planting is easily rectified.

It is a great mistake to imagine that a better effect can be secured from hardy hybrids than from species; but it is equally a mistake to despise the hardy hybrids and only plant species: there is plenty of room for both and a mixture will give a longer time of flowering and the variety of the flowers will add interest.

In the succeeding sections will be found lists of hardy Rhododendrons with their colours, their hardiness and their approximate date of flowering—their degree of hardiness I have taken from the *Year Book* of the Rhododendron Association.[1] Lists of species will follow and also of Azaleas, but I do not propose to give comprehensive lists of all of these, only those which, from experience at Exbury, I consider of sufficient value for the ordinary amateur who is fond of colour and effects in his garden to get benefit in planting. Those with more ambitious ideas can obtain fuller knowledge by getting the *Rhododendron Year Book*s and *Handbook*, or from *The Species of Rhododendron* published by the Rhododendron Society, which includes full lists of all Rhododendron species so far described.

But no garden will give the same amount of pleasure unless it contains some hybrids raised by the owner. I think I have obtained more pleasure in the last twenty years from seeing my own hybrids grow and flower—in spite of the fact that many have been failures—than from any other form of gardening. But bad failures need not occur if simple rules are followed. Here again, a separate section is required, and at the end of this will be found a list, not only of some of the most successful crosses made at Exbury, but also some of the failures, in order that others may not fall into the same pitfall into which I stumbled.

RHODODENDRON SPECIES

Anyone who has read KINGDON WARD's descriptions of his journeys in the Himalayas and Chinese Alps will have gathered what a magnificent splash of colour the wild Rhododendrons make in their native habitat, from the large-leaved denizens of the forest, with their yellow and pink flowers, through the many coloured dwellers of the open woodland to the shades of mauve and purple, and even yellow, of the dwarf denizens of the higher alps, which they cover like heather on the Scotch hills. It is an extraordinary fact that so many of these flourish in our climate, and although there are some stubborn and recalcitrant

[1] *Editor's Note.* Now published as The Rhododendron Handbook by the R.H.S. Although some of these ratings have been altered in the last edition of the Handbook, we have retained here Mr. de Rothschild's notes as he wrote them.

members of this great family, in the milder parts of our country a large proportion are prepared to display their beauty annually for our benefit. It would be useless to re-enumerate in these pages species which are not in cultivation, others which do not take kindly to our climate, or a large number which are of no value to the garden, for these notes are written for the garden lover, who wants every plant he possesses to give some return for the space it occupies. Tastes differ and change, and first it is blood-red that attracts a Rhododendron collector, but it is not long before he finds that whites and pinks, yellows and even purples have as great, if not greater, charm. I know that at first too many reds were planted at Exbury and these have long ago given place to others of softer hues, though of course reds still exist there in large quantities.

The following description of species of Rhododendron that I have flowered or seen in flower may be a help to those about to start in this most fascinating branch of horticulture. They are arranged in their series.

ARBOREUM

I suppose *Rhododendron arboreum* is better known to most travellers to the Himalayas than any other species. First sent home by Captain HARDWICKE and Dr. WALLICH, and then by JOSEPH HOOKER, who distributed seeds to many Cornish and Scotch gardens, it has acclimatized itself well along the south and west coasts, and anybody who has seen it in flower at Lochinch is fully aware of the magnificent display it makes. At Heligan also, in Cornwall, it is magnificent in flower, but in both these places varieties *roseum* and *album* predominate, though in one of the woods at Caerhays large specimens of the blood-red variety —the type—give a fine display when they are in flower, and at Tregothnan there is even an avenue of these. A tree of 30–40 ft. in height, it requires twenty years at least before it displays its beauty to full advantage, but from then on the lucky owner will have a gorgeous display in early spring. It is, however, only hardy along the coast, though in warm inland gardens the white and pink varieties will flourish. Its variety *cinnamomeum* is also perhaps hardier, characterized by the deep brown indumentum on the under-surface of the leaf; it is slower growing and less tall than the type: its flowers are usually white or pink and I think the colours are cleaner and purer than *arboreum* itself. At Lochinch there are many minor varieties differing in indumentum and shape of leaf, but certainly they are not better garden plants and need not concern us here. *R. zeylanicum* (to which *Kingianum* has been reduced) also has flowers of pink, white or red, and

is only mentioned here because there is a deep red form which flowers in June and which has raised valuable hybrids; it is a tender plant though and only fit for very warm gardens. The same remark applies to *Delavayi*, the Chinese form of *arboreum*, which is too tender for most gardens. Its blood-red form is as fine, if not finer, than *arboreum* itself, but even in Cornwall the frost of 1939–40 damaged it severely.

Others in the Arboreum Series and Subseries Arboreum, which will find their way into gardens, are *niveum*, a silvery-leaved plant with dull purple flowers in tight little trusses, which have to be kept away from all reds and pinks; it is of no great garden value, though amongst the large-leaved pale yellows it will give a change of colour at the end of April or early May; *silvaticum*, sent home by KINGDON WARD, has so far been a disappointment as its reddish flowers have a distinct trace of blue in them and it is only mentioned here as a warning.

Subseries Argyrophyllum of the Arboreum Series contains no showy plants, yet many are very pretty in their modest way, and to anybody with plenty of room an odd plant will give great pleasure. This subseries also consists of hardier plants which will grow in all except cold Rhododendron gardens or in exposed places; *argyrophyllum*, a shrub of 20 ft. in height, with small pink bells in a loose truss, is quite pretty when it has reached flowering size: but here again patience has to be exercised as it is only free-flowering when it has reached maturity. The same can be said of *hypoglaucum*, with its narrower leaves, beautifully white underneath, and its small trusses of white flowers, as clean as chintz. *R. floribundum*, with its purple flowers in early April, a shrub of 15 ft. or so in height, will make its displays at an earlier age, but many forms are rather an unpleasant purple; the best is undoubtedly that grown by Colonel STEPHENSON CLARKE at Borde Hill and this, like *niveum*, wants to be kept away from any reds. *Hunnewellianum* also must be kept to itself: flowering in March and April, it is very free, with pale pinky-lilac flowers, spotted within, which again will not mix with any reds. Nor will *Ririei*, a shrub eventually 18 ft. in height, with dull purple flowers, almost scarlet in bud, and flowering in February or early March; quite hardy, its early flowering makes it only suitable for sheltered gardens and it takes years before it flowers freely. Two other Rhododendrons in this subseries must be mentioned—*insigne*, with its pointed leaves, plastered with yellowish shiny indumentum underneath, and its trusses of pinky-white flowers with crimson spots inside, flowering in May and June: it is slow growing. At Bodnant it makes a magnificent display every year, but I think it must be fairly old to show its real beauty. *Thayerianum*, has little white or pinkish flowers in small trusses of nodding

bells, which it never opens till the end of June: it is exceedingly useful for prolonging the flowering season — with its slender dark green, leathery leaves it is very pretty in the woodland at that time of the year. Unfortunately, however, it is not easy to obtain.

AURICULATUM

The Auriculatum Series contains two species, both of which are worthy of cultivation in our gardens. The first, *auriculatum* itself, is one of the last of the species to flower, being usually in full beauty at Exbury the first week in August. It forms a large shrub, 15 ft. or more in height and as much through, and its sweet-scented white flowers are attractive: if the weather is not too hot it sheds its leaves annually after flowering just after the new growth has been made and, unless there are rains, requires watering to help these to develop properly: it does not flower freely until it is about fifteen years in age, but after that time it never misses provided it is not allowed to set seed the previous year.

The other member of the series—*Griersonianum*—a rather sprawling shrub of 5 ft. or more in height, with soft geranium-scarlet flowers in June, is perhaps the most striking of FORREST's introductions. Its hybrids have produced new forms of colour in hardy or semi-hardy Rhododendrons and in itself it makes a beautiful picture. Quite hardy along the sea coast and in warm inland gardens, it has been killed to the ground in cold damp places inland, not only in the winter of 1939–40 but also 1926–7. It is well worth experimenting with. The last sending of seed of this species from the wild, by FORREST, has produced forms with deeper red flowers, one at Exbury being almost blood-red but with no blue in it whatsoever.

BARBATUM

The Barbatum Series is much larger and contains some valuable garden plants, perhaps the most valuable of all being *barbatum* itself. As the name implies, all members of this series are more or less hairy, sometimes only just around the bud, sometimes on the new shoots or even under the leaves and sometimes persisting for more than one year—some of the bristles feel sticky to the touch, though the gum, or whatever it may be, never seems to come off on to one's hands. A tree of 30–60 ft. in height, *barbatum* is *perfectly* hardy but, flowering as it does in February or March, is often cut in cold gardens. Its flowers are, however, the most frost resisting of all the big Rhododendrons and often when all other Rhododendrons are a sorry sight from a distance it flaunts its compact scarlet trusses to the winter sky. Its variety *carneum* is pink, and pleasing enough in its way, but I prefer the

type. With all these tree Rhododendrons patience is required to see their beauty, but no Rhododendron garden in warm districts should be without this species.

R. Smithii is very near to *barbatum* itself but is a slower growing, more compact tree, with darker green leaves and all its shoots are intensely bristly. Its flowers are perhaps a little deeper red and it is as attractive, if not more so than *barbatum* itself: it flowers perhaps a little later. Both these plants, however, seem to have flowers which are very attractive to the tits as there must be copious honey glands at the base of the flowers which the birds pick to pieces. At Exbury I keep them off the plants by providing a coconut or a little bird cake made of lard, etc.

In the Subseries Crinigerum, *crinigerum* is a shrub eventually some 12 ft. in height, but flowering when 2–3 ft. high and as much through. It has been sent back many times. In its best forms it is a most attractive shrub with clear pinky-white flowers with a deep crimson blotch. Its hairy stems, its dark green leaves with thick yellow indumentum behind, make it an attractive evergreen and it is perfectly hardy in itself, but unfortunately it flowers in April when its flowers are apt to succumb to a spring frost. In spite of FORREST's thinking it the worst species he ever collected, various explorers must have been attracted by its beauty because of the number of times it has been sent back, and certainly ROCK has sent some very charming forms home to us. Its variety *euadenium*, which seems to be mid-way between *crinigerum* and *glischrum*, is a rather taller, quicker growing shrub, with quite attractive rose-pink flowers as seen at Exbury. Not enough is known of it yet, however, to decide upon its value as a garden plant.

In Subseries Glischrum are a number of species, none of them showy but some of which are worth growing in a collection of Rhododendrons. *Diphrocalyx*, a shrub of 5–15 ft. in height, has a calyx two-thirds of the way down the corolla, giving almost a double effect. Its small lax trusses of rose-coloured flowers are quite attractive, but one plant of it is probably sufficient. *Exasperatum*, a very hairy shrub, said eventually to be 10–15 ft. in height, with rusty brick red flowers, is at present 2–3 ft. high in our gardens. It is, however, a very distinctive species and interesting from that point of view. So far as I know it has not yet flowered in cultivation. *Glischroides*, a tree or shrub 6–15 ft. in height, and its variety *arachnoideum*, which is distinguished by the whole undersurface of the leaf being covered with a cobweb of white hairs, is in my opinion one of the best of this series. Its white, chintz-like flowers, flushed with pink with a crimson blotch, are most attractive when the weather allows them to open. Its foliage is fine

also, but it is really only suitable for warm gardens along the sea coast as it opens its flowers in February. *Glischrum* I have discarded from Exbury except for one plant, as its mauvy-pink flowers leave me cold. I have been in very hot water with the late Sir HERBERT MAXWELL about my dislike of this plant: he sent me truss after truss to try and convince me of its beauty. It was flowering really well at Exbury the same weekend that I received one of these trusses, a bush about 5 ft. being covered with 20–30 trusses, all perfect; I took Mr. BEAN to see it and asked him if he did not admire it. He said: "Why do you like it? You have many hybrids out at the present time with much prettier flowers." And as his view coincided with mine, I let the matter drop. *R. habrotrichum*, a shrub of 4–10 ft. in height, with hairy stems and darker leaves, is much more attractive. Its trusses may be a little smaller, but the pale rose of its flowers is purer and there are forms with even white flowers. It also flowers later at the end of April or early May and is quite a pretty plant for the garden.

In the Subseries Maculiferum there is *maculiferum* itself, which is perfectly hardy and flowers at the end of April with small white trusses. It is said to grow up to 30 ft. in height but flowers at quite a small size, and whether it is the deep black purple blotch at the base that shows off the whiteness of the flower, I know no Rhododendron which seems so pure in its whiteness. Some forms are said to be slightly flushed with pink, but these should be avoided. *Pachytrichum* is another Rhododendron which has got me into hot water—I have never yet seen a form which gives me any pleasure. Its white flowers are not white, but an ugly rose, and the deep purple blotch does not improve them. There is an Award of Merit form which is worth growing, but unless this can be procured, it should be avoided. Its near ally—*strigillosum*—is, however, quite worth a place in the garden; a shrub from 12–20 ft. in height, it has been called the Chinese *barbatum*. It is almost as hairy as *Smithii* itself: it is a bush, not a tree: its trusses are looser than *barbatum* with large individual bells: but as it flowers in February it is only suitable for mild districts. Here again discretion is required in purchasing a plant, as only the blood-red form should be grown.

The last member in this subseries is, in my opinion, the most attractive—*pseudochrysanthum*, a bush or shrub 1–9 ft. in height, with white to pale pink flowers—or deeper, and crimson spots within, it is one of the most beautiful of the April flowering Rhododendrons. A small group of it planted at Caerhays filled me with delight some years ago, and in 1940 I was able to enjoy its beauty at Exbury, though it was only some 2–3 ft. in height. A small growing shrub, it wants a front position.

CAMPANULATUM

The Campanulatum Series contains some fine Rhododendrons. To anyone who likes foliage *aeruginosum* is well worth planting, the almost metallic silver-blue of its fresh foliage being as attractive as any flowers: incidentally the flower buds should be picked off unless seed is required as the flowers are rather a poor ugly purple. It makes a spreading bush several feet in height and as much through. The Rhododendron which gives its name to the series—*campanulatum* itself—is a fine hardy shrub or small tree 12–18 ft in height and as much through. The Knap Hill variety is probably the best and, as it has been growing for many years in that cold nursery, it should grow anywhere in this country. This particular variety has a fine brown suede indumentum on the back of the leaf and its trusses, though small, are of a very pleasing blue-purple. Many forms exist with white, rosy-white or rosy-purple flowers more or less spotted and with a variety of indumentum at the back of the leaf. When the indumentum consists of numerous separate hair tufts it is known as *Wallichii*, and I have seen several very pleasing forms of this from seed collected in one of the Mount Everest Expeditions. Both these plants are well worth growing. So is *fulgens*, a shrub 6–12 ft. in height, with very small trusses of bright scarlet flowers in late February or early March. A perfectly hardy plant, like many of the early flowering Rhododendrons, the tits seem to like its flowers. *Lanatum*, a shrub 10–15 ft. in height, with a woolly brown indumentum on the under side of its leaves, has attractive pale yellow flowers, spotted with crimson purple. The secret of success in growing this Rhododendron, which is a somewhat difficult subject, is to plant it in pure leaf mould: it will not grow in gravelly soil or clay but with proper feeding it does well. The Rhododendron sent back by KINGDON WARD as *lanatum* has been named *tsariense*; its leaves are very similar but smaller, with the same dense wool on the under side of the leaves. Its flowers, however, are different, being pale blush pink, cream or white, sprinkled with red spots. It seems to require the same treatment as *lanatum*, but is smaller growing and, so far as I know, has not yet flowered in this country.

CAROLINIANUM

The members of the Carolinianum Series, coming as they do from America, are perfectly hardy in our country. Although not showy, the little bushes are quite pleasant with their rosy-purple or whitish flowers, and both *carolinianum* and *minus* make a pretty picture in the wild woodland in gardens which cannot grow the more tender species.

CINNABARINUM

The Cinnabarinum Series is one of the most attractive of the genus. *Cinnabarinum* itself, a hardy shrub 10 ft. in height, has been sent back in numerous colour variations. I think I like the type best, with its reddish orange-yellow flowers. Its variety *Roylei*, with its intense cinnabar red flowers, makes a fine sight when the setting sun lights up its tubular flowers. Variety *blandfordiaeflorum* has smaller flowers, yellow, with the outside of the corolla flushed red at the base: it always attracts attention in the garden. Some of the forms sent back recently by KINGDON WARD have colour variations ranging from apricot to deep orange and, so far as I have seen them in flower, are most attractive. *Concatenans*, a much dwarfer shrub, at present only 3–4 ft. in height, has rather more glaucous foliage and its yellow-apricot flowers are attractive. It does not, however, seem to be quite so hardy as *cinnabarinum* itself. *Keysii* is unfortunately a tender shrub; it also has tubular flowers, smaller even than those of *blandfordiaeflorum*. The type has bright red flowers tipped with yellow—almost sealing-wax red, and it must be kept away from the many crimson hybrids which flower at the same time; but by itself it forms a fine splash of colour. Variety *unicolor* has flowers all red without any yellow tips and is said to grow up to 16,000 ft. in Bhutan, and plants from there should surely be hardy in our climate—I can only presume that all those growing here must have come from much lower altitudes. Its light green, slender leaved foliage makes a change from the usual heavy green of the Rhododendron wood.

EDGEWORTHII

The Edgeworthii Series, beautiful as most of its members are, is unfortunately not fit for cold gardens. *Bullatum*, with its dark green crinkly leaves and its large fragrant white or flushed with pink or even pink flowers, can be grown in warm gardens in the south-west of England and along the western coast and should be in every garden there. It seems a more compact plant than *Edgeworthii* and a better doer, though the botanical differences are so slight as to be negligible from the garden point of view. It makes a pretty greenhouse plant.

FALCONERI

The Falconeri Series, consisting mostly of tree Rhododendrons, together with the Grande Series, is certainly one of the noblest of the genus. *Falconeri* itself, a tree of 40–50 ft. in height, with large leaves and large trusses of pale yellow flowers with a purple blotch, is a magni-

ficent sight in warm gardens sheltered from the wind in the months of April and May. At Exbury its flowers last longer on the tree than any other Rhododendron I know and I have had them in full beauty for nearly a month at a time. It requires semi-shade, a moist atmosphere and plenty of room, and, like all these large growing Rhododendrons, it is far finer as a specimen plant than crowded together with other shrubs. For those who have not room for *Falconeri* itself, the Chinese representative *arizelum* is a good substitute. Although its leaves are very similar, it is only 10–20 ft. in height as a rule: it flowers at an earlier age with rather smaller trusses; but where *Falconeri* can be grown, this is my preference. *Basilicum*, another member of this series, is said to be rather hardier, also with large leaves more shiny above: but those I have seen in flower have not attracted me as they are mostly a muddy yellow splashed with crimson. It is said to grow up to 30 ft. in height, but at Exbury it resembles *arizelum* in its growth and, as it grows in the same district, has undoubtedly been crossed with *arizelum*, and some of these hybrids are growing in our gardens under perhaps this name. *Coriaceum*, a shrub or tree 10–25 ft. in height, with white or white-flushed rose flowers with a crimson blotch, has been sent back many times and in many varieties, most of which are worthless. Its white flowers in a small truss have little to commend them, and it would not be mentioned in this book were it not for two numbers which FORREST has sent back—25622 and 25872—both of which have rather larger trusses of white flowers that have attracted me very much at Exbury. *Eximium*, a rather smaller edition of *Falconeri*, should only be grown for its foliage: its flowers, of a muddy pinkish yellow, are not very pleasant, but the bright orange indumentum which covers its young foliage is very attractive in the woodland and makes it one of the most attractive of all foliage Rhododendron species. It will not, however, grow in a dry situation or in a dry atmosphere, and only shows to advantage in those districts where copious rainfall or ample watering can be given at the growing period. *Fictolacteum* has been sent back in many forms and many varieties. One of FORREST's photographs shows a bank of this Rhododendron in full bloom, as profuse as any garden hybrid, but it requires age to produce this result and, like *arboreum*, it is at least twenty years before it is seen in any beauty. A shapely tree, 15–45 ft. in height, with its leathery green leaves and white flowers with a crimson blotch, it makes a magnificent picture when mature. The best form has been sent back by KINGDON WARD under number 4509: this has larger foliage and larger flowers than any other that I have seen, though at present it is not yet big enough to show off its full beauty. It is, I believe, especially fine in Scotland, though the late Mr. CROSFIELD,

of Embley Park, was the first to receive an Award of Merit for it. *Galactinum*, one of WILSON's plants, is perhaps the hardiest of the series, growing 15 or more feet in height; with grey-green foliage with white or pale rose flowers, spotted within, it always gives me pleasure, though perhaps it is one of the least showy of this series; it has the great merit, however, of being hardy anywhere in the country. The last member of the series to be mentioned, *Hodgsonii*, makes a tree 12–20 ft. in height and is really more useful as a foliage plant with its fine foliage of dark shining green. Its flowers vary from bright magenta to rather pale rose pink and are the least attractive part of it.

FORTUNEI

The Fortunei Series consists of six subseries, and in some of these the differences are so wide that they might almost be series in themselves. *Calophytum*, which gives its name to the first of these subseries, is one of the noblest Rhododendrons that WILSON sent back. It seems quite hardy in our climate: a small tree, said to be eventually 30–40 ft. in height, at present it is not much more than half that in our garden and seems to make more of a spreading umbrella-shaped plant. It requires a sheltered situation and for its full beauty a warm garden, as it flowers in March or April. It is a magnificent foliage plant with long leaves and bears large trusses of white or pink flowers with a deep blotch. Either of these forms is magnificent: the white is the one most frequently grown, but the pink variety which Dame ALICE GODMAN showed from South Lodge, and which gained a First Class Certificate, is magnificent. I have seen as good a form at Caerhays, from which there are seedlings growing at Exbury. *Calophytum* should be grown as a specimen plant in sheltered woodland, and so should the two plants in Subseries Davidii—*praevernum* and *sutchuenense*. The late Mr. J. C. WILLIAMS would not recognize any distinction between these, but then he only grew *praevernum* at Caerhays which he called *sutchuenense*, a fine white Rhododendron with a crimson blotch with the flowers in rather a more compact truss than *calophytum* and with leaves not quite so long. *Praevernum* emanated from Kew, whence plants have been distributed to many gardens, and where its early white flowers won the admiration of all who saw it. The type *sutchuenense* has pink or lilac-pink flowers with or without a blotch and some of the plants raised from seed from the wild have flowers of an objectionable bright magenta colour. I believe most of the poorer forms have been eliminated from our gardens now. A so-called hybrid between these two species has flowered in our gardens and now is called *Geraldii*. When it first came out it was known as *sutchuenense* var. *Geraldii* as it

first flowered at Wakehurst, and that particular variety, with its lilac-pink flowers and deep crimson blotch is certainly one of the most attractive of the early flowering Rhododendrons. I myself believe that these two plants merge into one another and that really there should be one species only. The earliest to open is sometimes in flower at the end of January or early February, but other forms are found which do not unfold their buds till March has come; of course, like all early flowering Rhododendrons, it depends upon the weather, as at home they wait until the snow and frost of the Chinese Alps have gone and spring has come—in our climate a mild winter encourages them to open. Last year neither of the three plants described opened before April.

The Subseries Fortunei contains some good garden plants: *decorum* has been sent back numerous times from the Chinese Alps. The earlier importations by WILSON are probably the hardiest but unfortunately have the smallest flowers. Both KINGDON WARD and ROCK have sent back varieties and these two, perfectly hardy at Exbury, have fine white flowers in May. Some forms have been sent back with pinkish flowers but I have never managed to grow any of these at Exbury. A shrub or small tree up to 20 ft. in height, with sweet scented flowers which are pretty but apt to spot with rain. *Diaprepes*, very near *decorum* but with larger flowers which open in July, is unfortunately not hardy and suffers badly from bark splitting. Closely allied is *serotinum*, a tree 25 ft. or more in height, which often only flowers in September. This seems hardy. In the same subseries is to be found *discolor*, the most satisfactory of all the series for general cultivation in this country although it is not satisfactory in Scotland or in very cold places in the British Isles, where it also is apt to split its bark. In most gardens in this country it forms a tall shrub, 20 ft. in height, with either white or pale pink flowers opening the first week in July and, when well established, it never fails to show its beauty: as it sets seed very freely the flower trusses must be picked off as soon as it has finished flowering, and this remark applies to all members of the series. *Fortunei* is perhaps the hardiest of all this series, with its pale lilac white flowers at the end of May or early June, it makes a small tree of 15–20 ft. in height, and its fragrance in a fine month makes it well worth growing in the woodland. The best variety undoubtedly is the one grown at Leonardslee, which the late Sir EDMUND LODER used as one of the parents of his famous Rhododendron 'Loderi'. *Vernicosum*, with its four geographical forms *araliaeforme*, *euanthum*, *rhantum* and *Sheltonae*, has been sent back frequently by various explorers. They are all more or less hardy and make shrubs 10–15 ft. in height with small white or pinkish flowers; though *vernicosum* itself is the best, they are none of them really showy

plants. A lighted match held to the leaf of any of these will melt the wax on the upper surface and give that shiny effect from which its name is derived, as the original specimen collected was dried too near the fire.

The Subseries Griffithianum consists of only one species, which gives it its name. A large shrub or small tree 14–20 ft. in height, with large white flowers with green spots, or sometimes flushed with pink, it is perhaps one of the finest of the Himalayan Rhododendrons. Specimens of this in full bloom at Caerhays or Heligan are perhaps among the most beautiful of all the species: it is unfortunate that it is only hardy in our very mildest gardens. At Exbury it has lived in the open for twenty years but only flowers occasionally. The Heligan variety seems to me the best and almost equal to it is the variety that Sir EDMUND LODER used at Leonardslee as the other parent of 'Loderi'. I believe this was MANGLES's original plant and it could be obtained from SMITH, of Guernsey.

In the Subseries Orbiculare, *orbiculare* makes a most beautiful round compact shrub up to 10 ft. in height and as much or more through. It should be planted as a specimen, where it will grow almost like a Dutch clipped yew. The best specimens were to be found at Caerhays, though they have grown so big that they have begun to touch and lose their distinguishing feature. Its flowers—rose pink—have a decidedly bluish tinge and are the least attractive part of the plant.

In Subseries Oreodoxa *Fargesii* makes an attractive shrub 10–15 ft. in height with pale rose pink flowers, also of a slightly bluish tinge: it wants to be kept away from the reds. Flowering as it does in April, it requires a sheltered garden and the dead flowers must be picked off quickly, as once the plants have reached a certain age they flower all over like a garden hybrid. The plant itself seems hardy. The other member of the subseries, *oreodoxa* itself, in all its forms makes shrubs or small trees 10–15 ft. in height, flowers bright pink in bud—in some forms almost scarlet, fading to light pink and in some cases almost white; it is very attractive when the plants are mature when every tree is covered with bloom. It takes, however, some time to reach full flowering age. Its buds are perhaps the most frost resisting of all Rhododendrons, they even start opening and showing colour without being faded by frost. Flowering as it does in early March up to April, it is of no use in cold gardens, but the "glory of the mountains" is indeed attractive where it can be grown. *Haematochei lum* and various other varieties have only minor botanical differences.

(*To be continued in* 1954)

HYBRID RHODODENDRONS

The early flowering hybrids are perhaps of less interest to the general public than those which come out after April is drawing to a close, yet in the favoured districts of Cornwall and the western sea-board they are only occasionally spoilt by frost. At Exbury and in the warmer gardens inland they are somewhat of a gamble, but what fun one gets out of them in a favourable year, and what a joy to walk through the woods on a dull February day and see colour already beginning to appear on countless bushes.

I suppose the two early hybrids which are in nearly every garden—'Nobleanum' and its various forms and 'praecox'—are too well known to need description, but only last year I noticed that the nursery gardeners are still confused about 'Nobleanum venustum', which is easily the best of that hybrid. I think ROGERS of Southampton were the first to distribute it, and the lovely pink flowers delight me every year, a much clearer pink than the dull form which is sometimes exhibited at the R.H.S. Hall.

After a cold December, January and early February were very mild and 'Bric-à-Brac', a cross between *moupinense* and *leucaspis*, was in full beauty. A neat small bush, rather stiffer and more compact than *moupinense*, it is usually white but some have a pink flush; it resembles *leucaspis* in the rounder flower and the bent style.

At the same time 'Bo-Peep' (*moupinense* × *lutescens*) was beginning to open its pale primrose flowers and 'Tessa', that fine cross of Mr. STEVENSON's between *moupinense* and 'praecox', was expanding its rosy purple buds.

Of the larger Rhododendrons 'Red Admiral' had already fully opened some of its magnificent blood-red flowers. This giant hybrid from Caerhays between *arboreum* and *Thomsonii* never fails to open its first blooms at Exbury in the first week of February and continues over the next two months to show its beauty, occasionally marred by a frost. It is easily the best of the reds and 'Abbot', a hybrid between *Delavayi* and *Thomsonii*, which opens at the same time and which is also first rate, is certainly not quite so good. 'Cornubia' of course, one of the best hybrids from Penjerrick, is fully out in some of its forms, and while it is a magnificent Rhododendron, it has neither as good a truss nor as good a colour as 'Red Admiral'. But 'Red Admiral' has been made by both GILL and LODER, and while both these latter crosses are good and better than either 'Abbot' or 'Cornubia', they are not so good as the WILLIAMS' cross, while as for 'Tregedna', which flowers at the same time, it is not in the same class and is really no

longer worth growing; nor is 'Harrisii', or even 'Harrisii superba', though this latter hybrid opens somewhat later.

'Alix' (*barbatum* × *Hookeri*), had opened its first flowers and was very fine in the woodland. It is a good red with no trace of blue in it, but its truss is not as big as 'Red Admiral'; it is, however, brighter than 'Shilsonii' and as it comes earlier than that plant, is a useful stop-gap.

Some crosses between *Ririei* and *sutchuenense* are a lovely large-flowered mauve and look very well as long as they are kept away from the reds. Luckily the birds do not like them as much as they do *Ririei* itself, which is picked to pieces for the honey.

R. sutchuenense × 'Cornubia' is a disappointing Rhododendron. Some forms may be better than others and one shown by Colonel STEPHENSON CLARKE, which got an Award of Merit, is probably the best of them. The same cross at Exbury has given very poor results and nearly all have been burnt; why I do not know, but none of the hybrids of 'Cornubia' has turned out well at Exbury.

'Lord Milner', a rather later *barbatum* hybrid of unknown parentage, crossed with *calophytum* gives some very pleasing pinks and one was in full beauty on 13th February.

R. sutchuenense crossed with a white or pale pink *arboreum* or, as I shrewdly suspect, *praevernum* × *arboreum* from Caerhays (for all the *sutchuenense* at Caerhays are, I believe, but *praevernum*) gives a very pleasant pinky-white hybrid with a nice truss and was just beginning to expand its blooms.

24th February 1938

A fortnight's cold weather has checked the Rhododendrons from expanding their blooms and very little more has come out during that period.

Why is it that very often hybrids made between two later flowering Rhododendrons are often so precocious? 'Aries' (*neriiflorum* × *Thomsonii*), a fine scarlet Rhododendron is already beginning to open its buds, though neither of its parents flowers before the end of April. Twice I made the cross. The second batch is finer and though some flower early, there are many unopened buds.

1st March 1938

'Aries' (the first cross) is fully out, and a very fine Rhododendron it is with a large calyx. This is the first year that I have seen it in full bloom although it has tried to open its buds for several years now; but it has always been frosted, and that may still happen.

'Christmas Cheer' was still a mass of flower yesterday; it has now been in full bloom for over two months, and it is a *caucasicum* hybrid

which pays better rent, I believe, than any other, especially as the tits seem to leave it alone, though they will pick 'Nobleanum' to pieces.

'Shilsonii' is opening fast, and while it is a fine deep red, will not bear comparison with 'Red Admiral'.

'Crossbill' (*spinuliferum* × *lutescens*) is just beginning to open its apricot-yellow flowers and a very pretty Rhododendron it is, one easily made and quick-growing and early-flowering from seed.

Fargesii × white *arboreum* is beginning to open its buds. Here again we have an instance of two later Rhododendrons throwing back to an early-flowering period.

21st March 1938

A sharp frost put an end to the display at Exbury and for a fortnight the garden was desolate; but now it has recovered a great deal of its beauty, though rain is badly wanted. The later flowering 'Shilsonii' are in full beauty.

One of the first of the *lacteum* crosses to flower, white *arboreum* × *lacteum*, is fully out, a fine white truss, ivory-tinted in bud. The same plant flowered last year and also another one which was pinky-yellow. I think it will be a finer cross than *sutchuenense* × white *arboreum*, first made at Caerhays and which is very pretty in the garden today. *Arboreum* × *calophytum*, on the other hand, have been somewhat disappointing, though one or two have had quite large flowers and retained the blotch. *Hookeri* × *arboreum* makes a fine red Rhododendron without any blue in it.

Fargesii × *Thomsonii* is opening its rosy bells. This is a cross which was made at Bodnant and it gives me intense pleasure every year. The owner is a little sceptical and thinks it did not take and that it is only a particularly fine form of *Fargesii* they had at Bodnant which has produced this delightful Rhododendron. A group of *Fargesii* almost next to the plants I received from Bodnant, however, seem to me to dispel this; mine were all raised from seed from the bed of *Fargesii* at Caerhays and I believe are as good as any in the country. The real difference is in the colour, as all the *Fargesii* have a faint tinge of blue in them, whereas the Bodnant plant is much purer.

A fine scarlet hybrid of MAGOR's—'Daphne'—with its curious double calyx is a pretty dwarf bush and makes a fine splash of colour against the dark fir trees.

R. calophytum × *irroratum* produced quite a nice Rhododendron which received an Award of Merit, but I do not think it is as good as *calophytum* × *arboreum* in its best forms

R. irroratum × *arboreum* is flowering at Exbury with small trusses of

pale-pink flowers but, while quite pretty in the wood—too pretty to be burnt—it would never take an Award of Merit.

29th March 1938

The warm weather has continued and Rhododendrons quite out of season are coming into bloom. The first flowers of 'Bibiani' ('Moser's Maroon' × blood-red *arboreum*) are already expanded. I do not know what blood 'Moser's Maroon' has in it but it is certainly a very fine parent.

Some of the *neriiflorum* crosses with garden hybrids are in full bloom and, although perhaps better doers and rather hardier, they are not so good as the best form of *euchaites*.

'Edmundii' has been in full bloom for some time, its parentage unknown though obviously with *barbatum* in it. It is curious how this hybrid, so admired only a few years ago, is quite a blue-red in comparison with many of the hybrids now available, and while it may perhaps stand a trifle more frost, it soon looks shabby and I am afraid now has to take a back seat, and the same can be said of the 'Duke of Cornwall'.

'Adjutant' (*sperabile* × *neriiflorum*), a very free-flowering red hybrid, is covered with blooms, but here again it is not better than either of its parents, if as good.

'Cornish Cross' is beginning to expand some of its flowers. It is curious how the plants at Exbury, while perhaps not quite so big in bell as the plant that came from Penjerrick, are more pleasing and truer in colour, varying from pale strawberry to deep red.

'Dr. Stocker' × *Thomsonii* is not so good; the trusses are smaller, more lax and of a duller pink, though some have a faint strawberry colour.

I do not think *caucasicum* blood is of value except for earliness, it always produces such papery flowers. While saying this a pleasing cross between *caucascium* and *campylocarpum* was fully out this week with pale yellow flowers, very pretty behind some Lapponicums.

5th April 1938

The number of Rhododendron hybrids to commence opening their flowers was very considerable, but they received a rude shock on Sunday evening with one degree of frost in the screen. All those with Thomsonii Series blood in them fared badly in the cold part of the garden.

What a pretty small Rhododendron 'Crossbill' is. This has been made two or three times at Exbury as I admired it so much at Caerhays, and all the offspring of this cross are attractive, some creamy, some reddish-orange. But one of the original 'Crossbill' from Caerhays was

recrossed with *spinuliferum* and an exceedingly pretty brilliant orange-red hybrid has ensued, a bigger flower and brighter than *spinuliferum*, though it takes a good deal to beat *spinuliferum* itself when a biggish plant is in full bloom.

Another Rhododendron which surprised me was *Falconeri* × *sinogrande*. The best *Falconeri* I had in flower at Exbury was fertilized with pollen from Captain JOHNSTONE's best yellow *sinogrande*, and the result has been a flower deeper in colour than *lacteum* ('Fortune', F.C.C. 1938). I have had to wait many years for this—so far only one has bloomed; there are fourteen or fifteen more of the same cross growing on at Exbury and it will be very interesting to see what their flowers are like.

'Avalanche' (*calophytum* × *Loderi*) has been in full bloom now for ten days. I like the white form best but the pink one is very beautiful also. The two plants with the best flowers so far seem to set regularly every year, but here again although the cross has been made many years there are still some unflowered seedlings.

Haematodes × blood-red *arboreum* of MAGOR was fully out with fine trusses of an amazing scarlet. The plants I have are quite first class and are a great credit to the raiser.

The second batch of 'Aries' have now been good for a fortnight. They are very constant—out of fifty or sixty plants a dozen are equally good and the others very little behind.

'Abalone' (*callimorphum* × *campylocarpum*) in its varied forms is beginning to open, but those in the top wood suffered severely from the frost.

'Moonstone' (*Williamsianum* × *campylocarpum*) in a sheltered wood retained its beauty—all shades of cream, ivory and pink. I think it is one of the prettiest crosses ever made. I have always been in love with it ever since I saw it at Caerhays and have three or four batches of seedlings coming along, all pretty.

'Dr. Stocker' × a pinky *arboreum* is in flower with white or pinky-white flowers. All of them are tolerable but of the batch which I have at present flowered only one is really good and somehow it has got a thicker and fleshier bloom than the majority, in which the papery flower of 'Dr. Stocker' seems to predominate.

Thomsonii × 'Loderi' has been quite pretty. This is I think an improvement on GILL's 'Aurora', which is *Thomsonii* × 'Kewense'—its flowers are a deeper colour. There is no doubt of the fine results to be obtained from using a good 'Loderi'—the improvement which Sir EDMUND LODER obtained by using improved parentage is clearly indicated in the progeny.

'Dawn's Delight' × blood-red *arboreum* has not been a success; tender

and with a little blueness predominating, only one plant is retained at Exbury as a memento. 'Dawn's Delight' itself, one of MANGLES's hybrids, is a fine thing with no trace of blue in it, but its parentage with *Thomsonii* has also been disappointing. With some of the later species it has, however, given good results.

27th April 1938

Frost put an end to the display at Exbury and in most other parts of the country as well, but in spite of the cold winds the warm sun is again beginning to open buds and the main spring rush has begun.

Various named varieties of 'Naomi', some pink and some with almost a touch of yellow, are all uninjured; the extra touch of *Fortunei* blood added to the already existing *Fortunei* in 'Aurora' having given hardiness.

'Yvonne' ('Aurora' × *Griffithianum*) was crippled in all but the mildest parts of the wood. This also is a very pleasing Rhododendron but definitely on the tender side.

'Carmen' (*repens* × *didymum*) is a pretty little dark red dwarf Rhododendron and although in an open position, the buds were uninjured.

'Humming Bird' (*Williamsianum* × *haematodes*), which emanated from Caerhays, is a little shrub with pretty rosy-red bells—very floriferous and most attractive.

'Susan' (*campanulatum* × *Fortunei*), emanating from Lanarth, is certainly one of the most beautiful mauve Rhododendrons I know and should be in every garden.

'Annabella' (*campanulatum* × 'Loderi') and 'Lamellen' (*campanulatum* × *Griffithianum*), both pleasant white flowers, are not opening properly this year, partly due to the frost and partly to the drought. There is no doubt in my mind that the variety of *Griffithianum* used is most important from the point of view of all those who live in the somewhat colder parts of the country, such as the New Forest and Sussex. From my experience at Exbury crosses made with the Heligan variety of *Griffithianum*, a very fine form indeed which has been sent out by SMITH, of Guernsey, and which I believe was MANGLES's original variety and was used by Sir EDMUND LODER in his famous 'Loderi' strain, are quite satisfactory. The form known as 'roseum superbum' largely used by LOWINSKY, a form which he obtained from GILL, produces very tender offspring and I have completely discarded its use. The form used by Mr. GEORGE JOHNSTONE is also much too tender for northern gardens. His 'Luscombei', 'Shilsonii' and *barbatum* crossed *Griffithianum* have given a lovely range of strawberry-coloured hybrids, very beautiful in his garden but, alas, too tender for me at Exbury

where only occasionally I flowered some of them and I am reluctantly discarding all of them by degrees to make room for hardier varieties; and yet the parentage on the other side if crossed with one of the hardier forms of *Griffithianum* should give perfectly satisfactory results.

