LILY

This Year Book seems to increase in popularity and readers should not be disappointed in this issue, which is dedicated to Miss Christabel Beck, who is so interested in Fritillaries. One of the main articles is an account of the Lilies grown at The Royal Botanic Garden, Edinburgh, by Mr. E. Kemp and Mr. A. Evans. Others include *Lilium* × *testaceum*, by Dr. W. B. Turrill; Lilies, Nomocharis and Notholirion at Keillour, by W. G. Knox Finlay, and an account of the Lilies in the Villa Taranto Gardens, by Mr. H. Cocker. Three Symposia are included this year and should prove useful, the subjects being: The Feeding of Lilies; When I Prick Out my Seedling Lilies and Fritillaries in the Open. Articles devoted to genera other than Lilium are also included, namely: Chionodoxa, being a review of the genus by Mr. E. B. Anderson and Mr. P. M. Synge, and *Fritillaria persica* and Other Supposed Species of Fritillaria, by Dr. W. B. Turrill. The Lily Group Discussions on Lilies in Pots, and Vegetative Propagation of Lilies, together with an Any Questions Meeting, are reported. Also included are Show Reports, Awards and a large number of Notes. Two colour plates and many black and white illustrations add to the value of the book.

DAFFODIL AND TULIP

This volume, dedicated to Mr. A. Simmonds, contains a number of interesting articles and one of particular value is Mr. P. Bracey's report on the Control of Weeds in Narcissi and Tulips with Residual Herbicides. Mr. T. H. Findlay gives an account of the Daffodils at Windsor, and those who try to breed scorch-resistant daffodils will read Mr. V. H. Booth's article on the Colouring Matter of the Narcissus with interest. Miniature daffodil enthusiasts will appreciate Mr. Alec Gray's Hybridizing Miniatures and Mr. D. Blanchard's Notes on Miniature Daffodils. Overseas contributions include an account of the Breeding of Pink Daffodils in Tasmania, by Mr. W. Jackson, and on Growing Daffodils in the Carolinas, by Mr. W. H. McNairy. Tulip articles include Mr. Th. Hoog's account of the early tulip collectors employed by Messrs. van Tubergen and a description of the Tulips at the Keukenhof Exhibition, by Mr. Bram Warnaar, and Hints on Forcing Tulips. Show reports are again included and a list of Newly Registered Daffodil names. The book is well illustrated with one colour plate and many black and white illustrations.

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THE ROYAL HORTICULTURAL SOCIETY

VINCENT SQUARE, LONDON, S.W.1

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R.H.S. RHODODENDRON AND CAMELLIA YEAR BOOK 1959

THE RHODODENDRON AND CAMELLIA

YEAR BOOK—1959

THE ROYAL HORTICULTURAL SOCIETY

THIS issue contains a number of articles of interest to lovers of both genera including: Rhododendrons and Lime, by Dr. H. Tod; The Rhododendron Gardens of Crarae and Lochfyneside, and Dwarf Rhododendrons at Branklyn, Perth, by Mrs. D. Renton. Mr. Davidian has contributed an account of the Rhododendrons at The Royal Botanic Garden, Edinburgh, which he will complete in the next volume, and Herr Dietrich Hobbie reports on his work with Rhododendrons at Linswege, Germany. Camellia articles include a description of some famous Camellias at Chatsworth by Mr. F. E. W. Hanger; *Camellia rusticana* in California by Mr. Ralph Peer, and Camellias in the Huntington Botanic Gardens, California by Mr. W. Hertrich.

COVER ILLUSTRATION

Rhododendron 'Beef-eater'. A.M. 1958

Colour photograph by

J. E. Downward

Acknowledgements

TO THIS ONLINE EDITION

The volumes of the *Rhododendron and Camellia Year Book* issued between 1954 and 1963 could not have been published online without the generosity of others.