'Blue Tit' in its various forms is a very attractive little dwarf and so is *fastigiatum* × *Augustinii*, or rather the *fastigiatum* of the trade.

'Blue Diamond' is another one of these dwarfs, which are very pretty planted as a front edging to some pale pink or yellow Rhododendrons. The genius of the cross is undoubtedly Mr. J. C. WILLIAMS, who was the first to prove it possible.

A pretty yellow cross between *Valentinianum* and *primulinum*, emanating also from Caerhays, is a pretty background to 'Blue Tit' but it is in but few gardens, though there is no reason why the same cross should not be made again.

A cross between *chasmanthum* and *Augustinii*—'Electra'—has produced some very fine deep blue Rhododendrons and, coming as it does mid-way between the flowering seasons of *Augustinii* and *chasmanthum*, will be a useful stop-gap.

All the *campylocarpum* hybrids are beginning to come out and a very fine range indeed they are — I do not know which I like best. Mr. F. J. ROSE, gardener at Townhill Park, has raised a fine batch with *Fortunei;* I have seen them in their full beauty and there are no bad ones, although of course some are better than others.

'Penjerrick' (*campylocarpum* var. *elatum* × *Griffithianum*) is too well known to need eulogy.

R. campylocarpum has been crossed with *Souliei* and gives a delightful hybrid very much smaller than 'Penjerrick' but equally attractive. Here again when the variety *elatum* of *campylocarpum* is used yellows, pinks and whites are the result, while with HOOKER's *campylocarpum* constant pale yellow is produced. There is no doubt that var. *elatum* gives infinitely better results in hybridizing and should be the only one used. With 'Loderi' it has produced 'Barbara', a Rhododendron with as many shades of colour as 'Penjerrick' and, curiously enough, with rather better trusses of flowers though perhaps the individual ones are not quite so large. But then 'Penjerrick' never has such big flowers at Exbury as it does in some gardens. *Campylocarpum* × 'Dr. Stocker' ('Damaris') gives magnificent results at Logan but this hybrid, alas, is not available to the public.

16th May 1938

The majority of the forms of 'Loderi' raised at Leonardslee are good, some better than others, but there is little to choose. Some nurserymen

are not averse from selling 'Kewense' crosses which they have made as forms of 'Loderi' and the purchaser must beware of this. Many of the named forms are in the trade; 'King George' is perhaps one of the best. I personally am very fond of 'Venus', but that perhaps because the original plant is at Exbury. Anyhow they were a magnificent mass of flower on the occasion of the Rhododendron Show.

R. campylocarpum × *cyclium* is even prettier than *campylocarpum* × *callimorphum* with an equal variety of colour from pink to white and yellow. *Campylocarpum* × 'Luscombe' also gives fine results. *Campylocarpum* × 'Naomi'—'Carita'—has an equal range of colour.

Some of the Griersonianum hybrids are beginning to come into bloom. 'May Day' (*haematodes* × *Griersonianum*) is again an instance of a hybrid flowering before either of its parents, with its brilliant scarlet flowers, more brilliant than any other Rhododendron perhaps, and *scyphocalyx* × *Griersonianum*. Then all the Rhododendrons had a rude shock and 4° of frost on the night of the 8th–9th May put an end to all in the Upper Wood.

But it is curious how soon new flower comes after four or five warm days and by the 15th May the wood was quite gay with all the different 'Lady Bessborough' in flower, creams, pinks and apricots. It is a far finer hybrid than 'A. Gilbert', which is a constant pale primrose yellow.

'Sir John du Cane' (*Thomsonii* × *discolor*), with its old-rose-coloured flowers, is a fine hybrid but it is doubtful if it will ever get an Award of Merit.

But *discolor* × 'St. Keverne' has produced 'Sir Frederick Moore' with fine bold large trusses of pink or rosy-coloured flowers with no trace of blue in them; a first-class hybrid in its best forms which one day will be as sought after as 'Lady Bessborough'.

In the meantime 'Lady Chamberlain' and 'Lady Rosebery'—*cinnabarinum* var. *Roylei* × 'Royal Flush', pink and orange forms—have come out but are flowering very little this year. 'Lady Berry' ('Rosy Bell' × 'Royal Flush') was frosted.

For all who can grow it 'Royal Flush' is undoubtedly the finest of these hybrids, but where 'Royal Flush' cannot be grown the other two are good stop-gaps.

Lord ABERCONWAY produced a primary cross last year between *cinnabarinum* var. *Roylei* and *polyandrum*, and I should think this will make a very valuable Rhododendron in due course.

Up to now most of the hybrids have been between species or a species and a hybrid, but I think mention must be made of some of the LOWINSKY Rhododendrons. He raised a good many at Tittenhurst and made numerous crosses, not only with a species on one side but

between hybrid and hybrid, with the result that a great many have had to be discarded. When he parted with his Rhododendrons, a large proportion of them came to Exbury. Unfortunately his book with the crosses in got mislaid and it is only possible to guess at some of the parentage. There are undoubtedly some outstanding and very beautiful seedlings amongst those which came to Exbury and grafts of a great many of the best have been given to nursery gardeners so as to make them available to the public.

Photo. R. Eudall]

FIG. 1.—The Peat Walls (*see* p. 33)

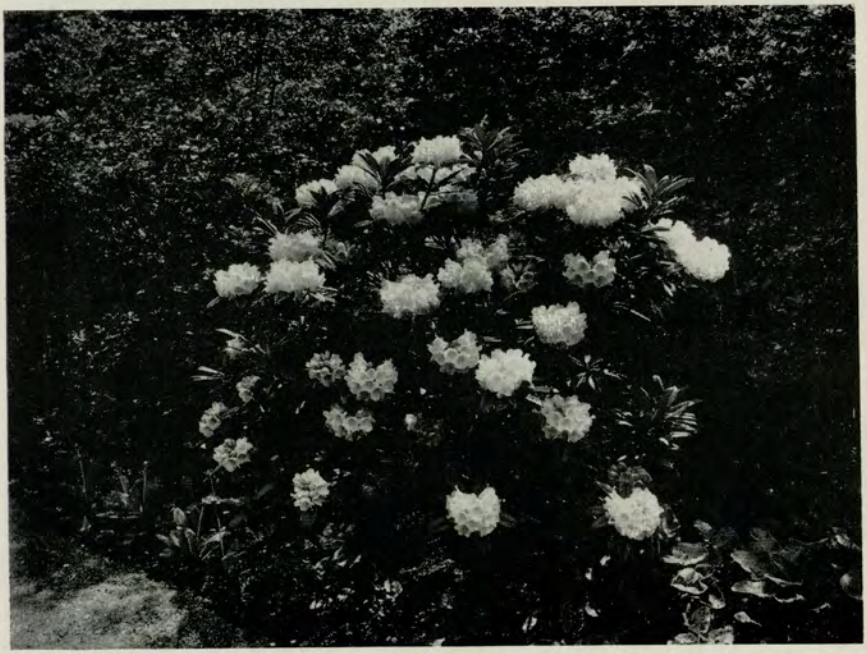
Photo. R. Eudall]

FIG. 2.—Part of the Rock Garden with Dwarf Rhododendrons (*see* p. 33)

Photo. R. Eudall]

FIG. 3.—*R. fastigiatum* on the Rock Garden at Edinburgh (*see* p. 56)

FIG. 4.—*R. puralbum* (*see* p. 56)



Photos. R. Eudall]

FIG. 5.—*R. insigne* (*see* p. 56)

RHODODENDRONS IN THE ROYAL BOTANIC GARDEN, EDINBURGH

by

Dr. J. Macqueen Cowan, C.B.E.

THE Royal Botanic Garden, Edinburgh, although rich in species of Rhododendron can lay no claim to exuberance of Rhododendron growth. The Scottish east coast climate—cold easterly winds, a sparsity of warmth and sunlight, late frosts and a meagre rainfall—is the very antithesis of Asiatic monsoon; and the soil, although not calcareous, is entirely lacking in humus—pure sea sand a few inches below the surface of the ground.

Nevertheless, when the soil is enriched with peat or leaf mould and there is shelter overhead, as in the Copse and Woodland Garden; or when the shelter of high hedges on either side is provided, as in the Rhododendron Walk; or again when terraces are specially prepared, as in the Peat Garden (Fig. 1) and in selected pockets of the Rock Garden (Fig. 2); then all but the more tender Rhododendrons may be grown with moderate success.

They have been planted, not as so often in Botanic Gardens in a definite geographical arrangement and not in accordance with some systematic scheme, but where it is thought that they may do best, and in planting due regard has been paid to aesthetic effect.

It is estimated that some four hundred and sixty different species are grown out of doors or with protection in the Rhododendron House, and hybrids are scarcely less numerous. Altogether the Rhododendrons in the Garden are far more than can be catalogued here or individually described, but this is no cause of embarrassment, since the records of the Garden afford a ready means of making choice. The many manuscript volumes in which these records are bound go back as far as the beginning of the nineteenth century, and we may also consult various documents of a much earlier date.

Recently on looking over the written pages it seemed to me that the many references to Rhododendrons might, when assembled and sifted, prove to be of unusual interest. Not only do they reveal facts with which we are unfamiliar, but they serve also to show how the genus came more and more to claim attention and at length to take a place of prominence in the affairs of the Garden.

The evidence afforded, although in itself too incomplete to form the basis of a fully documented account of the genus Rhododendron in the Garden, may yet be used advantageously as the groundwork of this narrative, since it may readily be supplemented from other sources, and in the long history of the Garden no chapter is of greater interest.

The compiling of the data, a preliminary task occupying some months, was undertaken by Mrs. P. KER, who was for a time a member of the Garden staff, and to whom I am much indebted for her assistance.

The beginning of the story takes us back to the seventeenth century —the Garden was founded in 1670. We may therefore glance very briefly at the seventeenth and eighteenth centuries before considering the nineteenth and twentieth centuries in greater detail.

THE SEVENTEENTH CENTURY

In 1683, not long after the Garden was founded, JAMES SUTHERLAND the first "Intendent", published his well-known *Hortus Medicus Edinburgensis*. This is a catalogue of all the plants grown in the Garden. Although for our purpose it has a negative value, since it shows that no Rhododendrons were then in cultivation, the fact is not without interest. The absence of Rhododendrons is not to be wondered at since the Garden, then known as the "Physical Garden", was primarily a place for growing medicinal herbs. Moreover, the omission is the less surprising when we recall that at this time only one species of the genus was then in cultivation, namely *R. hirsutum*. SUTHERLAND was an eager seeker after strange and unusual plants, but in those days journeys were difficult, roads were almost non-existent and ships between Leith and London were few; furthermore, JOHN TRADESCANT the younger, who is credited with this initial introduction—the date was 1656—was apparently somewhat averse to passing on his plants. Like evil deeds the words of his contemporary, THOMAS FLAXMAN, unkindly wise, live after him.

"Thus John Tradeskin starves our greedy eyes,
By Boxing up his new found rarities."

THE EIGHTEENTH CENTURY

As to the early eighteenth century we must first look beyond our records, since it would appear that no further catalogue of the trees and shrubs in the Garden was published till 1775.

From other sources we learn that PETER COLLISON of London, a man with a high reputation as a botanist, who had his own private Botanical Garden at Mill Hill, has the credit of some of the earliest introductions. He opened a large business with the American Colonies in men's

mercery, and it was he who first brought the American Azaleas into cultivation—*R. canescens*, *R. nudiflorum* and *R. viscosum* with several varieties, all in 1734; he also introduced *R. maximum* in 1736. Apparently these American species were in the country before the typical Alpine Rose had arrived from Switzerland, for, curiously enough, while *R. hirsutum* (as we have seen) was in Britain in 1656, *R. ferrugineum*, according to various authorities, was not introduced until 1752.

As to Edinburgh, the Garden catalogue of 1775 to which we have referred lists among trees and shrubs only three Rhododendrons, namely *R. ferrugineum*, *R. maximum* and *R. viscosum*. Thus, we observe, there was no great delay in the arrival of *R. ferrugineum* in Edinburgh, although the exact date when it was acquired is unknown.

It is interesting to note in passing that the large group of this species near the Pond may, perhaps, have come from the original stock. The celebrated WILLIAM MCNAB, whose portrait is reproduced on Fig. 8, Curator from 1810–48, planted a number of groups as the following extract from *The Garden* of 1876 shows. Referring to *R. ferrugineum* it is stated that "this succeeds in all parts of this land; but seems to thrive best in the north; for instance it may be seen in no greater perfection than in the Edinburgh Botanic Garden, where the late Mr. McNab planted some isolated groups on one of the lawns".

From the standpoint of the genus Rhododendron, as from that of the general history of Botany, the year 1753 is, of course, highly important, since it was then that the genus was founded by Linnaeus. Previously Rhododendrons had been known by other names such as Balsamum, Ledum, Cistus, Chamaerhododendron and Azalea. Linnaeus in the '*Species Plantarum*' not only established the genus Rhododendron, but also ranked Azalea separately as a genus. Of the nine Rhododendrons he described, under both names, five were then in cultivation and two more were imported later in the century.

As to the older names which now, excepting Azalea, have no connection with Rhododendrons, it is interesting to observe further that they were not merely classical names to be found only in the early herbals, but were sometimes used even in commerce. A nurseryman's catalogue, which must be one of the earliest in which Rhododendrons were offered for sale in Scotland, was published about the middle of the century, but without date. Among the items offered under the title "Garden, Grass, Foreign and Native Forest Trees and Flower Seeds" we find *R. maximum* appearing under the name Chamaerhododendron, sold by ROBERT ANDERSON "at his shop at the Sign of the Gilded Gardener, by the Cross, North Side, Edinburgh."

In 1761 the celebrated Dr. JOHN HOPE became King's Botanist and

Keeper of the Garden. He corresponded with many contemporary botanists, and Linnaeus he held in high regard. In 1799 he erected the monument which stands in the Garden to this day. An amusing caricature by Kay (No. 311), one of his portraits reproduced on Fig. 6, portrays Dr. HOPE standing by a row of flowerpots as he talks to one of his gardeners. A copy of HOPE's *Hortus Siccus* in his own handwriting is still preserved in the Garden library, but it gives no clue as to what was in cultivation, being concerned with Scottish plants as they occur in their native habitats.

As direct evidence of what was growing in the Garden during the century there is nothing to supplement the catalogue of 1775. As we have seen, three species of Rhododendron were then in the Garden but it is likely that several others were acquired shortly afterwards. Among them is included *R. ponticum*, believed to have been brought to this country from Gibraltar prior to 1763, which though not in the catalogue of 1775, is known from other sources to have been in the Garden twelve years later.

About this time PALLAS, the celebrated German traveller, who became a Fellow of the Royal Society while on a long visit to England, was responsible for three noteworthy introductions, *R. dauricum* in 1780, *R. luteum* in 1793 and *R. chrysanthum* in 1796. When Professor of Natural History at the Academy of St. Petersburg, he made a long and hazardous journey to Siberia and the frontiers of China, which he described in a published account entitled *Travels through the Southern Provinces of the Russian Empire in the years 1793 and 1794* (Leipzig 1801). Here he relates that *Azalea pontica* grows on the summit of Mt. Beshtau above tree limit and states that from the country of the Belshilbai tribe we obtain "that famous intoxicating or what is usually called maddening honey, which the bees collect from the blossoms of the Rhododendrons". The Azalea to which he refers, is, of course, now known as *R. luteum*. This species, however, was first introduced by his contemporary, Mr. ANTHONY HOVE, of Warsaw, whose plant was figured in the *Botanical Magazine* (No. 433) in 1799. He wrote in his diary, on 4th July 1796, "near Oczakov found thousands of these plants fully blown, in a marsh, every springtime overflown by the sea; found there also a Tartarian farmer, who lived entirely by the profits arising from the honey which the bees extracted from the flowers of these plants, sold to Constantinople and other parts of Turkey for medicinal uses".

No categorical statement can be made, but there is reason to presume that, by the end of the century, every one of the species already mentioned had found its way to Edinburgh. It is certain, at least, that

in the earliest manuscripts all their names appear, indicating that between 1810 and 1820 they were being freely distributed from the Garden. By the end of the century, however, only twelve species were known and ten were in cultivation, elsewhere if not at Edinburgh.

The Nineteenth Century—First Half

From near the beginning of the nineteenth century the practice of keeping despatch and donation books was instituted and these were maintained with some regularity for recording seeds and plants received and distributed by the Garden. Doubtless many plants actually in the Garden were omitted from unofficial records such as these, but they afford some definite reliable data. Incomplete as they are, the notes are illuminating, often revealing the original source of plants which are growing in the Garden even at the present time.

From the first book, which starts in 1810, we see that *R. dauricum* and *R. punctatum* (*R. minus*) were in cultivation in April of that year, while *R. ponticum* and *R. luteum* were added only a few months later.

It will be observed with interest that all the entries during that period refer to species from North-East Asia, America, Asia Minor and Europe; as yet from India or China no Rhododendrons had reached this country.

On several occasions gifts of seed were received from Russia. *R. dauricum*, from Dr. Ryan, of St. Petersburg, for example, is included amongst "Seed from the southern part of the Russian Empire" received in 1818. Then again *R. chrysanthum*, which is by no means a common plant in cultivation nowadays, was at that period frequently exchanged. It was sent to the Garden first in 1814 by Messrs. Loddiges & Sons from their nursery in Hackney; subsequently, in 1840 and 1841 by Dr. Fischer, who was then Director of the Imperial Garden, St. Petersburg, other correspondents also sent or received it from time to time. Another well-known species from Asia Minor, *R. caucasicum*, introduced to the country in 1803, reached Edinburgh in 1814.

As to *R. minus* the American species, referred to above, this was received from John Fraser, who is commemorated by the genus *Frasera*. He was a native of Inverness and, it will be recalled, he made seven journeys to America to collect plants; he also visited St. Petersburg. From the year 1770 his headquarters were in London, where he established a nursery at Sloane Square, Chelsea. Several other American species were introduced by him, including *R. catawbiense*, which was soon to play a part of first importance in the breeding of hybrids. This he discovered in Carolina in 1808 and introduced to Britain in 1809; by 1815 it was in the Garden at Edinburgh. Another entry dated May

1813, "*R. maximum* and *R. hirsutum* received from MR. FRASER", presumably referred to a further donation by the same JOHN FRASER, and I was somewhat surprised to discover that he died in 1811. The enigma, however, was quickly explained because his son, also John Fraser (who accompanied his father on several of the expeditions to America), carried on the business after his father's death, later establishing a nursery at Ramsgate.

The paucity of species available at the time of which I write is manifest in the lack of Rhododendrons from China; only one is included in the books of the first decade of the nineteenth century. This singular species, *R. obtusum*, was then known as *Azalea indica*, and was supposed to have originated in India, but, as is now common knowledge, is a native of China, not of India. It was first brought to this country by the Directors of the East India Company in 1803 and reached Edinburgh in April 1815. No risks were taken for, as we are informed, it was kept "in an airy part of the greenhouse", a policy of overcautiousness which continued over a long period and was responsible for many deaths and failures.

Five years more were to elapse before there was notification of any seed having been sent from India. Moreover, it is remarkable that the first Rhododendrons from India should have come from Nepal, a more or less forbidden land to Europeans from then almost to the present. The consignment in question, which arrived in 1820, consisted of "*R. arboreum fl. rubra*, *R. arboreum fl. albis* and *R. aromaticum*" (the last, though aptly named, is more familiar as *R. anthopogon*), sent by Dr. HAMILTON to WILLIAM MCNAB, who was then Curator.

The proceeds of WALLICH's famous expedition reached us in the following year (1821), when WALLICH himself forwarded some of his Nepal seed from Calcutta. The package contained eight Rhododendrons without information as to their identity and this was followed by another unspecified collection from him in 1822. Yet another donation of WALLICH's Nepal seed reached the Garden in the same year through Mr. A. B. LAMBERT, of Boyton, who was for nearly fifty years vice-president of the Linnaean Society.

By now GRAHAM had succeeded RUTHERFORD as Keeper of the Garden and among his many correspondents were HAMILTON, WALLICH and LAMBERT, all three of whom had other connections with Edinburgh.

Dr. HAMILTON, who was born at Bardowie, Stirlingshire (and later was known as Buchannan-Hamilton of Leny, near Callendar), had graduated M.D. at Edinburgh in 1783. When a medical student he studied Botany under HOPE and, like ARCHIBALD MENZIES before him and many other students after him, was not forgetful of the Garden.

On qualifying he joined the East India Company and served for three periods in Nepal (1802–3, 1810 and 1813–4) as well as in Bombay, Malaya, Burma, Madras and Bengal. HAMILTON has the distinction of being the first botanist to make extensive collections in Nepal and furthermore he was the first to secure Himalayan seed for cultivation in this country. Subsequently he became Superintendent of the Calcutta Garden, a post which he held for about a year (1814–5), and in which he was succeeded by WALLICH.

NATHANIAL WALLICH, an M.D., of Copenhagen, was Superintendent until 1841. His portrait is reproduced on Fig. 10. His visit to Nepal, an outstanding event in the history of Indian botany, took place in 1820, but then, as later, the authorities did not allow visitors to the country to go far from the capital, Katmandu; he therefore enlisted the services of Indian pilgrims visiting the shrine of Gossain Than, which is some days' march from the capital, at about 16,000 ft. They collected for him, and his botanical material formed the basis of the famous Catalogue. One commentator remarks that to have described all the plants of the Wallichian series would be beyond the powers of anyone who had only 365 days in the year and less than one hundred years of life. There is no information whether or not WALLICH ever visited Edinburgh, but his son George took his M.D. there in 1836 and later went to India.

LAMBERT also had a link, if not a direct one, with Edinburgh through his assistant, DAVID DON, who described most of WALLICH's Nepal material in his *Prodromus Florae Nepalensis*. David was the second son of GEORGE DON, Curator at Edinburgh from 1802–6.

Correspondence shows that WALLICH's seed germinated well, for amongst letters preserved in the Garden there is one from the Curator of Kew, dated 1826, in which he asks for any spare seedlings of WALLICH's *R. arboreum*, since those at Kew had unfortunately been killed by frost. Attached is a reply stating that seedlings were available and that two dozen had been sent.

Nowadays we like to suppose that the great *R. arboreum* in the Rhododendron House at Edinburgh is one of these original seedlings. Certainly the tree is a large one, an old plant, which within living memory has scarcely increased in size, and for the past fifty years it has been reaching the possible limit of height and growth. Its branches have been repeatedly cut back to keep it within bounds in the house; of a venerable age, no one can assert that it is not old enough to have been one of WALLICH's seedlings, but for proof we must await the time when the tree is cut down and the annual rings can be counted.

The next entry worth noting marks the receipt of *R. camtschaticum*

from Moscow in 1821, about twenty years after its first introduction. This is a plant which grows exceedingly well in the Rock Garden. Further, we may observe that for a number of years at about this time *R. lapponicum*, then obviously more plentiful than it is today, was frequently being sent out to correspondents.

A second species was introduced from China in 1823 and appears in our lists in 1827. This is *R. molle* mentioned in 1827 by SWEET in the *British Flower Garden* (Ser. I t. 280), where he writes of *A. sinensis* (i.e. *R. molle*) as lately imported.

As we scan the pages, a note which immediately arrests the eye informs us of a shipment of Rhododendrons to St. Helena in February 1827, when eight species were despatched to "General Walker", who was then the Governor of the Island. An officer of the East India Company, under whose jurisdiction the island was at the time, he had been recalled from retirement in Edinburgh to go to St. Helena in 1823. According to PHILIP GOSSE (*St. Helena*, 1938) and other writers WALKER did much to alleviate poverty by organizing agricultural and horticultural shows and competitions, when many of the islanders were without employment. This followed Napoleon's death on 5th May 1821, and the subsequent withdrawal of his suite. But the experiment with Rhododendrons was presumably no more successful than another organized by this enterprising Governor; an attempt to introduce and establish silk worms. Anxious to ascertain the fate of these Rhododendrons I wrote to the Government Secretary, St. Helena, who informs me that, "it is thought they did not survive very long as no mention is made of them in old reference books. The Agricultural and Forestry Officer after inquiries and careful search gives his assurance that there are now no Rhododendrons growing on the island". Another correspondent, however, writes that a few years ago he imported seed and succeeded in raising a number of plants which are still alive and quite healthy.

The later pages record again the name, presumably of the same General WALKER. It would appear that he sent seed from Ceylon in 1831, 1832 and 1837. Whether or not the staff of the Garden were aware of the facts is not known, but the truth is that Brigadier-General ALEXANDER WALKER was "General Walker" of St. Helena while Brigadier-General GEORGE WARREN WALKER was "General Walker" of Ceylon. If, however, the printed biographies are correct the Ceylon WALKER should have been entered as "Colonel" since he did not attain the higher rank until 1840. Be that as it may, the authors of *British and Irish Botanists* have certainly confused the two men. They cite GEORGE WARREN WALKER as having been appointed Governor of St.

Helena in 1828, but he was never there, and they give him credit for *Cycas circinalis*, figured in the *Botanical Magazine* (1826), which was rightly due to Alexander.

An account of the ascent of Adam's Peak and of the discovery of *R. zeylanicum* is given by Mrs. A. W. WALKER, wife of Colonel G. W. WALKER, in a letter written to Sir JOSEPH HOOKER which was published in the *Gardeners' Chronicle* in 1845 (p. 607), but this does not concern us here.

When we look at these Ceylon records more closely, however, a point of some importance emerges. Seed described as *R. arboreum* was sent in 1831 and 1832. It came as *R. zeylanicum* in 1837, with the remark "scarlet tree Rhododendron of Ceylon found on a mountain 8,000 ft. above sea". The different entries undoubtedly refer to the same species because one only (*R. zeylanicum*) occurs in Ceylon. Furthermore, it would appear, therefore, that these entries in our registers have the distinction of establishing the fact that *R. zeylanicum* (which is also known as *R. Rollissonii*) was first introduced, not in 1843 as is commonly supposed—the date given by AITON, PAXTON and other authorities—but about eleven years earlier. All three donations, it will have been remarked, were made prior to 1843.

The Ceylon Rhododendron comes from comparatively low elevations but it is reasonably hardy in Edinburgh; a large plant in the Rhododendron Walk is no less vigorous than one with protection in the Rhododendron House.

Here and there throughout the earlier manuscripts we come across names which are unfamiliar and no longer current in gardening literature. One of these, *R. Danielsianum*, received in 1835, was named in honour of Captain DANIELS of the East India Company, who in 1830 brought home from China several cases of rare plants including many Azaleas for Mr. TATE of Sloane Street. Since his Azalea proved to be identical with *R. indicum* the name has disappeared in synonymy.

As to another entry of 1835 I can offer no explanation. It reads as follows: "From Cape of Good Hope, Mr. WILSON, Rhododendron."

Another again refers to a consignment of five Rhododendrons and Azaleas addressed to Sydney in 1845; I wonder whether this marks the first introduction of Rhododendrons to Australia where many are now successfully cultivated.

At this stage it is necessary to say a few words about hybrids. It is not by deliberate intent that so far they have been overlooked; the fact is that the Rhododendrons listed were actually species. The artificial raising of hybrids was not indeed attempted until well into the eighteen-twenties. One hybrid, however, which I omitted to

mention, was acquired in Edinburgh as early as 1814. This, curiously enough, was an Azaleodendron—the Azalea and Rhododendron cross known as *R. azaleoides*. MILLAIS writes of it:

> "The first hybrid raised in this country of which we have any account is one that resulted in Mr. THOMSON'S nursery in London through the accidental crossing of *R. ponticum* and *R. nudiflorum*. It is still well known today under the name of *R. odoratum* or *R. azaleoides*, and is a useful floriferous and sweet-scented shrub, being intermediate in habit between the evergreen Rhododendron and the deciduous Azalea section."

With this single exception no hybrids appear in the records prior to 1828. From then, however, they recur with increasing frequency, until by 1850 large numbers were being sent to, or received from, correspondents all over the country. The awakening interest in hybridization and experiments in grafting may perhaps explain the despatch of five hundred *R. ponticum* to two correspondents and one hundred *R. maximum* to a third in the year 1827.

The earlier breeders used only *R. ponticum*, *R. maximum*, *R. catawbiense*, *R. caucasicum* and a few American Azaleas, "swamp honeysuckles" as they were called. At first *R. arboreum* was considered to be too tender for use in breeding, but soon its value was fully appreciated and by 1830 it was being used freely. Yet with these few species, by intercrossing and recrossing, a very large number of hybrids were raised and as the years passed, with further interbreeding, parentages became more and more obscure. Nurserymen vied with each other in publishing long lists of names in their catalogues, at best with the briefest description or a mere indication of origin, and thus little is known of these earlier hybrids; the great majority are now lost to cultivation. Given a specimen of one of the few that survive, unless it has still its label attached or is one of those that were illustrated or happen to be still in commerce, there is no means of determining its original name. It is possible only to hazard a guess at the identity and origin. In the catalogues both 'fancy' names and latin names were used indiscriminately and it is perhaps as well that most of them have long ago been forgotten. To revive the Latin names would undoubtedly raise questions of priority likely to disturb the nomenclature of some more recent well authenticated species. In this connection the early catalogues of Messrs. PETER LAWSON & SON LTD., Edinburgh, and of Messrs. STANDISH & NOBLE, Bagshot, which were kindly lent me, are informative and have been of the greatest interest. These firms were both frequent contributors to the Garden at this time.

Towards the middle of the century hybrids became more and more prevalent in the lists of donations and purchases; large numbers were acquired by the Garden. The largest single consignment was received in 1849, sixty unnamed hybrids—from Messrs. DICKSON & TURNBULL of Perth—but usually the names are entered in detail. By 1850 hybrids actually outnumbered species (among the references to Rhododendrons) and this continued for about twenty-five years when the position was again reversed.

In discussing hybrids we have, however, outrun our general narrative and must now turn back a decade to bring it chronologically into line.

Nearly ten years before HOOKER explored the Eastern Himalayas, Dr. A. CAMPBELL, who had been formerly assistant to B. H. HODGSON, British Resident in Nepal, had taken up residence in Darjeeling where he had been sent to open the Sanatorium, and to be Political Resident in the district. Dr. CAMPBELL, who was a native of Argyll, was keenly interested in the Himalayan flora and from time to time sent seed to various friends at home in Scotland. According to Sir HERBERT MAXWELL, who is doubtless correct, some of the veteran Rhododendrons in the garden at Stonefield, near Tarbert in Argyll, were raised from this seed. As early as January 1840 a donation came to Edinburgh: "From the Himalaya Mountains, Seeds from Mr. CAMPBELL, White Rhododendron very scarce and handsome—a second species of White Rhododendron." In the Himalayan Journals, we read of how CAMPBELL was attacked and taken prisoner by the natives when he was accompanying HOOKER on one of his journeys and HOOKER acknowledges the great debt he owed him and to Mrs. CAMPBELL after whom he named *R. Campbelliae*.

The common Himalayan species *R. campanulatum* is first recorded in 1835. It was sent again in 1841 by Dr. ROYLE, from the Botanic Garden at Saharanpur, from which many donations were received.

This Botanic Garden, originally an old Mohammedan garden at the foot of the Himalayas, was opened in 1820, only thirty-three years after the Calcutta Botanic Garden had been founded by Colonel KYDD in 1787. Dr. ROYLE, its first Curator, who was born at Cawnpore, was educated at the Royal High School, Edinburgh. He entered the Bengal Medical Service and became Curator of Saharanpur in 1823. Returning to London in 1831 he became Professor of Materia Medica at King's College and Dean of the Faculty of Medicine, and he was also Secretary of the Royal Horticultural Society from 1851-58.

Of another common Himalayan species known before HOOKER's time, namely *R. barbatum*, MILLAIS writes that "it was first found in

Sikkim in 1829 at which date Colonel SYKES probably sent seed to Edinburgh". However, I can find no record of any such donation. *R. barbatum* first appears in our register in April 1850 and next, in 1856, under the name *R. longifolium*.

The Madras Rhododendron, *R. nilagiricum*, which was discovered in the Nilgiris by the Rev. SCHMIDT, was described by ZENKER in 1836 and is first entered in January 1849. The plant sent to the Garden on this occasion was the var. *roseum*. This is of interest, for Mr. LATHAM, who was for a long time a member of the Indian Forest Service in Madras, tells me that in the Nilgiris the flowers are scarlet. They are pink only on shoots which are attacked by a fungus causing Witch's Broom.

Further references to this species are found in the volumes for 1856, 1862 and 1865.

The first of these refers to a donation from Mr. W. G. McIVOR, Superintendent of the Nilgiri Cinchona Plantations. Through Sir CLEMENTS MARKHAM, Cinchona was introduced to India from Peru in 1861 and it was mainly due to the skill and perseverance of McIVOR that the Madras Government Cinchona plantations were successfully established. When I visited them over twenty years ago some of the original trees were still standing. McIVOR, who was born at Dollar, Clackmannan, died at Ootacamund in 1876.

The second came from Miss WALKER of Drumsheugh—to whom the City of Edinburgh was indebted for the funds to erect St. Mary's Episcopal Cathedral. Whether or not Miss WALKER ever visited India—she sent us Indian seed from time to time—and whether she was related to General WALKER of Ceylon I have not been able to ascertain, but she was keenly interested in growing Rhododendrons. An article contributed to *The Scots Farmer*, which was reprinted in abbreviated form in the *Gardeners' Chronicle* of 1865, describes how she contrived to have a sequence of Rhododendrons in flower throughout the greater part of the year. A list of the species and hybrids which she grew with this object in view is given in the article mentioned above.

The third donation was from H. F. C. CLEGHORN, another Edinburgh graduate in Medicine, a correspondent of Professor J. HUTTON BALFOUR and a contributor to the Transactions of the Botanical Society of Edinburgh. Primarily an officer in the Madras Medical Service, he was instrumental in founding the Indian Forest Service and, after officiating as Conservator, he became Inspector General of Forests in 1867.

THE NINETEENTH CENTURY—SECOND HALF

The second half of the century begins appropriately with the advent of seed from Sir JOSEPH HOOKER, collected on his Himalayan journeys

from which he returned in 1851. It is universally agreed that these journeys, so vividly described in the Himalayan Journals, hold a place of highest esteem in the annals of botanical exploration. The account which HOOKER gives of the country, its peoples and their customs, its contours and climate, and his descriptions of its rich vegetation constantly changing with increasing altitude from the low-lying tropical Terai to the upland pasturelands of the Tibetan border, has never been surpassed. Had he confined his observations solely to the genus Rhododendron, even then it would have been said that his contribution to our knowledge of the flora of the Eastern Himalayas was one of greatest significance; and it is a tribute to the thoroughness of his work that no new really distinctive Rhododendron has subsequently been found in this region, although the whole territory has been repeatedly and carefully explored by many other competent botanists.

Except for the few Sikkim species we have already noted, and one or two others, all the rest which now we know so well were discovered by HOOKER, and most of them were described by him in his beautifully illustrated folio volume *Rhododendrons of the Sikkim Himalaya*. Under the heading "Sikkim Rhododendrons, Dr. Hooker", and dated April 1850 a package was forwarded from Kew which included *R. campylocarpum*, *R. Falconeri*, *R. grande*, *R. fulgens*, *R. niveum*, *R. Wallichii*, *R. lanatum*, *R. Dalhousiae*, *R. glaucum* and *R. lepidotum*. This obviously came from Sir WILLIAM HOOKER who, having previously occupied the Chair of Botany at Glasgow University, had by then become Director of Kew. Two years later he sent plants of *R. Hodgsonii* and *R. Maddenii*, while *R. Campbelliae* arrived in 1856. *R. Thomsonii* and *R. Wightii* were not recorded till 1879, but possibly they were received earlier.

From the introduction to *Rhododendrons of the Sikkim Himalaya* we learn that in choosing names for his new species Sir JOSEPH HOOKER wished to honour the botanists "well versed in the vegetation of the country" whom he met on his journeys. Several had been medical students at Edinburgh, taking part of their course at the Royal Botanic Garden. Since these men are less well known than the Rhododendrons which bear their names, a few biographical details may be of interest.

Dr. HUGH FALCONER, after whom *R. Falconeri* is named, and whose portrait is shown on Fig. 9, was born at Forres in Morayshire. After taking an Arts degree at Aberdeen in 1826, he attended the Medical School at Edinburgh, and studied under GRAHAM, taking his M.D. in 1829. He secured an appointment as Assistant Surgeon in the East India Company's Service in Bengal. But according to the rules then in force, he was too young to proceed to India at once, and before eventually going out in 1830, he spent some time helping WALLICH in

London to distribute his collections. In 1831 he met ROYLE at Saharanpur and in the following year succeeded to the charge of that Garden. For health reasons he returned home in 1842, bringing with him, as it is recorded, seventy chests of herbarium specimens and forty-eight cases of fossil bones, the latter alone weighing five tons and costing in transit £600. FALCONER was able to return to India in 1848 to take charge of the Calcutta Garden and he was there at the time of HOOKER's visit.

Mr. B. H. HODGSON, after whom *R. Hodgsonii* is named, was British Resident at Katmandu at the Court of Nepal from 1823–43, and before going to Darjeeling Dr. CAMPBELL had for some years been in Nepal as his assistant. Sir WILLIAM HUNTER in his *Life of Hodgson*—a full account of the man and his work—refers to his keen interest in plants and to his valuable botanical collections. When HOOKER visited Sikkim, HODGSON was living in retirement in Darjeeling.

Major MADDEN, whom HOOKER described as "a good and accomplished botanist", was a Fellow and President of the Botanical Society of Edinburgh, and he died in Edinburgh in 1856.

Lord DALHOUSIE, whose family seat is at Brechin in Angus, was then Governor-General of India. As to *R. Dalhousiae*, we may quote HOOKER's own words—"to the Lady of the Present Governor-General of India I have as a mark of grateful esteem and respect, dedicated the noblest species of the whole race".

Dr. THOMAS THOMSON, after whom *R. Thomsonii* is named, was the son of an Edinburgh doctor, who took his M.D. at Glasgow, studying there under Sir WILLIAM HOOKER. He joined Sir JOSEPH HOOKER at Darjeeling in 1849 and they botanized together, returning to England in 1851 with thousands of plant specimens. Thereafter, he collaborated with HOOKER in the classification of many new plants. Then he returned to India in 1855 to take charge of the Calcutta Botanic Garden until 1861, when he was invalided home (Fig. 7).

It is impossible, now, to determine how many of the older Himalayan Rhododendrons in the Edinburgh Garden (and they are very fully represented by large specimens) were actually raised from HOOKER's seed, because all have been repeatedly reintroduced. But it is highly probable that the large *R. Hodgsonii* in the Rhododendron Walk, which flowered freely for the first time only a short time ago, is one of them. Perhaps the severely stunted *R. Falconeri* may be another. It was for a long time grown indoors in a tub. The very large *R. Maddenii* in the Rhododendron House has not changed much within living memory. Two years ago a very large *R. fulgens*, on the lawn near the top of the hill, was removed because it had been "going back" for

many years; I have little doubt it was an original introduction. Another perhaps is the large *R. campylocarpum* which, after flowering freely for many years, is now decrepit and may soon have to be replaced. But most of the other Himalayan species in the Garden, even the larger plants, are more likely to have been introduced later, for in 1872 when Sir GEORGE KING was Superintendent at the Botanic Gardens, Calcutta, and at intervals thereafter, seed of Himalayan species was again received. When I had charge of the Calcutta Garden in 1926–8 it had become a matter of regular routine to set out every year in September or October, accompanied by the well-known Lepcha collectors RIBU and RHOMO, for a three or four weeks' seed-collecting tour to Sikkim as far as the borders of Tibet, and seed was afterwards distributed. The generosity of the Superintendents of the Calcutta and Saharanpur Gardens continued for a very long period and has indeed been an important factor in our garden flora, a debt which is gratefully acknowledged.

To attempt to follow in detail all the acquisitions of the second half of the century would be repetitive and tedious. The species of earlier years reappear again and again; to these the later Himalayan species have now been added, and they likewise frequently recur. Furthermore, many more nurserymen had by this time become interested in Rhododendrons and the archives are swollen with long lists of hybrids, often with names no longer of consequence.

From the manuscript pages I propose to select only a few of the more noteworthy items, confining my comments to such as are of greater interest and following closely the sequence in which they occur.

First we revert to 1851, when another Himalayan species, *R. formosum*, was received under the name *R. Gibsonii*. Mr. J. GIBSON, who was collector to THE DUKE OF DEVONSHIRE, explored the Kashia Hills in 1837 and discovered this very beautiful species, "in thickets where *R. arboreum* is abundant". It had, however, been found previously in the same region in 1815, and was included in WALLICH'S catalogue so that the Wallichian name took precedence.

Another entry of June 1851 relates to *R. javanicum*, received from "Mr. LOW, Clapton Nurseries". This raises an interesting speculation. To whom are we primarily indebted for these plants? Was it to Sir HUGH LOW, who was connected with the "LOWS of Clapton" and who had more than forty years experience of Colonial Administration in the East Indies, or was it to THOMAS LOBB the well-known collector for the firm of Messrs. VEITCH of Chelsea? Sir Hugh, on his way out to take up an appointment with the East India Company, happened to travel on the same ship as Sir JAMES BROOKE and became so much

attached to him that he gave up his appointment and joined the future RAJAH OF BORNEO as his secretary and companion. Sir Hugh will be remembered as having made the first ascent of Mt. Kina Balu in 1851 when he found no less than thirteen new species of Rhododendron, as well as the giant Nepenthes *N. Rajah*. The Rhododendron *R. Lowii* is named after him, as is the magnificent *Vanda Lowii*, one of the many fine orchids he collected in Sarawak.

According to various authorities, THOMAS LOBB, who collected so widely for his famous firm, had the credit for the introduction of *R. javanicum* in 1847. LOBB visited Borneo and he and Sir HUGH LOW botanized and collected together. The Bornean Rhododendron which is named after him, *R. Lobbii*, reached Edinburgh in 1870. Several other East Indian species, among them *R. Brookeanum*, were also introduced by LOBB.

The next event to which our attention is directed is ROBERT FORTUNE'S epoch-making journey to China. *R. Fortunei* was purchased for the Garden in 1859; by then it had been for three years in Mr. GLENDINNING'S Nursery at Turnham Green.

After training at Edinburgh, FORTUNE was sent out to China by The Royal Horticultural Society, and in *The Gardeners' Chronicle* of 29th October 1859 he writes as follows:

> "When on one of my long journeys in the province of Chekiang (West from Ningpo), I accidentally met with this fine species amongst the mountains, about 300 ft. above the level of the sea. The discovery was most unexpected, for although the lower parts of these mountains are covered with the allied genus Azalea, no Rhododendron had been known to exist in this part of China. The specimens I met with were of all sizes, from a year's seedlings to full-grown plants, the latter being 10 to 12 ft. in height. The large plants had been covered with flowers a short time before, and the ground under the branches was now strewed with decayed blossoms, but not in a state fit for examination. I was told on all sides by the natives that the plants were most beautiful objects when in full bloom. When I returned to the same place in the autumn I found an abundance of ripe seed, which has vegetated freely in Mr. Glendinning's Nursery at Chiswick."

He adds this arresting and revealing remark:

> "The only other species of Rhododendron known in China is *R. Championae* (HOOKER), a pretty plant discovered by the lamented Colonel Champion on the Honkong Hills."

FIG. 6.—Dr. John Hope and his gardener (From Kay's Original Portraits)
(*see* p. 36)

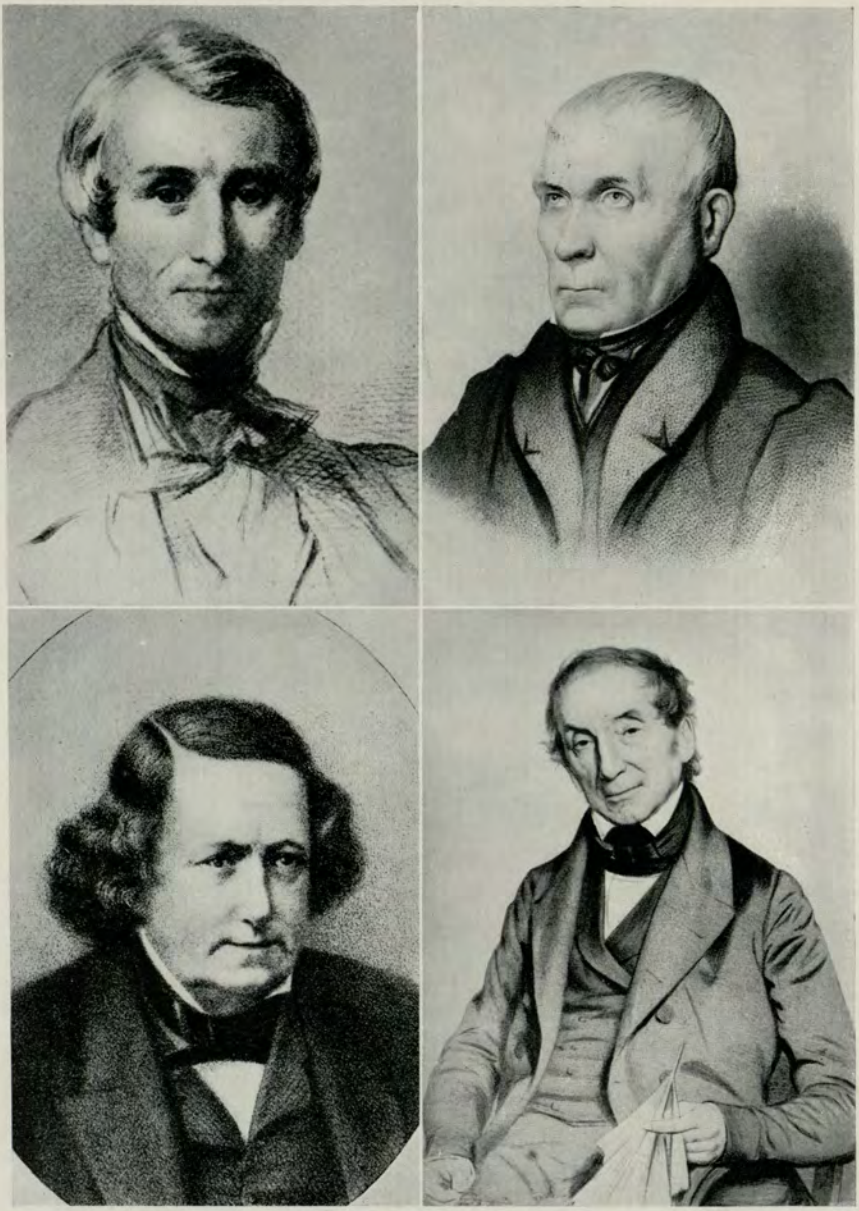


FIG. 7.—(Top left) Dr. T. Thomson (*see* p. 46)
FIG. 8.—(Top right) W. McNab (*see* p. 35)
FIG. 9.—(Bottom left) H. Falconer (*see* p. 45)
FIG. 10.—(Bottom right) N. Wallich (*see* p. 39)

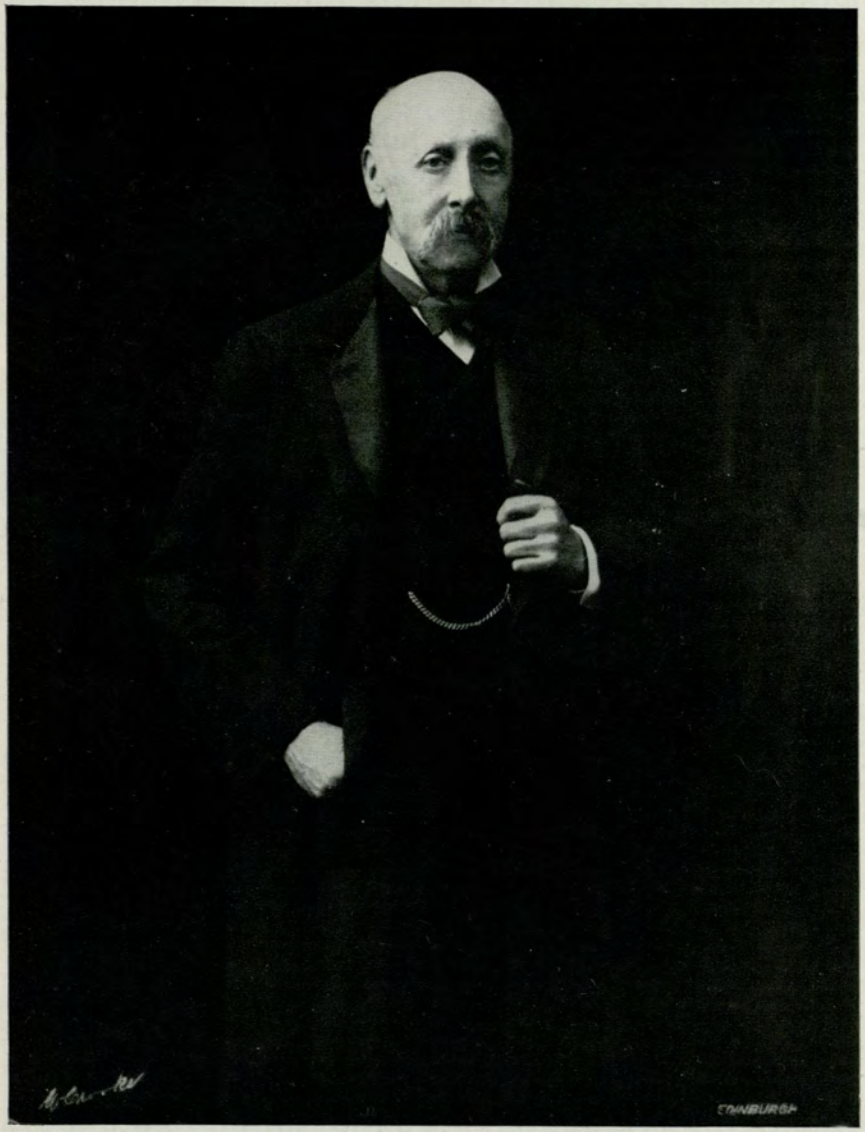
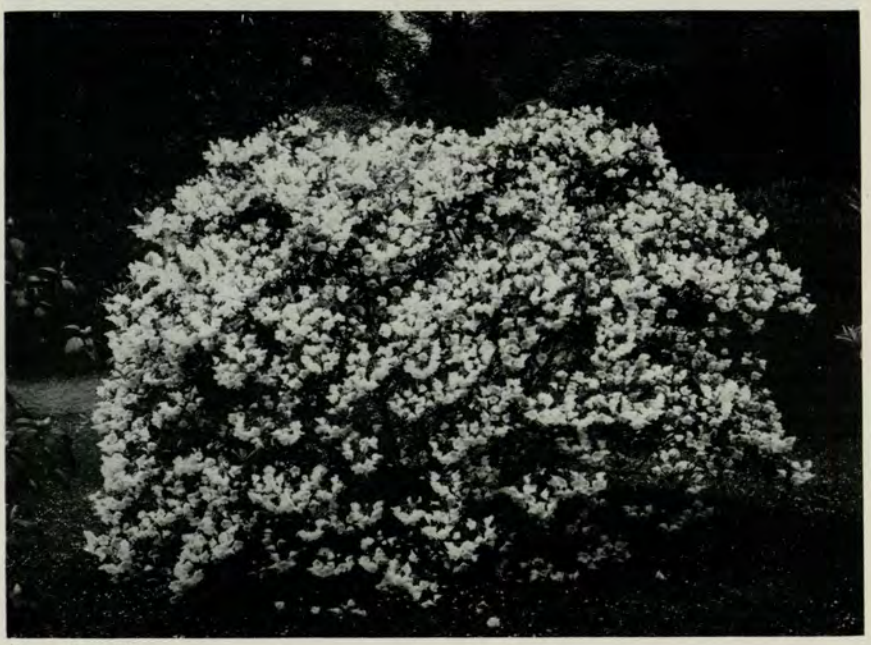


FIG. 11.—Sir Isaac Bailey Balfour (*see* p. 52)

FIG. 12.—*R. Wardii* (*see* p. 56)



Photos. R. Eudall]

FIG. 13.—*R. Souliei* (*see* p. 55)

It was about this time, too, that NUTTALL, who had returned from America in 1842, was distributing plants from Mosley Hill, which he had raised from seed collected by his nephew T. J. BOOTH in Bhutan. No authentic information as to the origin of the large *R. Shepherdii*, now in the Woodland Garden, is available, but though seed was collected by BOOTH and it is a Bhutan plant, it was probably acquired later. *R. Nuttallii*, however, was sent us by NUTTALL himself in 1862. Another Bhutan species introduced by BOOTH, *R. Keysii*, does not turn up until 1898.

There is no mention of any Rhododendron from Japan prior to 1866. In that year seed of *R. Metternichii* and of an unspecified Japanese Azalea reached Edinburgh from St. Petersburg. The botanist, Dr. ZUCCARINI, who describes *R. Metternichii* in his *Flora Japonica*, where it is beautifully figured, relates that he was given a plant by Prince SATZUMA during his stay at Jedoo in 1826. He named it after Prince METTERNICH, who had interested himself in Rhododendrons. ZUCCARINI attempted to bring living plants home to Europe, but they died in transit while he was in Batavia.

No other Japanese species appears to have reached the Garden till 1897, when the graceful *R. quinquefolium* was received from Kew.

If the text can be taken as reliable, the next reference to a Rhododendron from Japan, in 1898, has a special historical significance. The name is clear enough—*R. mucronulatum*—although the source of origin is not given. According to the *Botanical Magazine* (t 8304), *R. mucronulatum* was not introduced until 1907, when a batch of plants was obtained by purchase from a firm of nurserymen in Yokahama for Kew. If therefore the Edinburgh manuscripts are correct they indicate an earlier introduction, and indeed *R. mucronulatum* may perhaps have been in cultivation long before 1898. It was described as early as 1837 and since MAXIMOWICZ, the author, considered it to be a variety of *R. dauricum*, it may quite probably have been included among the many donations of *R. dauricum* from St. Petersburg.

With regard to hybrids recorded as having been received during the second half of the century, it will suffice to mention only a few. Like those of the earlier years the great majority (and enormous numbers were raised) are lost to cultivation and their names forgotten. 'Lady Elaine Cathcart', 'Jacksonii', 'John Waterer', 'Venus', 'Broughtonianum', 'Everestianum' and some others less noteworthy, which were in cultivation at Edinburgh by 1860, are, however, still with us.

The 'Countess of Haddington', listed as new in 1862, was received from the raiser, Mr. R. PARKER, Exotic Nursery, Tooting, in 1863.

The well-known *R. praecox* was exhibited to The Royal Horti-

cultural Society as a new plant in 1861, and reached us in 1865. The Praecox hedge, which is 55 yd. long, attracts large numbers of visitors to the Garden when it is in flower. The flowering period varies according to the season, any time from early February to April, and lasts for a fortnight, or more often only for a day or two since the buds are frequently cut by frost almost as soon as they expand.

'Lord Palmerston', now on the Hill, was first received in 1869.

Another hybrid, a cross between *R. ciliatum* and *R. Edgeworthii*, raised about 1860, known as *R.* 'Macnabianum', in honour of McNAB the Curator, is no longer in the Garden and is probably lost to cultivation.

Of the firms of nurserymen whose names figure prominently in our records some are still active, some have disappeared. From 1850 onwards, besides P. LAWSON & SONS, Edinburgh (who produced the first *Griffithianum* hybrids), and STANDISH & NOBLE, of Bagshot, already mentioned; we note such names as Messrs. JACKSON, Kingston; VEITCH & SONS, Exeter and Chelsea; CUNNINGHAM, FRASER & CO., Comely Bank, Edinburgh; T. METHVEN & SONS, Edinburgh; OSBORN & SON, Fulham Nurseries, London; ROLLINSON & SONS, Tooting; SANDER & CO., St. Albans and BACKHOUSE & SON, York and others who supplied plants from time to time.

It may seem strange, looking back from our present view-point, that few other Rhododendrons from China should have reached Edinburgh prior to 1900. Knowing of the activities of the French Missionaries—DELAVAY, DAVID, FARGES, SOULIÉ and the others—we might have expected an influx of new species, but only two, in particular *R. Delavayi* and *R. racemosum*, came as far as Edinburgh. The plant of *R. racemosum*, described in the *Botanical Magazine* (No. 7301), in 1893, was sent by BALFOUR from Edinburgh, where it had flowered in March of that year. Another plant in flower was exhibited to the Botanical Society of Edinburgh at their April meeting in 1894. Seed of a few species was sown at the Jardin des Plantes and at M. MAURICE VILMORIN'S nursery in Paris and these were the first Rhododendrons from China to be cultivated in Europe after the introduction of *R. Fortunei*. Although many new species were described—DELAVAY alone sent enormous quantities of herbarium material to FRANCHET in Paris—only three or four were established in cultivation. As we all know, the field was left wide open for the collectors of the present century to rediscover and to introduce most of the plants which the French missionaries had found and to discover many others they had never seen.

As to other parts of the world, two further donations from Kew can be reported—*R. afghanicum* discovered by Major AITCHINSON in

Afghanistan in 1878, sent to us in 1893, and *R. simiarum*, collected by Mr. C. FORD at Kwantung, in China, received under the name *R. Fordii* in February 1895.

Thus we come to the end of the century, with our knowledge of the Rhododendrons of Europe, America and India almost complete. Some three hundred species were known, including a number from the East Indies, China and Japan, but not more than some thirty were in cultivation. Hybrids were more numerous and by now *R. Fortunei* had become the parent of a new race of hybrids, but virtually the whole wealth of China was still almost unsuspected and unknown.

THE TWENTIETH CENTURY

The phenomenal rise of the genus to its place of importance in the twentieth century is a matter of common knowledge. The remoter western provinces of China, with the adjacent parts of Burma and Tibet, proved to be a region rich in Rhododendron species far beyond all expectations, and for the eventual realization of those riches we are indebted primarily to a few men who devoted all their energies to the botanical conquest of these regions. The names of these explorers—E. H. WILSON, G. FORREST, R. FARRER, J. F. ROCK and F. KINGDON WARD—are as familiar in Rhododendron circles as are those of the greatest adventurers in wider spheres.

But without in any way detracting from all that they accomplished, it may be said with truth that their combined efforts, with all their enthusiasm, would not alone have raised the genus to its present status. Without the response of gardeners, amateur and professional alike, without the fervour and imagination which enabled them to devise new ways of growing and accommodating their plants, the modern Woodland Garden, with its wealth of Rhododendrons, would not have been evolved. Furthermore, without the stimulus of the botanists on the scientific side, without their eager and active co-operation in the naming of species and in their classification, the advance in our knowledge of the genus would have been far less spectacular.

The hazardous journeys of the various collectors and many of the plants they discovered have been described in numerous books and in botanical and horticultural journals. For an excellent summary we have the account of their work by Mr. E. H. M. COX to which we may turn, *Plant Hunting in China*, which was published in 1945. The author knows the country of which he writes for he visited Burma along with FARRER.

What the gardeners have accomplished is evident in such gardens as Caerhays, Bodnant, Exbury, Tower Court, Muncaster and Lochinch,

where the newer species with the many new hybrids which have been raised now dominate many acres of woodland. The efforts of the earlier years are recorded in *The Rhododendron Society Notes* (1916–31), the journal of a pioneer body recently dissolved, and now merged in the flourishing Rhododendron Group of The Royal Horticultural Society.

As to the botanists, their contribution may be seen in such works as REHDER and WILSON'S *Plantae Wilsonianae*, *Notes from the Royal Botanic Garden, Edinburgh*, and *The Species of Rhododendron*. In one ten-year period alone, 1910–20, no less than three hundred and twelve new species were described and the number of known species was thereby doubled.

In all these varied activities the Edinburgh Botanic Garden played its part. As to the collectors, it was concerned principally with FORREST, who was trained in the Garden, and especially with his later expeditions. The naming of herbarium specimens as they arrived from China in almost overwhelming quantities and the raising of plants from seed went on behind the scenes. On the gardening side the reconstruction and extension of the Rock Garden, which now occupies more than four acres, was begun in 1908 and the new Rock Garden became the home of many dwarf Rhododendron species from the Asiatic alpine pasturelands at elevations of over 12,000 ft. The Peat Garden, a later development, was constructed in 1938 and was intended for Rhododendrons and other calcifugous plants. During the First World War and in the years that followed, the Woodland Garden entirely changed its character and was redesigned to become a place where the taller Rhododendrons from open woodland at elevations under 12,000 ft. could be grown in the shelter and shade of trees. Similar plantings were made in the Copse, and in the Rhododendron Walk with the shelter of high yew hedges. The Rhododendron House, constructed in 1910, was designed for species which occur at elevations of about 8,000 ft. or lower and which are too tender to survive the winter out of doors at Edinburgh.

In 1930 the estate of Benmore, near Dunoon, was handed over to the nation by Mr. H. G. YOUNGER, and the policies around the house, now the Younger Botanic Garden, came under our management and became the home of thousands of Rhododendrons for which there was no room at Edinburgh and which could here be grown under conditions more akin to those that they enjoy in their native land.

Meanwhile, Sir I. B. BALFOUR (Fig, 11) and Sir W. W. SMITH, with the assistance of Mr. H. F. TAGG, were describing many new species and working upon a new classification which was the foundation of *The Species of Rhododendron*. At the same time, the building up of a repre-

sentative herbarium occupied their attention, so that now Edinburgh may claim to have the most complete Rhododendron Herbarium in the world.

The progress of events cannot be traced in any great detail. WILSON started upon his first expedition in 1899 and was four times in China; he and Mrs. WILSON were killed in a motor accident in America in October 1930. FORREST made seven expeditions to Yunnan between 1904 and 1932 and he died in Yunnan when he had all but completed his seventh expedition. FARRER was in China and Upper Burma in 1914 and 1915 and died in Upper Burma in October 1920. WARD began collecting in Western China in 1911; ROCK in 1920. LUDLOW and SHERRIFF collected in Bhutan and Tibet between 1933 and 1949.

Though the first of these many expeditions took place early in the century, yet it was not until after the first decade that they began to make an impression upon the Garden flora.

A Census of plants flowering in the Botanic Garden has been taken from time to time. The first of these, for the year 1907, shows that 135 different Rhododendrons were in flower during the season and of this total number 98 were hybrids, only 37 were species. Of the 37 species only 4 originated in China; the rest were from various other parts of the world—India 15, America 9, North-East Asia 3, Asia Minor 3, Europe 2, and Japan 1.

The Census for 1910 is similar, with one species added to those grown out of doors and this is from Japan. By then, however, the Rhododendron House had been constructed and twenty-five species are shown as grown under glass; of these three were from China.

Prior to 1908 the only noteworthy additions to the Rhododendron flora of the Garden from the beginning of the century were *R. Collettianum*, *R. Przewalskii*, *R. Tschonoskii* and *R. nivale*.

It should be recorded that prior to 1900 explorers in passing had come across many new species in New Guinea. Some two hundred had then been described but none was in cultivation. This is an area as yet almost untouched, but quite recently Mr. STONOR collected seed of four species. Since Rhododendrons in New Guinea reach elevations as high as 14,000 ft., some of them should prove hardy. The naming of those plants, when eventually they are rediscovered and introduced, will, however, present problems of great difficulty, for most of the original herbarium material was burnt in Berlin during the war. Nevertheless, Mr. STONOR's recent article in The Royal Horticultural Society's *Rhododendron Year Book* show that this territory would well repay further intensive exploration.

As to Western China neither WILSON nor FORREST in their earlier days was directly concerned with Edinburgh. WILSON collected first

or the firm JAMES VEITCH & SONS and then for the ARNOLD ARBORETUM; FORREST first for Mr. A. C. BULLEY and afterwards for Mr. J. C. WILLIAMS. As far as the records go, seed from WILSON appears to have arrived in the Garden for the first time in 1908 (one species only, W. 586 *R. discolor*), but a long list of WILSON's seed numbers follows in the donation book for 1909. Seed collected by FORREST seems to have been first received from Mr. BULLEY in 1910.

The records may not perhaps include the first donations, one would suspect they might have been earlier, but they show indisputably that from 1910–14 large numbers of seedlings, raised from the seed of both collectors, were being distributed to various correspondents.

Expeditions to China were curtailed and interrupted by the war, but the work of collectors continued between the wars and large consignments of seed were received from time to time.

I well remember in 1932, soon after I had returned from India to Edinburgh, the excitement caused by the arrival of a lorry load of tea chests containing FORREST's collections from his last expedition. Soon the whole of the large laboratory—fortunately it was during vacation—became strewn with herbarium specimens. As each case was unpacked, specimens were examined and sorted one by one into neat piles on the benches. I was astonished at the rapidity with which they were passed in review by Professor WRIGHT SMITH and a few of the staff, who quickly assigned them each to its appropriate place according to family, genus or species, with now and again a doubtful specimen. After preliminary sorting they were looked at again, Rhododendrons, Primulas and other genera of horticultural interest taking precedence, as the numbered specimens equivalent to seed numbers had to be named as soon as possible in order to facilitate seed distribution. In another room the cases which contained seed were unpacked. The seed came in muslin bags or paper seed packets of various shapes and sizes—anything from a pound to a pinch of seed! These packets, large or small, had to be divided amongst some fifty share holders who received, according to their subscription, a whole, half, quarter or other fraction of a share. I imagined that this might entail minute and laborious weighings after careful calculation, but division was skilfully carried out with the aid of no more complicated apparatus than an ordinary brass ruler. A bag of seed was emptied on the bench in front of a window and gathered into a neat dome-shaped mound. With the ruler the seed was divided and subdivided again and again, until each of the share holders had been allotted his proper share, the quantities having been carefully calculated beforehand. The whole process took only a few minutes. Each share had then to be transferred to

packets, on which the seed number and the name of the species had already been written by the four or five assistants, who were required to keep pace with the person who was dividing. With large quantities of seed, division was easy, with smaller quantities more difficult, and sometimes seed was insufficient to go round in which case only the large share holders would benefit; but a tally was kept and adjustments were made when the same species recurred under another number. Sometimes, but rarely, individual seeds were counted.

Meanwhile, as identification proceeded, lists were prepared for circulation, field notes were copied and a share of the seed passed to the propagating department. All this occupied some weeks, the final identification of many specimens taking, of course, much longer.

This last expedition of FORREST's was undoubtedly the most prolific of them all, and it is from seed of this and the previous expeditions of the century that the great majority of Rhododendron species now in the Garden have been raised.

By the work of these men the Rhododendron collection has become one of the most comprehensive in the world. A recent census shows that 340 species flowered in one season, this is about two-thirds of the total number grown in the Garden. The total number of hybrids now grown in the Garden is about 350.

A mere list of the many species of Rhododendron, introduced since the beginning of the century, which are hardy enough to be grown out of doors at Edinburgh, would occupy several pages. They have been described elsewhere and most of them are known to the readers of *The Year Book*. A few are chosen for comment. I take first—it may be personal preference—*R. Souliei*, as represented by a perfect plant which flowered freely for many seasons but died some years ago. It is illustrated on Fig. 13; many will remember it. Although *R. Souliei* is still in the Garden no other plant has flowered so freely. This species is a fitting memorial to the French Missionary, JEAN ANDRÉ SOULIÉ, who was put to death by Tibetan Lamas at Batang after they had tortured him for fifteen days. It was introduced to cultivation by E. H. WILSON in 1905, the same year in which SOULIÉ was murdered.

After it, but scarcely less distinguished, I would select *R. lacteum*, which was introduced by FORREST in 1906. No other Rhododendron has a more perfect truss, but its fine yellow flowers appear early in the season and at Edinburgh are apt to be caught by frost. Again, though this species is still represented in the collection, it appears to be short-lived. Our finest plant died some years ago.

Next and, as it happens, sharing the honours, I would choose

R. Macabeanum, which was first found by WATT and introduced by WARD in 1927 from the Manipur Hills in Assam.

Other species following closely in a list of personal preferences would include several which are now very large plants in the Copse and Rhododendron Walk. The more noteworthy are perhaps *R. Augustinii*, which flowers freely every year; *R. Wardii* (illustrated on Fig. 12); *R. fictolacteum*, especially F. 22020, with a large truss of pink-flushed flowers (the best of numerous forms); *R. detonsum*, an exceptionally fine plant of the Taliense Series, not so well known and appreciated as it deserves to be; *R. callimorphum* which needs no description; *R. puralbum* of great elegance and simplicity (Fig. 4) and *R. mallotum* with a rich red indumentum on the under sides of the leaves.

Among others, which can be relied upon to flower freely almost every season, are *R. Fargesii*, *R. rubiginosum*, *R. yunnanense* and most species of the Triflorum Series, *R. fulvum*, and *R. haematodes* with *R. chaetomallum* in the same series.

Few plants are more magnificent than *R. insigne* (Fig. 5) when it is covered with trusses of rose pink flowers, and *R. strigillosum* is also most attractive with its scarlet flowers in early spring. But these two species flower infrequently. Only very occasionally do they flower freely.

Two more are worthy of special notice for their exceptional qualities—the pink form of *R. moupinense* which, when it escapes the frost, is glorious for a week in early February, and *R. Valentinianum* which, though rated as "Class D", is perfectly hardy in one of the most exposed positions in the Garden, where it flowers very freely and often twice in the season.

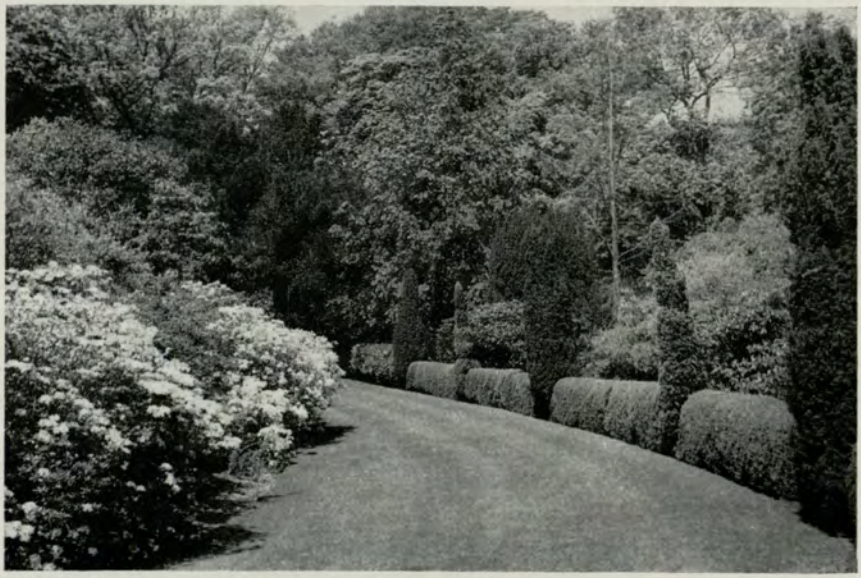
In the Rock Garden and in the Peat Garden, in pockets of humus, the dwarf species are planted, sometimes singly, sometimes in groups of five or six or more. When planted closely they, in due course, grow together and intertwine, forming a compact mat, as in their native meadows. Grown in the open they remain compact and squat, and not drawn up as they are apt to become when grown in partial shade. The Lapponicum Series is well represented, but none is finer than *R. fastigiatum* which repeats itself here and there both in the Rock Garden and Peat Garden. A compact of many years growth, originally a group of separate plants, is shown on Fig. 3. Dwarf species of other series, such as *R. Sargentianum*, in the Anthopogon Series, *R. calostrotum* and other members of the Saluenense Series, *R. campylogynum* and *R. tephropeplum*, are all at home in the Rock Garden, while WARD's *R. pemakoense* and *R. imperator* are both prominent on the Peat walls.

In the Rhododendron House is one of the finest specimens of *R. Griersonianum* in the country. This was introduced by FORREST in

Photo. R. Eudall]

FIG. 14.—The original plant of *R. Griersonianum* in the Rhododendron House at Edinburgh (*see* p. 57)

FIG. 15.—Muncaster Castle



Photos. R. Eudall]

RHODODENDRONS AT MUNCASTER CASTLE

FIG. 16.—Azaleas on the Terrace Walk (*see* p. 59)

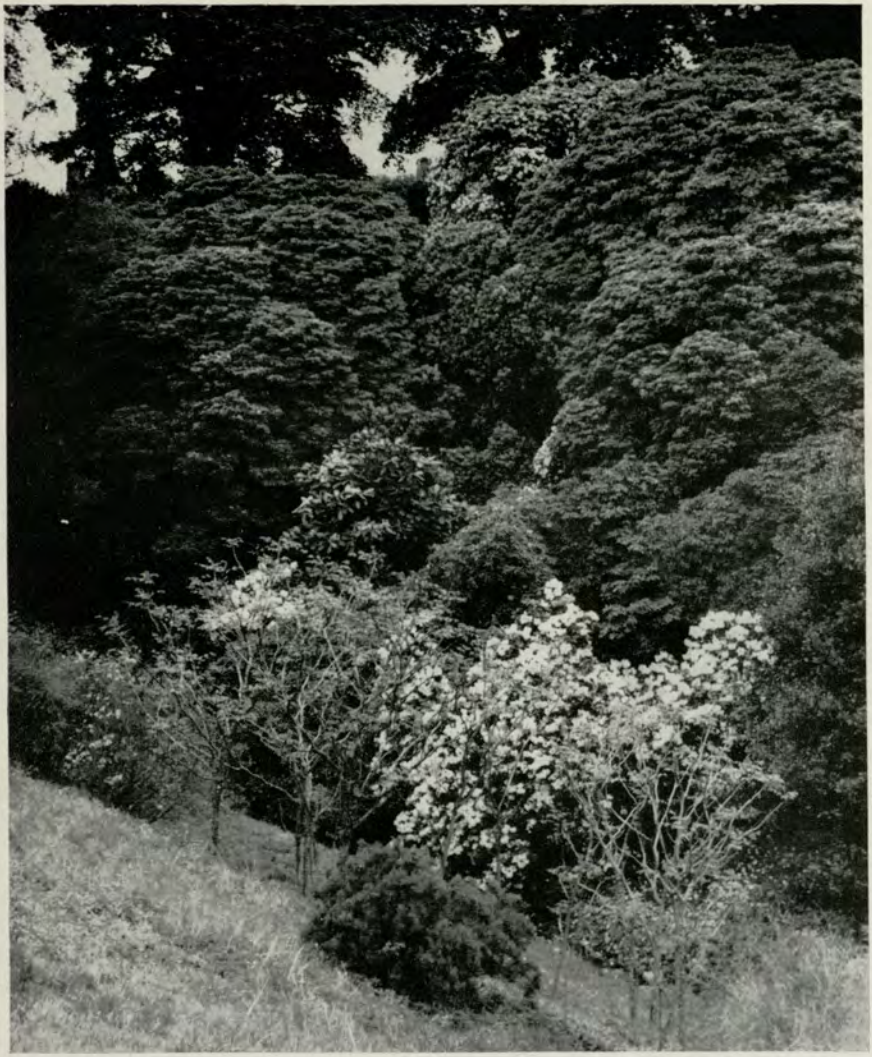


Photo. R. Eudall]

FIG. 17.—The bank opposite the Terrace showing large trees of *R. arboreum* hybrids (*see* p. 58)

Photo. R. Eudall]

RHODODENDRONS AT MUNCASTER CASTLE

FIG. 18.—The view from the Terrace (*see* p. 58)

the year 1917, and is one of the plants raised from his original sending (Fig. 14). *R. giganteum* occupies the centre of the house. Seed was sown in 1924 and the plant, one of the original seedlings, is now 16–17 ft. high and 16 ft. across, but has not yet flowered. Here also is *R. sinogrande*, the first to flower in this country, forced into bloom about 1912. It was long before it recovered from the treatment it received and it flowered again only after an interval of nearly forty years. Other species in the house worthy of notice include *R. rhabdotum* and *R. Elliottii*, both collected by WARD, and *R. Lindleyi* raised from LUDLOW & SHERRIFF's seed. The last is not hardy at Edinburgh though it flowers freely out of doors in the west of Scotland.

Those who desire further details of the foregoing species will find that full descriptions are readily available in literature. Many other recently discovered species might be mentioned, but must of necessity, be omitted from a short account.

As to modern hybrids, even the most choice are not well represented in the Garden, but a few—'Loderi', 'Amor', 'May Day', 'Humming Bird', 'Elizabeth', 'Yellow Hammer', 'Polar Bear' and others—have a place on the fringes of the Woodland Garden or in formal beds on the lawns. The limited area precludes an adequate selection; moreover, some of the older hybrids, such as 'Cynthia', 'Doncaster' "fastuosum flore pleno", which are massed in great banks on the slopes of the Hill, and the hybrid Azaleas in beds farther to the west, have by their dazzling and unfailing display earned a place for themselves which no others can dispute, and they prolong the flowering season until well into June.

We have now passed in review the main events connected with the genus Rhododendron in the long history of the Garden and have glanced at the more outstanding species of comparatively recent introduction, but let it clearly be understood that I have merely touched upon the latter period. And lest there be any chance of misunderstanding, I would stress the fact that it was not until early in the present century that the genus Rhododendron had a place of real importance in the Garden flora.

Finally let it be said that if, as a consequence of following the records of the Garden, the earlier years have assumed an undue prominence in the present narrative, it is not without fitting compensation that the descriptive account of Rhododendrons now in the Garden has thereby necessarily been curtailed. Incomplete and scanty as the records are, they extend to the four centuries during which the Garden has been in existence, and some of the references to Rhododendrons hidden in this hitherto neglected treasury are of exceptional interest historically.

(Delivered as Presidential Address to the Botanical Society of Edinburgh, 16th October).

RHODODENDRONS AT MUNCASTER CASTLE

by

Patrick M. Synge

MUNCASTER CASTLE stands on a spur of the hills which separate the Lake District from the Cumberland coast and is not very far from the village of Ravenglass. It is thus a very favourable situation for Rhododendrons, being within three miles of the sea but yet for the most part sheltered by the hills. The rainfall is high, in the neighbourhood of 40–45 in. per year, but not nearly so high as that experienced in many parts of Western Scotland, while the influence of the Gulf Stream seems to be almost as strong, enabling many otherwise tender species, particularly those of the Maddenii Series, to be grown.

By the kindness of Sir JOHN RAMSDEN we were able to visit Muncaster early in May 1952. From the terrace of the Castle there is a view which we will not readily forget. Below the Castle the ground falls rapidly away into the winding valley of the Esk while in the distance rise Scawfell and other mountains.

Directly below the eastern side of the Castle, however, is a small glen with a stream while on the other side the hillside rises steeply and is planted with a wonderful display of Rhododendrons and Azaleas, backed by old Oaks and other trees, curving into the distance round the hillside, from which the ground falls quickly away into the main valley. Near the head are massed banks of old *R. arboreum* hybrids, very large plants, crimson and deep pink in colour and including 'Altaclarense' and 'Nobleanum' (Fig. 17). These were covered in flower and contrasted well with the masses of yellow Azaleas and Rhododendrons which completed the bank. They had all grown together making a solid mass, as one imagines they may appear on some Himalayan or Caucasian mountain side (Frontispiece and Fig. 18). The old yellow Pontic Azalea (*R. luteum*) was most lovely in great masses contrasting well with the very dark purple of the old hybrid 'Royal Purple', while at the foot of the slope was a big plant of the old white hybrid 'Duchess of Portland' covered with flower. Among the yellow Azaleas some red hybrid Rhododendrons were growing and flowering freely, while we also noted plants of *R. Thomsonii* and *R. neriiflorum*. Towards the foot of the bank were large specimens of the purple-leaved Japanese Maple and *Berberis stenophylla* in flower, while towards the back of

the Azaleas were large trees of *Magnolia Kobus*, *M.* 'Soulangeana' and *M.* 'Veitchii'. Below the Castle the near slope was grass covered and must have been a wonderful sight earlier with masses of Narcissi, while at the foot of the glen, planted just where it began to curve round the base of the hillside, was a fine Silver Birch which helped to give perspective to the plantings behind. At the head of the little valley were masses of Hydrangeas which we were assured flowered blue in the late summer. Although composed largely, perhaps entirely, of plants well known to most Rhododendron growers, this was one of the finest and most spectacular sights that I have ever seen in any garden, and it made a perfect foreground for the more distant view of valley and mountain.