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Photo: J. E. Downward

Rhododendron 'Beefeater' (*R. elliottii* × 'Fusilier') A.M. 3 June 1958. A fine late-flowering hybrid raised at the R.H.S. Gardens, Wisley (see p. 137)

THE RHODODENDRON AND CAMELLIA YEAR BOOK

1959

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ILLUSTRATIONS

FOREWORD

THE majority of Rhododendron enthusiasts were very pleased with the mass of flowers produced in most, if not all, gardens in the late spring and summer of 1958. It was an abnormally good flowering year throughout the British Isles. The many early species flowering in February, March and April suffered severely from the adverse weather conditions, and we were robbed of much of the promising floral display in the early part of the year. Camellias suffered a similar fate but it is amazing how soon the flowers of the *C. williamsii* section and their lovely hybrids are out in full bloom again when a fine frost-free spell eventuates. Frequently the well-advanced pink buds are covered for days by a coating of ice and snow and then emerge undamaged when the ice and snow melt away.

Now let us turn to the future and run through some of the varied articles, both geographically and botanically, which this Year Book contains.

It is perhaps invidious to pick from so many good ones but I will concentrate mainly on the articles written about the gardens and places that I know well myself.

MR. SYNGE has dealt at length and with great skill with the wonderful rhododendron gardens on Lochfyneside in Scotland. Crarae and Ardkinglas have much to interest the rhododendron enthusiast, and the high rainfall has encouraged phenomenal growth in many of the rare species planted in years gone by.

DR. TOD has given us an interesting account of his work on soils in relation to lime and its effect on rhododendrons. He has given us rather a technical account of his investigations which underlines how much more research is needed into this all-important subject.

The account of the dwarf rhododendrons growing so well at Branklyn in Perthshire is useful, as I am sure that there are many lime-free small gardens throughout the British Isles that can benefit very much from the many miniature treasures in the rhododendron world that are easy to cultivate and are so highly rewarding.

The Rhododendron Nursery Garden at Linswege in North-West Germany, belonging to HERR HOBBIE, is fascinating. I went to see for myself this summer the work he has been doing in hybridization over the past twenty years and I found it most interesting. The setting in open pine woods is very attractive, quite unlike any nursery that I have seen elsewhere. He has produced most of his hybrids by crossing *R. forrestii* var. *repens*, and

also *R. williamsianum*, with many of the best hardy hybrids and he has achieved a great number of shapely small plants with a wide range of colour effect, coupled with extreme hardiness, which is essential for his Northern European market. He has also added the very effective and colourful young growth effect where *R. williamsianum* has been used as one of the parents. The use recently of the good LUDLOW and SHERRIFF form of *R. wardii* as a parent shows that HERR HOBBIE is far from being behind the times with his hybridization activities. I think we were slow to appreciate the value of *R. forrestii* var. *repens* as a parent, presumably because it flowered so sparsely itself in cultivation. I believe the late MR. SCRASE DICKENS was the first hybridist in England to realize its possibilities as a parent when he produced 'Little Ben' and 'Little Bert'. This success prompted the great Bodnant hybrid R. 'Elizabeth'.

We have a most interesting article on late-flowering rhododendrons by MR. GEORGE GRAHAM, which will give many of us much food for thought. It certainly covers new and unexplored ground. I have been for many years trying to produce late-flowering rhododendrons at Minterne and I have found that REGINALD FARRER'S form of *R. facetum* is the most successful parent I have used. I have produced several excellent hybrids with *R. facetum* as one of the parents and it has actually lengthened the flowering period of the other parent by at least a month. A 'Polar Bear' × *facetum* hybrid with large flowers and leaves, and with lovely pink flowers, gives me great pleasure in mid-August. The only drawback is that *R. facetum* is a tender plant and alas! my plants all died during the war years, but their hybrids all survived.

It is very enlightening to read MR. A. C. GIBSON'S account of his activities at Glenarn, where so many lovely semi-tender rhododendrons live quite happily not so very far from Glasgow.

There seems to be a large number of accounts of rhododendron gardens from Scotland, but I am glad to see that MR. FINDLAY, MR. HANGER, MRS. R. M. STEVENSON and MR. HAWORTH-BOOTH have kept the English rhododendron activities well to the fore in their interesting contributions, which I am sure will be read with great care and appreciation.