It is impossible in describing an estate of the size of Muncaster with four hundred acres planted with Rhododendrons and other trees and shrubs to mention more than a small proportion of the fine plants we saw. One particular feature of the garden lay in the variety of the plantings and in addition to the Rhododendrons we saw many fine Nothofagus, including a very large specimen of *N. betuloides*, numerous Eucryphias, including a 20 ft. *E. Moorei*, Cornus, Stewartias, Pieris, Magnolias and even *Michelia Doltsopa*, growing against a wall but flowering freely. Thus the flowering season is prolonged through the summer.

The plantings had been made with great skill, often with large groups of plants of the same species or variety so that a great colour display was obtained, but at the same time the natural effect had not been lost. The masses of ferns, forget-me-nots and bluebells contributed not a little to this. We were assured that the majority of the plantings had been made between the two world wars and the great size of many of the plants bears testimony to the very rapid and luxuriant growth at Muncaster.

Crossing the head of the valley, we were led along the terrace walk, a wide grass walk half a mile long which curved round the hillside and from which we obtained magnificent views over the valley. We were told this had been made about 1750. We passed behind the big *R. arboreum* hybrids previously mentioned and were able to look at their massive trunks. Here also were large white *arboreum* hybrids, probably 'Bodartianum'.

Along the edge of the terrace bordering on Eskdale, a formal hedge of clipped box had been grown with at intervals taller plants of golden and dark green Irish Yew appearing to ascend in steps as the terrace sloped upwards and curved round the hillside (Fig. 16). On the slope below we were able to look down on a large group of different coloured forms of *R. Augustinii*, all good and showing the influence of

the dark purple eye in the centre, or the paler green eye, in giving a prevailing purplish or blue tone respectively to the flowers. Along the other side of the terrace was a long tree and shrub border in which were many Magnolias, Pieris, Ericas, Drimys, Stewartias, Crinodendrons, Acers, Pittosporums and other shrubs. Towards the end was the largest tree of the Gean, *Prunus avium*, which I have ever seen. It had several great, wide-spreading trunks and a vast span, and while then nearly over, had obviously flowered very freely. I don't think that 50 ft. in height and twice that span would be an exaggeration.

Behind the terrace border was "Church Wood" a large area containing many very fine Rhododendrons. Particularly lovely were large bushes of good yellow *R. campylocarpum*, some 12 ft. in height and as much across, while the very fine deep pink 'Muncaster hybrid' had grown to a great size and was laden with flower (Fig. 20). Acquired about 1860 from a local nursery which has long since disappeared, no other name had been given to this hybrid which was one of the finest Rhododendrons of the "hardy hybrid" type I have yet seen. It has the appearance of being related to 'Pink Pearl' but is without the purple anthers. Another particularly fine plant raised at Muncaster was 'Red Dragon' (*R. Griersonianum* × *R. Thomsonii*); brilliant scarlet in colour, a vigorous grower and very free flowering, it made great splashes of colour through the woods. One particularly effective planting I noted bordered the drive close to and below the Castle; backed by larger trees and without any competing flower colours it was a splendid sight. This cross has also been made at Bodnant and is shown in the Stud list under the name 'Hecla'.

In Church Wood we saw many more plants of *R. Augustinii*; one planting adjacent to a large group of the dwarfer pink 'Hi No Mayo' made an attractive combination. The Kurume Azaleas were well represented here as was also the Triflorum Series with good plants of *R. yunnanense* (Fig. 25), *Davidsonianum*, *caeruleum album*, a good form of *ambiguum* and *pseudoyanthinum*, the deep plum-coloured form. A 9 ft. plant of *R. Hookeri* also attracted special attention, as did a very unusually deep coloured bush of *R. orbiculare* and a good form of *R. habrotrichum*, with a well-filled truss of deeper coloured flowers than is often seen in this species (Fig. 21).

R. Williamsianum was well represented and several of the bushes, placed conspicuously at the junctions of paths were over 5 ft. in height and as much in diameter. I have never seen larger specimens (Fig. 23). We also saw a small secluded garden, surrounded by a bamboo hedge and planted largely with *R. Williamsianum* in raised beds. Here also were hedges of 'Blue Tit' and plants of a small free-flowering deep purple

hybrid probably raised from *R. saluenense*. This little garden was carpeted with ferns and primulas and was most attractive.

Another special enclosure contained a pool and along one side were two huge plants covered with flowers of the good deep pink-budded R. 'Loderi King George'; they were at least 12 ft. in height and more in diameter and flowering right down to the ground.

A very successful combination was made by a long low hedge of *R. mucronatum*, backed by large plants, flowering freely, of such lovely hybrids as 'Penjerrick' (Fig. 19), the ivory-white form, and 'Sunrise' as well as tall yellow *R. campylocarpum*. In front of the *mucronatum* was an edging of the dwarf salmon-pink and semi-double *R. indicum balsaminae-florum*. Other interesting plants in this part of the garden were *R. heliolepis*, an unusually large specimen, *R. lanatum*, *R. Vaseyi* and *R. Schlippenbachii*, as well as many of the Kurume Azaleas. In the top garden also was a notable plant of *R. Griffithianum*, now about 20 ft. in height. This plant was originally at Tittenhurst where the late Mr. LOWINSKY protected it in winter with a canvas tent.

Along the drive from the gate to the Castle there are a number of fine plants including several of the larger-leafed species which grow particularly well at Muncaster. Here were groups of *R. Falconeri* and *R. sinogrande*, mingled with some very large old plants of the red form of *R. arboreum* and such old hybrids as 'Purple Splendour'. Here also were clumps of 'Red Dragon' making a most brilliant splash of colour and numerous Magnolias, Nothofagus and Azaras.

Even larger trees of *R. sinogrande* and other large-leaved species were seen in the woods above the Castle. A few beeches and some fine *Abies pectinata* had been left, but very large plantations of Rhododendrons had been made along the grass rides. There was also a large plant of 'Elsae', a hybrid between *R. Hodgsonii* and *R. grande*. It had large leaves, a thick yellowish indumentum below and a huge single truss of creamy flowers. At the edge of the wood we found the largest and finest specimen of *R. Falconeri* I have ever seen. It was unusual also in that the large size of the leaf had been retained although the tree was flowering and between 30 and 40 ft. in height and probably as much in diameter. It was a very impressive tree and an indication of the very favourable climate for Rhododendrons at Muncaster. This plant was bought from Tremough in 1920 and was then about 10 ft. high.

There were groves of such rare and tender large-leaved species as *R. giganteum* and *R. Kyawi* (the Forrest form, grown previously as *R. prophantum*) and these must later present a fine sight when in flower. Although this is probably the way in which they are found in China and the Himalayas, one could not help regretting that more of these

choice plants had not been singled out for growing as specimens, particularly in the case of the early flowering *giganteum*. Where specimens had been grown as in the case of *R. grande* (the form usually known as *argenteum*), the effect was superb and fitted well with plantings of the size and scale of those at Muncaster, especially with the large plants of 'Penjerrick', 'Red Dragon' and the banks of *R. amoenum* which were close. Among the *grande* was a very large plant about 25 ft. in height with a truss of pale pink flowers which was described as *grande* (*argenteum*) *roseum* but may possibly have been a hybrid between *R. grande* and *R. eximium*. There was also a tall *R. grande* of 36 ft. which came as a small plant from a nursery bed at Leonardslee. *R. Macabeanum* was represented by a group of which the largest was very tall and carried big trusses of a good yellow. It was good to see a large plant of *R. strigillosum*, showing well the brilliant red of its young growth and buds. Near this section also we noticed a very large-flowered form of *R. cinnabarinum*, a big bush 12 ft. high by 15 ft. through, and throughout the woods we saw a great variety of forms of *cinnabarinum*, *concatenans* and *xanthocodon*, the latter two almost merging into one another. A great clump of *R.* 'Cinnkeys', in full flower and 15 ft. across by as much in height showed well the great garden value of this hybrid when it attains a certain size and becomes literally smothered with bloom. The orange and red combination of the flowers are very striking against the surrounding carpet of bluebells.

The tender species of the Edgeworthii and Maddenii Series were particularly well represented. An unusually attractive sight was a large plant of *R. bullatum*, flowering freely and growing out of the rocks on the side of an old quarry, a very protected situation (Fig. 22). Here also grew plants of *R. giganteum*, *R. megacalyx*, *polyandrum*, *eriogynum* and a fine plant of *R. Kyawi* in the centre of the quarry. There was also an interesting hybrid between *R. Johnstoneanum* and *R. bullatum* well budded but unfortunately not in flower. We saw many plants of *R. polyandrum* again, mostly heavily budded and up to 10 ft. in height, growing against the shaded northern and eastern walls of the lower garden. During June and early July they must have made a fine display. After the *polyandrum* come the *manipurense*, flowering in early July. The season at Muncaster is carried on through July and into August by large numbers of late flowering hybrids such as 'Lodauric', crosses of *auriculatum* with *serotinum*, *diaprepres* and *facetum* as well as crosses of 'Lodauric' with *facetum* and *diaprepres* with *facetum*.

Another very unusual sight was a large clump of about twelve specimens of *R. Lindleyi* (LUDLOW & SHERRIFF 2744). The individual flowers of this form did not seem as large as some I had seen, but they

were borne in trusses of up to eight flowers each which is rather more than usual and were of the heavy waxy texture we associate with this species as well as being heavily scented. The calyx lobes were reddish and the outside of the corolla was very lightly flushed with pink. The plants were 8 to 10 ft. in height (Fig. 24).

We also saw flowering plants of *R. Taggianum*, 'Princess Alice', 'Suave' and a rather unusual white-flowered species under the number K.W. 8546, which had been provisionally identified as *R. Headfortianum*, a species very rarely seen.

One of the most beautiful spectacles was a great thicket of *R. Johnstoneanum*, where the plants had grown together and were all flowering freely with that attractive blend of creamy-lemon colour and deeper yellow blotch that characterizes this lovely species. There were several unusually good forms among them with flowers larger than the average. We were able to look down on them from above since so much of the ground in the woods is on the slope. Near this planting was a group of a hybrid between *R. Boothii* and *R. burmanicum* with very bright yellow fragrant flowers. They were much deeper in colour than the *Johnstoneanum* near them.

Later flowering Rhododendrons were also well represented such as 'Polar Bear', *praestans*, *facetum* and *Kyawi* and must have been a fine sight later. Among the unnamed plants we particularly noted a good hybrid of *sutchuenense* × *Griffithianum* but with a truss of very large flowers, carrying the deep crimson blotches. Another interesting plant was a white Rhododendron with rather flat and very large slightly crinkled flowers. It was very fragrant and Dr. COWAN, who was with us, suggested that it might be *Chlorops* a large-flowered form of *R. decorum*, but very rarely seen. Alternatively it might have been of hybrid origin. A plant under this name received an Award of Merit in 1938 when shown by THE EARL OF STAIR.

Practically every other Series seemed to be represented in this great collection and we saw numerous plants of the Sanguineum, Haematodes, Campanulatum and Fulvum Series to mention only a few.

Undoubtedly the thick layer of leaf mould in the woods overlying a good loam and a basic clay have contributed with the high rainfall and conditions of mild climate and shelter to the growth of this outstanding collection.

It was good to see that in spite of its size the garden was so well maintained and I would like to express my thanks not only to Sir JOHN RAMSDEN for the pleasure the visit gave me and for his help in amending the draft of this article, but also to Mr. BLAIR, the head gardener who accompanied our party. My thanks are also due for

much help in naming of the plants to Dr. J. MACQUEEN COWAN and Mr. E. E. KEMP of the Edinburgh Botanic Garden who accompanied us, as well as to my colleague LANNING ROPER and to Mr. R. EUDALL of Edinburgh who took a number of photographs.

Through the kindness of Sir JOHN RAMSDEN this great garden is open to the public on Wednesdays and I can most confidently recommend all Rhododendron lovers to pay it a visit.

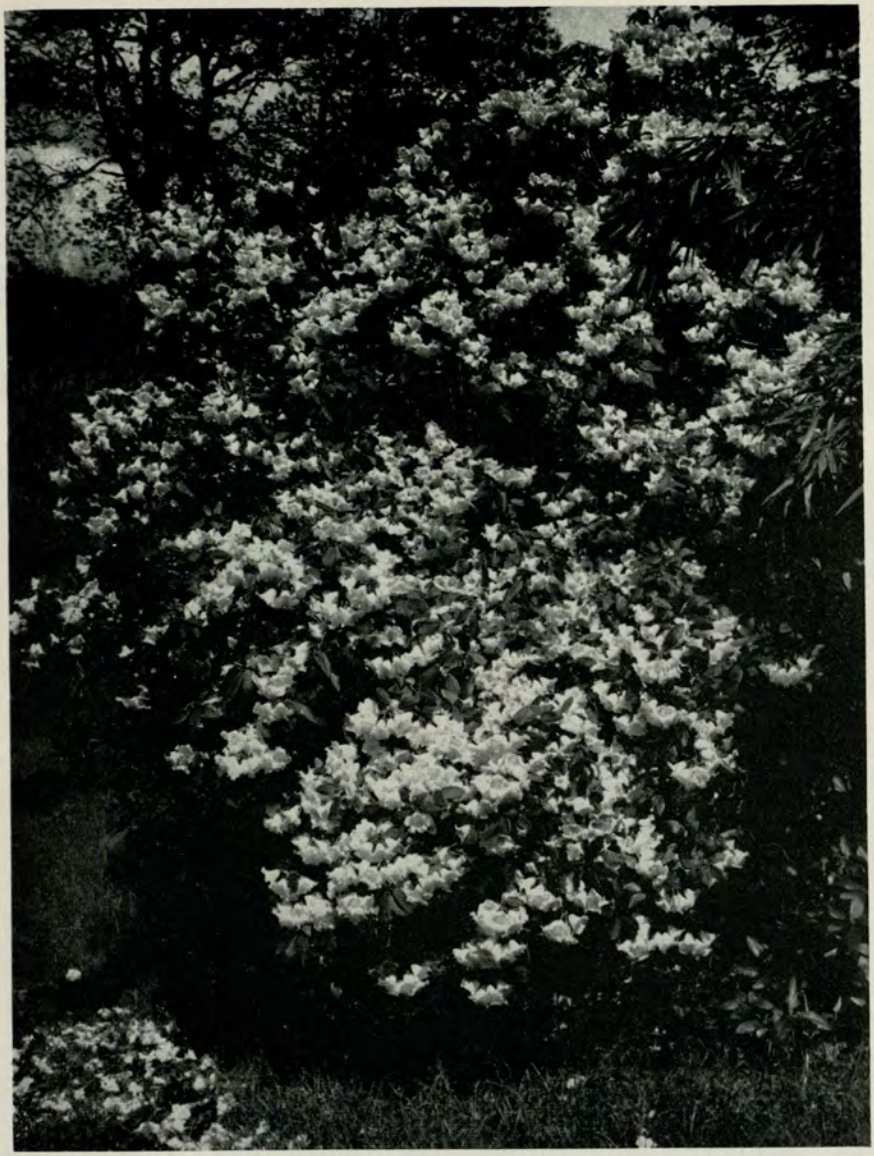


Photo. R. Eudall]

FIG. 19.—*R.* 'Penjerrick' at Muncaster (*see* p. 61)

FIG. 20.—*R.* 'Muncaster hybrid' (*see* p. 60)

Photos. R. Eudall]

FIG. 21.—*R. habrotrichum* at Muncaster (*see* p. 60)

FIG. 22.—*R. bullatum* growing on the wall of a quarry at Muncaster (*see* p. 62)

Photos. R. Eudall]

FIG. 23.—*R. Williamsianum* at Muncaster (*see* p. 60)

Photo. R. Eudall]

FIG. 24.—*R. Lindleyi* at Muncaster (*see* p. 63)

THE HARDINESS OF RHODODENDRONS ON THE EAST COAST OF SCOTLAND

by

E. H. M. Cox

IT might be imagined that the climate of the east coast of Scotland differs little from that of the rest of the country. And yet those who follow the regional weather forecasts must notice how often in spring and autumn we are given a niche to ourselves, a niche that is often none too pleasant. Where we differ from the rest of the British Isles is in our long spells, often weeks on end, in March, April and May of strong east winds with low humidity. It is then that growth is brought to a standstill. Unfortunately the wind often dies away at night when we have more than our fair share of ground frost.

We also differ in our damp autumns. The barometer may be high, but we suffer from lack of sun and from what we call on the east coast a haar or sea-mist. Locally we firmly believe that these haars are much more dense where the estuarine water is brackish, such as in the Tay and Forth estuaries.

From these two climatic differences we tend to suffer from lack of growth in the spring and lack of wood-ripening in the autumn. Our winters are not quite so continental as in the home counties, but they last longer; and our summers are certainly cooler. Thus species that come into growth late, but not too late, like *R. Griersonianum* and *R. glischrum* do particularly well, but not those that come into growth *too* late, such as *R. auriculatum*, and have no ripened wood to produce flower buds.

The *Thomsonii* Series gives a good example of the effects of our dry and low-humidity springs. Both the subseries *Campylocarpum* and the subseries *Souliei* seem to be willing to wait for suitable weather in which to start their growth. They will vary from two to four weeks from year to year according to the temperature, and particularly the humidity. Not so the subseries *Thomsonii*. I have grown and lost *R. cyanocarpum*, *R. eclecteum* and *R. Hookeri* because they refused to await suitable conditions and were cut year after year. *R. Meddianum* and *R. Stewartianum* seem to be made of sterner stuff. Until the spring of 1952 they have been cut back each year since 1945, but they send out a second set of leaves that seem to be sufficient to keep body and

soul together, but that is all. At one time I had dozens of plants of the former from FORREST's 1924–5 Expedition. I have tried them in every possible situation with a similar failure in each case. I now only keep two to see what they are going to do. *R. Thomsonii* itself is a little better, but its growth is cut too often to make it reliable in its flowering.

Most of my Rhododendron species are growing in a glen sufficiently shaded—far too much so during the war years when I lost most of my dwarfs through excess of top cover—and sheltered from the wind. The ground falls away rapidly, and if anything the drainage is too good. The majority of the plants are more or less mature from the Forrest Expeditions of 1921–2 and 1924–5 and the Kingdon Ward Expeditions of 1921 and 1922. There are also a number of WILSON plants and a few of FARRER, plus an odd Himalayan.

We find that it is a complete waste of time trying to grow those species that flower really early. *R. moupinense*, *R. ciliatum* and *R. leucaspis* are examples of species that survive only as unhappy-looking straggly plants. The earliest flowering species to give account of itself is *R. strigillosum* which is only rarely badly damaged. This, I think, is due partly to the fact that the flowers are fairly well protected by the foliage, and partly because our main plant is now more than 10 ft. high and thus is above much of the ground frost. Also I think that the flowers themselves are more resistant to cold than its next door neighbour, *R. Fargesii*, of the same age and height which flowers with us at about the same time.

The behaviour of the large-leaved species is interesting. Such as I have of the *Falconeri* Series grow slowly and are often cut in flower, but the leaf-growth is rarely touched. With us they almost all tend to be biennial in their flowering. This is particularly the case with *R. Falconeri*, *R. basilicum* and *R. arizelum*. Much the best of this series in flower is the original *R. fictolacteum* of FORREST. WARD's form is not nearly so free to flower, although it puts on each year more growth than any other of the series.

Of the *Grande* Series I have had *R. Macabeanum* too short a time to judge of its ultimate behaviour, but it comes into growth early in July, usually a wet fortnight, and it seems very much at home in the Royal Botanic Garden at Edinburgh. *R. praestans* puts on almost no growth. I have a number of *R. sinogrande* under various numbers. They are all quite hardy but too slow growing to be of any real value. *R. sidereum* and *R. protistum* have died under exactly the same conditions as *R. sinogrande*.

Both members of the *Fulvum* Series, *R. fulvum* and *R. uvarifolium* (*R. niphargum*), do extremely well. Both are very variable species, and

we have a number of forms, but all are extremely good value on the east coast, free-flowering and quick growing. *R. fulvum* is more than worth its two stars; and we cannot imagine why *R. uvarifolium* has not been granted even one. In the best form of *R. fulvum* the flowers are a lovely soft rose with a large, deep crimson blotch at the base, and these show up extremely well against the very dark, almost blue-green foliage. In addition the young foliage is quite the best that we have; the undersurface being almost snow-white, while the general symmetry of the plant is impeccable.

We find that most of the *Fortunei* Series that we possess give very little trouble. *R. calophytum* of its own subseries, and *R. planetum* and *R. sutchuenense* of the subseries *Davidii* are inclined to be regular biennials in their flowering. On the other hand *R. decorum*, *R. Fortunei* and the various forms of *R. vernicosum* all of the sub-series *Fortunei* are fairly regular in their flowering, only failing when their young growth has been badly cut the previous year. *R. diaprepes* is too spasmodic and too sparse in its flowering to be of great value. It is growing in the greatest shelter that we can give it, probably in too dense shade, but we do not find it excessively tender. Branches sometimes die from bark-splitting. In any case we think it is a plant of little value for the east coast; its descendent 'Polar Bear' is far better, a most excellent late-flowering Rhododendron for our climate. Our other *Fortunei* subseries, *Oreodoxa*, is perfectly happy under our conditions. Both *R. Fargesii* and *R. oreodoxa* are now well over 10 ft. in height. While an occasional plant may have a rest, the group as a whole flowers almost with abandon every year. Even if the flowers are occasionally cut, the young growth comes late enough to escape almost any danger of frost, and the wood seems to ripen well. We place either or both species among the best dozen for the east coast.

I have mentioned the subseries *Thomsonii* of the Series *Thomsonii*. The subseries *Campylocarpum* presents no difficulties; they grow and flower freely. Probably *R. cyclium* will prove one of the best of the medium growing shrubs for a cold garden. With us it does not flower until June followed quickly after by its young growth which is always vigorous and is never cut. *R. caloxanthum* is the earliest to come into growth with *R. callimorphum* and *R. campylocarpum* following a middle path.

Taken as a whole the subseries *Souliei* is much the best for our part of the country. *R. Souliei* itself flowers magnificently and is a most satisfactory plant in every way. Its white counterpart *R. puralbum* is equally so. The yellow *R. croceum* and *R. Wardii* give excellent accounts of themselves. They seem to vary their time of flowering and

maximum growth so that if one is cut by early frost there are always later ones coming on. The only exception to this paean of praise is *R. Williamsianum* which is too often cut to be of great value. But I am not certain that this is not partly our fault. Our large plant is in a very sheltered dark pocket 4 ft. above the burn. In a frostless year like 1952 it has made trailing growths almost a foot in length. It goes on growing until the end of summer with the consequence that the last few inches of the young shoots are almost always in a soft condition when winter comes. It is too large to move, but would certainly prove hardier under more exposed conditions.

Next door to it and only 10 ft. away is a plant of *R. Valentinianum* of the *Maddenii* Series. This grows away perfectly happily and flowers two years out of three. This bears out the remark in the 1952 *Rhododendron Handbook* that it is "apparently much hardier than usually supposed". Before the war we had a dozen of them growing well down a cleft in the rock, but these were smothered by Male Ferns during the neglected years of 1939 to 1945. The only other member of the *Maddenii* Series that we grow outside is *R. crassum*. These are large spreading plants almost 6 ft. in height. They were planted out in 1936 and have only been cut once when we had a hard air-frost at the end of May, but they rarely flower and then only a few at a time. Here again they might be better if they were exposed to a little more sun.

Most of the *Taliense* Series are hardy but uninteresting and require little comment. We have grown many of them from both FORREST and WARD seed, but as they took up more and more space many of them, like *R. Balfourianum*, have been weeded out. There are only two that we consider worth growing, at least on the east coast, *R. recurvoides* of the *Roxieanum* subseries, which oddly enough has proved very free-flowering with us once it has reached an age of at least twelve years, and is attractive with its tiny little tight trusses of white flowers and very narrow leaves, and *R. Clementinae* of the *Taliense* subseries. This has the most beautiful young foliage of almost any Rhododendron we know, a glaucous, steely green with a lovely off-white undersurface. The old foliage is also well-shaped and the whole plant in its habit and deportment shows breeding. It is obvious that FORREST thought highly of it in the wild state as he named it after Mrs. FORREST. The flowers are quite good, a soft white with deep crimson markings. We have never seen it touched or damaged in any way, either by frost or snow. It is a plant that we should certainly consider worthy of some recognition.

It might be imagined that the *Triflorum* Series as a group would prove to be one of the best in our climate. This has not always proved to be

the case. Even *R. yunnanense*, quick growing and free-flowering though it is, suffers a good deal from bark splitting when whole sections of mature plants die off. In the subseries *Yunnanense*, *R. zaleucum* has proved to be one of the most tender Rhododendrons that we have tried outside, along with *R. lutescens*. Having tried them on several occasions we have now given up the attempt. *R. Davidsonianum* is often cut, but is fairly hardy. The best of this subseries with us is certainly *R. chartophyllum*. It does not make such sappy growth as *R. yunnanense* and does not suffer from bark splitting.

In the subseries *Augustinii*, *R. Augustinii* itself is about equal in hardiness to *R. Davidsonianum*. *R. chasmanthum* is very rarely cut and is probably a better plant for the east coast than *R. Augustinii*, while *R. villosum* comes into growth and flower so late that it escapes all frosts. In the subseries *Oreotrephes*, *R. oreotrephes* itself is very suspect. It is marked A in the Rhododendron handbook, but I know that others besides myself who live in this area would class it as B if not as C. *R. Keiskei* in the subseries *Triflorum* is moderately frost-proof even though it flowers in April. By a long way the best of the series with us is *R. concinnum*, another Rhododendron that is worth several stars. It is absolutely hardy and whether it is something to do with our soil the colour is a rich rose-purple with no hint of magenta in it. This we would certainly count among our twelve best species.

We happen to have raised such large numbers of *R. desquamatum* and *R. rubiginosum* of the *Heliolepis* Series that we use them as shelter hedges to break the north-west wind. Possibly because they are so exposed they are very rarely cut and most years are full of flower. We certainly do not find that *R. desquamatum* is a C plant; we would change it over for *R. oreotrephes*.

There is not much that I can say about the large and ubiquitous *Neriiflorum* Series. We grow a good many of the species and subspecies. As plants they are all hardy. As flowering plants those that flower early of the *Haematodes* subseries such as *R. chaetomallum* and *R. pocophorum* are of doubtful value in any district so subject to spring frost as we are. *R. chaetomallum* seems to be partially resistant, particularly in the bud, but *R. pocophorum* on the other hand we think definitely bud-tender. The only other comment I have to make about a very charming series is that we cannot get *R. aperantum* to flower.

In the near-dwarfs we like the *Glaucum* Series. *R. charitopes* is a great standby that never fails, and the other member we like if it is well placed is *R. tsangpoense* var. *pruniflorum*, one of the latest of this class of Rhododendron to flower with us in mid-June.

Dwarfs in their various series grow well with us so long as they are

not in too dense a shade, the only exception being *R. imperator* which has been tried on many occasions.

Finally, there is a definite clash between our climate and monsoon areas. All of WILSON's collecting that we have tried grow well, followed closely by those from the Tali area of Yunnan, both outside the influence of the monsoon. But the moment plants come from an area much afflicted by the monsoon, such as the N'Mai Hka-Salween, Salween-Irrawaddy and Shweli-Salween divides with a monsoon rainfall of over 70 in., they begin to get troublesome. I am so certain that this is a main factor in our cultivation of any of the south-west Chinese flora that we avoid planting anything that comes from a heavy monsoon area.

Rhododendron var. 'Temple Belle'

The hybrid Rhododendron 'Temple Belle' shown in Fig. 36, was raised at Kew in or about 1916 by Mr. ARTHUR OSBORN from a cross between *R. orbiculare* and *R. Williamsianum*. In the rock garden at Wisley, where the photograph was taken, it has made a plant of pleasing shape, not over 2 ft. tall but spreading widely and flattening its lower branches over the adjacent rocks. Its neat, orbicular-ovate leathery leaves on red stalks are decorative at all seasons, and provide an attractive setting for the bright pink flowers which open in lax trusses about mid-April. The plant has not been pruned more than has been necessary to provide cuttings, which Mr. HANGER tells us can be rooted without difficulty.

N. K. GOULD.

TWO NEW RHODODENDRONS FROM NEPAL

R. Cowanianum and *R. Lowndesii*

by

H. H. Davidian, B.Sc.

IN WALLICH'S catalogue eight species of Rhododendron are recorded from Nepal. These were described over a century ago from specimens which WALLICH obtained from pilgrims to the Shrine of Gossain Than, when he visited Katmandu in the year 1820. Since then, and previous to Mr. O. POLUNIN's and Col. D. G. LOWNDES's visits, little has been added to our knowledge of the flora of Nepal. Lieut.-Col. F. M. BAILEY, when resident in Katmandu, collected a few herbarium specimens, but, like other visitors was not allowed to wander far afield. A number of species including *Meconopsis regia* and *Meconopsis Dhwojii* were, however, collected in 1931 by LAL DHWOJ, at the instigation of the Maharajah and at the request of King George V.

Mr. POLUNIN and Col. LOWNDES had the privilege of visiting Nepal in 1949 and 1950 respectively, and each was fortunate in securing a new species of Rhododendron on his first visit to this little known country. These species were described by me in the *Notes from the Royal Botanic Garden, Edinburgh*, XXI, May (1952), and it is thought that a more general account would be of interest to readers of the *Year Book*. Neither of these plants is in cultivation, but we all wish that Mr. POLUNIN, who is at present collecting in Nepal, will be successful in obtaining seed to enable us to add to our collections these two desirable new plants.

The first of these I named after Dr. J. M. COWAN in consideration of the work he has done on the genus, and it is appropriate that a Nepalese Rhododendron should be named after him, for he has been in Nepal and I understand that when in Darjeeling he learnt Nepalese and spoke the language fluently.

R. Cowanianum was discovered by Mr. POLUNIN in June 1949, in Langtang Lateral Valley, Central Nepal, at an elevation of 12,000 ft.

The new species is so unique that it cannot be placed in any series. It is remarkable in being deciduous and yet distinct from the species of all deciduous series. It suggested first the Trichocladum Series but the flowers are reddish-purple not yellow, the scales are entire with a marginal rim not bladder-like as in that series, and, moreover, the known species of the Trichocladum Series are all from China and

east Tibet. *R. Cowanianum* somewhat resembles *R. Baileyi*, but cannot be placed in the Lepidotum Series because the leaves are deciduous. From *R. Baileyi* it is further distinguished by the scales, which are entire and not crenulate.

The other species was discovered by Col. D. G. LOWNDES in Marsiandi Valley in July 1950, growing in rock crevices on cliff faces, at an elevation of 13,500 ft.

R. Lowndesii is remarkable for its unusual characteristics and for the beauty of its flowers. It is so distinctive that it also does not fit well into any recognized series, but it is tentatively placed in the Lepidotum Series although the leaves appear to be deciduous. From *R. lepidotum* it is readily distinguished by the deciduous leaves with bristly margins, by the bristly pedicels and by the distribution of the scales on the lower surface of the leaves, two to three times their own diameter apart.

It also suggests relationship with the Uniflorum Series, but differs markedly in its short, sharply bent style and deciduous leaves.

Rhododendron Cowanianum Davidian

Shrub, 1.5 m. high; branchlets sparsely bristly or glabrous, scaly. Leaves *deciduous*; lamina obovate or oblong-obovate, apex rounded and mucronate, obtuse or narrowed at the base, 2.3–5.2 cm. long, 1.2–2.4 cm. broad; upper surface rather densely scaly, sparsely pilose or glabrous, midrib pilose, margin bristly; lower surface scaly with large yellowish-green scales, 1–4 times their own diameter apart; petiole 3–4 mm. long, scaly and bristly. Inflorescence terminal, umbellate or shortly racemose, 2–4-flowered, rachis up to 4 mm. long; pedicels 1–1.6 cm. long, scaly. *Calyx 5–8 mm. long*, lobes rounded or oblong-ovate, scaly outside, margin bristly or glabrous. Corolla shortly campanulate, 5-lobed, 1.5–1.8 cm. long, *reddish-purple*, slightly scaly or non-scaly outside. Stamens 10, unequal, 1–1.4 cm. long; filaments villous at the base or to three-fourths their length. Ovary conoid, 4 mm. long, densely scaly; *style short and bent*. Capsule 6–8 mm. long, 5 mm. broad, scaly, calyx persistent.

CENTRAL NEPAL. Langtang Lateral Valley. Alt. 12,000 ft., 5 ft., deciduous; flowers reddish-purple; occasional. 7th June 1949. O. POLUNIN No. 175. Type in Herb. Brit. Mus.

CENTRAL NEPAL. Langtang Valley, N. facing slopes. Alt. 12,000 ft. Frequent in birch forest. Shoots from deciduous species; see 175. 23rd June 1949. O. POLUNIN No. 551.

Rhododendron Lowndesii Davidian

A dwarf shrublet up to 10 cm. high; branchlets thin, *pilose*, slightly to moderately scaly. Leaves bright green, *deciduous*; lamina obovate

or oblanceolate, apex rounded and mucronate, obtuse or narrowed at the base, 1.3–2 cm. long, 0.4–1.1 cm. broad; upper surface *puberulous*, scaly or non-scaly, *margin bristly*; lower surface sparsely bristly or glabrous, scaly, the *scales* yellowish-green, *2–5 times their own diameter apart*; petiole 1–2 mm. long, scaly. Inflorescence terminal, *1–2-flowered*; pedicels slender, 2.5–4.3 cm. long, *bristly* and scaly. Calyx deeply 5-lobed, crimson, 2–5 mm. long, lobes rounded, ovate or oblong-ovate, scaly outside, margin ciliate. Corolla rotate-campanulate, 5-lobed, 1.4–1.7 cm. long, *pale yellow, spotted with carmine* on the posterior side, scaly outside. Stamens 10–11, unequal, 7–10 mm. long, exserted from the tube; filaments villous to two-thirds of their length. Ovary conoid, 2-3 mm. long, densely scaly; *style short and sharply bent*.

NEPAL. Marsiandi Valley. Alt. 13,500 ft. Rock crevices on cliff faces. Flowers pale dull yellow, spotted yellow ochre. Back of corolla and calyx marked with carmine. Flower stem carmine. Leaves bright green. 2.7.1950. D. G. LOWNDES No. L. 1174. Type in Herb. Brit. Mus.

THE PROPAGATION OF RHODODENDRONS FROM STEM CUTTINGS

by

James S. Wells

Bridgeton, New Jersey, U.S.A.

THE position on the eastern side of the United States is in many ways unique in so far as the growing of hybrid Rhododendrons is concerned. The climate is extremely variable and as winter temperatures often drop to zero or below at least once during the winter period, most of the better hybrids cannot be grown here. The variety 'Pink Pearl' for instance is so unreliable as to be not worth growing from either a commercial or a consumer's angle. It will be seen, therefore, that a vast amount of really beautiful varieties has to be eliminated and we are still supplying the vigorous demand from a group of old "iron-clad" varieties which were raised fifty years or more ago by crossing with the native *Rhododendron catawbiense*. Most of these are listed in The Royal Horticultural Society's *Handbook* as being no longer worthy of growing, and of course this is true when they are compared with the wealth of material which is available in England. However, to meet our most peculiar climatic conditions, we have to maintain these varieties in production and hope that hybridizers will one day wake up to our particular needs and produce some really hardy varieties which have the breeding and charm of R. 'Loderi'.

When I came to this country from England in 1946, propagation had, up to that time, been carried on almost exclusively by grafting. A few people had experimented with the rooting of stem cuttings and also leaf-bud cuttings but no quantity of plants was available in the trade grown in this way, and knowledge was extremely limited and incomplete. In the first twelve months it was obvious to me that if we could root Rhododendrons from cuttings we would gain certain very worthwhile advantages. The problem mainly centered around a disease which attacks *R. ponticum* here, sometimes very severely. It is a fungus disease known as *Phytophthora Cinnamomi*, and is a tropical aquatic relation of the ordinary potato blight. *R. ponticum* seems to be highly susceptible to this and no good control has yet been found. Tests made twenty years ago seem to show that the disease could be controlled by lowering the *p*H of the soil so that the plants were being

grown at a *p*H of 4 or less. This is, I believe, correct but there are certain clearly understandable difficulties in trying to maintain a soil at such a low *p*H. We have attempted to do so by using flowers of sulphur but with a high humus content, which is also necessary, the effect of the sulphur is to a certain extent buffered. If the *p*H creeps up above 4, and given a period of high summer temperatures with excessive humidity, then the disease can become epidemic. This occurred last season, 1951, and we lost over 6,000 Rhododendron grafts. Yet with the disease at an epidemic level similar varieties on their own roots, and growing beside plants dying by the thousands, came through unharmed.

In tackling the problem of rooting from cuttings, therefore, we had two factors to consider. First was the loss normally sustained when propagation was done by grafting, and second was the fact that whereas it required two years to raise an understock, and two more years to bring the plants to saleable size after grafting, plants on their own roots were ready for sale in two years, and in the case of vigorous growing varieties in one. The varieties with which we have to work are, however, just about the most difficult ones to root. By reason of climate we are limited strictly to the "Ironclad" group given in the R.H.S. *Rhododendron Handbook* of which 'Dr. H. C. Dresselhuys' and 'America' are our most reliable hardy reds. Some of this group, notably 'Roseum Elegans', and hybrids with *catawbiense* blood, root fairly readily, but the reds which always are in keen demand are extremely difficult.

With these problems facing us, we commenced experiments in 1947 which have continued to date. We now have a certain amount of data which leads me to say that I think we shall within the next two years be able to eliminate propagation by grafting and produce all varieties from stem cuttings.

Before considering in detail the methods which we have found to succeed best in our tests, I would like to explain why we have concentrated on stem cuttings as against leaf-bud cuttings. Leaf-bud cuttings certainly can be rooted. Many growers are doing it well, and we have rooted them too, but once rooted they have a tendency to remain dormant and it is extremely difficult sometimes to break the bud into active growth. We have kept plants here for twenty-one months before dormancy has been broken and delays of this kind are not commercially sound. Certain varieties may root more readily, and for the smaller grower or amateur wishing to produce a few plants and where time and quantity are of no importance, or where the propagating material is very strictly limited as with a new variety, then leaf-bud cuttings are certainly justified. But for standard commercial production

of saleable plants in large quantities and in the shortest possible time, I am quite certain that stem cuttings are unbeatable.

In tackling the many problems which had to be dealt with, we concentrated on one variety, Rhododendron 'Roseum Elegans'. This is one of the most easily rooted of the varieties which we normally grow. In fact, it roots now with such ease that we begin to wonder why the plants were ever grafted. It is, of course, very easy to be wise after the event and especially when one knows how to do the job. Using this variety, we commenced a series of experiments which began to show us what Rhododendrons need in order to root. From this base, and with the steadily accumulated fund of knowledge, we have worked out into other and more difficult varieties, until now we are rooting fair quantities of quite a number, including many of the so-called "red flowering" types. These last, of course, are the most difficult of all to root. For instance up to this year it has been almost impossible for us to root Rhododendron 'Dr. Dresselhuys'. We can root a few of course, but we consider that we have to root at least 50 per cent of the cuttings which we insert in order to make the operation commercially sound. With this as a basis for evaluation, would repeat that we think it is possible to root almost any variety of Rhododendrons, at this percentage or higher. It just depends upon knowing how to treat the variety in question.

We found that some twelve different factors closely affect the results obtained and in order to achieve good percentages it is necessary to know just how to balance these factors for each of the varieties concerned. I propose to run through each of these separately and to give the distilled essence of our results. The way in which a balance between them all can be achieved will readily be seen.

TIMING

This is one of the most important single factors. We have found that the difference in percentage of rooting can be as much as 50 per cent with only two weeks difference in the date of taking the cuttings. For instance, 'Ignatius Sargent' taken on 16th August gave 36 per cent rooting while the cuttings taken from the same plants on 5th September gave 74 per cent under identical conditions of treatment. Similar critical timing has come out in many other varieties, and under our conditions here in southern New Jersey we have found that the period from early August to the end of September is the best. Certain varieties which start into early growth in the spring and therefore mature earlier in the summer can be taken at the end of July. 'Purpureum Elegans' is one; 'Lee's Dark Purple' is another; but for most varieties and under

normal conditions the time given is the best. The actual date at which the cuttings will be taken has to be judged season by season.