With regard to camellias, I was interested to see that the L. H. Bailey Hortorium at Cornell University, Ithaca, New York, U.S.A., has been chosen for the investigation of the very complex question of the world-wide study of Camellia Cultivars. I visited the Hortorium only a few years ago and I am convinced that it is an excellent place to have chosen for this work and I am sure all readers

of the R.H.S. *Rhododendron and Camellia Year Book* will join me in wishing MR. RALPH N. PHILBRICK every success in his difficult job of Principal Investigator. As far as the Camellia genus is concerned this is an essential preliminary to the future simplification of a most complex situation as it exists today.

I hope that MR. J. R. SEALY'S volume on the genus *Camellia*, which has just recently been published, will also be a help to ourselves and our botanical friends overseas and should be in the possession of all camellia specialists.

With regard to the articles on camellias in the Year Book this year there is a most interesting account by the CURATOR EMERITUS of the Huntington Botanic Gardens, San Marino, California. It is one that can well be studied carefully by all camellia enthusiasts. WILLIAM HERTRICH gives a vivid description of all that has occurred in the formation of this masterpiece of planning to suit the varied forms of camellias in the collection.

No camellia book would be complete without a contribution from MR. RALPH PEER, who has in this instance given us a most stimulating article on *Camellia rusticana* in California and his final paragraph about many different varieties found in the Western mountains of Japan is also of great interest.

The notes on new camellias from Australia and New Zealand are always a welcome addition to our Year Book, and the Camellia Notes from MR. H. G. HILLIER and MR. C. J. WILLIAMS will be read with great pleasure.

In conclusion, I would like particularly to thank MR. FRANCIS HANGER for his very delightful contribution on the famous *Camellia reticulata* 'Captain Rawes', at Chatsworth, and the interesting story surrounding it.

All raisers of rhododendrons should be particularly grateful to DR. FLETCHER for the enormous trouble which he must have taken in producing the manuscript of the International Rhododendron Register, which has just been published. We hope that all those who have new rhododendrons to name will consult the Register before submitting a new name and refrain from naming a plant which has not yet been proved worthy.

To sum up, the 1959 *Rhododendron and Camellia Year Book* is, in my opinion, of unusual interest and should be a great benefit to all enthusiasts.

DIGBY

1st October 1958 *Chairman, R.H.S. Rhododendron and Camellia Committee.*

RHODODENDRONS IN THE ROYAL BOTANIC GARDEN, EDINBURGH

PART I

By H. H. DAVIDIAN, B.Sc.

THE Royal Botanic Garden, Edinburgh, possesses a rich collection of rhododendron species. Some 430 different species are recorded to have flowered within recent years. The majority of these are introductions from FORREST's expeditions to Western China; other species are the trophies mainly of WILSON, ROCK, KINGDON-WARD, LUDLOW and SHERRIFF.

The Garden occupies an area of about 62 acres. The contours are undulating with level areas along the east and south-west, gradually rising to form the hill towards the west.

An exceptionally luxuriant growth of rhododendrons, as in their native home, cannot be claimed in view of the climatic conditions, namely, strong easterly winds, early and late frosts, and an average annual rainfall of 25 inches. Moreover, the soil is sandy with no humus in it. Nevertheless, tall hedges of yew and holly which have been provided as windbreak, a regular supply of water during drought in summer, a generous addition of peat and leaf-mould to the soil, and above all, a high standard of gardening, have contributed to a successful cultivation of rhododendrons.

The medium and large-sized rhododendrons have been planted in the Woodland Garden, along the Rhododendron Walk, in the Copse, and on the Azalea Lawn; the smaller rhododendrons in the Rock Garden and Peat Garden; whilst the tender species are grown in the Rhododendron Glass House. To attempt to describe all these species would be an immense task and would occupy far too many pages. Only a selection of species, including some of the rarer ones, will be commented upon, and these will be concluded in the 1960 Year Book.

WOODLAND GARDEN

The Woodland Garden, which is situated at the foot of the Hill, and a short distance from the East Gate, provides a good setting for a formidable array of rhododendrons introduced from Western China and the Himalaya. It is divided by a network of paths into several sections, and each of these contains a mixed group of species of diverse form and colour. These flourish in the shade

and shelter of conifers and high holly hedges, reaching the height of their beauty in April and May.