TYPE OF CUTTING

Thin cuttings taken from side growths have given consistently higher percentages of rooting. Strong, vigorous terminal growths are the worst. Similarly, cuttings taken from the under-side of large trees have rooted very much more readily than cuttings taken from the vigorous growing top growths. Once this fact was established, we tried to produce this thin type of side growth on the young stock plants which were growing in an open bed on our nursery. When the plants had completed their first spring growth after flowering, we went through the block and pinched out all the terminal buds. This delayed the second surge of growth by two to three weeks, but the plants then produced a series of relatively short and somewhat thinner growths on the tip of each stem. The illustration (Fig. 26) will clearly show what I mean. This last year we have used, almost exclusively, cuttings of this kind and they have rooted very well indeed. It seems clear, therefore, that under commercial conditions it is possible to produce the thin type of side growth which roots more readily and not to rely upon the haphazard production on the lower side of larger stock plants.

MAKING THE CUTTINGS

We gather cuttings early in the morning when the plant material is fully turgid. We immediately place it in a cool cellar and damp it down to keep it cool and moist, while the cuttings are prepared. We have found that short cuttings of 3–4 in. in length root more readily than longer ones. If long ones are made and inserted they tend to root half-way up the stem at a point closer to the surface of the rooting medium and the insertion of the long stem seems only to delay the rooting process. This short thin type of cutting is happily produced by the method described above, for the second set of growth produced by the stock plants after pinching is ideal. There seems to be no obvious advantage in keeping a heel on the base of the cuttings. We have obtained just as good results with or without a heel. The leaves on the individual cutting are reduced to a maximum of four unless they are rather small when perhaps five or six may be kept. No leaves are halved, we retain leaves untouched or remove them entirely.

WOUNDING

This is the second most important procedure which we practice. I do not say that Rhododendron cuttings cannot be rooted without

wounding but we have proved time and again that by carrying out this procedure we greatly increase the speed and total percentage of plants rooted. Wounding of cuttings is a procedure which does not seem to be too widely practised. Apart from the time honoured method of splitting carnation cuttings, I first ran into it in 1946 when on a visit to Boskoop. We have experimented with a number of different kinds of wounds, but we have found that what we call our "heavy" wound is preferable. The cutting is prepared in the normal way, excessive leaves removed, the base of the stem is trimmed to the desired length and then using a sharp knife a thin slice is removed from the base of the cutting for a distance of about 1½ in. (Fig. 27). This slice cuts through the outer cortex tissue and exposes the cambium layer beneath. We believe it best not to cut right through the cambium layer if it is possible to gauge the cut thus accurately, but when unskilled people are operating on large quantities, every variation can be found. The actual depth of the wound, as long as it does not cut the stem in half, seems to be not too critical. We have found some varieties respond even better to a double wound of this kind whereby a similar slice is removed from the other side of the stem leaving two small intact sections between the cuts. We have always considered that the main value of this wound is to allow a much larger area of entry for the hormone treatments which we give immediately. Whether this is scientifically true or not, I do not know. The fact remains that the wound certainly works.

HORMONE TREATMENTS

There are growers who say that there are no results obtained by the use of hormones which the skilled propagator cannot develop without them. This is an argument to which we do not subscribe. We believe that used intelligently, plant hormones have a most definite place in modern plant propagation and we use them extensively. For our easily rooted varieties we use a powder containing .008 of indolebutyric acid. This is the strongest commercially available powder in this country. This strength suits admirably the variety 'Roseum Elegans' and we believe would be quite adequate for many of the softer varieties which we do not grow. However, the results of our tests seemed to show that many of the varieties of Rhododendrons would respond to much stronger treatments. For instance, the variety 'Dr. Dresselhuys' was hardly affected by treatments with this powder. We therefore purchased some indolebutyric acid and mixed our own powder at a 2 per cent strength and this greatly increased the number of varieties which were successfully rooted. For example, the variety 'Cynthia'

gave 15 per cent rooted with the weaker powder, but 83 per cent rooted with the stronger one. By testing a number of varieties in small quantities, first with the weak, and then with the stronger indolebutyric acid, we obtained data which indicated the type of treatment which best succeeds under our conditions. These results clearly showed, however, that many varieties require still stronger hormone treatments in order to be stimulated into the production of roots.

Even although we were using stronger powders which for all normal plants would be quite lethal, some of the extremely difficult red-flowering varieties still resisted our efforts. This last year, therefore, we approached the U.S. Department of Agriculture, at Beltsville, Maryland, to ask them if they could suggest any chemicals which were considered so strong as to be quite unusable for normal plant propagation. We asked them to give us a list of the most active chemicals known to them. They came up with a list of twelve and I made up a standard 1 per cent mixture of each of these in talc for testing purposes. The most active of these powders was fifteen times as strong as the strongest one we had used to date. We have obtained some clear-cut results which seem to show that our arguments were right. In small scale tests on the variety of Rhododendron 'Dr. Dresselhuys' the following two chemicals have given us the best results.

2 4 Dichlorophenoxy alpha propionic acid;
2 4 5 Trichlorophenoxy alpha propionic acid.

The first gave 90, 80 and 90 per cent rooted in three tests of cuttings taken on 6th August, 23rd August and 7th September, while the second gave 80, 90 and 90 per cent in a similar three tests. These are much higher percentages than we have ever obtained before. They are, however, on small test quantities only and these results have to be interpreted this year in a commercial way to establish their true value. We believe, however, that the value of these excessively strong hormones will be proven in the rooting of some of the really difficult, tough varieties.

MEDIUMS

We have tested a number of different rooting mediums, including vermiculite, but we prefer a mixture of about 90 per cent acid (*p*H4 to 4.5) or German type peat and 10 per cent clean, sharp sand.

INSERTING THE CUTTINGS

We insert the cuttings fairly close together in the benches so that the leaves support each other in an upright position. It is important not to

insert the cuttings too deeply. Nothing is gained thereby because roots are only produced higher up the stem close to the surface. We take the cutting so that if it is 3–4 in. long, we insert about 2–2½ in. in the rooting medium. All leaves should of course be clear of the bench.

BOTTOM HEAT

We maintain a steady bottom heat of about 70–75°. There seems to be a definite value in reducing the temperature after the cuttings have been in the bench for some time. Cuttings taken in August will respond to a high temperature but if they have not rooted in three months then they are more likely to do so if the bottom temperature is dropped to 60°.

HUMIDIFICATION

This is the third point which we have found to be of extreme value in the rooting of Rhododendrons. For the past two seasons we have maintained our propagating houses under a constant mist during the day and have endeavoured to maintain a humidity as close to 100 per cent as possible (Fig. 29). This has made a striking difference in the percentages rooted. I would quote one example. On the variety 'America' (one of our most difficult reds), cuttings taken without humidification gave us 6 per cent rooted, while cuttings taken with humidification gave 80 per cent rooted. All other factors were similar. This is a somewhat extreme example, but higher percentages are consistent throughout.

AIR TEMPERATURE

As cuttings are taken in August and September when we normally experience very hot weather, the air temperature in the greenhouses, even under the fog system, can go above 100, which is definitely detrimental. We try to keep the air temperature at a maximum of 85 by running cold water down the outside of the greenhouses and maintaining the fog system running through the day inside. Light shading is necessary in excessively hot weather.

LIGHT

The question of shading brings up the matter of light intensity in the propagating houses. We believe that this has a very definite bearing upon the results obtained and we try to keep the maximum light intensity comparable with the proper control of air temperature. Humidification, air temperature and light are all interconnected and all require very careful watching to maintain a proper balance.

Photo. R. Eudall]

FIG. 25.—*R. yunnanense* at Muncaster (*see* p. 60)

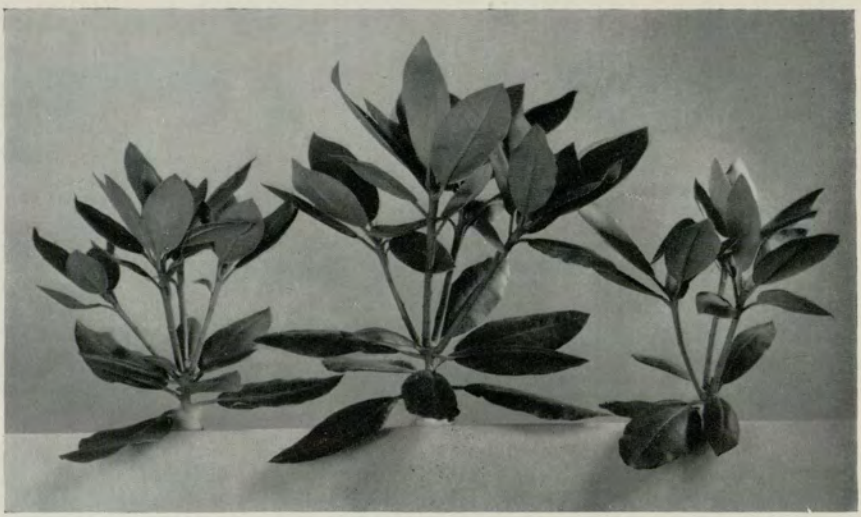
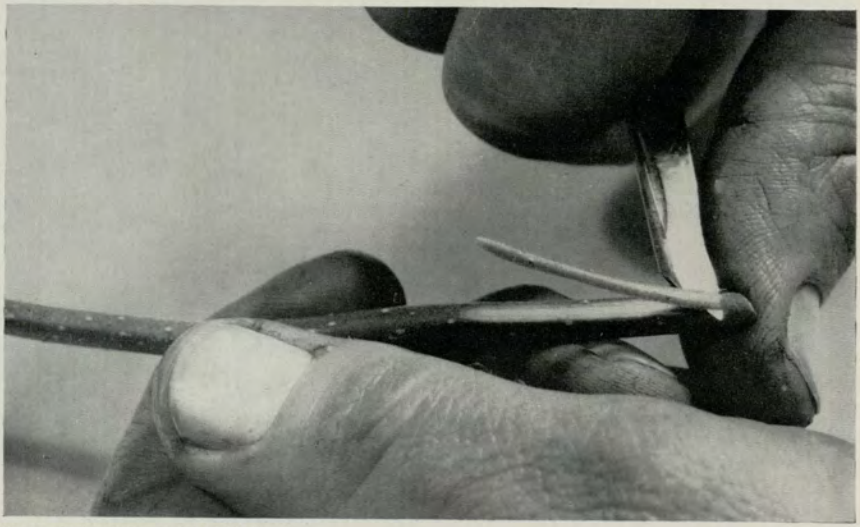


FIG. 26.—Type of Cutting. Showing the relatively thin and short type of growths which are produced by actively growing stock plants if the terminal buds are removed after completing the first set of growth. These thinner and shorter cuttings root much more readily than stronger growths (*see* p. 77)



Photos. Seabrook Farms, by McClelland]

PROPAGATION OF RHODODENDRONS FROM STEM CUTTINGS

FIG. 27.—Wounding. Showing how the heavy wound is made. In some instances we have made two such wounds on opposing sides of the cutting. Cuttings so wounded are *immediately* treated with hormones so that the powder sticks to the newly cut damp surface of the wound (*see* p. 78)

FIG. 28.—Rooting. Well rooted cuttings being lifted just 10 weeks after insertion. These will be potted and prepared for over wintering (*see* p. 81)

Photos. Seabrook Farms, by McClelland]

FIG. 29.—Humidification. The fog line is suspended below the centre board of the house. Jets are spaced 2 ft. apart and are directed alternately to either side. When in operation each jet needs 1½ gallons of water per hour at 60-70 lb. per sq. in. pressure. Rhododendrons can be seen in position on the benches (*see* p. 80)

FIG. 30.—The second pinching. A young plant in late June showing the development of the buds and the start of the second set of growth. All such buds are removed at this time to induce further branching. This plant is just 8 months old from the time it was removed as an unrooted cutting (*see* p. 82)

Photo. Seabrook Farms, by McClelland]

FIG. 31.—The finished produce. A plant in the middle of its second season. Flower buds are not yet formed but will be set later in the summer. These plants are just 21 months old from the time the cutting was taken (*see* p. 82)

ROOTING

Under the conditions described above, the cuttings will rapidly form a pad of callus and will then apparently remain dormant for some time. They may rest in the bench for 8–10 weeks with little activity and will then suddenly commence to root. When rooting commences a ball of vigorous young roots is produced in a remarkably short space of time and once a good ball is established the plants can be lifted for potting. It is necessary to be very careful in the handling of the rooted cuttings because in many instances the roots are lightly attached to the stem at this stage and break off very easily. Once a good proportion of cuttings are rooted, there should be no delay in the lifting of these because they can go back if not moved out of the bench.

RESTICKING UNROOTED CUTTINGS

Cuttings which are otherwise healthy but which have not rooted or which have one or two roots just commencing should be restuck into the bench. This is particularly true of the red-flowering varieties and slower rooting types which sometimes require as long as six to eight months to produce a proper ball of roots. Speed of rooting will vary according to varieties and those which are slow must be treated with patience. A further point of importance must be mentioned here. Just what happens to the medium we do not know, but we have clear evidence that three to four months is the maximum time that it should be retained in the propagating house. After about four months, cuttings just commencing to root will produce a tight stunted fuzzy type of root, obviously abnormal and virtually useless as a root system. If the medium is changed and the cuttings are inserted in a fresh peat and sand mixture they will at once commence to produce normal roots and can be potted on in a short time. We have never been able to find an explanation for this. We simply change the medium when the cuttings are lifted for potting and resticking.

POTTING

The rooted cuttings are immediately potted into 3 in. pots using a suitably acid peat potting mixture and returned to the houses from whence they have just come. The object of this is to keep them in a similar atmosphere and to encourage them to produce a sturdy pot ball of roots before being taken from the greenhouses and placed in frames for wintering. Once firmly established in the pots, the plants can be taken out and plunged in frames in a bed of peat so that the top of the pot is covered and they will come through the winter with no difficulty whatsoever (Fig. 28).

PLANTING AND SUBSEQUENT TREATMENT

It is perhaps in order to include in the discussion of propagation the handling of plants in the first season. We make up our beds early in the spring with a really good dressing of peat 3–4 in. deep which is roto-tilled into the ground. The net result is to produce a mixture in the beds of about 50 per cent peat and 50 per cent top soil. As early as possible in the spring we commence planting out the rooted cuttings. They are removed from the pots and planted out in these beds at a distance of about 10 in. The terminal bud is removed at the time of planting and the beds are mulched with peat to insure a cool moist root run. The beds are then shaded with lath shades to provide 50 per cent coverage for protection during the hot summer months. The early planting is important because the Rhododendrons commence root action very early in the spring long before any signs of top growth are actively seen. We like to get our plants out early so that they can become established and in intimate contact with the soil before hot weather sets in. This early planting has a very definite effect upon the vigour of growth in the ensuing months. With the terminal bud removed, the plant commences growth and produces three to four shoots from the top of the cutting. Once growth is complete on these shoots, which will probably be sometime in June, the terminal bud is again removed from each of them (Fig. 30), and the second set of growth which follows will once again be branched. The final result is to produce a 10–12 in. and in some cases a 12–15 in. high plant with a well-branched system of stems which is the basis of a fine bushy Rhododendron. These plants, if left undisturbed in the second year, will grow to 15–18 in. in height and should bud up strongly (Fig. 31).

The advantages of propagation of Rhododendrons in this way are the elimination in the use of *R. ponticum* and thereby the virtual elimination of the disease which attacks this plant, and the production of a saleable plant with much less effort and in considerably less time.

The results which we have obtained are confined almost exclusively to the old hardy varieties which are not by any means the most easy to propagate. From information which I have from Oregon, I am quite sure that this method of propagation can be used on a wide list of varieties such as are normally grown in England.

TIP GRAFTING OF RHODODENDRONS, AZALEAS AND OTHER PLANTS

by

J. S. Yeates

Botany Department, Massey Agricultural College, Palmerston North, N.Z.

THE traditional methods of grafting Rhododendrons and Azaleas are by the side-graft, the saddle graft or the cleft graft, as described by GARNER.[1] All these methods have one feature in common, namely that fully ripened one-year-old scions are grafted near the base of the stocks on to wood which is two or more years old. The root-graft is similar except that the scion is grafted directly on to a root of the stock plant, so avoiding the risk of the stock's suckering.

In the hands of a good propagator these methods are fairly satisfactory, to the extent that from 60 per cent to over 90 per cent of the grafts are successful in routine commercial work where popular varieties, selected partly for ease of propagation, are used. In other cases, however, it is found that union and growth are not satisfactory following the usual methods of grafting.

LEM[2] in 1946 published an account of a method used by him for top-working old Rhododendron bushes out of doors. As this method seemed to offer promise as a regular method of propagating Rhododendrons, trials were carried out, partly along the lines of LEM's work, but mainly in an attempt to develop a system of grafting on to young (i.e. current season's) wood of the stock, suitable for the large scale grafting as now done by side or saddle grafting.

The account by LEM was (in part) as follows:

> "The grafting should take place as soon as the leaves unfold on the new shoots in the spring or early summer. Cut off the new shoots leaving only a two-inch stub which should be split one and a half inches down through the centre. The wedge-shaped scion should be fitted in so that the cambium layers approximate each other on one side at least. . . .
>
> "Perhaps even better results may be obtained by cutting the new shoot off just above the lower two leaves and splitting the stem

[1] Garner, R. J. *The Grafter's Handbook.* Faber & Faber, London 1947.

[2] Lem, H. *The Rhododendron Yearbook* for 1946 (American Rhododendron Society, Portland, Oregon).

down one inch and a half between these two leaves, placing the scion between them."

Although our climate in Palmerston North is a fairly humid one, it has not been found a practical proposition to do these operations out of doors as LEM found he could in North-West U.S.A. His object moreover, was to top-work larger old bushes to new varieties; while our aim was to develop this as a regular method for grafting on to the smaller stocks generally used in propagating Rhododendrons.

Having satisfied ourselves by a preliminary trial that such a method was successful, we carried out trials lasting over some three years, in order to find the best stage of maturity in wood and in scion, and also the degree of tolerance that existed in these respects. Furthermore, it was important to compare the effectiveness of this new method as compared with the orthodox veneer-grafting technique.

THE SCION

In our first trials scions were used at the stage described by LEM, i.e. as soon as the leaves unfolded in spring or early summer. It was soon found, however, that even in a humid propagating house the youngest leaves which had just unfolded were too soft, and usually wilted, leading to failure of the graft. The earliest stage of growth which we found to be really satisfactory in the large-leaved evergreen Rhododendrons, was at the time when the new leaves had become fully firm—the same stage at which we usually take half-ripe cuttings of those Rhododendrons which can be rooted successfully. This stage is shown in the scion in Fig. 32.

Scions of more mature wood are equally successful; in fact the important feature appears to be that the understock should be in active growth, and that the scion should be inserted into wood which is not more than half-ripe. In this respect tip-grafting has been of considerable value in New Zealand. Scions of new hybrids are conveniently imported into New Zealand from England in November-December, at which time they are fully mature and hard. These scions arrive in New Zealand when the current season's growth of our understocks is about half ripe. Union and growth is generally very rapid under these conditions, as shown in Fig. 32 and as described later for the hybrid 'Elizabeth' (F.C.C.).

THE STOCK

The stock, or understock as it may be called, may be successfully used when the new wood into which the scion is inserted is much softer than could be used for a scion. Quite successful grafting has been done

when the young shoots of the stocks were at the "asparagus-brittle" stage. The long narrow pinkish scale leaves on the new growths of *R. Fortunei* seedlings were still attached to the young shoots. From this stage of softness tip-grafting has been successfully done right through autumn and winter. It is, however, when the stock is in active growth and its new shoots soft or half ripe that this method shows its particular advantages of quick union and rapid growth as compared with the orthodox methods of grafting.

GRAFTING TECHNIQUE

The actual procedure in grafting by this method is very simple indeed, and stages in grafting and subsequent growth of one plant are shown in Fig. 32. The terminal bud and if necessary a little more of the stock is cut off, just above one or more leaves. The short piece of stem left above the leaf is important in securing a firm tie at that point. Some of the leaves for 1 or 2 in. down the stem may also be cut off to simplify tying. The stem is then slit down the middle for a distance of about 1½ in.

The scion is prepared by removing all but three or four leaves. The scion is cut to a wedgeshape, making this wedge slightly shorter than the split in the stock. This is important, because we have found that the union and subsequent growth are poor if any part of the cut surface of the scion is left exposed above the stock. The scion wedge is then inserted firmly in the split stock, being careful to make firm contact in the base of the split, where first union appears to take place. The cambium is matched on one side of the split, or on both sides if scion and stock are of the same thickness. If the grafting is done with both stock and scion at the half-ripe stage there appears to be considerable latitude in this matching of cambium layers, a feature not unexpected with tissues which have so recently been in active growth. For tying we use raffia. Only moderate tension is applied in making the tie, because tender shoots may easily be bruised. To ensure firmness we use a considerable number of turns of raffia.

AFTER-CARE

The grafted plants are then put into a closed propagating case in a glasshouse for some six weeks or two months. Towards the end of this time the propagating case is opened for longer periods, first at night, and later during the day. After removal from the propagating case the plants may be hardened in the open glasshouse or in cool frames and, in our mild climate, may be lined out in early autumn.

The propagating case need not be heated, since temperatures of

60° F. or more can readily be obtained in summer without artificial aids. The use of ordinary garden frames for this grafting is quite satisfactory provided they are damped down once or twice a day and shaded during periods of full sun. As a simple means of maintaining humidity in these frames we commonly pack sphagnum moss among the plants and damp down simply by playing a hose with a fine spray over the plants once or twice during sunny days.

ADVANTAGES AND DISADVANTAGES OF "TIP-GRAFTING"

In comparing this method of grafting with the normal methods (veneer graft or saddle graft) for Rhododendrons, there are several aspects to be considered including:

(1) The percentage of success obtained;
(2) Ease and speed of working;
(3) The subsequent growth of the plants;
(4) The disadvantages of a union several inches above soil level.

(1) All the evidence we have so far obtained indicates that the average or below-average propagator can obtain a higher percentage of successful grafts by the "tip-grafting" method. This feature is particularly noticeable when grafting some species or varieties which are difficult to graft successfully by the usual means. In our work, for instance, scions of a particular plant of *R. Delavayi*, veneer-grafted in early spring on two or three occasions gave only about one success in twelve. Scions off the same bush, tip-grafted in midsummer, gave six successes for six grafts. The managing director of New Zealand's largest nursery reports exactly the same results—that tip-grafting is particularly successful in grafting Rhododendrons which are known from previous experience to be difficult.

It is easy to find a likely reason for the greater success obtained from the tip-grafting. The grafting is carried out at a time of the year, and at a stage of growth when stock and scion exhibit more meristematic activity than when grafting is generally done in early spring. Even though tip-grafting is done in early spring, it has the advantage that the wood of both stock and scion where union takes place, are of about the same age, and much less woody than the old base of the stock into which a veneer or saddle grafts are done.

(2) Ease and speed of grafting are very good features of this method.

(3) The subsequent growth of the plants is an outstanding feature of this method. Fig. 32 shows a plant of the (F.C.C.) Rhododendron 'Elizabeth' taken some thirteen weeks after grafting. The scion was received by air from England on 11th November 1950. Having two

whorls of leaves, it was cut into two for grafting. The scion shown was the basal half of the shoot, with no terminal bud and only the usual small dormant buds in the leaf axils. Within four weeks two of these dormant buds had swelled and produced good shoots. In approximately another month, each of the shoots had made a second growth—as shown above the middle whorl of leaves on each. The photograph was taken on 27th February 1951.

Growth of plants which have been grafted for several years has remained entirely satisfactory; the first Rhododendron grafts of this sort were done in midsummer of 1946–7. At the time of writing they are about four and a half years old and have proved completely satisfactory in all respects. Several hundreds of Rhododendron plants have been grafted in this way, spread over later years, and there has been no indication of any shortcoming in their growth as a result of the grafting method used.

(4) Disadvantages of a high union between stock and scion are more apparent than real. In most cases the union is between 6 in. and 9 in. above ground level. This may appear a considerable height when the plant is small, but it has no serious disadvantage in the growth of the young plant, and in a Rhododendron bush of mature size, an unbranched stem of as much as 12 in. is unimportant. Most of the suckers on Rhododendron stocks originate from the stem-base of seedling plants, not from the stem proper. Moreover, they are very easy to remove from the true stem as they appear.

In one respect we find the height of the union of considerable advantage. By leaving in place the foliage of the stock for a year or two, we are able to assist growth of the grafted plant quite considerably. Any axillary buds which begin to develop are rubbed out.

GRAFTING OF DECIDUOUS AZALEAS

The vegetative propagation of the hybrid deciduous Azaleas other than by layers is difficult. Grafting seems to be successfully done on a commercial scale, mainly in Belgium and Holland, and layering is resorted to elsewhere. The recommended method of side-grafting has been tried with only mediocre success in New Zealand, both by a commercial nurseryman and by ourselves.

Tip-grafting was first tried on very soft Azalea scions which had been taken for cuttings. These scions had some young leaves still unfolding. They were inserted into the soft to half-ripe tips of Azalea seedlings and kept in a close propagating frame. Within a week they were so obviously uniting that most of the remaining cuttings were removed from their rooting medium and grafted. Subsequent trials

have shown that the deciduous Azaleas can be successfully grafted from the stage at which both stock and scion are soft and brittle, to the half-ripe stage at which all the leaves are fully expanded and a small terminal bud is visible at the stem apex.

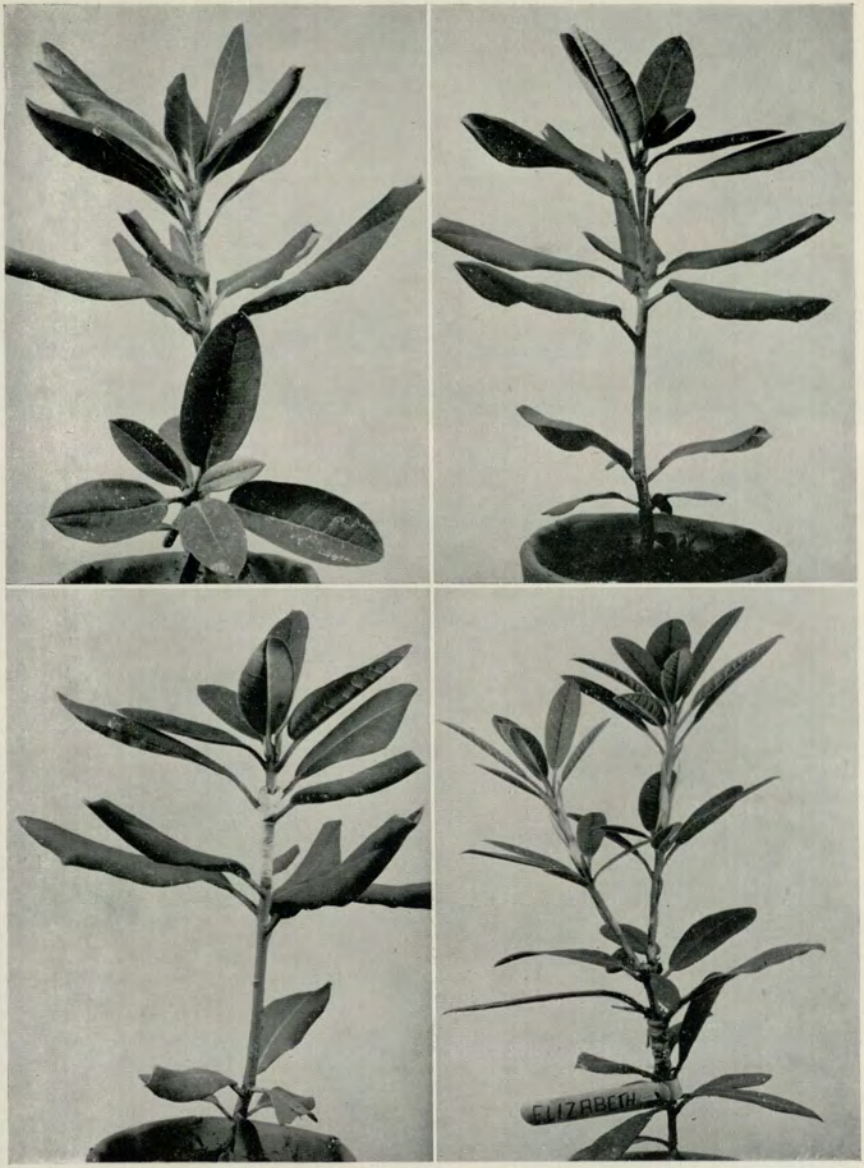
However, when both scion and stock are at the softer stage described above, growth of the grafted plants is much faster than when older wood is used. In the former case new growth of the united scions in the season of grafting may be as much as 6 in. When half-ripe scions and stocks are used, there is no fresh growth until the following spring.

The technique of Azalea tip-grafting is the same as that for evergreen Rhododendrons (Fig. 33). This method of grafting gives a very high percentage of success. A semi-skilled assistant on the first attempt had approximately 95 per cent success, the small number of failures being due to accidental breakage of the grafted plants.

Grafted plants of deciduous Azalea are of course not nearly so satisfactory as seedlings or layered plants. They suffer from the disadvantage that any suckers from below the union will not be of the desired variety, and must be removed. As a result, a grafted Azalea is unable to adopt the normal habit of growth of these plants which is to develop a number of stems from below ground level. Tip-grafting is, however, a satisfactory means of propagating new varieties of Azaleas in cases where layering is not practicable.

The well-known garden form of *Camellia reticulata* is another plant which can readily be grafted at midsummer by the tip method, using scions of half-ripe wood and grafting on to half-ripe shoots of *C. japonica*. *C. reticulata* being a notoriously difficult plant to propagate, a separate paper is being prepared on its propagation.

The above experimental work on plant propagation was carried out with the assistance of a grant from the N.Z. Department of Scientific and Industrial Research.



TIP-GRAFTING OF RHODODENDRONS

FIG. 32.—Stages in tip-grafting of a Rhododendron
(Top left) Potted stock and scion at suitable (half-ripe) stage for grafting (*see* p. 85)
(Top right) Scion fitted to stock before tying
(Bottom left) Graft tied, ready for propagating case
(Bottom right) A grafted plant of Rhododendron 'Elizabeth' F.C.C. three months after grafting (*see* p. 86). The limits of original scion are shown by the raffia, and by the cut top of scion where plant forks

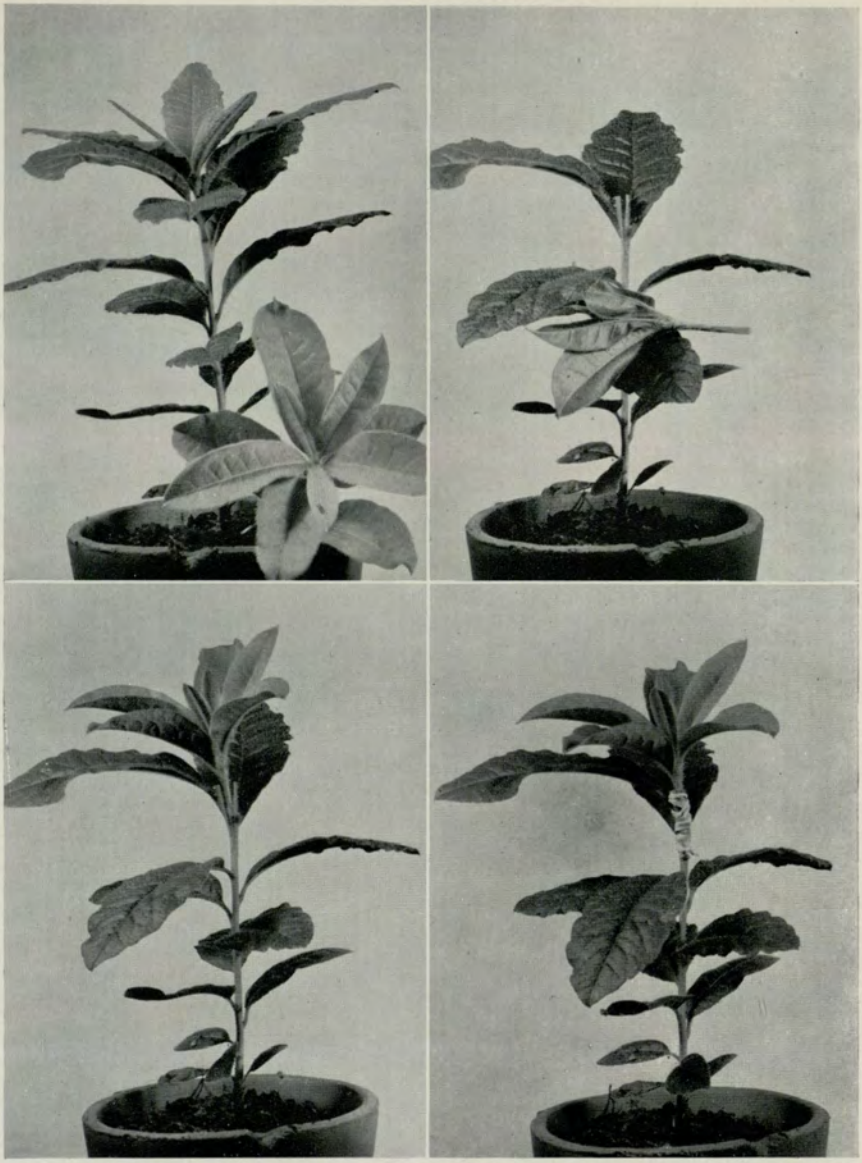


FIG. 33.—Stages in tip-grafting of a deciduous Azalea
(Top left) Stock and scion at suitable (soft to half-ripe) stage (*see* p. 88)
(Top right) Stock and scion prepared for fitting
(Bottom left) Stock and scion fitted
(Bottom right) Grafted plant ready for propagating case

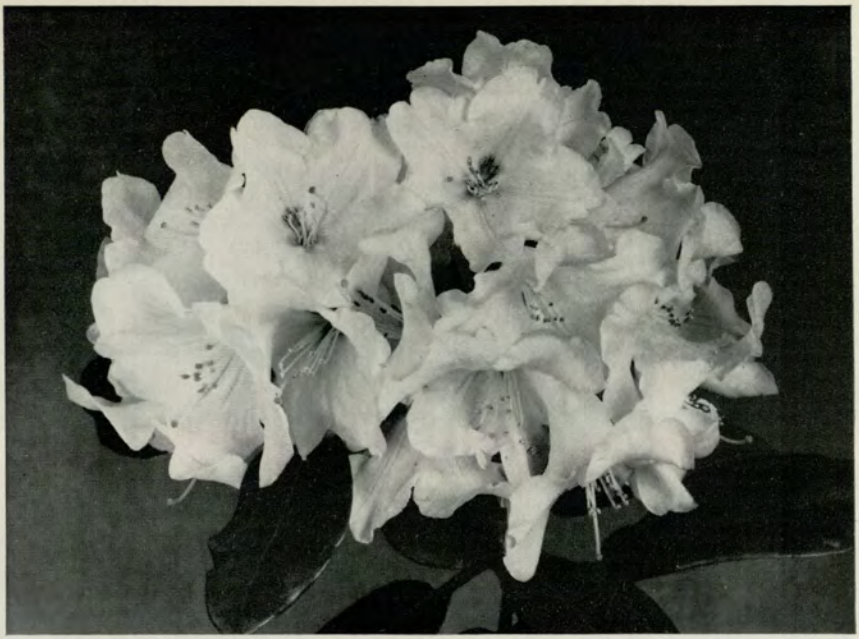


FIG. 34.—*R.* 'Moonshine' **A.M.** 29th April 1952. Exhibited by the Director, R.H.S. Gardens, Wisley (*see* p. 138)

Photos. J. E. Downward]

FIG. 35.—*R.* 'Lord Stair' **A.M.** 29th April 1952. Exhibited by the Rt. Hon. the Earl of Stair, D.S.O., K.T. (*see* p. 138)

Photo. P. M. Synge]

FIG. 36.—*R.* 'Temple Belle' in the rock garden at Wisley (*see* p. 70)

SOME VERY EARLY FLOWERING HARDY RHODODENDRONS

by

Frederick Street

THERE is a saying among gardeners—"Out of season, out of reason". But, like all general rules, there are exceptions. It is probably safe to assume that this applies largely to varieties of a particular genus that flower after the main season is finished. As if the very late varieties of any plant are a little too much, a little overdone, like one glass of port too many. Varieties that flower before the main season are more popular. They are like an aperitif, a piquant hors d'œuvre.

This applies to hardy hybrid Rhododendrons in particular. Although the hybrids from *Rhododendron discolor* and *R. auriculatum* are not generally popular, the very early flowering varieties are widely grown. Needless to say, there is a considerable element of risk in planting Rhododendrons that flower in the winter and early spring. Despite the chance, and a fairly considerable chance at that, of damage by early frosts, it is a risk that is often justified. In fact, there are some years when the early flowering varieties will succeed and the mid season and late flowering varieties will fail because of late spring frosts. From experience I should say that the odds against the early Rhododendrons giving good show of flower are about three to one.

Although I regard any Rhododendron that flowers before the middle of May as being an early variety, for the purpose of these notes I am considering those varieties that flower before the middle of April. Some of them have been known to flower at Christmas in a mild winter and probably the most widely grown of these are the different varieties of R. 'Nobleanum'. To the general gardener, who does not specialize in Rhododendrons, R. 'Nobleanum' is nearly as well known as R. 'Pink Pearl'.

The form generally grown as R. 'Nobleanum' and the variety R. 'Nobleanum Coccineum' can often be seen in flower at Christmas. Although R. 'Nobleanum' is named after the late CHARLES NOBLE, a former partner in the SUNNINGDALE NURSERY, it was, in fact, raised by MICHAEL WATERER at the Knaphill Nursery in 1835. Mr. NOBLE was visiting Mr. WATERER at the time when the plant first flowered and, so great was his admiration, Mr. WATERER gave it his name. The parentage of R. 'Nobleanum' is *R. caucasicum* × *R. arboreum*. As a proof of the skill of the Victorian nurserymen, it was given the valuable

Award of Garden Merit in 1926, ninety years after its introduction. Probably the main advantage of many of these very early flowering Rhododendrons is the characteristic inherited from both *caucasicum* and *arboreum*, but chiefly from *caucasicum*—the production of a series of crops of flower bud so that if one is caught by the frost, another is still protected by the scales and comes into flower later. This succession of flower has often been mistaken, particularly in *caucasicum* hybrids, for "bud blast". Flowering so early in the year it is quite often that the first flowers are damaged by frost and remain in a blackened state on the bush. This can be confused with "bud blast" but, if the plants are watched carefully it will be noticed that the sinister hairs do not appear on the bud.

There is a lesson to be learned from the many different forms of R. 'Nobleanum' under different names, as with R. 'Loderi'. The different seedlings of both these Rhododendrons have been selected and named, where they have been good enough, and have then been propagated by grafting or layering and true plants have been sent out, all raised from the original selected seedling. It is most unfortunate that this practice should have died out in recent years. There are now very many Rhododendrons that have been raised as the result of a first cross between two species and seedlings from them have been sent out at random all bearing the name of the first selected plant that received an award. This has caused considerable disappointment and it is a practice which may cause a decline in popularity of the Rhododendron, particularly of the newer hybrids.

R. 'Nobleanum' is probably a nice balance between the two parents. In the open, it is a bushy compact plant. It is a little taller growing in part shade. The leaves are narrow, lancolate with revolute margins, similar to *caucasicum*, but with a brown covering on the underside—a quality inherited from *arboreum*. The flowers, produced in successive crops, are red, of moderate size and formed into a well-shaped truss. Not only are the buds hardy and well protected until they open but also the flower will stand moderate frost even when it is fully expanded. The variety 'Coccineum' is similar to the type but probably shows a stronger influence of *R. arboreum*. The wood and petiole are more red and the under side of the leaf is silvery. The flower is brighter red and, perhaps, not quite so hardy.

R. 'Nobleanum Venustum' is a creamy-pink form of considerable charm. There are two white varieties—R. 'Nobleanum Album' and R. 'Heatherside Beauty'. In habit and foliage and flower R. 'Nobleanum Album' is similar to the type except that the flowers are white. R. 'Heatherside Beauty', one of the few varieties introduced by my

grandfather, has a rather larger flower and the leaf and habit of the plants are better. The leaf is wider and more fleshy than the other forms and the truss is more built up. I have a large plant of this variety and it is by no means uncommon to see it in full flower in February.