At the south side, a noteworthy feature is a magnificent specimen of *R. fictolacteum*, 15 feet high and as much across, which gives a fine display in April and May, with its large trusses of white flowers with a crimson blotch. The species has been introduced by various collectors from different areas; some of the forms varying in leaf-shape and size, are to be seen growing in the Woodland and in other parts of the Garden. It may be mentioned that *R. fictolacteum* is the hardiest of all the large-leaved rhododendrons, although many years are required before it starts flowering freely. Near by, a group of *R. basilicum* reaches up to 9 feet high, and is greatly admired not only for the beauty of the immense trusses but also for the large foliage and the attractive young growths. Along the same border, we find a splendid plant of *R. calophytum*, a spreading shrub of 12 feet with beautiful foliage and large trusses of, from fifteen to twenty, white flowers (Fig. 1). The species was introduced by WILSON in 1904 from Western Szechuan, where he found it growing as a large bush or tree up to 50 feet high. Another particularly charming plant is *R. edgeworthii*, one of HOOKER'S discoveries on the Himalaya where it grows, often as an epiphyte, at elevations of 6–10,000 feet. Although the species is tender, this plant in the woodland is flourishing in a well-sheltered situation, and is very free flowering, with large deliciously fragrant white flowers tinged with pink.

Across the path, the main attraction is a specimen of *R. argyrophyllum* var. *nankingense*, 9 feet high, covered with masses of rosy pink flowers in May. Here also is a spreading form of *R. campanulatum* var. *aeruginosum*, 4 feet high, and worthy of special notice for its exceptional qualities as a foliage plant. With its young unfolding leaves glaucous above, white beneath, and with the mature leaves with a fawn silky indumentum, it is a plant of charm and beauty, and is well worth a place in any collection of rhododendrons. Down the path, we find *R. dryophyllum*, of the Lacteum Series, an uncommon plant in general cultivation. It is hardy, 9 feet high, and flowers freely with attractive trusses of, from eight to sixteen, white bells. Amongst the smaller front-row plants, there is a delightful specimen of *R. aperantum*, 2 feet high, with leaves arranged in rosettes and deep rose flowers. The species is a native of North-East Upper Burma where it has been found carpeting the high alpine slopes for miles. It is hardy in a sheltered position, but it is a slow grower and a shy flowerer. To give effect

to the beauty of the flowers, several plants should be grouped together.

Towards the centre of the Woodland, an unusual sight is a large plant of *R. detonsum*, a member of the Taliense Series, 10 feet high, adorned in May with trusses of rosy pink flowers. Near by, we find a plant of *R. mucronulatum*, 10 feet high, which flowers in February or March, or even in January. When it escapes the frost, it heralds spring with a blaze of rose-purple colour. Other noteworthy species include *R. orbiculare*, 8 feet high and dome-shaped, discovered by WILSON in Western Szechuan where it is said to grow up to 15 feet; *R. morii*, a native of Taiwan (Formosa), not commonly seen in gardens, but a remarkable and a most desirable plant with trusses of, from ten to fifteen, white flowers, and *R. rex* with large, broad leaves and great trusses of, from fifteen to eighteen, bells. Further along, situated in a well-sheltered corner of the Woodland, is a particularly fine specimen of *R. beesianum*, discovered by GEORGE FORREST during his first expedition of Western China. It is a distinct plant with good foliage and beautiful trusses of, from twenty to twenty-five, deep rose flowers. However, it is a slow grower, for many years are needed before the species begins to flower with any great freedom.

Proceeding eastwards towards the Rock Garden the outstanding feature in May is a group of *R. cerasinum*, 5–9 feet high, which attracts attention with charming flowers of cherry-red or white with a cherry-red band round the summit. Although the foliage tends to hide the flowers, a well-grown plant laden with flowers is most effective. KINGDON-WARD, who discovered and introduced this plant from Assam, must have been particularly struck by the beauty of one of his specimens (No. 5830) with brilliant scarlet flowers and with five coal-black honey glands at the base, which he named "Coals of Fire".

The later flowering rhododendrons are well represented in the Woodland Garden, including several plants of *R. callimorphum* of neat habit, which are exceedingly charming when covered with masses of deep rose flowers in May or June. The species is unquestionably one of the most elegant of FORREST's discoveries in Yunnan. A short distance further on, we come upon a group of *R. griersonianum* introduced by FORREST from Western China. These plants are straggly, no more than 3 feet in height, and flower somewhat freely in a well-sheltered position, although in the Rhododendron Glass House an exceptionally fine dome-shaped specimen is to be seen, 12 feet high, which has been regarded as

one of the best of this species in general cultivation. Perhaps it may be of interest to point out that in so far as our herbarium material is concerned, *R. griersonianum* has a limited distribution in Western Yunnan and North-East Upper Burma. It grows 5–10 feet high, in open pine and mixed forests, and thickets, at elevations of 7–9,000 feet. The flower colour varies from "bright rose" through "soft geranium with vermilion shades" to "rich soft crimson, almost vermilion". Some of these colour forms have been introduced into cultivation.

Amongst the border plants to be noted, before reaching the Rock Garden, are a good form of *R. haemaleum*, covered in May with black-purple flowers, and *R. martinianum*, less well-known in cultivation, a delightful shrub of 4 feet with pleasing pale rose flowers. Here also grows as a background plant, the well-known *R. fulgens*, discovered by J. D. HOOKER on the Himalaya, with compact tresses of, from twelve to fifteen, attractive crimson flowers.

Across the road which passes through the Woodland Garden, we come upon a large planting of the large-leaved rhododendrons, including *R. arizelum*, *R. praestans*, *R. galactinum*, *R. fictolacteum* and *R. calophytum*, growing amongst conifers which provide invaluable shelter from wind and frost. Mention must be made of *R. coriaceum*, a native of Yunnan where it was discovered by SOULIÉ and introduced from the same region by FORREST. This plant is 9 feet high with handsome leaves and large trusses of white flowers with a crimson blotch. The species is hardy in well-sheltered positions, and is worthy of more general cultivation. Amongst the medium-leaved rhododendrons which fringe the Woodland Garden along the glade, there is a tall plant of *R. insigne*, a distinct species of the Argyrophyllum Subseries, and only known from Mount Wa-shan, Szechuan, from where it was introduced by WILSON in 1908. It has thick coriaceous leaves with plastered shining copper-coloured indumentum, and bell-shaped flowers of an exquisite shade of pink with deeper pink bands on the outside. It has also the added advantage in that it prolongs the flowering season into June.

We now cross the glade into the wood on the opposite side, and as we pass several large-leaved forms of *R. fictolacteum* we get a glimpse of a stately specimen of *R. fulvum* in the background, with lovely foliage covered on the under surface with a suède-like cinnamon indumentum. The rose flowers appear very freely in March, but unfortunately they are apt to succumb to a heavy frost.

In severe cold weather its leaves, like those of some other species, curl in, but they uncurl on the return of favourable conditions, a feature which is also evident during drought in summer.

Further up the path leading to the main road, there is a perfect specimen of *R. beanianum* var. *compactum*, one of KINGDON-WARD'S finest discoveries in Tibet, but which is still rare in general cultivation. This is a wide-spreading plant of 5 feet with good foliage, shining above, with brown indumentum below. It is hardy, with crimson flowers produced freely towards the end of April or early in May, and is worthy of being widely cultivated. The Taliense Series is represented here by *R. bureavii*, 8 feet high, a most remarkable foliage plant possessing dark shining leaves with a distinctive thick cinnamon-red wool below, and most attractive young growths with silvery white indumentum eventually turning fawn. These features of the foliage alone render the species worthy of a place in every collection of rhododendron species, quite apart from the fine display of white flowers with numerous crimson spots, borne in May in trusses of, from ten to fifteen. Amongst the many rhododendrons growing in this part of the Woodland Garden, is *R. traillianum*, a distinct species, discovered by FORREST in North-West Yunnan in 1910. It is hardy and interesting, especially when the young leaves, pale green above, white beneath, are beginning to appear.