Although the name suggests that it is probably the earliest Rhododendron to flower R. 'Christmas Cheer' usually expands about the first week in March. I should perhaps mention that I refer to the flowering periods of these varieties in my own rather cold and exposed situation and many may well come into flower earlier in more favoured positions. The exact parentage of R. 'Christmas Cheer' is not known but it has the same general appearance as the different forms of R. 'Nobleanum'. The colour of the flower is an attractive pink which could stand up well in comparison with many of the later sorts. Flowering as early as it does it is outstanding. The habit is good—bushy and compact. The foliage is dark and the plant has good constitution and grows well. R. 'Christmas Cheer' is one of the more fortunate Rhododendrons and there are few years when it does not produce at least one good crop of flower. It is often used for forcing both for shows and decoration. But this does not show the plant at its best for a good deal of colour is lost when it is treated in this way.

An early Rhododendron that is often confused with R. 'Christmas Cheer' is R. 'Jacksonii'. It is difficult to know why these two plants should be mistaken for they are quite distinct. R. 'Jacksonii' has a more spreading habit, the foliage is longer and of a lighter green than that of R. 'Christmas Cheer'. 'Christmas Cheer' is a self pink while 'Jacksonii' is pale pink with a deep pink, almost red, stripe on the outside of the petal. R. 'Jacksonii' is described as being *R. caucasicum* × 'Nobleanum' raised in 1926. It is a little doubtful if this is the exact date for the plant is described in a catalogue issued by my late uncle in 1922. There is nothing in the description or price to indicate that it was new at that time. Although R. 'Jacksonii' is a little late flowering, it is usually at its best with the daffodils. It is, without doubt, one of the best of the early Rhododendrons. It is a lucky plant. Every year it seems to give a good show of flower and always misses the early frosts. Although it is an easy plant to grow and layers very easily I am always astonished every year by its beauty. R. 'Jacksonii' does not flower in succession but produces one crop of flower at one time. The only fault with this very fine plant is that the foliage is subject to sunburn and early frost damage as it is produced so early in the year. For this reason only R. 'Jacksonii' is probably best planted in part shade.

Although I wrote at some length in the *Rhododendron Year Book* of 1951 about *R. caucasicum pictum*, this variety should be included in any

selection of early flowering Rhododendrons. It has good foliage and a bushy habit. The flower is pink, frilled and with a dark eye. The habit of flowering in crops in succession is common to this variety as with many other hybrids from *caucasicum*. Like R. 'Jacksonii', the flowering period is a little later, usually towards the end of April.

Another early flowering hardy hybrid which appeals to me very strongly but, I must confess, does not seem to be generally popular is an old variety called 'Waterer's Caucasicum Hybrid'. This plant has a good habit, somewhat similar to R. 'Nobleanum', the flower is cream flushed with pink. It is formed into a fair-sized truss and for this reason it may be considered to be superior to R. 'Nobleanum Venustum'. Its lack of general appeal may be due to the fact that it, too, is so often forced that the delicate shading of the colour is seldom seen at its best.

Another old variety which is still worth growing as an early Rhododendron is 'Pierre Moser'. This is a good pink with a star-shaped flower. It is a strong grower. As with 'Waterer's Caucasicum Hybrid', this variety is not now very widely grown. The reason may be the same—forcing gives it a bad colour. It is difficult to make any suggestion about the breeding of this variety for it does not bear very much resemblance to *caucasicum* and has little of the *arboreum* characteristics. One fault with this plant may have caused it to become unpopular—it is almost too tall growing. If left on its own it will grow as strongly as 'Sappho' and 'Mrs. Lindsay Smith'. With all these varieties it is probably advisable to prune them every five years.

R. 'Sun of Austerlitz' is an early flowering variety which is predominantly 'Arboreum' in form; it is usually in full bloom by the middle of April. The leaves are very attractive with silver underneath, the habit is compact forming a well-shaped specimen. The flower is a good red and yet, despite the very close resemblance to *R. arboreum*, this variety is remarkably hardy. It is a little difficult to propagate both by layers and grafting as the wood is brittle and hard.

Another plant that is by no means easy to raise but is quite hardy and tough is R. 'Handsworth Scarlet'. This also is an *arboreum* hybrid and the flower is of particularly good colour. The truss is a good deal larger than those of the usual old-fashioned hybrids and this variety will stand up well in comparison with newer Rhododendrons. R. 'Handsworth White' is a typical *caucasicum* hybrid and, although it does not flower as early as 'Handsworth Scarlet', it is a plant that is most valuable chiefly because of its reliability. It has a fine habit with long dark green leaves. The flower opens as pale pink fading to pure white when fully expanded.

Although R. 'Praecox' does not conform to the usual type of hardy hybrid Rhododendron, it cannot be left out of any notes of the early flowering varieties. It was raised in 1860 as the result of a cross between *R. ciliatum* and *R. dauricum*. For some reason, R. 'Praecox' is a good deal more hardy than either of its parents. It is a well-known plant in many gardens and it received a very well deserved Award of Garden Merit in 1926. Although the foliage is small the plant makes a handsome bush about 4 to 5 ft. high which is covered in the early spring with many pink-mauve flowers. R. 'Praecox' is another lucky plant—although it flowers very early, in some years it may be out in February, it nearly always seems to choose a time to come into flower when there is little frost. A most delightful improvement on 'Praecox' is R. 'Tessa' which was raised in 1935, when it received an Award of Merit, by the late J. B. STEVENSON, Esq., of Tower Court, Ascot. The parentage is R. 'Praecox' × *moupinense* and, although I have not yet had the opportunity of growing this plant in my cold and bleak conditions, I feel sure from its appearance that it will prove to be as hardy as R. 'Praecox'. The flower is rather more flat and open and the colour is a paler but more definite pink.

These are by no means all the early flowering hardy hybrid Rhododendrons—'Lee's Early Scarlet', 'Rosa Mundi' (which I believe to be synonymous with 'Christmas Cheer'), 'Auguste Van Geert', 'Caucasicum Roseum', 'Harbinger' are a few others that are also in cultivation today. But it is probably due to R. 'Nobleanum' and its varieties that the early flowering Rhododendrons are so well known. There are many people who know little about gardening and who, as soon as Rhododendrons are mentioned will say:

"I should hardly believe it, but I have seen a Rhododendron in flower at Christmas."

RHODODENDRON NOTES

The Spraying of Rhododendrons

I note on page 73 of *The Rhododendron Year Book* for 1951–2 "Spraying with Bordeaux mixture . . . was carried out fortnightly on a group of badly infected hybrids with gratifying results although severe scorching has been reported elsewhere." This is further elaborated at the bottom of page 77.

The scorching, I feel sure, was due to wrong choice of weather in applying the spray. If sprayed during the heat of a sunny day or on a sunny morning, the foliage of Rhododendrons and many other plants will be severely burned. Even if sprayed in a similar manner with plain water, such results can be expected. I usually spray toward evening on a day when the night and the next morning promise to be clear. An overcast day when there is no likelihood of rain will prove equally satisfactory. The burning is largely the result of sunlight shining through the small droplets, though of course, once the tissues are weakened, the copper sulphate in the spray adds to the injury.

For many years I have sprayed all my Rhododendrons at least three times a year with 2–2–50 Bordeaux and two of lead arsenate mixed. About thirty old-time hybrids, many modern hybrids and some hundreds of species have been so treated without perceptible injury except two or three times when the sun came out on them suddenly and unexpectedly immediately after spraying. From the time seedlings are four or five months old, all receive the same treatment. Cuttings are sprayed in the propagating beds at least once.

This combined spray controls nearly all fungus troubles, especially the tip blight (*Phytophthora cactorum*) and the leaf-spots diseases, which are universally prevalent here, and at the same time checks leaf-eating caterpillars, crickets and similar pests. I suspect that the lead arsenate may help the lime in preventing copper sulphate burn.

Because of the unsightly whitish spotting of the spray on the foliage, I have also mixed in some dry pigment chrome green dark, about 4 lb. in the above formula. This renders the spray nearly invisible, and may still further act to prevent leaf scorch. Most sprays in this country are mixed with an inert spreader to make them stick better and stay on longer, and such a spreader no doubt helps to prevent scorch.

So general is the practise of fungicide spraying in nurseries that bud blast in this country attacks only neglected plantings. I must repeat my recommendation that such spraying be used in England.

However, there is something more to be said about Bordeaux spray. The strength recommended for winter spray, 5–5–50, is much too strong for the growing season. The 2–2–50 is simply diluted with 2½ times the amount of water. Naturally if the weaker spray is applied in too large amount, or too frequently repeated, the result will be the same as applying too strong a spray. A light misting over is all that is needed.

The active ingredient in Bordeaux is the copper sulphate. The purpose of the lime is mostly to prevent leaf scorch. After the mixture is made, it deteriorates rapidly.

For sucking insects use only nicotine sulphate, and rather understrength. The use of DDT or even rotenone may prove unexpectedly disastrous, for these substances kill everything, including the little spiders which are of immense value in keeping down insect pests. After my first and only use of rotenone, all the new growth on all my plants was destroyed for the balance of the season, and badly injured the next season. It took some research to discover the cause.

The Rhododendron midge is always with us, showing in distortion, curling and reddening of the young leaves here and there. Its depredations are normally so slight that merely picking off the deformed leaves as they appear will control it. The midge lays its eggs on foliage buds about to break. As the young leaves unfold, the maggots of the midge, almost too small to be seen, browse along their margins, which curl inward, protecting the maggots from sprays or other injury.

Several species of small or young spiders lie in wait near the terminal buds, and there eat the midges which come to deposit their eggs. Other spiders, very slenderly built, crawl through the tunnels of the incurled leaves, feasting on the maggots. So until we interfere with a stupidly efficient spray, little damage results. With my rotenone I killed the spiders. The midges laid their eggs without interference, the maggots browsed unchecked. The life cycle of these little pests is about a week. The second week there were millions, the third week billions, destroying completely all young growth. It took about a year and a half before the spiders returned and multiplied in numbers sufficient to reduce this midge infestation to normal.

America is spray-mad. I sincerely hope Britain will not follow in the disastrous cycle, for the more sprays used, and the more efficient the sprays, the more will be needed. Apples here must now be sprayed every few days throughout the season, because all the natural enemies of every pest have been destroyed. Man insists on doing all the work himself, discarding the really enormous help offered by birds, spiders and predatory insects. He is working always harder, paying more and

more money for sprays, poisoning the soil and some of the people who eat the fruit, and gaining little in quality.

But a few long-tried sprays of moderate potency, if not used too frequently, are very helpful, and I would not know how to raise Rhododendrons without Bordeaux and nicotine sulphate.

G. C. NEARING,
Editor of the American Rock Garden Society.

Drought Resisting Rhododendrons

To those of us who live in localities that enjoy relatively hot dry summers the culture of Rhododendrons is not without its anxieties for it is, of course, precisely at this season, when making their new growth, that the plants are in most need of atmospheric humidity and cool moist conditions. Curiously enough I have noticed that during a drought Rhododendrons appear to suffer less when growing in a loose friable soil than they do in one, like mine, which is of a fairly stiff nature. The reason why this should be is not very clear: one can only suppose that it is in some way correlated with the higher percentage of fibrous roots which appear to be produced in these lighter and more sandy mediums. Among the species, and likewise among many of the hybrids, there exists a marked difference in the degree of aridity which a Rhododendron can endure before succumbing. The size and texture of the foliage is to some extent an indication but is by no means an infallible guide. Broadly speaking the bigger the leaves the less tolerant will be the individual possessing them. For instance *R. sinogrande*, *R. Falconeri*, *R. calophytum* and the 'Loderi' hybrids are all obviously shade and moisture lovers and with me often require copious watering if they are to be kept in health. On the other hand members of the Lapponicum, Anthopogon, Cephalanthum, Carolinianum, as well as those of a few other of the smaller-leaved series, are not only tolerant of drought but will even submit to full exposure to the sun: most of the Obtusum types of Azalea are also fairly accommodating in this respect. At first sight it seems rather remarkable that *R. moupinense* (which comes from an area having a heavy precipitation), should be one of the species that is least effected by such trying conditions. The explanation, of course, lies in the fact that in its natural habitat this Rhododendron is almost wholly epiphytic. It is obvious that when perched on the branch of a tree, no matter what the aggregate rainfall may be, there must be occasions when the plant is exposed to longer or shorter periods of desiccation.

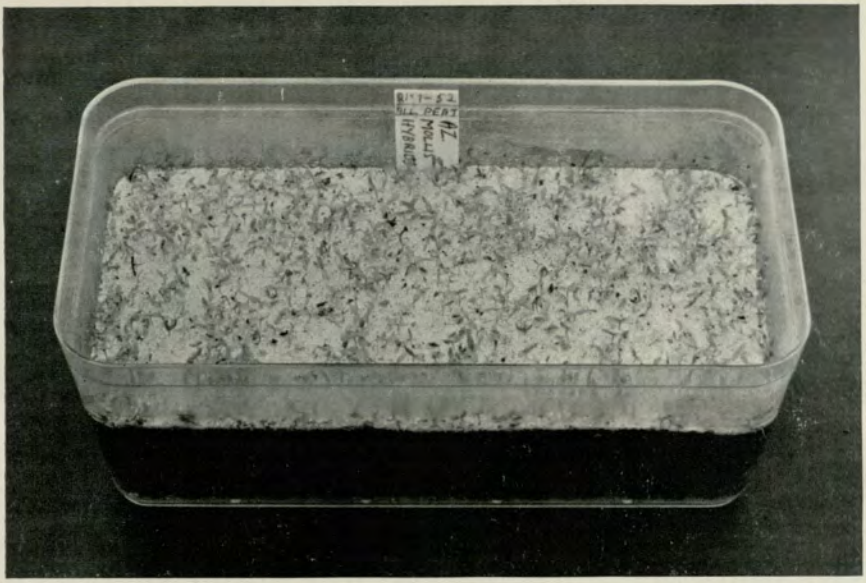


FIG. 37.—Azalea mollis hybrids. Seed sown 21st January 1952 in pure peat. Photographed 22nd February 1952 (*see* p. 97)

Photos. N. K. Gould]

PLASTIC CONTAINERS AS AN AID TO SEED GERMINATION

FIG. 38.—Plastic containers as used at Wisley (*see* p. 97)

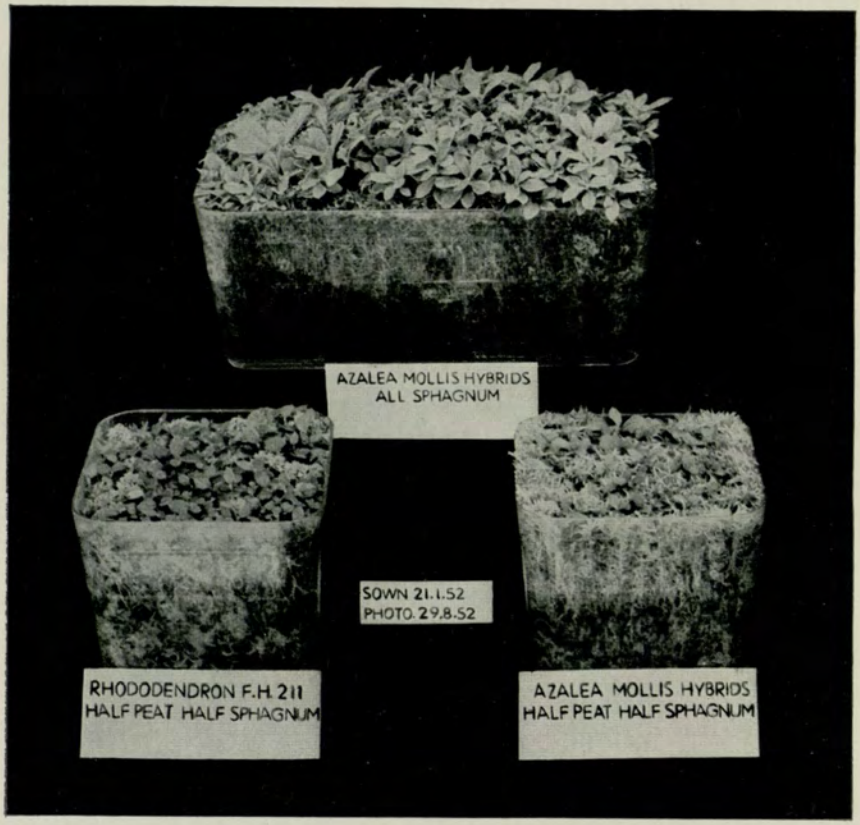


FIG. 39.—Rhododendron seedlings grown in plastic containers (*see* p. 98)

I have, of course, referred here to only a fraction of the varieties which can be successfully grown in the drier parts of England. It is a pity that there exists no comprehensive list of these which might serve as a guide to gardeners residing in such localities. The letters in the *Rhododendron Handbook* indicating the relative hardiness of each species has proved of inestimable value to prospective growers of these plants. Would it not be possible to increase further its usefulness by giving some clue as to which species are, or are not, likely to thrive in a sunny and comparatively dry climate? Assuming this knowledge could be obtained by pooling the experiences of those who have attempted to grow Rhododendrons under these conditions, the information could quite easily be conveyed by adding a symbol, or symbols, to the aforesaid letters.

COLLINGWOOD INGRAM.

Benenden, Kent.

A Note on Plastic Containers as an Aid to Seed Germination

In the American Rhododendron Society's *Quarterly Bulletin* for October 1951, Dr. F. T. NISBET published an article entitled "Simplified Seedling Production", which dealt with the raising of Rhododendrons from seed with the aid of airtight plastic dishes. Since that date this method has been thoroughly tested at Wisley with a wide range of different seeds and different media as composts. The seeds of the rarer, choicer Primulas, Rhododendrons, Azaleas, Gaultherias, Gloxinias, Begonias and other similar small seeds, respond immediately, germinating with added rapidity and certainty, and needing only the minimum of attention regarding watering, etc.

Rectangular colourless plastic dishes with tight fitting covers, such as are used for food storage in small domestic refrigerators, were used in the experiment, with the following composts (Fig. 38):

1. Pure best granulated peat.
2. Half vermiculite, half granulated peat.
3. Half chopped Sphagnum moss, half granulated peat.
4. Chopped clean Sphagnum moss only.
5. Acid horticultural vermiculite only.

These media were selected for their moisture retaining qualities, as it is of paramount importance to obtain a mixture which will absorb large quantities of rain water in the initial stages, and remain moist in

the drainless, airtight vessels until germination is complete and the seedlings ready for pricking off. This, in most cases, with adequate heat, and suitable conditions including shade, takes from three to six weeks. During this time no watering or attention is necessary. When the cotyledons are fully developed the lids of the plastic containers are gradually opened and finally removed to enable the seedlings to become hardened, and thus ready to be pricked out singly.

Although germination was good in all the various composts used in this experiment, by far the best results were obtained from No. 1 and No. 2 media, with a preference for the former. Sphagnum moss proved to be an excellent moisture retainer, but in such airtight, humid conditions, the moss itself grows so rapidly, that over-crowding of the small seedlings results. In pure horticultural vermiculite, the seedlings germinated well but soon suffered, due no doubt to the absence of plant nutrients (Fig. 39).

It must be born in mind that as the plastic vessels have no drainage, all composts must be extremely light, excellent moisture retainers, so that a constant humidity may be maintained without additional watering over a long period. Before placing the composts in the containers, they should be finely broken up and allowed to absorb as much rain water as possible without becoming unworkable. A little fine silver sand only, is necessary to cover the seed after sowing.

These plastic dishes vary in depth, but those with depths of 3 to 4 in. are most desirable for seed raising, and these should be two-thirds filled with compost, leaving sufficient room for the development of the seedlings.

F. E. W. HANGER.

Rhododendron Seedlings

For the past few years when visiting in Donegal I have gone to see the excellent Rhododendron garden planted by the late EARL OF LEITRIM and THE COUNTESS OF LEITRIM at Mulroy. Here in an area with high rainfall often amounting to forty-five inches a year and comparatively little frost, areas of woodland have been planted up with fine species and hybrids as well as the tender flowering shrubs like Embothriums, Drimys, Eucryphias, Myrtus, *Hydrangea Sargentiana* and *villosa*, etc. *R. Taggianum*, *bullatum*, *Edgeworthii*, *Lindleyi*, etc., flourish and seed freely. The rate of growth is exceptional and large numbers of young plants are being propagated by various methods.

The treatment of seedlings interested me particularly because of

an unusual practice which I had never seen used before. Ground is cleared in the woodland under a light canopy of shade, but the soil is not prepared by digging in the usual way. The area is immediately fenced as protection against rabbits. Then a quantity of the natural soil from the forest which contains a high degree of peat is sifted and mixed with sand in the ratio of two parts to one to form a compost. A 6-in. flower pot is filled with this mixture and lightly packed. This is then inverted and the contents turned out on the prepared bed for all the world like the mounds of sand from a child's pail on the beach. The operation is repeated, each mound being set out in a neat line with the previous one until the whole bed is covered with contiguous piles. In the middle of each a seedling Rhododendron from the seed pan is planted and lightly firmed. If there is no prospect of rain, an unusual occurrence in Donegal in spring, the plants are lightly watered.

The seedlings grow on at a rapid rate, sending out roots in all directions until the mound is a solid mass of roots. The following year, or even earlier, a spade is inserted under the mound, and it is lifted and planted out. There are two advantages: first, there is no disturbance whatsoever even to the most fragile hair roots. Secondly, it makes it possible to move young plants at any season. This method has proved highly satisfactory and although the little mounds tend to wear down with the continuous rainfall, they keep their identity. This method is only satisfactory in an area of high rainfall as otherwise there would be too great a tendency to dry out. The same method has been used successfully with the Azalea types and even with some of the flowering shrubs and trees.

LANNING ROPER.

NAMES OF RHODODENDRON HYBRIDS REGISTERED DURING 1952

Name	*Parentage*	*Raiser or Exhibitor*
AFFECTATION	ambiguum × cinnabarinum var. blandfordiaeflorum	Sunningdale Nurseries, 1951
ANDROMEDA	neriiflorum × Stewartianum (scarlet form)	Reuthe, 1941
ANTHONY	Arthur Osborn × Griffithianum	Harrison, 1952
ARTHURIA	Griersonianum × Master Dick	King, 1952
BABYLON	calophytum × praevernum	Reuthe, 1935
BERNARD SHAW	calophytum × Pink Pearl	Reuthe, 1940
BETELGEUSE	Griersonianum × Mme. Colijn	Reuthe, 1940
BILLY BUDD	Elliottii × May Day	R.H.S., Wisley, 1952
BLACK STRAP	dichroanthum × didymum	Sunningdale, 1951

Name	*Parentage*	*Raiser or Exhibitor*
BLOOD ORANGE	dichroanthum × May Day	Sunningdale, 1951
BOB CHERRY	Adrastia × repens	Sunningdale, 1951
COER	Barclayi var. Romala × Delavayi	Stevenson, 1952
COROMANDEL	Lady Bessborough var. Roberte × Vanessa	Sunningdale, 1951
DICHROFAB	dichroanthum × Fabia	Reuthe, 1940
DVORAK	discolor × Williamsianum	Reuthe, 1949
EUTERPE	Augustinii × exquisitum	Reuthe, 1941
FORERUNNER	haematodes × Vanguard	Sunningdale, 1951
GENERAL WAVELL (a)	Glory of Japan × indicum	Ingram, 1952
GLAUTESCENS	glaucum × lutescens	Reuthe, 1939
GLOW WORM	dichroanthum × Halcyone	Sunningdale, 1951
JOYCE RICKETT	discolor × Mme. Carvalho	Hillier, 1945
LORD STAIR	Lindleyi × Taggianum	Stair, 1952
MAID OF ORANGE	dichroanthum × Loderi var. Sir Edmund	G. Loder, 1952
MELLA	burmanicum × Edgeworthii	C. Williams, 1952
MOONSHINE	Adriaan Koster × litiense	R.H.S. Wisley, 1952
MUFFINEER (a)	Glory of Numazu × indicum	Ingram, 1952
PLEIADES	dichroanthum × scyphocalyx	Reuthe, 1941
PSYCHE	Fortunei var. Mrs. Butler × Williamsianum	Reuthe, 1950
PYREX	facetum × haematodes	Reuthe, 1945
ROMARI	Coer × Meddianum	Stevenson, 1952
ROZIE	Barclayi var. Romala × discolor	Stevenson, 1952
SINBAD	concinnum × Lady Chamberlain	Crown Lands, 1952
SIRIUS	crassum × cinnabarinum var. Roylei magnificum	Reuthe, 1949
SONATA	dichroanthum × Purple Splendour	Reuthe, 1949
TALLEYRAND	G. A. Sims × Tally Ho	Reuthe, 1945
THOMALEUM	haemaleum × Thomsonii	Ingram, 1948
VESUVIUS	Griersonianum × Romany Chai	Sunningdale, 1951
WHITEWAY	Loder's White × Mrs. Lindsay Smith	Digby, 1952
ZALEUTINII	Augustinii × zaleucum	Johnstone, 1952

(a) = Azalea

NEW VARIETIES OF HYBRIDS ALREADY REGISTERED

Hybrid	*Variety*	*Raiser or Exhibitor*
ARTHUR SMITH	Ightham Yellow	Reuthe, 1952
AUGFAST	Ightham	Reuthe, 1952
BEACON	Fabos	Reuthe, 1952
BLUESTONE	Blue Ribbon	Johnstone, 1952
CORONET	Panther	Ingram, 1952
FABIA	Minterne Apricot	Digby, 1952

THE RHODODENDRON SHOW

29th and 30th April, 1952

by

Lanning Roper

THE Rhododendron Show was again one of the most colourful shows of the year and it attracted a large attendance. There were 87 competitive classes, an increase of three over the previous year, and ten in the non-competitive section, an increase of one. A total of 33 exhibitors put up 881 entries while 34 in 1951 staged 970. Although the winter had been a mild one, Rhododendrons in parts of the South of England did not flower as freely as usual and the quality of some of the blooms was not up to the best standards as the result of weather conditions which had been difficult with the alternation of snow and frost at the end of March followed by an exceptionally warm spell, and even freak hail storms in certain areas. However, exhibits from Cornwall, Wales, Scotland and Ireland where conditions had been more favourable set a high standard.

It is always impressive how well exhibits from far away parts of the country are packed and handled so that they arrive in splendid condition and the handicap of distance seems to be surmounted.

Non-Competitive Groups

The non-competitive groups were arranged down the centre of the New Hall and the competitive classes on tiered tables down the sides. Messrs. J. Waterer, Sons & Crisp, Ltd. staged a colourful floor exhibit at the foot of the dais of large-flowered hybrids and Azaleas which received a Silver Flora Medal. The central feature was a tall red hybrid of *eriogynum* flanked by 'Fastuosum flore pleno', 'Rose Perfection', 'Cynthia', 'White Swan', 'Mrs. E. C. Stirling', etc. Azaleas in variety were used, including 'Emile Ludwig', 'Fedora', 'Brazil', 'Orange Beauty', and 'Hugo Koster'.

The platform exhibit of the Sunningdale Nurseries, Windlesham, which received a Silver Flora Medal, was unusually successful in the grouping of colours and in the choice of textures, the small flowering types predominating. The central feature was a large blue *Augustinii*, flanked by the delicate apricot and yellow trusses of 'Idealist', and 'Day Dream'. On the other side were fine plants of the evergreen Azaleas, including the pink 'Juliana' and a rich red *amoenum coccineum*. The front was kept low with blues, violets, mauves, whites and pinks

predominating. 'Blue Tit', 'Blue Diamond', *russatum*, *scintillans*, *chryseum*, *impedtum*, 'Hatsugiri', 'Hi No Mayo',' Juliana', 'Kure No Yuki', etc., were shown in good forms. Reds and strong yellows were conspicuous by their absence.

A Silver Banksian Medal went to Messrs. R. WALLACE & Co. for their interesting floor exhibit with a high centre consisting of large well flowered plants of *Vaseyi* nearly 6 ft. tall covered with delicate pale pink flowers and even taller shrubs of the yellow and pink blended 'Firecrest', 'Abalone', 'Flashlight' and 'Moonstone'. For the effectiveness of their foliage alone, *basilicum*, *praestans*, *Bureavii* and *sinogrande* were a striking foil for well flowered masses of *russatum*, *pseudoyanthinum*, *spinuliferum*, *tephropeplum*, *Johnstoneanum*, and Azaleas *mucronatum*, 'Kirin', 'Atalanta', 'Fedora', and 'Juliana'.

In the centre of the hall, Messrs. KNAP HILL NURSERY CO., LTD. staged a floor exhibit which was awarded a Silver-gilt Flora Medal. The large well-shaped specimens were spaced in a rectangular bed of peat surrounded by an ample verge of green so that each plant could be seen effectively. Large hardy hybrids including 'Purple Splendour', 'Fastuosum flore pleno', 'Blue Peter', 'Royal Purple', 'Susan' and 'Naomi' were grouped down the centre and at the corners, while Azaleas in a wide colour range of yellow, apricot, pink and orange completed the plan.

Messrs. G. REUTHE, LTD. were awarded a Silver Flora Medal for a low platform exhibit staged around an 8-ft. *Falconeri*, ringed by *coriaceum*, *Thomsonii*, *basilicum*, *Hodgsonii*, *rhaibocarpum*, *Wardii*, *detonsum* and smaller plants and cut sprays of *Wightii*, *racemosum*, *oreotrephes*, *campanulatum*, *prostigiatum*, *rhantum*, 'Hi No Mayo', 'Canary', 'Phoenix' and the F.C.C. form of 'Lady Chamberlain'. Unfortunately so many plants were shown that individually they were not as effective as they might have been.

Messrs. HILLIER & SONS of Winchester received a Silver Banksian Medal for a varied exhibit of species and hybrids. In the centre were large spreading plants of clear pink *Davidsonianum* and Azalea 'Hi No Mayo'. Again *Bureavii* was used for its handsome foliage with rusty red indumentum. *R. fastigiatum*, *Baileyi*, *ravum* and *orthocladum* were combined with massed Azaleas and a few well chosen large-flowered hybrids.

Mr. FREDERICK STREET, of Heathermead, Woking, was awarded a Silver Banksian Medal for a good selection of hardy hybrids and Azaleas. Four standard plants gave height to the groups of 'Pink Pearl', 'Mrs. C. B. Van Nes', 'Mrs. Wm. Agnew', 'Prince Camille de Rohan', 'Mrs. Furnival', 'Mother of Pearl', 'Mount Everest' and a

variety of others. HOLLAMBY'S NURSERIES (Southern Growers) also showed Azaleas and hardy hybrids.

Under the clock the wall exhibit was staged by Messrs. ARTHUR CHARLTON & SONS, LTD., who banked large plants of 'Prince Camille de Rohan' with close masses of 'Purple Splendour', 'Britannia', 'Pink Pearl', 'Betty Wormald', 'Cynthia', Azaleas 'Jean' and 'Orange Beauty' and sprays of *Augustinii* and 'Emasculum'. This received a Flora Medal.

LORD DIGBY was awarded a Silver-gilt Banksian Medal for his ambitious and very interesting collection of cut sprays of hybrids and species, which had to be staged in great haste as the material had been delayed in transit. Three large branches of *Falconeri* formed the central features around which were grouped a varied collection, which included 'Princess Alice', 'Lady Chamberlain', 'Cinnkeys', the dainty *serpyllifolium*, 'Luscombei', 'Blue Tit', *Thomsonii*, *Wardii*, *caloxanthum*, *cyclium*, and his lovely hybrid 'Lady Digby'.

COMPETITIVE CLASSES

Class 1, for one truss of eight species, attracted seven exhibitors who showed an interesting selection. THE EARL OF STAIR won first prize with a well-formed truss of *Falconeri*, a clear yellow *Macabeanum*, with gleaming silver backed leaves 15 in. long, a pale *campanulatum*, a deep red *Thomsonii*, *concatenans*, *Delavayi*, *euchaites*, and a lovely truss of *lacteum*, in superb condition. Mr. R. O. HAMBRO gained second with an impressive group, also grown in Wigtownshire, containing a fine *sinogrande* with huge leaves, a sturdy truss of a pale *Hodgsonii*, an attractive *arizelum* tinged rose at the tips of the petals, a large flowered *campanulatum*, a fine *glischrum*, a rather pale *Thomsonii*, a pure white *bullatum* and *arboreum kermesinum*. Mr. EDMUND DE ROTHSCHILD was third with *Falconeri*, *arizelum*, *coriaceum*, *euchaites*, *Thomsonii*, a compact truss of pink *arboreum*, a fine grey-blue *campanulatum*, and a lovely yellow *Wasonii*.

Class 2, calling for one truss each of three species, set a very high standard. THE DOWAGER MARCHIONESS OF LONDONDERRY showed enormous well-filled trusses of *fictolacteum*, *Macabeanum*, and a pale pink *Hodgsonii*, which made an imposing well-chosen trio and was one of the outstanding exhibitions in the show. THE COMMISSIONERS OF CROWN LANDS won second prize with a smaller truss of *fictolacteum* of an unusually lovely clear pink, well flecked with crimson, a good deep *Thomsonii*, and a very spotted form of *campanulatum superbum*. Third place went to Mr. E. DE ROTHSCHILD for a strong truss of *habrotrichum*, a pale and sparsely spotted *fictolacteum* and a very dark *neriiflorum*.

There were only four entries in Class 3, for one truss of eight hybrids. For first place Lord ABERCONWAY and THE NATIONAL TRUST showed 'Choremia', glistening scarlet with a large irregular calyx of the same colour, 'Cornish Cross', 'Hiraethlyn', 'Barclayi', an ivory form of 'Penjerrick' with lovely pink markings and fine foliage, 'Gretia', 'Cardinal' and 'Cornish Cross' × 'Kewense'. In second place Lord ABERCONWAY showed 'Coresia', 'Red Queen', a fine white *arboreum* × *Griffithianum*, 'Siren', with a large calyx of brilliant red, 'Matador', 'Laura Aberconway', 'Fair Maiden' and 'Jack Tremayne'. Mr. DE ROTHSCHILD was third. Among his blooms was 'Querida' which received an Award of Merit. It is a fine thing with brilliant red flowers and dark green foliage showing its parentage, 'Red Knight' × *Elliottii*. The others were 'Kiev', 'Mariloo', 'Yvonne', 'Janet', 'Gaul', 'Day Dream' and 'Carita'.

There were twelve entries in Class 4, for one truss each of three hybrids. First place went to Mr. E. DE ROTHSCHILD for a truss of 'Fortune', a lovely clear pink 'Naomi' var. 'Pink Beauty' and a deep red 'Karkov'. Second place was filled by Messrs. W. C. SLOCOCK, LTD. with a large truss of the shell pink 'Dame Nellie Melba', 'Letty Edwards', and the creamy white 'China'. 'Eleanore', 'Aurora' and the lovely pale delicate pink 'Loderi' var. 'Astarte' took third for Mr. E. DE ROTHSCHILD.

The McLaren Challenge Cup, for one truss of a species, went to THE EARL OF STAIR for his fine form of *lacteum*. The clear yellow flowers and good foliage were in perfect condition. Mrs. WALKER-HENEAGE-VIVIAN put up a three-flowered truss of *Lindleyi* for second place and Mr. HAMBRO took third place with a fine truss of *Hodgsonii*, large, well filled and delicately striped pink. Lord ABERCONWAY showed a curious polypetalous form of *basilicum* under the Farrer number 873. Mr. HAMBRO also showed a fine open truss of *sinogrande* with huge glistening leaves and very large pale yellow flowers, well spaced on erect downy pedicels.

Class 7 for the Loder Challenge Cup awarded to a hybrid boasted nine entries. Mr. DE ROTHSCHILD took the cup with a truss of 'Fortune'. Mr. A. F. HOWLETT showed *cinnabarinum* × *polyandrum* × *concatenans* with long tubular flowers tinged pale orange. THE EARL OF STAIR was third with his fine *Taggianum* × *Lindleyi*, which received an Award of Merit in the show.

Class 8, calling for one truss of six hybrids, raised by or in the garden of the exhibitor, had seven entries. Lord ABERCONWAY won the Crosfield Challenge Cup with 'Gretia', 'Cornish Cross' × 'Kewense', 'Hiraethlyn', 'Siren', 'Choremia', and *arboreum* × *Griffithianum*. The

second place also went to BODNANT for 'Bella', 'Camilla', 'Laura Aberconway', 'Matador', 'Fair Maiden', and 'Cardinal'. Mr. DE ROTHSCHILD was third with 'Fortune', 'Yvonne', 'Janet,' 'Idealist', 'Naomi' var. 'Pink Beauty' and 'Karkov'. In Sir GILES LODER's exhibit there was a distinguished truss of well spaced pure white flowers from a cross between *irroratum* and 'Loderi'.

Sprays of three hybrids raised by or in the garden of the exhibitor were called for in Class 9. Lord ABERCONWAY ranked first with 'Laura Aberconway', 'Elizabeth' and the strongly contrasting 'Bodnant Yellow', all F.C.C. plants. Mr. DE ROTHSCHILD was a close second with the lovely 'Naomi' Exbury variety, 'Day Dream' and 'Chanticleer'. 'Hiraethlyn', 'Adlo' and 'Cardinal' took third for BODNANT.

Class 10, calling for any species of Rhododendron, either a spray or a single truss, was won by Mrs. WALKER-HENEAGE-VIVIAN for a spray of *Lindleyi* with nine trusses of four to five, fragrant, lily-like flowers. It is worth noting that *Lindleyi* and *Taggianum* are easily confused, the calyx lobes of the former being densely fringed with hairs while in the latter the lobes are scaly but not hairy. No second prize was given, but Sir GILES LODER's well-flowered spray of *Augustinii* filled third and Mr. DE ROTHSCHILD, fourth place with a strong yellow *caloxanthum*. THE COMMISSIONERS OF CROWN LANDS showed a fine spray of *Vaseyi* and Lady LONDONDERRY and Lord ABERCONWAY both entered *Johnstoneanum*.

There were nine entries in Class 11, for one truss of *arboreum* or a subspecies. These showed the great colour range of this attractive species. A small compact truss of deep red *arboreum* took a first place for Mr. E. DE ROTHSCHILD. THE EARL OF STAIR filled second and third places with large trusses of a clear rose form liberally flecked with maroon and a clear white. Class 12 for other species of the Series Arboreum was won by Mrs. WALKER-HENEAGE-VIVIAN with a well-formed truss of a warm violet *niveum*. Lord ABERCONWAY was second with a loose truss of *argyrophyllum* with deep pink markings and striping of the same colour on the outer side of the corolla and Sir HENRY PRICE's *niveum* of a deeper but rather colder blue violet ranked third.

Class 13, for one truss of the Series Barbatum, was popular with thirteen entries, outstanding of which was a strong pink *diphrocalyx* from BODNANT with a dark raspberry throat. Mr. HAMBRO showed a mauve pink form of *glischrum* with handsome red pedicels and sepals covered with silvery hairs in second place and Mr. DE ROTHSCHILD took third with a pale *habrotrichum* tinged pink and spotted crimson.

There were twelve attractive exhibits in Class 14 for one truss or spray of the Series Boothii. THE EARL OF STAIR showed the delightful

and little known *auritum* with its pale yellow tubular flowers tinged pink at the tips as a worthy first place. Mrs. DOUGLAS GORDON also showed *auritum* but this form was smaller and slightly paler. Lord ABERCONWAY took second with a strong purplish-pink *deleiense* and Mrs. WALKER-HENEAGE-VIVIAN third with a large-flowered and deep coloured *tephropeplum*, in marked contrast to the exquisite pale pink form from Tower Court.

Class 15, for a truss of the Series Campanulatum made a lovely sight with the great variation in colour, and one realized the attractive possibilities of a mixed planting of various forms. Messrs. W. C. SLOCOCK's fine violet *Wallichii* qualified for first place. Mrs. STEVENSON came second with a small compact truss of *campanulatum* with perfectly formed flowers of delicate colouring. Capt. COLLINGWOOD INGRAM took third with the same species. Mr. HAMBRO showed a very pale truss of great size with fine dark foliage.

The Series Cinnabarinum in Class 16 was a delight but the subtle colouring and shading of the flowers is a challenge to the writer. Lord ABERCONWAY showed a remarkable form of *concatenans* with broad flowers about 1¾ in. in diameter, the rounded petals reflexed flat at the tips. The colour was more intense than the usual *concatenans*. It was in every way a lovely plant. Mrs. STEVENSON's form, which was also very attractive, was placed second and Lord DIGBY, third with two trusses of *cinnabarinum* var. *blandfordiaeflorum* with 2 in. tubular flowers of glowing orange paling to greenish-cream at the tips. Sir GILES LODER showed a lovely *cinnabarinum* var. *Roylei*.

Class 17 for a truss of *Falconeri* attracted entries from England, Ireland, Scotland and Wales. Mr. HAMBRO chose a fine truss of pale yellow flowers of great substance in a collar of superb leaves. Mr. DE ROTHSCHILD entered a slightly paler truss, the flowers accented with brilliant jade green stigmas in contrast to the yellowish ones in the other exhibits. Third place went to THE DUCHESS OF MONTROSE for a good specimen with rather narrower pointed leaves.

The entries in Class 18 for a truss of *fictolacteum* showed considerable variation in colour and leaf size. THE DOWAGER MARCHIONESS OF LONDONDERRY won first place with a huge truss, 7 in. high and 8 in. across, the flowers almost white and handsomely spotted. THE COMMISSIONERS OF CROWN LANDS with a slightly less well-filled truss of a pale pink were second and Mrs. WALKER-HENEAGE-VIVIAN's exhibit came third.

Class 19 for any other species of the Series Falconeri again went to Lady LONDONDERRY for a huge pyramidal truss of a pale pink *Hodgsonii* and second to Mr. HAMBRO's exhibit of the same species, paler in

colour and the truss less well filled but with enormous individual flowers over 2½ in. long. Lord DIGBY put up an attractive *basilicum* with pale yellow fleshy flowers, heavily veined. Lord ABERCONWAY showed *eximium* and the Farrer form of *basilicum* mentioned under Class 6.

Rhododendron Griffithianum in Class 20 attracted only four entries. THE DUCHESS OF MONTROSE won a first with a nine-flowered truss with large pink corollas and small calyx in contrast to Lord ABERCONWAY's pure white, very large-flowered form, distinct with its large flat calyx. Lord DIGBY showed a loose truss of *Griffithianum* var. 'Snowdrop', white and very fragrant. In Class 21, for any species of the Fortunei Series other than the above, a pale pink *vernicosum* from BODNANT with large flat flowers over 3¼ in. in diameter took first place and a truss of Rock 03788, labelled *vernicosum aff.* with well-frilled flowers of an even more delicate pink, and a fine large-leaved form of *orbiculare*, attractive with its deep rose campanulate flowers borne on bright red pedicels, gave the other places to the same garden.

Class 22, for the Series Fulvum, attracted only one entry, a white *fulvum* spotted red from Mr. DE ROTHSCHILD. Class 23, for the Series Grande was won by a huge truss of *Macabeanum*, exhibited by Lady LONDONDERRY, with flowers 2½ in. across, clear yellow and accented by bright red stigmas. THE DUCHESS OF MONTROSE came second with a fine *sinogrande* and Mrs. WALKER-HENEAGE-VIVIAN, third with a symmetrical truss of *grande*.

Mr. DE ROTHSCHILD took first place in Class 24 for the Series Irroratum with a truss of the type. Lord ABERCONWAY showed *venator* and a pale pink form of *Aberconwayi* for the other places.

Class 25, for a truss of the Series Lacteum, went to THE EARL OF STAIR for a fine truss of sulphur yellow *lacteum*. Miss E. C. GODMAN and Mrs. GORDON DOUGLAS both showed *Wightii* for the other two places. It is a difficult plant to show well as the truss is loose and does not stand up when cut.

In Class 26, for the Series Megacalyx, Mrs. WALKER-HENEAGE-VIVIAN showed a fine five-flowered truss of *R. Lindleyi* for first place.

In Class 27, for a truss of the Series Maddenii other than those in the class above, there were nine entries. Lord ABERCONWAY's three-flowered truss of *polyandrum*, with white flowers tinged pink on the outside of the tube and the inside a glowing yellow, was placed first. For second place Miss E. C. GODMAN's *ciliicalyx* with four-flowered trusses of light textured, snow white blooms was a worthy candidate, and Mr. DE ROTHSCHILD's lovely *carneum* with its rather narrow pink

petals and subtle scent in third place made one wish that this plant was more easily grown.

Lord DIGBY, Mr. DE ROTHSCHILD and THE COMMISSIONERS OF CROWN LANDS all showed neat trusses of *haematodes* varying slightly in depths of colour in Class 28 for the Subseries of that name.

Class 29 for the Subseries Neriiflorum had nineteen entries, a record number. A good truss of the type of excellent colour won first place for Miss E. C. GODMAN. Mrs. WALKER-HENEAGE-VIVIAN and Mr. DE ROTHSCHILD showed small well-formed trusses of *euchaites* for second and third places. Class 30, for *aperantum*, attracted only one entry, a good truss of five flowers of rich colour nestled in a collar of dark green leaves, shown by Lord ABERCONWAY. In Class 31, for the Subseries Sanguineum other than *aperantum*, Lord DIGBY put up a fine eight-flowered truss of *haemaleum* (R.22293) with unusually dark flowers. Lord ABERCONWAY and Mr. DE ROTHSCHILD showed the same species for second and third places. In Class 32, *Wasonii*, selected from the Series Taliense by Mr. DE ROTHSCHILD and Lord ABERCONWAY, gained first and third, respectively. Lord DIGBY's *rhododactylum*, a curious pinkish form of *Wasonii*, heavily spotted within, was second.

Class 33, for a spray of the Subseries Campylocarpum, was very attractive. Miss C. E. GODMAN showed a fine yellow *campylocarpum* with trusses of up to ten flowers, large and in perfect condition. For second place, the Committee selected THE DUCHESS OF MONTROSE's form of the same plant, slightly smaller and a little more lax in habit but with unusually glistening foliage. Lord ABERCONWAY's *caloxanthum* with large pale yellow bells, beautifully shaped, was third. Mrs. STEVENSON showed a lovely pale pink *cyclium* and Mr. DE ROTHSCHILD, an orange-yellow *caloxanthum* in this same class.

The Hon. JOHN MCLAREN took the first and only prize in Class 34 for the Subseries Martinianum or Selense with a fine spray of *rhaibocarpum*, with deep glistening pink, large, perfectly formed flowers. There were three other entries that were not placed. In Class 35, for the Subseries Souliei, only *Williamsianum* appeared. Lord ABERCONWAY's form with large pendulous flowers of a rich pink and handsome glaucous leaves was the obvious choice for first. Sir GILES LODER took second with a smaller and rather paler form and Mrs. D. M. ROGERS showed a very pale but attractive variation.

The Thomsonii Subseries, Class 36, was a little disappointing as many of the entries were light in colour. Lord DIGBY filled the first two places with well-formed trusses of large sized flowers and Lord ABERCONWAY's exhibit with unusually large calyx cups was a close third.

Class 37, for *Rhododendron Schlippenbachii*, is one of the most attractive

of all for it is a superb plant. This year the entries were a trifle disappointing, better forms appearing in other classes. Lord ABERCONWAY's fine spray with flowers 2¾ in. in diameter took first place, and Mrs. STEVENSON's and Mr. DE ROTHSCHILD's entries, second and third. In Class 38, for any deciduous Azalea other than the last named, *Vaseyi* in perfect condition with good trusses of delicate pink flowers and deeper shaded buds won a first for THE COMMISSIONERS OF CROWN LANDS. Lord ABERCONWAY's lovely intense forms of *Albrechtii* and *reticulatum* were second and third.

Class 39 for three deciduous species of the Series Azalea was outstanding. Lord ABERCONWAY staged a perfect trio, using large sprays of a very fine *Schlippenbachii*, with flowers over 3 in. in diameter, beautifully flushed and marked. A very deep *reticulatum* of orchid purple and a Tyrian rose *Albrechtii* blended beautifully and made one of the finest exhibits. THE COMMISSIONERS OF CROWN LANDS were a close second with a lovely *Vaseyi*, a good *reticulatum* and a first-class *quinquefolium* with nodding white flowers of great delicacy and leaves tinged bronze with ciliate margins. Sir HENRY PRICE staged *reticulatum*, *Schlippenbachii* and *quinquefolium* for third place. Lord DIGBY showed *luteum* and *canadense* which added interest and variety.

A spray of any evergreen species or hybrids in the Azalea Series called for in Class 40 attracted eleven exhibitors. THE COMMISSIONERS OF CROWN LANDS took first with a branch of bright crimson 'Hi No Degiri', the flowers well opened and in perfect condition. Sir GILES LODER showed a huge flat branch of the same variety but the flowers were not as well developed. Mrs. WALKER-HENEAGE-VIVIAN's vivid pink 'Nyacino' took third. Other attractive exhibits were the pure white 'Palestrina' and *serpyllifolium*.

Class 41, for three evergreen species or hybrids of the Azalea Series, was spectacular. Again THE COMMISSIONERS OF CROWN LANDS took first with the fine white 'Haru No Nyokii', 'Hi No Degiri' and the cerise 'Dakon'. Sir GILES LODER, who selected 'Orange Beauty', 'Hi No Mayo' and 'Hi No Degiri' and Mrs. WALKER-HENEAGE-VIVIAN, who combined 'Kirin', 'Ima Shojo', and 'Nyacino', were placed second and third.

Class 42, calling for species of the Series Anthopogon or Cephalanthum, had some distinguished entries. Lord ABERCONWAY's choice of a beautiful white *cephalanthum* with very fluted flowers almost 1 in. in diameter arranged in neat clusters of five and six was a happy choice for first prize and was one of the interesting plants of the show. In contrast to it was his neat white *cephalanthum* var. *crebreflorum*, looking like a fine Daphne with its clusters of ten to twelve perfectly formed

small flowers. In third place, again from BODNANT, was a spray of *anthopogon* bearing three small trusses of large reddish-pink flowers. All were highly aromatic and in every way delightful representatives of this charming series.

In Class 43, for the Series Campylogynum, the only entry was Lord ABERCONWAY's spray of *myrtilloides* with purple bell-like flowers covered with a grapey bloom. This was given a second place. Class 44, for species of the Series Edgworthii grown in the open, had six entries, five of which were *bullatum* and one, the type. Lady LONDONDERRY, who had cut a large spray of *bullatum* with about twenty trusses of flowers, delightfully tinged with pinkish-red took first place. The reddish-orange calyx cup and the stigmas of the same colour added to its beauty. A second prize went to Mr. J. W. HOWLETT for a similar form of the same species. THE COMMISSIONERS OF CROWN LANDS were third with a pure white *bullatum* with pale green sepals and the leaves edged and coated with silvery white down which set off the cold frosty beauty of this form. The scent of flowers in this class caused much comment.

Class 45, for the Series Glaucum, was a little bewildering for the same plant appeared in a variety of forms. Lord ABERCONWAY won a first for *charitopes* with very rounded flat flowers of reddish-purple and a second as well with a *glaucum* of an unusually strong pink. The flowers with very prominent stamens were borne in good trusses. Mrs. WALKER-HENEAGE-VIVIAN showed a lovely clear pink *glaucum* for third place and fourth went to THE COMMISSIONERS OF CROWN LANDS for a plum-coloured *tsangpoense*. Lord ABERCONWAY showed a *glaucum* which caused much comment because of its large well-fluted flowers of a brilliant pink shaded apricot and orange.

The Series Heliolepis, Class 46, had six exhibitors, five of whom chose *desquamatum*. First place went to Mrs. WALKER-HENEAGE-VIVIAN for a light purple form with very large flowers, 2 in. in diameter, with red stigmas and stamens. Lord DIGBY showed a redder form for second place and Mr. DE ROTHSCHILD was third.

Class 47, for the Series Lapponicum, had seventeen entries. Lord ABERCONWAY filled first and third places with an outstanding *russatum*, very dark and rich in colour, and a lovely primrose *chryseum* with dark saffron buds. Second prize went to Miss GODMAN for a delightful *hippophaeoides* with compact trusses of eight to nine pale grey-blue flowers perfectly formed. The grey-green foliage in perfect harmony with the flowers made this exhibit one of the most outstanding in the class. Fourth place went to THE COMMISSIONERS OF CROWN LANDS for a fine form of *scintillans*, well flowered and in fine condition. Class 48,

for the Series Lepidotum, had no entries and Class 49, for the Forrestii Subseries, had only one, a *repens* shown by Sir GEORGE JESSEL, who was awarded a second prize.

Class 50, for the Series Saluenense, contained an outstanding red form of *calostrotum* shown by THE COMMISSIONERS OF CROWN LANDS. The flowers looked outward and the colour combination of the rich rosy-red flowers and the blue-green foliage was particularly pleasing. For second place Mr. DE ROTHSCHILD showed a reddish-purple *saluenense* and Lord ABERCONWAY a slightly paler form.

Seven entries in Class 51, for the Series Virgatum or Scabrifolium, was lead by the *spinuliferum* put up by THE DUCHESS OF MONTROSE which had fine foliage and brilliant reddish-orange flowers. Lord ABERCONWAY took second place with the same species and third with a brilliant pink *scabrifolium*. In Class 52, for the Series Trichocladum, Sir HENRY PRICE took first honours with a fascinating deep yellow *mekongense* set off by bronze-green leaves and pale brown anthers. This plant was a pleasant contrast to the paler *trichocladum* shown by THE COMMISSIONERS OF CROWN LANDS and Lord ABERCONWAY for second and third places.

In Class 53, for the species *Augustinii*, Mr. E. DE ROTHSCHILD took first prize with a fine spray of a very ruffled form of a good clear blue with a light streak in the centre and pale mauve filaments. Mr. J. W. HOWLETT was second with a good coloured form with rather pointed petals. THE COMMISSIONERS OF CROWN LANDS were awarded third and Mrs. STEVENSON, a fourth place. It is interesting to note how the colour of the filaments changes the tonality of the whole flower, the red filaments making the flower appear less blue and more on the purple, even though the tone of the petals may be the same. Class 54, for any Rhododendron of the Augustinii Subseries other than the above, showed great similarity, for all three places went to *chasmanthum*. Mrs. DOUGLAS GORDON was first with a lovely, pale, well-flowered form with little marking in contrast to the very frilled form with yellowish throat shown by Lord ABERCONWAY and the prominently green marked F.C.C. flowers which took third for Mr. E. DE ROTHSCHILD. This last is a very large particularly handsome one.

Strangely enough there were only two entries for the lovely Oreotrephes Subseries, Class 55 but Mr. E. DE ROTHSCHILD's fine *timeteum* was a worthy first. In Class 56, for the Subseries Polylepis, first place went to THE COMMISSIONERS OF CROWN LANDS for a brilliant rich red *pseudo-yanthinum*, heavily fluted, second place to Mr. E. DE ROTHSCHILD for a reddish-purple form and a third to Mrs. STEVENSON for a deeper slightly redder one. There were six entries in Class 57 for the

Subseries Triflorum. Lord ABERCONWAY's fine *xanthocodon* with luminous orange-yellow bells was a good choice for first. Mr. DE ROTHSCHILD showed a clear pink *triflorum* for second, and THE COMMISSIONERS OF CROWN LANDS filled the other place with a smaller very pale *xanthocodon*. Lord DIGBY showed an interesting *triflorum* var. 'Mahogany'.

Class 58, for the lovely Subseries Yunnanense, was popular with twelve entries, and the places went to three different species. Lord ABERCONWAY put up *caeruleum album* of fine substance for first. It was a lovely spray with a few greenish buds and the snow-white flowers set off by the chocolate coloured anthers. Lord DIGBY took second with a fine pink *Davidsonianum* and third with good trusses of *suberosum*, prettily marked with green and set off by long white stamens.

Class 59, designed to include any other species not included elsewhere in the schedule, had five entries. Mr. E. DE ROTHSCHILD showed *hyperythrum*, one of the Subseries Caucasium with trusses of ten pure white flowers on long pedicels, for first place. Lord ABERCONWAY took second with *adenopodum*, a member of the same subseries, and THE COMMISSIONERS OF CROWN LANDS, third with a spray of the American *minus*, with small trusses of six to seven pale pink flowers.

The next twenty-one classes were for hybrids and it is impossible to describe them in detail. In Class 60, for any hybrid of the Series Arboreum, Lord ABERCONWAY took the first two places with 'Choremia' and *arboreum* × *Griffithianum*. In Class 66, for a hybrid of the Series Neriiflorum, the first place was filled by 'Phoebus', one of Lord ABERCONWAY's fine crosses with 'F.C. Puddle'. Sir GILES LODER won first prize in Class 67 for a Thomsonii hybrid of brilliant colouring and nice form, the other parent being 'Glory of Leonardslee'. Class 70, for any hybrid of the Series Cinnabarinum, is always one of the most attractive, not only for the beauty of colouring but the exquisite form of the pendulous flowers. First prize went to Mr. GEORGE H. JOHNSTONE for 'Trewithen Orange', which has already had an F.C.C. He showed three trusses of glistening orange flowers paling to creamy pink at the tips. Second prize was filled by Capt. MURRAY ADAMS-ACTON's 'Perseverance' var. 'Rose Madder', and third by Mr. JOHNSTONE with a lovely frilled form of *cinnabarinum* × *Maddenii* with flowers 2½ in. long and across. Other entries were the pale yellow 'Peace', 'Lady Roseberry', 'Sinbad' and 'Cinnkeys'.

Class 71, calling for any hybrid of which one of the parents is a species, proved popular with ten entries. First place went to THE EARL OF STAIR for *Taggianum* × *Lindleyi*, with a fine, heavy textured, white flower 3½ in. long and 4 in. across, borne in trusses of five. The sepals

FIG. 40.—View across the hybrid planting in the test garden (*see* p. 87)

Photos. J. G. Bacher]

TRIAL GARDEN OF THE AMERICAN RHODODENDRON SOCIETY

FIG. 41.—*R.* 'Mrs. G. W. Leak' playing a dominant role in the test garden

FIG. 42.—A view of the 4th Annual Tacoma Rhododendron Show (*see* p. 121)

Photos. Richards]

THE TACOMA RHODODENDRON SHOW

FIG. 43.—*R. occidentale* (*see* p. 123)

were yellowish-green tinged red, and the corolla white with a butter yellow throat shaded orange. This plant received an Award of Merit. Second place was filled by Sir GILES LODER's 'White Wings', again a large flower nearly 4 in. in diameter borne in trusses of three and nutmeg-scented. Lord ABERCONWAY took third with a single truss of 'Tyermannii', bearing three creamy-white flowers over 4 in. long, the tubes of which were deep yellow. 'Princess Alice', 'Countess of Haddington', 'Suave', and 'Fragrantissimum' made for lively competition in this class and the fragrance caused many observers to linger.

First prize in Class 72, for any hybrid between the Series Triflorum and Series Lapponicum, went to THE COMMISSIONERS OF CROWN LANDS for a spray of 'Blue Diamond' with compact spherical trusses of fine blue violet and second, to Mrs. STEVENSON for slightly looser trusses with larger flowers of a little paler blue. Class 73, for any Triflorum hybrid other than with the Series Lapponicum, was won by Mr. DE ROTHSCHILD's 'Electra' (*chasmanthum* × *Augustinii*) with fine blue flowers marked green on the paler throat, and second by his 'Eleanore' (*desquamatum* × *Augustinii*). Class 74, for any hybrid of *repens* or *aperantum*, saw Lord ABERCONWAY take first with 'Elizabeth' and Mr. E. DE ROTHSCHILD and THE COMMISSIONERS OF CROWN LANDS second and third with 'Carmen'.

In Class 75, for any hybrid between two species other than those provided in previous classes, went to Mr. R. OLAF HAMBRO for a fine large truss of 'Elsae'. Lord DIGBY took a first in Class 76 with 'Prostigiatum', followed by THE COMMISSIONERS OF CROWN LANDS who showed a more intensely coloured form. In Class 77, for any hybrid between a species and a hybrid other than those previously provided for, a fine deep red *eriogynum* × 'Britannia' won a first for Lieut.-Col. J. F. COLVIN. Brig. J. M. J. EVANS won a second with a vivid scarlet truss of *euchaites* × dark red seedling. Lord ABERCONWAY took the first two places in Class 78 for any hybrid between two hybrids with 'Cheerful' and 'Cornish Cross' × 'Kewense'. Thirteen entries in Class 79 for a spray of any Rhododendron hybrid made a lovely show. Mr. HUGH F. THORBURN with four trusses of 'Day Dream' and The Hon. JOHN MCLAREN with 'Penjerrick', a cool cream form with reddish throat, were first and second.

Class 81, for six hardy hybrids raised by nurserymen, went to Messrs. WATERER for 'Pink Pearl', 'Rose Perfection', 'Alice', 'White Swan', 'Betty Wormald', and 'Fastuosum flore pleno'. Messrs. W. C. SLOCOCK ranked second with 'Dairymaid', 'Letty Edwards', 'Goldsworth Crimson', 'China', 'Mount Everest', and 'Unique'. 'Queen Wilhelmina', 'Diane', 'Prince Camille de Rohan', 'Rose Perfection',

'Bodartianum' and 'Princess Juliana' earned a third for Major A. E. HARDY.

Class 82, calling for a plant in bloom of any dwarf Rhododendron suitable for the rock garden, had six entries, which were delightful after so many cut blooms. Messrs. JOHN WATERER took first place with a well-flowered plant of *russatum*, a rich violet mass in perfect condition. THE COMMISSIONERS OF CROWN LANDS filled second with a wonderful rosy red form of *calostrotum* with very flat flowers facing out. Messrs. SLOCOCK were third with 'Impeanum'. The next class called for a specimen plant in bloom not exceeding 4 ft. in height. Again THE COMMISSIONERS OF CROWN LANDS were first with a plant over 3½ ft. in diameter of 'Blue Diamond' and took third place as well with a huge spreading plant of the lovely soft pink 'Hi No Mayo'. Messrs. JOHN WATERER showed for second place a plant of 'Fedora' over 2½ ft. in diameter, which was so smothered in dark pink flowers that almost no leaves were visible.

Class 84, for two leaves each of six Rhododendrons, is one of the most interesting of all. This year the exhibitors showed originality in their selection and the standard was high. In first place were THE COMMISSIONERS OF CROWN LANDS with *mallotum*, *fictolacteum*, *basilicum*, *fulvum*, huge silvered *sinogrande* (21½ in.×9 in.), and 'Polar Bear', pale apple green above and silver below. For second place Mr. E. DE ROTHSCHILD showed *sinogrande* (24 in.×12¾ in.), *mallotum*, *campanulatum*, *Macabeanum*, *Falconeri*, and *Bureavii*. This exhibit showed a great variety in colour, size and texture. Lady LONDONDERRY was a very close third with a huge *sinogrande*, *Falconeri*, *fictolacteum*, *Hodgsonii*, *magnificum*, and *Macabeanum*, all of which were of fine lustrous green and perfect form. Mr. HAMBRO showed the largest of all the *sinogrande* (29 in.×9½ in.), *calophytum*, *eximium*, *argenteum*, *mallotum*, and *Hodgsonii*.

Class 85, for an arrangement of Rhododendrons grown in the open and in a container provided by the exhibitor, had six entries. Mr. HUGH F. THORBURN used a white pottery container to hold a delightful purple, pink and mauve arrangement of 'Day Dream', *tephropeplum*, *racemosum*, 'Blue Tit', *Augustinii*, etc. Sir GILES LODER took second with a crystal two-handled pedestal vase containing a strong pink hybrid surrounded by apricot Azaleas, 'Orange Beauty', *Wardii*, *Williamsianum*, and *Augustinii*. Third prize went to Mrs. DOUGLAS GORDON for a thistle vase of tourquoise blue banded in yellow which picked up the yellow of the blooms which were blended with the pale blue of *Augustinii* and the pink of *Davidsonianum*.

Class 86, for any species shown by an exhibitor who has never won

a prize at a Rhododendron Show, had only two entries. Mr. GERALD WILLIAMS, M.P., showed a pale spotted form of *campylocarpum* for first place. In Class 87 he took the first two places with 'Blue Tit' and 'Ivery's Scarlet' for hybrids as in Class 86.

On the dais a large number of lovely hybrids were put up for awards. Mr. F. E. W. HANGER's 'Moonshine' ('Adriaan Koster' × *litiense*), shown by the DIRECTOR OF WISLEY, received an Award of Merit as did THE EARL OF STAIR's 'Lord Stair' (*Taggianum* × *Lindleyi*). Other plants of note were 'Melba', a cross between *Edgworthii* and *burmanicum*, shown by Mr. CHARLES WILLIAMS, which had delightful, yellow, very fragrant flowers over 2 in. in diameter, and Mr. GEORGE H. JOHNSTONE's 'Bluestone' var. 'Blue Ribbon' and 'Alison Johnstone' (*yunnanense* × *concatenans*) with its lovely pale apricot flowers. This had already received an Award of Merit in 1945 but, like Mr. HAMBRO's 'Elsae', it proved the wisdom of the award. Capt. GRANVILLE SOAMES chose a handsome *arboreum* × 'Prometheus'. The Committee asked to see again Mr. DE ROTHSCHILD's 'Penelope', a cross between *Griersonianum* and 'Dragonfly', and it is probable that more may be heard of it. THE COMMISSIONERS OF CROWN LANDS showed the red form of *calostrotum*, which is described at length elsewhere and Capt. COLLINGWOOD INGRAM staged 'Timoshenko', a hybrid of uncertain parentage.

THE TRIAL GARDEN OF THE AMERICAN RHODODENDRON SOCIETY

by

J. G. Bacher

TO present a clear account of the creation of this trial garden one must delve to some extent into the beginning of the American Rhododendron Society itself as both are of very recent origin.

In 1945 a small group of Rhododendron fanciers, growers, amateurs and professionals met at various times, discussing the needs of such a group in this country. Locally on the Pacific Coast this evergreen shrub makes such an impressive display in gardens and the few public parks that it is by far the finest feature in all landscape plantings.

Yet no one in the whole nation seemed to be interested in classifying or in any manner tabulating its potentialities even though nurserymen grew large numbers where conditions seemed favourable for them. One had to go to Great Britain and The Royal Horticultural Society with its Rhododendron Group for literature and books on the subject. It was also realized that there is a vast difference climatically between our country and Great Britain and British growers are largely unaware of the reactions of the Rhododendrons to our surroundings.

So the formation of an American Rhododendron Society was deemed to be the solution for obtaining this essential information bearing on the behaviour, culture and adaptability of these most interesting shrubs.

Inspired by the British group, who have gone so deeply and thoroughly into every phase of Rhododendron knowledge, our pattern, so to speak, was cut out after their own model in a spirit of fraternity and goodwill as no small number of our best growers came originally from British shores.

One of the first tasks deemed essential to real progress in our study was a trial garden for Rhododendrons. However, beginners seldom have means to undertake ventures of this sort unless they are lucky in finding godfathers, who are disposed to assist financially.

This proposition, once known, did produce a solution of an enticing nature. The JACKSON family, owners of the *Oregon Journal*, made a gift of twenty-seven acres of land, adjoining the University of Oregon Medical School, to the American Rhododendron Society.

The Rhododendron Park was installed there near the heart of the city —within two miles of the city centre.

This land fronting on one of the sight-seeing boulevards consists of a rather steep hillside forest of rich but clay soil with ravines—no all year water courses—but great scenic possibilities for the future.

Our young group was greatly elated over this generous gift and began to plan how to develop it, but realized that volunteer work could not accomplish much on such a large task and that financing such a project called for large sums of cash, far beyond the ability of our membership. So, it was decided to await better times for the project and meanwhile time slipped by until another lucky break occurred. Mr. C. I. SERSANOUS was elected President of the American Rhododendron Society and he provided us the leadership of a far-sighted business man of mature judgment.

Near his residence and among his acquaintances lived the Public Park Superintendent, Mr. C. P. KEISER, who knew of a tract of land belonging to the park system which was neglected. It was a small island on the public East Moreland Golf Course and after a visit of inspection, it was discovered as ideally suited for a Rhododendron garden.

Mr. SERSANOUS, encouraged by Mr. KEISER, went before the City Council to explain the purpose of the Rhododendron Trial Garden and to learn their reaction to the appeal. The City Council agreed to the proposition, and after much legal procedure (adoption of an ordnance giving the American Rhododendron Society a revocable permit to use this land for the installation of a Rhododendron Trial Garden), the way was paved at last. Naturally the American Rhododendron Society contracted to build up the garden free of any cost to the city proper, but the city, through its Park Bureau, agreed to the maintenance of the grounds and in this manner assured their continued care without obligation on the part of the American Rhododendron Society.

This venture, so rich and unique in park improvement for public use, exerted a most stimulating influence on the membership of the Society and our leader played his role in truly masterful manner by setting up a test garden fund of $2,000 cash for the purpose of defraying initial construction expenses—such as a 300 ft. Cyclone fence with gate to prevent unlawful entry and also for various material needed in the construction of paths and roadways. A committee for the planting of this test garden was duly appointed, with the writer as its head, and so the work of removing surplus trees got underway—all done with the help of volunteers, trucks, chain saws, motor ploughs and other equipment necessary for initial ground work.

Mr. SERSANOUS assisted in the rough work to the limit of his ability, and one greatly interested spectator, who came to heckle this volunteer gang of men for spoiling a public recreation spot he had long been accustomed to visit daily, became a daily worker in the land clearing task, much to the enthusiasm of his fellow workers. It is one of our national habits to forget all rank or position in life to assist in any work going on for the welfare of a community. But to have a well-to-do, grey-haired man with only one arm join a gang of normal bodied persons in such rough work and more than hold his own, did prove to all that a loyalty of purpose and the will to serve one's community is a thrilling experience.

Planting began with the donation of two of the oldest and largest specimens of 'Cynthia' in the city. These were given by Mr. C. P. KEISER, ex-City Park Superintendent, as his contribution to the first Rhododendron trial garden in the United States.

These bushes, well over forty years old, 12–15 ft. tall, were moved by cranes and trucks within a few hours to their new home, where they flowered as usual the following spring without a visible trace of damage from their transplanting ordeal.

Donations of whole truckloads of plants were made, not of small nursery size plants but of stately bushes 12–25 years old so that a showing could be made to inspire any visitor to this trial garden. All labour performed and equipment furnished was on a voluntary basis. Practically every nurseryman dealing in Rhododendrons in this region has made generous donations of entire collections; and amateurs have given us some of their Rhododendron treasures. From a professional point of view the planting of such a collection is not always an easy one as much of the material received is of unknown sorts and of all sizes and ages.

A building had to be erected in which to store tools and provide shelter against sudden rainstorms, and being on public property it had to comply with the building codes of our city. Mr. C. T. HANSEN, designer and employee of the Federal Government, furnished the required design and specifications approved by the Building Inspection Bureau. A crew of volunteers, many of them with construction experience, worked on Saturdays until this log-cabin design was completed and painted a neutral shade to blend into its surroundings. Its purpose of storing tools and equipment answered the need of primitive essentials at lowest costs. Mrs. RUTH M. HANSEN, Landscape Architect, provided a plan for walks and paths which were partly in existence from a previous period of Park Improvement but needed restaking and dressing with gravel and road material; this work was also carried

out by volunteer workers on a series of Saturdays. Seldom did Mr. SERSANOUS fail to be on the job along with the rest of the volunteers and assist in all menial duties as well as planning for the future. One of the great advantages in this location was the suitability of the soil for Rhododendrons. Just here and there it was necessary to add peat or other soil loosening elements. This permitted the planting of large and small specimens with the least possible effort and time. For the first plantings the writer furnished several loads of waste hops from the local brewery that were used as mulch and incorporated where the soil was deemed too heavy. This mulch proved very beneficial and during the second fall season the goodwill of the city's street cleaning department was enlisted and many loads of leaves were furnished to use as an overall mulch. The Park Bureau staff takes care of watering and as a permanent underground watering system had been established there during previous improvement programmes, this is easy.

It is a joy for every person interested to visit there and to observe the healthy rich green foliage in all plants that is the surest sign of well being. The flowering in the second season after planting has been exceedingly free and lush in every respect.

Spring, with a larger than usual number of frosty mornings that damaged young foliage and spoiled early flowers in gardens throughout the city, did not seem to affect in any visible manner the flowering of the Rhododendrons there.

On 1st March *R. lutescens* had its first flowers open and the large specimen of *R. sutchuenense*, which the year before bloomed the first of all in late February, did not come until about 10th March. In our planting of the island, the species are arranged in groups to quite an extent. The Lapponicums and kindred types begin to the left of the entrance, which is the East side of the island and form a large scale border. In front of them we find the Deciduous Azaleas gradually merging into evergreen forms. The South side is given over largely to the Triflorum Series interspaced with *R. glaucum* and sun tolerant species. The western border of the island shaded more heavily by native trees, is devoted to the larger leaved species which are spaced according to size. Their needs for light have been given first consideration for the Falconeri and Grande Series prefer shelter from the noonday sun.

The hybrids of all types prevail. These form large groups as the majority are of good size ranging in age from five to twenty years and even up to forty-five years for a few of the largest specimens. In addition there are those purchased by Mr. SERSANOUS who selected entire groups from various sources in order to have the trial garden attractive right from the start. All are donations.

The plantings, being done largely through the fall and winter seasons, will need rearranging by colours to improve the colour effects but as soil conditions are very favourable, it is going to be an easy matter physically. However, the goals of beauty are bound to be controversial at all times.

Everyone who takes the trouble to visit this idyllic little isle in the midst of a civic golf course in the south-eastern section of our city of Portland must realize that Rhododendrons have come a long way as the result of hybridization and understanding of their culture from the native species we are acquainted with.

It also impresses everyone to see the great diversity in forms, foliage, growth, flower and the long period of blooming. Nowhere in the nation is such a collection to be found as in this garden, less than two years old but in effect, presenting the charms of a half-century of growth. It is the miracle of the gardening world and the proud accomplishment of men and women Rhododendron fanciers of America.

The Park System of Portland is more than fortunate to have the goodwill of the American Rhododendron Society do such a task which would be impossible for anyone else to accomplish in such an idyllic spot.

In the State of Oregon we have climatic conditions not found in any other State the nation over that permit the culture of the largest range of Rhododendron species and their hybrids. It is to Mr. CLAUDE SERSANOUS, President of the American Rhododendron Society that credit for the idea of this trial garden and for his generosity in providing the fundamentals is due. An enthusiastic membership is an equally vital power and many who are willing to help the project with money, labour, and plant material have not yet had the opportunity to do their share. The active leaders will be happy to learn of the goodwill awaiting them for this unique project offers an unlimited opportunity as no garden of this type will ever be complete. The actual work has proven highly stimulating to every person who has contributed.

THE FOURTH ANNUAL TACOMA RHODODENDRON SHOW

TACOMA, WASHINGTON, U.S.A., 10–11th MAY

by

Leonard F. Frisbie

President

THE Tacoma Rhododendron Show this year was held in Normana Hall which offered spacious quarters and afforded an opportunity for some highly effective landscaping. A vigorous advance publicity programme aroused and centred community interest. A small greenhouse was set up weeks before the show on a traffic island in the heart of downtown Tacoma where examples of fine Rhododendrons were displayed to the public. A huge plant of a hybrid was flown to Washington, D.C., where it was forced into flower in the White House greenhouse for presentation to President Truman and family. The Tacoma Society made the first presentation of Rhododendrons on television in the United States. A complete miniature Rhododendron garden was transported to a Seattle studio. The cameras were worked in quite closely to pick up the detail of each plant and flower. The result was a mild sensation. As a result of effective publicity the Tacoma Show was exceptionally well attended. This show has come to be an event in the Pacific Northwest, that is annually anticipated by horticulturists and Rhododendron enthusiasts with pleasant expectations. Each year new hobbyists are enlisted in the cause of Rhododendrons through the helpful spirit that has always characterized The Tacoma Rhododendron Society.

From its inception the Tacoma Rhododendron Show has been a living plant display. It was believed by those directing the movement that a wide variety of Rhododendron plants arranged to simulate actual garden conditions would best accomplish the objectives for which the show was to be staged (Fig. 42). The primary purpose has been to arouse enthusiasm and interest in Rhododendrons, to educate the general public, and to encourage a wider use of the genus in estate and home gardens.

To accomplish these objectives an effort has been made to bring into the show a wide range of varieties, both species and hybrids, so that the public might see the plants that are adaptable and valuable for many different garden purposes. At all times a real effort was made to seek

out for the show only plants of high quality, character and beauty. Exhibitors were discouraged from showing indifferent varieties. Since the Tacoma Rhododendron Society is officered and controlled by non-commercial people it has been possible to make our show a civic and an educational enterprise, yet benefits to nurserymen who sell Rhododendrons have been great. The annual show in Tacoma has had a decided influence in the area. It has done much to raise standards and it has developed an interest in unusual varieties. Every year it gives great impetus to the distribution of fine Rhododendrons.

The 1952 spring in the Puget Sound country was the most backward one we have had in many years. There were long periods of cold, cloudy weather, and when the nights were clear, there were heavy frosts that spoiled the flowers. This catastrophe cut down the number of exhibitors, and it deprived our show of many fine species and hybrids. Fortunately the gardens that were located in warm areas and those directly on Puget Sound did not have frosts, so there were plants in sufficient numbers to stage a highly creditable show. The principal exhibitors were H. L. LARSON, I. S. BROXSON and THE TACOMA SEED CO., Mrs. WALTER BERG, HERBERT BOWEN, LEONARD F. FRISBIE, W. E. CRABTREE, POINT DEFIANCE PARK, CHAS. W. JOHNSON and Mrs. BERNICE TOLBERT.

For a number of years the Tacoma Rhododendron Society has been assembling a representative collection of native American species for the Puget Sound area. A number of these were exhibited. A very charming plant of *R. carolinianum album* proved to be the outstanding species and it won for DAVID G. LEACH of Brookville, Pennsylvania, the R.H.S. Affiliated Societies Silver-Gilt Medal. Mr. LEACH had sent the plant as a gift to the Tacoma Collection. The flowers of this form are pure white, ten to twelve in a compact truss that nestles closely to the light green foliage. Plants of this fine form of *R. carolinianum* are rare. *R. nudiflorum* was present at the show in the pure white form as well as the usual light pink. A very attractive yellow-eyed white form of *R. alabamense* won lots of admirers. *R. atlanticum* was represented by the tall pure white form. The better, low growing, pink-flowered sorts did not open in time for the show. JAMES HARTLEY displayed a spray of a very deep pink form of *R. Vaseyi*, a rare form on the coast where *R. Vaseyi* is a general favourite. A nice form of *R. roseum* from near Delhi, N.Y. created much interest as did a small flowered, intense reddish-orange form of *R. speciosum* from the Tennessee mountains.

Another species in the Azalea Series was *R. mucronatum*. This Azalea is well liked in this section, *R. mucronatum album* being the most popular, although var. *ripense* shown by CHAS. W. JOHNSON

charmed all visitors. Var. *sekidera* also attracted a lot of attention. *R. Kaempferi* was represented by plants with typical orange flowers. One spray of *R. occidentale*, a very good pink and white form with a prominent yellow blotch, was displayed as Plant No. 101 in the Tacoma Occidentale Survey, which is an effort at a comprehensive study of this important American species. The flowers of this form are 2½ in. across. The corolla is white heavily flushed with carmine rose. The centre of the corolla lobes are faintly striped with this same colour, and the back of the tube is also carmine rose. The blotch is Empire yellow (Fig. 43).

H. L. LARSON displayed the following highly interesting group of species: *R. bauhiniiflorum*, *R. impeditum*, *R. cremastum*, *R. Hanceanum*, var. *nanum*, *R. dichroanthum*, *R. liliiflorum*, *R. calostrotum*, *R. riparium*, *R. cephalanthum* var. *crebreflorum*, *R. imperator*, *R. oreotrephes* and *R. Souliei*.

Azalea hybrids helped to add interest. R. 'Delicatissima', R. 'Exquisita' and R. 'Graciosa' of *R. occidentale* parentage, were on display as were large numbers of Kurumes including R. 'Hi No Degiri', R. 'Hi No Mayo' and many others, most notable of which were big plants of R. 'Snow' exhibited by Mrs. BERNICE TOLBERT. The CHAS. W. JOHNSON exhibit was highlighted by scattered groups of R. 'Sanderi Ruby'. I. S. BROXSON featured fine plants of the Gable hybrid 'Corsage' as well as a large plant of 'Lingham's Perfection', a *R. occidentale* hybrid developed by ALFRED LINGHAM, a Puyallup member of our Tacoma Society. Most of the newer, big flowered deciduous hybrids were lost to Jack Frost, but 'Indian Chief' was a standout representative of the Puyallup Valley hybrids as was a plant of 'Signal Light'. Efforts to bring to Tacoma a representative collection of the Glenn Dale hybrids developed by B. Y. MORRISON for the U.S. Department of Agriculture brought a number of small plants to the Tacoma Show. The colour range, the size of the flowers and the flowering habits of these showed definite superiority over all evergreen Azaleas seen previously in this section. Large plants will be even more impressive. W. E. CRABTREE exhibited the most colourful group of Azalea hybrids at the show, consisting of a large number of mature plants of Kurumes in a wide range of colours.