We now proceed to the New Border which is an extension of the Woodland Garden towards the west, and here we find a large group of *R. ciliatum* which seldom fails to display the beauty of the flowers early in spring. Further on, across the path, the main feature is a plant of *R. watsonii*, of the Grande Series, discovered and introduced by WILSON from Western Szechuan in 1904. It is quite hardy and usually covers itself in May with large trusses of white flowers with a crimson blotch. Although not commonly to be seen in cultivation, it is a most desirable rhododendron for the woodland. Other noteworthy species are *R. vellereum* (Ludlow & Sherriff No. 2797) and *R. meddianum*. The former, a compact shrub of 5 feet with pale green leaves and creamy yellow indumentum below, and white-tinged pink flowers, is most distinctive; the latter, 8 feet high, when laden with crimson flowers, is worthy of notice. Numerous young rhododendrons have recently been planted in well-sheltered positions at this border, and these are all growing fast. In fact, it may be mentioned that this season, the vast majority of rhododendrons in the Garden have produced luxuriant growths as a result of the wet summer.

RHODODENDRON WALK

We now leave the Woodland Garden and walk up the hill towards the View Point which commands fine views of the city of Edinburgh. On the slope of the hill, we find a large mass of *R. smirnowii*, 9–12 feet high with a profusion of rose-purple flowers in June. The species is not common in cultivation, but it is well worth growing, for not only is it extremely free flowering, but being very hardy, groups of it may be planted to provide shelter to the less hardy species. Near the View Point, below the tarmac road, a striking feature is a group of *R. vaseyi* which looks extremely effective with white or pink flowers in May or June.

Here at the Rhododendron Walk we find a very large collection of species, containing the choicest and the finest of rhododendrons growing in the Garden, including many of the species already seen in the Woodland Garden. In the shelter of the yew hedges, which extend for a considerable distance northwards, they provide a wealth of colour in April and May. At the entrance to the avenue of rhododendrons, there is a perfect specimen of *R. glischrun* var. *adenosum* (Rock No. 03837), discovered and introduced by Rock from the mountains of Kulu in South-West Szechuan. It is a compact shrub of 8 feet, and is greatly admired when covered with white flowers in May. Further on, along the path, *R. hirtipes* (K.W. No. *5659*), 6 feet high, and a remarkably distinct species, usually makes a fine show in April, with its white-tinged pink flowers.

Amongst the many introductions from South-West Szechuan, perhaps few species are more graceful than one of Wilson's plants, *R. argyrophyllum* var. *cupulare*, when it is completely covered with beautiful white bells in May. Other interesting species include a specimen of *R. campanulatum* (Cooper No. 5768) with large leaves and well-filled great trusses of lavender-blue flowers not often seen in this species, and across the path a compact specimen of *R. makinoi*, a unique foliage plant with long narrowly lanceolate recurved leaves, thick, woolly below, and beautifully covered with fawn indumentum when young.

Special reference must be made to several magnificent plants of *R. hodgsonii*, one of Hooker's discoveries on the Himalaya. These are 15–18 feet high, with lovely bark, handsome leaves and large compact trusses of crimson-purple flowers. Another particularly striking plant is *R. cyanocarpum*, discovered by Delavay, and first introduced by Forrest from Western Yunnan in 1906. It is quite hardy, 10 feet high with bluish green leaves and pale

FIG. 1—*R. calophytum* (see p. 10)

RHODODENDRONS AT THE ROYAL BOTANIC GARDEN, EDINBURGH

FIG. 2—*R. strigillosum* (see p. 15)

Photo, Michael Cox

FIG. 3—Crarae Lodge and part of Loch Fyne, taken from the Azalea mound

Photos, Michael Cox

FIG. 4—*Eucalyptus urnigera* grown as a forestry group near the front entrance (see p. 25)

FIG. 5—*Eucalyptus urnigera*, 75 feet in height (see p. 25)

CRARAE

FIG. 6—General view of house and part of the glen

Photos, Michael Cox

FIG. 7—View of the Middle Glen, with *R. augustinii* in foreground and *Magnolia salicifolia* on the right

pink flowers appearing in April. Although not common in cultivation, it is well worth attempting, being a free flowerer and one of the finest of the Thomsonii Series.