In the Rhododendron hybrid class effects of the weather were noticeable in that frosts robbed it of many newer varieties that had been planned for the show. Others refused to flower due to cold, backward weather. There were many, many hybrids, however, even though some of the newer things will have to wait for a more favourable spring to make their Tacoma début. There is one advantage about

showing the older good sorts in the United States and that is that we can display large plants. These are always most impressive. Included in this group were plants of 'Snow Queen', 'Mrs. W. C. Slocock', 'Souv. of W. C. Slocock', 'Goldsworth Pink', 'Butterfly', 'Beauty of Littleworth', 'Dawn's Delight', 'Ivery's Scarlet', 'Mars', 'Bow Bells', 'Earl of Athlone', 'Mrs. E. C. Stirling', 'Fabia', 'Madame de Bruin', 'Vulcan', 'Loder's White', 'Faggetter's Favourite', 'Armistice Day', 'Alice', 'Mrs. G. W. Leak' and 'Mrs. C. B. Van Nes'.

One of the top hits of the show was H. L. LARSON's plant of 'Elizabeth'. This is the very first plant of the variety to flower in Tacoma and it aroused universal enthusiasm. Mr. LARSON also showed 'The Don' which is still new in this section. Plants of 'Mrs. Betty Robertson' attracted a lot of favourable attention with its rich cream flowers, due to the fact that this variety is not well known here. 'Rosemary' and 'Pierce's Golden Jubilee' were of interest. These are of Washington origination, but the parentage is unknown. HERBERT BOWEN displayed one of the most fascinating plants in the show, 'Naomi', with flowers of exquisite colouring. He also exhibited a large plant of 'Lady Bessborough'.

By permission from The Royal Horticultural Society's Council the Banksian Medal was awarded to H. L. LARSON of Tacoma, by virtue of the fact that the monetary value of his total prizes exceeded that of any other exhibitor.

There are a number of very fine hybrids in the Tacoma area of local origination. One of the best ones is the result of a cross between R. 'Peter Koster' × R. 'Loderi' var. 'King George'. This cross was made by Mr. BARTO, now deceased, of Junction City, Oregon. It was exhibited at the 1949 Tacoma Show. The flowers are 4½ in. across and 2 in. deep. There are twelve to fifteen flowers in a large conical truss. The colour is cherry red, H.C.C. 722/2, fading to 722/3. There are no markings. This handsome plant is now growing in the garden of Mrs. HORACE FOGG of the Lakes District, in Tacoma, and she has named the hybrid 'Renaissance'. R. 'Virginia Scott', a *R. Souliei* hybrid has been grown by H. L. LARSON. It has typical *R. Souliei* foliage, somewhat larger than that of the species. The flowers are 3½ in. across and 1½ in. deep, campanulate in form. There are eight flowers to a well-formed truss. The colour of the corolla is straw yellow, H.C.C. 604/1. The buds are mandarin red, H.C.C. 17/2, fading to chinese coral, 614/2. This is a very fine hybrid. R. 'Mrs. Horace Fogg' is another grand Washington hybrid raised by H. L. LARSON. The parentage is *R. Griersonianum* × R. 'Loderi' var. 'Venus'. The flowers are 5½ in. across and 2¼ in. deep. They have five lobes, and there are nine flowers

in each huge truss. The colour of the flowers is Neyron rose, H.C.C. 625/2. The tips of the corolla are slightly deeper in colour, 623/1. The throat is crimson, H.C.C. 22. I. S. BROXSON of Tacoma has an unnamed *R. occidentale* hybrid that shows lots of promise. The flowers are 3½ in. across and 1 in. deep. The centre of each lobe is delicately striped pink, and the white corolla is slightly flushed with the same colour. There is a deep yellow blotch on the upper lobe, and the pleasing *R. occidentale* fragrance is present.

A DISCUSSION AT A MEETING OF THE RHODODENDRON GROUP

held on Tuesday, 29th April 1952
(Sir Giles Loder, Bt., in the Chair)

The CHAIRMAN: The President has kindly come to give us a few words on the Rhododendron Show which is being held today. The Show is proving very successful. It is a long time since we have had a Rhododendron Show alone, and I think you will agree that it stands on its own feet very well.

The PRESIDENT (Lord ABERCONWAY): I did not come to make a set speech on the Rhododendron Show; I came rather to have a little conversational chat. I must say that I agree with Sir GILES that the Show has been very good. We have had a good many more entries than we have ever had before, except for last year, and I think they have been of very fine quality. There have been frosts and winds, but they do not seem to have affected our Rhododendrons very much. We have been fortunate in having Rhododendrons sent over from Ireland and from Cornwall and all kinds of places, and these have added to the gaiety of the Show. All of us would wish to grow those enormous heads of blooms that they get in Ireland, but not many of us can do so. We are contented, however, with the smaller ones, which perhaps have a brighter colour.

These Rhododendrons (and I am sure I am speaking to the converted) are most wonderful things. They are so easy to grow, if you have not got lime in your soil, and if you will every year, in the winter, put all round the plants dead or decayed leaves, which are generally in superabundance in our gardens. If you either rot the leaves for a year and then put them on, or put them on fresh and put a tiny sprinkling of soil over the leaves to keep them from being blown by the wind, that will keep the Rhododendrons in wonderful health.

Rhododendrons have very few diseases. They have a nasty disease called Bud Blast. I found there was a little bit of it on my Rhododendrons, so a boy went round for a couple of mornings and picked the blasted buds off, and that seemed to finish the attack. On looking at them this year, there seemed to me to be no more blasted buds. I do not think this disease is going to be a very serious thing, although it is rather a nuisance sometimes in Sussex or in the warmer parts nearer London, especially on Rhododendrons of *caucasicum* parentage. They seem to be rather more apt to get it perhaps than the other Rhododendrons.

At our Show you can see what a vast progress Rhododendron hybridization has made. We have not had many new Rhododendron seeds sent from China and other desirable places. The Reds there make things rather too difficult, although we are to send out an expedition to the fringe of China. But we can get on with our hybridizing; and if you look at the rows of hybrids and the rows of species in the Show, I think you will agree that really the hybrids are almost finer than the species, unless you take some of the really big ones or some of the large ones sent from Ireland.

I should like to recommend to Rhododendron growers the desirability of raising new hybrids. It is very nice to grow Rhododendrons to ornament your garden, for they make a wonderful improvement in your garden; but when you are raising Rhododendrons that you have produced yourself, that is a very much greater thing. For you have produced a new Rhododendron, which is perhaps better than a great many of the old ones, a Rhododendron which other people will want to have, a Rhododendron which will make new beauty in a hundred gardens. I think that is more enjoyable even than growing someone else's good hybrids or even growing a good species, although of course, the species of Rhododendrons have a great botanical interest which hybrids do not usually have.

I think it would be worth the while of many of you to go in for hybridization. It is so easy. If you have a little collection of Rhododendrons, then take the pollen from one and put it on the flower of another. It is easily done. Then you wait until the autumn, when the seeds ripen, and you sow them; and with a little effort you can make your seedling grow. I remember that when Rhododendrons were newer things in this country (I have been gardening a long time) those seedlings that people raised did not do very well at first, but people grew more and more skilled and now most of the seedlings that any skilled gardener raises come up. In fact, they often come up in quantities more numerous than you can deal with. They come up beautifully, they grow quickly and when they are quite moderately young you will very often be looking with admiration at the Rhododendrons that you have produced, for the hybrids often flower at a very early age.

When I look round the awards of the Show and see any awards that I may have been given for Rhododendrons that I have exhibited, I always say that the awards that I most value are those that have been given for the hybrids that I have produced in my own garden. I hope that many of you will get the same passion.

The CHAIRMAN: I think when one looks round the Show and sees

the hybrids, the parent shows up well in nearly every form. Upon seeing the President's species, *basilicum*, with those exceptionally shaped flower petals, I think we might have a class for the ugliest Rhododendron!

Would Mr. STREET like to make a few comments on the Show?

Mr. STREET: I find some difficulty in talking about the plants that interest me most in the Show, because, probably like most of you, I find them all interesting, the tender hybrids, the species and the hardy hybrids. Unfortunately, my ground is in a frost pocket, and I get frost and wind as well. The south-west wind comes over the Hog's Back and gains speed as it comes down, and it hits us rather harder than it does other people.

I have to grow the ones that suit my soil and situation, so for that reason I am largely confined to hardy hybrids.

I think that probably what most interested me was the exhibit put up by the KNAPHILL NURSERY. Fortunately, Mr. DONALD WATERER is not here, so I can say what I like about it! But I really wish he were present as I should like to congratulate him personally on an extremely well-staged exhibit of very beautiful plants, most tastefully arranged. In that exhibit he has done what we often all try to do, that is, to follow the fine example set by Mr. SAVILL in giving Rhododendrons plenty of space in an exhibit for showing plants. He has done it very effectively.

But it was not the exhibit in general that interested me so much as two plants, two standard Rhododendrons, 'Blue Peter'. I saw those plants when they first came to the KNAPHILL NURSERY. They were layers which came from a private garden. I expect you all know what layers can look like if they have been left to grow—walking sticks with a few leaves on the top and a few roots at the bottom. It is very much to the credit of the Nursery to see how they have been cultivated and grown into the handsome plants that they are now.

The next plant that interested me—and I apologize for talking about a plant in my own exhibit, but I feel that I should—was Rhododendron 'Mrs. Furnival'. I want to talk about it in relation to my notes in the last *Year Book* which some of you may have read. In those notes I tried to trace the history of one group of hybrids from *caucasicum*—the rather ill-fated species to which the President referred—from *R. caucasicum pictum* to 'Mrs. Furnival'. I said in those notes that I did not know 'Mrs. Furnival' nearly so well as I knew the other plants. I have got to know it very much better now. When you have to force a plant to the day, you get to know it extremely well; because first of all it has to go in the heat and then, if there is a spell of hot weather, it has to come out,

and so on. When you have moved it about like that, you really do know it. Having got to know it well, I must confess that I am not quite so sure that it belongs to that same group. It may do, for the flower is very similar indeed; the foliage is also similar, but a little bit more pointed; the habit is compact, like the others. But it is slightly different. The others are more angular; this is more upright. For these reasons it now seems to me that it is just possible that it might not belong to that group. Finally, when I put the plant into the lorry to come up to the Show, I noted that it had a very faint perfume. This makes me think that it has a bit of the *Griffithianum* blood in it. That does not exclude it from being one of the same type, but I think perhaps, considering its history, it is likely that it is an old plant of ANTHONY WATERER's—probably it is a hybrid of 'Viscount Powerscourt' with a *Griffithianum* hybrid.

I feel that I ought to make this public confession that what I said in the notes about 'Mrs. Furnival' may not be absolutely true. I therefore made the proviso about that plant, that I did not know it as well as the others.

One other plant to which I should like to refer is 'Queen Wilhelmina' which I saw in two exhibits in the specimens of hardy hybrids. In that well-known monumental work of MILLAIS on Rhododendrons, the parentage of 'Britannia' is given as 'Queen Wilhelmina' × 'Stanley Davis'. I know 'Stanley Davis' well, but not 'Queen Wilhelmina', which for me is rather tender. Seeing the two, it is fairly obvious that the parentage is correct. It would be interesting to know—I do not know whether anybody does—what the parentage of 'Queen Wilhelmina' is. I rather like guessing at these things and I feel that I should emphasize that it is largely guesswork when I am tracing back and doing detective work on the parentage of the old hybrids. I should say, by the look of it, that the parentage of 'Queen Wilhelmina' is probably an old Rhododendron called 'Ivery's Scarlet' crossed with *Griffithianum* or a *Griffithianum* hybrid. As it has played such a large part in producing those reds, 'Britannia' and so on, it would be interesting to know what the exact parentage is.

The CHAIRMAN: It has been interesting to hear from someone who, due to climatic conditions, has to contend with extremely hard conditions. With me, for instance, 'Queen Wilhelmina' is absolutely hardy and we rarely have any trouble with it. It provides a most wonderful show every year. But Mr. STREET evidently has to meet more icy conditions.

Perhaps Mrs. STEVENSON would like to say a few words now.

Mrs. STEVENSON: I feel very shy at getting up and speaking, but I will do my best, since I have been invited to speak. I would much prefer

to give a demonstration of practical work from the seed and seedlings to larger plant liftings. However, discussions lead us somewhere as well as the practical side, so I take the plunge in a new and fresh line for me!

As most of you already know, Tower Court is the home of the species, so I will begin by discussing the species versus the hybrids, both of which have been well represented in the Show today.

First, we all know that some of the species are tender and some are hardy, and the same applies to the hybrids. Therefore, in my opinion, there is nothing to choose between them.

Secondly, the species are considered by many to be non-floriferous, or are a long time before they do. That is true in certain cases, but not in all. For instance, certain series are very floriferous.

The Heliolepis Series, as we all know, is very free flowering and the Triflorum Series includes many species like *Keiskii* which flowers with us every year, and also *lutescens*, *polylepis*, *oreotrephes* and its connections —the earliest of all *mucronulatum*, which smothers itself in bloom and trusts to luck that it does not get caught by Jack Frost, as we in turn hope that it gets spared. Another most magnificent and popular one is *Augustinii*, but this one is not so regular each year as the others. Some others are *yunnanense*, *Davidsonianum* and nearly all the Triflorums. Another fine feature that they all have is that they are in scale for small and large gardens.

Then what about the Virgatum Series? The same applies here—and I mention *racemosum*, *hemitrichotum*, *pubescens*, etc. These are also extremely hardy. One should add the Lapponicum Series to this group; and both these suit all types of gardens, subject to the soil being reasonably lime-free.

Then we have the largest series of all, Neriiflorum, *euchaites* or *neriiflorum*, in my opinion, being the most floriferous and most consistent.

Then there is the Thomsonii Series, with its various subseries, *Souliei*, *campylocarpum*, *Thomsonii* and *selense*. What could beat the beauties of *caloxanthum*, with its superb orange bud, opening to pale yellow, the roundels of its foliage, the shape of the bush and the whole general appearance? We can say the same of *callimorphum*, so dainty and charming. *Wardii* is another well-shaped bush.

The Fortunei Series can also be counted among the regulars, and in particular *oreodoxa*, which starts very early—and how glad we all are to see it brighten the woodlands at last after our long winter months! *Fargesii* is another—WARD'S *decorum*, and the hardier form of *diaprepes*. And here in this series we have the addition of scent to help to gladden our senses.

We can make a big jump to the larger-leaved varieties and bring into line *fictolacteum*, and then—a further jump—all the Azalea species.

I could go on for ever, but I have only a few minutes!

I plead that we must not forsake the species for man-made beauties. (And I know I am guilty here as well!) We should bring to the general public and make known these wonderful plants of Nature, which have been and still are the basis of so many wonderful hybrids of the past and present.

There is one comment I should like to make about hardiness, and it is entirely a theory based on my own experience. When we have taken the trouble to self-pollinate a species, the seeds are matured like our hybrids in this country, so becoming acclimatized to our climate from the start. Their constitution in consequence is so much hardier than its forebears. By doing this, many moderately tender species thrive on a par with many hybrids.

Please do not think that I am against hybridizing—far from it—but in our efforts to surpass each other let us not overlook or forsake the species. Most important of all, we must not let them dwindle away; for, in honour of our predecessors, our explorers, our botanists, their combined efforts of the past and present should always be preserved. For otherwise, what would be the point of their efforts, skill, time and money spent upon such excellent pioneer and research work?

Let me conclude by saying again that in our enthusiasm for the production of hybrids, sometimes but not always with very thrilling results, we must never forget nor neglect the species from which those hybrids have emerged and without which we should not have had any Rhododendrons and Azaleas to enrich our gardens.

The CHAIRMAN: A very interesting point has been made about the seeds of the self-pollinated species being probably hardier than the parents. Perhaps after a few generations we shall get *Edgeworthii* growing in the hardy Eastern Counties, with a bit of luck!

Would anybody like to discuss the points that have been raised?

Mr. HAWORTH-BOOTH: A good many years ago I grew a large seed bed of *R. Griersonianum*. When I was planting them out, as so often happens there were about a couple of dozen plants which simply were not worth planting with the rest. I stuck them in my pocket and on the long walk home to the house through the woods, I stuck them into crevices in various mossy, rotten tree stumps on my way. As it happened later, I had no *Griersonianum* left in the nursery for my new garden, and it occurred to me that perhaps the plants which I had pushed into those crevices might have survived. So I went out into the woods and managed to find the track I had taken, and found there quite large

spidery, lanky plants of *R. Griersonianum*. I pulled them out and planted them on my very exposed sandy slope, facing due south and broiled during the day by the sun. When planting them, I pegged the long shoots out flat on the ground as much as possible. I expected most of them not to survive this treatment, especially as the planting was done in the spring. The plants grew with a vigour which I had never seen *R. Griersonianum* exhibit before, and the habit of growth completely changed.

Those on the most broiling part of the bank are now exceedingly dense plants, which could be kicked with more damage to the toe than to the plant. The flowering is exceedingly dense, and in fact almost excessive. It is possible to find two flower buds on each tip.

I mention this because I am sure that many of you have gardens which are too hot for the average run of Rhododendrons, and I suggest that *Griersonianum* is a plant of value for growing on a broiling hot bank where one would be afraid to plant most of the other Rhododendrons. I should like to know whether other people have had the same experience of finding that it is a plant which responds best to semi-starvation and a jolly good ripening of the wood from the sun's warmth.

The CHAIRMAN: What is the altitude of the bank?

Mr. HAWORTH-BOOTH: It is fairly high up. It is true that the position is favourable from the point of view of spring and autumn frosts, but I still think that the roasting does ripen them off very much better than would be the case in a shadier place. Incidentally, the plants left in the wood are a miserable lot.

The CHAIRMAN: I feel as you do, that due to the hot broiling sun and the lack of frost, the wood does get a good chance to ripen, and then you get the plentiful flowering, probably largely for that reason. We have some of them which are rather sad, and a bit lanky and lean.

Mr. F. C. PUDDLE: I do not know whether I am more interested in the Show or the discussion. We have heard the cases for the species and for the hybrids, but there appears to be a middle case. As a hybridist, I would suggest that two species, if they met in Nature, would be just as likely to hybridize as they would in a garden. Consequently we hybridists are only introducing them to each other.

As far as the Show is concerned, there is one thing which struck me in the hybrid classes. It is that those Rhododendrons which have the greater garden value are not necessarily the best Show plants or Show flowers. I wonder if it would be possible to have classes for large trusses of Rhododendrons and separate classes for the smaller trusses. I think this would lead to the smaller flowered hybrids competing on more equal terms.

I think everyone will agree with me, as gardens are today, that the moderate-sized Rhododendrons are the better garden plants. When I was hybridizing for Lord ABERCONWAY, I had in mind that the gardens of the future were likely to be comparatively small and I felt that the plants should be in proportion. I therefore based many of my hybrids on *R. Griersonianum* and *R. repens*, and looking round the Show today I think that the theory was not far wrong.

I do not think it is right to condemn hybrids by saying that they are just man-made. Rather we should look at the matter the other way and say that if they were growing together in Nature, it is quite possible that they would cross themselves. After all, who can say what part, whether great or small, natural hybridization has played in the origin of species?

The CHAIRMAN: Going round the Show today, I thought that the *Griersonianum* hybrid 'Elizabeth' which, as Mr. PUDDLE said, has a habit very suitable for a small garden, takes a lot of beating. It is very true that often the best garden plant does not show itself at all well in the Show. It is hard to devise a class for competition for such a Rhododendron which is an excellent plant. One cannot take the whole plant up, and short of sending up a spray, it is difficult to devise a competition for those plants which are so useful in the garden.

Mr. PERRY: Mr. PUDDLE has raised a most interesting point. When plant hunters visit China and other parts of the world, they always send home species. I think it has been mentioned by Mr. KINGDON-WARD on several occasions that although species grow in the wild under the best conditions for hybridization, one very rarely finds hybrids. I should be interested to hear whether hybrids have actually occurred in the wild, because I think this is a most interesting botanical point. It is also interesting from the point of view of its giving rise to further species.

Mr. PUDDLE: I cannot answer the question from the point of view of Rhododendrons, but I do know of at least one instance of a hybrid being made between two species of orchids which produced a result which proved that what had hitherto been considered a true species was really a natural hybrid.

Dr. COWAN: The question is one which it is difficult to answer, but as far as my experience goes (and it is confined to the Himalayas) I think one might say fairly definitely that it is a fact that, although many of the species do hybridize quite readily when man attempts to make a hybrid, they do not hybridize in Nature. It is at all events a rare occurrence to find a hybrid in Nature. I do not see why they should not do so, but in actual fact they do not. That is true of the Himalayan region.

I have no personal experience of China, but I have seen dried specimens of a great many plants from China and, of course, I have seen a great many raised from seed from China. I think one must admit, to begin with, that botanists have far too many names, and it is quite possible that there are certainly intermediates. There are subspecies and varieties, and these may do so.

Without further investigation in the field, I do not think we can absolutely say one way or the other whether Rhododendrons do or do not hybridize in Nature; but I think that on the whole it is a fact that they do not do it frequently, although I do not say that it could never be done.

Mr. SAVILL: I do not know whether Dr. COWAN could make some further remarks on the extreme variation one gets between the collecting of one species and the collecting of another. One gets a variation in the size of leaf, in the size of truss, in colour and in height of growth. Is there anything to account for that?

Dr. COWAN: That, again, is a difficult question to answer. It is quite true that the species range over a considerable area and over a considerable range of elevation, and the factor of hardiness must depend a good deal upon where the seed is actually collected. There is a certain range of variation in the size of leaf, according very largely to the sort of conditions under which the plant is grown.

There undoubtedly is an inherent variation within a species. Where one gets a big variation, as in *fictolacteum*, one can look upon it as a variant of the species or sometimes as a variant of geographical formation due to situation. But a great deal more investigation is required before one can be dogmatic about it.

If you take the Sanguineum group, for example, one point of view would be that the whole group represents only one species, and that there is a very large range of variation in size and even in shape of leaf, the presence and absence of bud scales, the size of the calyx and any other botanical feature that you like to name. There are two points of view from the botanical standpoint. One is the extreme view that all the variants are separate species; the other extreme is that there is one species and that all these are simply varieties or forms. Botanists cannot agree on that. I think that the best thing to do is to compromise. Indeed, I think the whole trend of this discussion is that there should be compromise.

I am sure that we all agree with the President that there are some hybrids which are better than many species and are well worth growing. I am sure that we all agree with Mrs. STEVENSON that the species should not be neglected.

One thing that I should like to say about hybrids is that there are such an enormous number of possibilities that I think we are in a great state of confusion about them. I have recently been looking over the history of Rhododendrons in the Botanical Gardens in Edinburgh and the Edinburgh firm of PETER LAWSON & SONS lent me one of their old catalogues going back to 1850. In those days there were something like four or five printed pages of Azalea hybrids and many of the names there given have long been forgotten. I think that when we make hybrids we ought to scrap some of the bad ones.

Following up what Mr. PUDDLE said, I think it would be very helpful to people with small gardens who want to grow a few Rhododendrons if some Society, such as ours, would select ten or fifteen species and a number of hybrids recommended as being suitable for the general garden, easily grown and useful for the smaller garden. I think it is important that we should do something like that.

Mrs. STEVENSON: May I bring out my point again, that if we took the trouble to self-pollinate the species in this country, as we make hybrids in this country, the species would become hardier. They would be slightly hardier than their predecessors in the tender forms.

The CHAIRMAN: It may be quite a possibility that in time we shall be able to breed some of these half-hardy species to be nearly hardy ones. It would be a great thing if it could be so. The question of the variation in the species has been mentioned. This provides a most interesting competition, as can be seen in the classes at the Show. If all the species were of exactly similar type, it would remove a large element of the fun in the competition in the species classes.

The PRESIDENT: I should like to say a few words about what Mr. PUDDLE, a very old friend, has said on hybridizing. Mr. PUDDLE has had a very unique class at the Show today. There was the class for six hybrids raised in the exhibitor's garden. Six hybrids were shown, all raised by Mr. PUDDLE. They got the first prize. There was a second lot of six hybrids shown in the same class, different ones, all raised by Mr. PUDDLE. They got the second prize. They could not get the first prize because his Rhododendrons had already got it! Then there was a class for three sprays of Rhododendrons all raised in the exhibitor's garden, and Mr. PUDDLE's Rhododendrons got the first prize in that class.

This seems to me to be a very great triumph for Mr. PUDDLE's hybridization, in a big Show of this sort. Of course, he has always been a hybridizer. Part of his life's work has been the raising of pure white Cypripediums and they are a very beautiful race now, which no one else has. I think Mr. PUDDLE has had a very great triumph in hybridizing.

The CHAIRMAN: It seems that next year we shall have to have a special class for hybrids not raised by Mr. PUDDLE!

Mr. SKINNER: There has been a suggestion that we should scrap the bad hybrids. But who is to say which are the bad ones? I went round a garden yesterday, and a lady said "I love that one", but a gentleman said, "There is too much blue in it." The stars are constantly being altered in the catalogues, so that it is very difficult to follow what is good and what is bad. I should like a body of experts to define in our *Year Book* what they consider to be a good Rhododendron and what they consider not to be a good one. The Rhododendron which I have in my garden is, I think, a very good one; but the star has been taken away.

Mr. STREET: I think I can speak with reference to 'G. A. Sims'. I had the honour to be on the sub-committee which prepared the list of hardy hybrids for the new *Handbook*. I think it will be agreed that 'G. A. Sims' is a rather bad grower, and it was on that account that the star was taken away. It has a bad habit and does not make a really nice plant.

The CHAIRMAN: I think the time has now come to close the meeting. I should like to thank all of you for coming, and to thank the speakers, who have given us much food for thought.

RHODODENDRON AWARDS FOR 1952

Rhododendron 'Akbar', A.M. 20th May 1952. This is a strong-growing hybrid from the cross *R.* 'Loderi' var. 'King George' and *R. discolor*. The heavy, flat-topped truss is made up of about 12 flowers each being 3 in. long and 5 in. wide and coloured Rose Madder (H.C.C. 23/2) with a small blotch of streaked crimson staining the throat. Exhibited by E. de Rothschild, Esq., Exbury House, Southampton.

Rhododendron arborescens var. **'Ailsa', A.M.** 10th June 1952. A magnificent form of this widely grown, late-flowering species was shown. About 10 flowers on long pedicels make up each truss. The corolla is long-funnelform in shape, 1¾ in. long and 2 in. wide, pubescent, of good substance and coloured white with a blotched, yellow stain on the central lobe. Like the type it has a rich fragrance. Exhibited by Murray Adams-Acton, Esq., 37 Palace Gate, London, W.8.

Rhododendron 'Arthuria', A.M. 20th May 1952. The parentage of this plant is *R.* 'Master Dick' and *R. Griersonianum*. It has dull green mucronate leaves which are broadly lanceolate and measure 7 in. long and 2 in. across. The large globular truss is composed of about 13 funnel-campanulate flowers each 3 in. long and 4½ in. across. The colour is Rose Madder (H.C.C. 23/1) which darkens towards the throat while the upper three lobes show brown spotting. Exhibited by E. H. King, Esq., Embley Park School, Romsey, Hants.

Rhododendron 'Cinnkeys' Minterne var. (*cinnabarinum* × *Keysii*) **F.C.C.** 20th May 1952. This most attractive and floriferous hybrid was raised from a cross made by the exhibitor in 1931. Its leaves are elliptic, obtuse, and somewhat lepidote, showing some limited scaling on the under surface. The truss is composed of up to 30 pendulous flowers. Both the pedicels and the calyces are scaly. The corolla is tubular, 1½ in. long and ¾ in. wide; inside it is coloured Nasturtium Red (H.C.C. 14/2), while outside it is scarlet (H.C.C. 19) gradually paling towards the top. This plant received an **A.M.** in 1951. Exhibited by Lord Digby, D.S.O., M.C., Cerne Abbey, Dorchester, Dorset.

Rhododendron 'Gwilt King', A.M. 20th May 1952. This is a vigorous hybrid resulting from the cross *R. zeylanicum* and *R. Griersonianum*. The inflorescence is gathered in a flat-bottomed, semi-

circular truss. Deep basal nectaries are seen in the corolla which is 2½ in. long and 3 in. wide and coloured Turkey Red (H.C.C. 721/2) with some spotting on the upper lobe. The thick leaves are 8 in. long and 2¾ in. wide; olive green above and beneath coated with a dense indumentum. Exhibited by Lord Digby, D.S.O., M.C., Cerne Abbey, Dorchester, Dorset.

Rhododendron 'Lord Stair' (*Taggianum*×*Lindleyi*), **A.M.** 29th April 1952. A richly-scented shrub for the cool greenhouse. Some scattered scales are found on the underside of the broad-lanceolate leaves and a heavy scaling on the petiole. Flowers are in clusters of 3, 4 or 5 and each one is large and semi-pendulous on a stout scaly pedicel. The calyx is leafy and the corolla, measuring 3½ in. in length and 1½ in. across is pouched. At the base of the upper two lobes is a pale orange stain against an otherwise white flower. Exhibited by The Rt. Hon. The Earl of Stair, D.S.O., K.T., Lochinch, Stranraer, Wigtownshire (Fig. 35).

Rhododendron 'Moonshine', A.M. 29th April 1952. This is a fine new hybrid made at Wisley by crossing *R.* 'Adriaan Koster' and *R. litiense*. The truss is compact, dome-shaped and composed of about 16 flowers. These have a shallow-rotate shape, are 1½ in. long and 2½ in. across, emarginate and lightly frilled at the edges. The throat is stained with a dark crimson blotch against primrose yellow (H.C.C. 601/2–601/3) that darkens somewhat on the upper lobe. Exhibited by The Director, R.H.S. Gardens, Wisley, Ripley, Surrey (Fig. 34).

Rhododendron 'Querida', A.M. 29th April 1952. A plant with the parentage of *R.* 'Red Knight'×*R. Elliottii*. About 16 flowers make up the globular truss. The corolla is 3 in. long and 3¼ in. across, has deep basal nectaries and is an intermediate shade of carmine (H.C.C. 21/1–21) with some light brown spotting on the upper three lobes. The oblong-lanceolate leaves are 10 in. long and 3¾ in. wide on a thick petiole 2 in. long. Exhibited by E. de Rothschild, Esq., Exbury House, Southampton.

Rhododendron 'Whiteway' ('Loder's White'×'Mrs. Lindsay Smith'), **A.M.** 20th May 1952. The large flowers of this plant are borne in a lax, flat-topped truss. The corolla is 2½ in. long and 4 in. across and has the characteristic, frilled margins of the putative *R. Griffithianum*×*R. arboreum album* hybrid. On the upper lobe there is a faint, pale yellow blush against an otherwise white background. The leaves are oblong-lanceolate, 6 in. long and 2½ in. across. Exhibited by Lord Digby, D.S.O., M.C., Cerne Abbey, Dorchester, Dorset.

RHODODENDRON TRIALS AT WISLEY, 1952

The Council of The Royal Horticultural Society has made the following awards to Rhododendrons after trial at Wisley.

Rhododendron (Azalea) 'Altaclarense Sunbeam' sent by Messrs. Sunningdale Nurseries, Windlesham, Surrey). **A.M.** 6th May 1952: Plant vigorous, of upright, loose-growing habit, with deciduous light green foliage. Flower truss flat-dome shaped, 10–12 flowered, very free flowering. Flowers open funnel shaped, 2¼ in. long, 2¼–2½ in. diameter, surface of petals slightly crêped, Chinese Yellow (H.C.C. 606/1) flushed Apricot (H.C.C. 609/2) with blotches at throat on upper petal of Tangerine Orange (H.C.C. 9/1).

Rhododendron (Azalea) 'Cinderella' (raised, introduced and sent by Messrs. M. Koster & Sons, Boskoop, Holland). **A.M.** 22nd May 1952: Plant vigorous, well shaped, spreading, with deciduous pale glossy green foliage. Flower trusses very large, round-dome shaped having an average of 30 flowers. Flowers open funnel shaped, 2½ in. long, 3–3¼ in. diameter, Maize Yellow (between H.C.C. 607/2 and 607/1) with a slight flush of Chinese Coral (H.C.C. 614/2) and large spots on upper petal of scarlet near Signal Red (H.C.C. 719/2).

Rhododendron (Azalea) 'Devon' (raised, introduced and sent by Messrs. W. C. Slocock Ltd., Woking, Surrey). **A.M.** 22nd May 1952: Plant vigorous, forms a compact low-growing bush with deciduous bright glossy green foliage. Flower truss of medium size, flat-dome shaped, 10 to 15 flowered. Flower 1¾ in. long, 2 in. diameter, long tubular campanulate, a bright red near Blood Red (H.C.C. 820/2) with shading of orange on upper petal at throat.

Rhododendron (Azalea) 'Goldeneye' (raised, introduced and sent by Messrs. Knap Hill Nursery Ltd., Woking, Surrey). **A.M.** 22nd May 1952: Plant vigorous, forming an upright bush with deciduous glossy green foliage. Flower trusses loose, 8 to 10 flowered. Flowers 2¼ in. long, 2½ in. diameter, tubular opening to funnel shaped, Poppy Red (H.C.C. 16/1) middle petals deepening at edges to Mandarin Red (H.C.C. 17/1), upper petal Tangerine Orange (H.C.C. 9).

Rhododendron (Azalea) 'Unique' (raised by Messrs. Noble & Standish, introduced by Messrs. Sunningdale Nurseries and Messrs. W. Fromow & Sons, The Nurseries, Windlesham, Surrey). **A.M.** 22nd May 1952: Plant vigorous, forming an upright bush with deciduous glossy green foliage. Flower truss large, compact, flat-dome shaped with up to 50 flowers per truss. Flowers 2 in. long, 2½ in. diameter, open funnel shaped, surface creped, upper petals Tangerine Orange (H.C.C. 9/1), lower petals Tangerine Orange (H.C.C. 9/1) shaded Nasturtium Red (H.C.C. 14/1).

Awards were also given to the following Kurume Azaleas growing in the R.H.S. collection of plants at Wisley.

Rhododendron (Azalea) 'Irohayama'. A.M. 6th May 1952. Wilson No. 8: Bush compact and spreading close to ground. Truss small, 2 to 3 flowered, very free flowering. Flowers open funnel shaped, 1 in. long, 1½–1¾ in. diameter, white overlaid Mauve (H.C.C. 633/2) margins pencilled Mauve (H.C.C. 633/1); stamens and pistil white.

Rhododendron (Azalea) 'Kimigayo'. A.M. 6th May 1952. Wilson No. 15: Bush compact and spreading very close to ground. Truss small, 2 to 3 flowered, free flowering. Flowers tubular campanulate, 1½ in. long, 1–1½ in. diameter, white at base changing to Phlox Pink (H.C.C. 625/1); stamens and pistil white.

Rhododendron (Azalea) 'Kirin'. A.M. 6th May 1952. Wilson No. 22: Bush dwarf, compact and spreading. Truss small, 1–2 flowered, free flowering. Flowers funnel shaped expanded at mouth, 1¼ in. long, ¾–1 in. diameter, hose-in-hose, outer petals three-quarters the size of the inner petals, Neyron Rose (H.C.C. 623/1) slightly flushed with Neyron Rose (H.C.C. 623); stamens Neyron Rose (H.C.C. 623/1), pistil Rose Madder (H.C.C. 23).

Rhododendron (Azalea) 'Kureno Yuki'. A.M. 6th May 1952. Wilson No. 2: Bush loose growing, spreading and upright. Truss small, 2–3 flowered, free flowering. Flowers funnel shaped, 1⅝ in. long, 1½–1¾ in. diameter, hose-in-hose, outer petals slightly smaller than inner petals, white with blotches of yellowish-green on upper petals at throat; stamens and pistil white.

Rhododendron (Azalea) 'Shin Seikai'. A.M. 6th May 1952. Wilson No. 3: Bush fairly compact and dwarf, spreading close to the ground. Truss small, 2, 3 and 4 flowered, very free flowering. Flowers tubular campanulate, 1 in, long, 1–1⅓ in. diameter, hose-in-hose, outer petals half the size of inner petals. creamy white; stamens and pistil white.

Rhododendron (Azalea) 'Suga No Ito'. A.M. 6th May 1952. Wilson No. 31: Bush upright and spreading. Truss small, 3–4 flowered, very free flowering. Flowers funnel shaped, 1⅛ in. long, 1½–1¾ in. diameter, hose-in-hose, outer petals irregularly shaped, small, white at base changing to Fuchsine Pink (H.C.C. 627/2) with darker spotting on upper petal at throat; stamens and pistil white.

Rhododendron (Azalea) 'Ukamuse'. A.M. 6th May 1952. Wilson No. 47: Bush dwarf and spreading. Truss small, 2 flowered, very free flowering. Flowers very open funnel shaped, 1¼–1½ in. long, 1¾–2 in. diameter, hose-in-hose, outer and inner petals of equal size, French Rose (H.C.C. 520/1) at throat deepening to Porcelain Rose (H.C.C. 620) at mouth with darker spots on upper petal at throat; stamens and pistil white.

RHODODENDRON COMMITTEE FOR 1952

CHAIRMAN:

Aberconway, Lord, C.B.E., LL.D., D.Sc., V.M.H., Bodnant, Tal-y-Cafn, Denbighshire, N. Wales.

VICE-CHAIRMEN:

Loder, Sir Giles, Bt., Leonardslee, Horsham, Sussex.
Strathcona and Mount Royal, Lieut.-Col. Lord, 2 Curzon Place, London, W.1.

Bentley, W., Quarry Wood, Burghclere, Newbury, Berks.
Bolitho, Colonel E. H., D.S.O., Trengwainton, Heamoor S.O., Penzance, Cornwall.
Comber, J., V.M.H., The Gardens, Nymans, Handcross, Sussex.
Congreve, Ambrose, Winkfield Manor, Ascot, Berks.
Digby, Lord, D.S.O., M.C., Cerne Abbey, Dorchester, Dorset.
Fromow, A. S., The Hedges, Windlesham, Surrey.
Harrow, R. L., V.M.H., Munstead Orchard, Godalming, Surrey.
Hay, T., C.V.O., V.M.H., Stoatley Cottage, Bunch Lane, Haslemere, Surrey.
Hillier, H. G., c/o Messrs. Hillier & Sons, Winchester, Hants.
Ingram, Capt. Collingwood, The Grange, Benenden, Cranbrook, Kent.
Loder, Lieut.-Col. Giles H., M.C., Dencombe, Handcross, Sussex.
McLaren, The Hon. Charles, Bodnant, Tal-y-Cafn, Denbighshire, N. Wales.
Pinckney, G. H., c/o Messrs. John Waterer Sons & Crisp Ltd., Bagshot, Surrey.
Rose, F. J., V.M.H., "Treknow", Telegraph Road, West End, Southampton, Hants.
Rothschild, E. de, Exbury House, Southampton, Hants.
Russell, J. P. C., c/o The Sunningdale Nurseries, Windlesham, Surrey.
Savill, E. H., C.B.E., C.V.O., M.C., M.A., Crown Estate Office, The Great Park, Windsor, Berks.
Slocock, O. C. A., Goldsworth Nursery, Woking, Surrey.
Stevenson, Mrs. R. M., Tower Court, Ascot, Berks.
Williams, The Rt. Hon. Charles, M.P., Caerhays Castle, Gorran R.S.O., Cornwall.
President of the American Rhododendron Society (*ex-officio*) (C. I. Sersanous, 7536 S.E. 27th Avenue, Portland, 2, Oregon, U.S.A.).

NOTE.—Members of the Council are Members of this Committee.

Adams, R. E., R.H.S. Offices (*Secretary*).

INDEX

Figures in bold type refer to illustrations.
An asterisk denotes award after trial at Wisley.