Further on, across the path, we find *R. habrotrichum* (Forrest No. 15778), 9 feet high, a vigorous grower, remarkable for distinctive crimson bristles on the young shoots and leaf-stalks. Amongst the early-flowering rhododendrons, *R. strigillosum*, from Szechuan, a compact shrub of 12 feet (Fig. 2), and *R. barbatum*, from the Himalaya, 15 feet high, provide a glorious display of brilliant crimson and scarlet flowers respectively, in March. Although both plants are hardy, the flowers are liable to be destroyed by heavy frosts.

On the lawn bordering the main road, the Triflorum Series is represented by several large plants, all of which flower profusely in May and June. These include a superb specimen of *R. augustinii*, 15 feet high, with pale lavender-blue flowers; and *R. zaleucum*, 7 feet high, with leaves markedly glaucous below, discovered by FORREST in Western Yunnan, where in rhododendron forest, it grows up to 35 feet.

Along the margin of the lawn, near the path, we find a group of *R. moupinense*, an exceptionally charming species from Western Szechuan, where it grows, often as an epiphyte on evergreen oaks and other broad-leaved trees. In February these plants are covered with a profusion of exceedingly beautiful rosy pink flowers, giving us a foretaste of the wealth of colour to follow. Being an early-flowering species, disappointment is to be expected, as both the flowers and flower-buds are often completely destroyed by a heavy frost. A mild frost damages the expanded flowers only, but these are soon followed by a fresh crop. The young foliage, bronzy brown and shining above, is most attractive.

As we proceed northwards along the path, a plant of *R. keysii*, 9 feet high, laden with bunches of bright scarlet flowers tipped yellow, looks extremely effective in June and early in July, whilst beside it *R. vernicosum*, 15 feet high, cannot fail to impress us in May with the beauty of its blooms.

Across the path, near the tarmac road, we come upon *R. thomsonii*, 12 feet high, which makes a grand show in April with its crimson flowers. This plant is one of the earliest introductions with somewhat small leaves and large cup-shaped yellow calyx, whilst a form introduced by LUDLOW and SHERRIFF (No. 2847), growing near by and in the Copse, has deep crimson flowers, large rounded leaves and a smaller calyx of the same colour as the corolla. Both

are first-rate plants and most worthy of cultivation. Mention should be made of the uncommon *R. prattii*, 12 feet high and as much across, introduced by WILSON from Western Szechuan in 1904. The large broadly bell-shaped white flowers, spotted with pink, in trusses of, from eight to ten, attract attention in May or June.

Along the border, to the left of the path, there is a fine plant of *R. mallotum* (Farrer No. 815), a distinct species of the Neriiflorum Series, with very thick leaves covered with cinnamon-brown wool beneath, and beautiful young growths of a fawn colour. The species is hardy in general cultivation, but as it flowers in March or early in April, a sheltered position should be provided. A short distance from it, a stately specimen of *R. smithii*, 15 feet high and as much across, is adorned in March with crimson trusses, for which the dark green foliage provides a most effective contrast. An ornamental feature of this plant is the long crimson leaf-bud scales on the young growing shoots.

An exceptionally charming sight in May is a large compact plant of *R. schlippenbachii*, with white-tinged pink flowers produced with great freedom, and pale green deciduous leaves turning to shades of crimson in autumn. Here also grows *R. auriculatum*, 15 feet high, discovered by A. HENRY in Western Hupeh, China, and introduced by WILSON in 1900. Although it comes from elevations of 5–7,000 feet, it has proved hardy in well-protected situations. It is of great garden value because of its large exquisitely sweet-scented white flowers, and the fact that it is the latest of all outdoors species to flower, producing them in August and September. Near by, is an imposing plant of *R. ririei*, 15 feet high, one of WILSON's discoveries on Mount Omei, Western Szechuan. The large bell-shaped flowers of a lilac-purple colour, in trusses of, from eight to twelve, are exceedingly pretty in March or April, although in cultivation the species has not received the wide recognition it deserves.

This part of the Rhododendron Walk, where the yew hedge turns towards the road, contains several popular species including a large specimen of *R. campylocarpum*, one of the earlier introductions, which produces masses of yellow flowers in May. Amongst the early-flowering rhododendrons, very few are perhaps more attractive than *R. lanigerum* (K.W. 8251—the type number), discovered and introduced by KINGDON-WARD from Assam in 1928. It is a compact plant of 8 feet with good foliage, charming young growths of silvery white, and large oval flower-buds covered with fawn indumentum. In March it provides a most

delightful colour display with its large trusses of rose-purple flowers, but unfortunately, too often, a devastating spring frost takes its heavy toll.

Other Himalayan rhododendrons growing here include *R. cinnabarinum*, an early introduction, with bright red flowers and remarkable young glaucous foliage; and *R. wallichii*, 15 feet high and as much across, covered in April with pale lilac flowers. A feature of the former species, as has been seen on a few occasions in the Garden, is that the plant loses its leaves, and flowers profusely before it dies off the same season.

We now turn left and proceed through the entrance in the yew hedge to the border around Inverleith House. Here also we find a large number of rhododendrons of good quality, providing a glorious display throughout the season. One of these is *R. souliei*, a most beautiful rhododendron, discovered by SOULIÉ at Tatsienlu, Western Szechuan, in 1893 and first introduced by WILSON from the same locality in 1905. It is hardy with rounded leaves and saucer-shaped pink flowers of exquisite beauty, which are greatly admired. Some distance further on, a delightful and very free-flowering plant of *R. calendulaceum* makes a wonderful sight with its reddish orange flowers in June. Yet another interesting species, familiar in cultivation, is *R. venator* (K.W. 6285—the type number) discovered by KINGDON-WARD in South-East Tibet growing in swampy ground in dense mixed forest at 8,000 feet. Unlike the species of the Parishii Subseries to which it belongs, it has proved hardy in a well-sheltered position outdoors. It is a wide-spreading shrub of 6 feet, and makes a great show with its scarlet flowers in June.

Amongst the front-row plants is a small group of *R. haematodes*, one of the most distinct of the Yunnan rhododendrons. This consists of spreading shrubs of 1–2 feet which no one can fail to admire when covered with crimson flowers in May. We pass several fine rhododendrons, and in the background a plant of *R. weyrichii* gives a fine display in June, as does *R. baileyi*, 5 feet high, with its deep red-purple flowers in May.

Here also grows *R. lacteum* (Forrest No. 6778), one of the finest yellow-flowered rhododendrons. This plant is 9 feet high, with large trusses of, from fifteen to twenty, yellow flowers. The corresponding herbarium specimen collected by FORREST on the eastern flank of the Tali Range, Northern Yunnan, is said to be a tree of 30 feet, growing in rhododendron forest at 12,000 feet. Although the species is hardy in well-sheltered situations, it is

difficult in culture. It is a slow grower and many years are required before it has reached the flowering size. Moreover, it does not set seed freely, and is difficult to increase by layering. It is a pity that this exceptionally fine species has become scarce in cultivation. Although difficult, it is well worth the trouble and extra attention that may be necessary in raising the plant.

Other species growing at this border which attract attention are *R. clementinae* (Forrest No. 12607), 6 feet high, a good foliage plant with distinctive silky indumentum on the under surfaces of the leaves and delightful young foliage, pale bluish green above, silvery white beneath; and the rare *R. thayerianum*, with trusses of, from fifteen to twenty, white flowers which appear towards the end of June or in July.

The outstanding feature along this border is a fine specimen of *R. macabeanum* (K.W. No. 7724) which provides an admirable display with its large trusses of yellow flowers in April or early May. It has beautiful foliage, most attractive young growths covered with silvery white indumentum, and conspicuous long crimson leaf-bud scales on the growing shoots. The species was discovered by Sir George Watt on the Naga Hills, Manipur, Assam, in 1882 in the course of the Government Demarcation Survey, and was introduced into cultivation by Kingdon-Ward from the same region, where it is said to be a tree 40–50 feet in height. In cultivation it is hardy in sheltered positions, and one of its merits is that it flowers at an early age.

Amongst other rhododendrons growing here worthy of notice are *R. didymum*, a delightful plant which provides a mass of colour in July; *R. pseudochrysanthum*, a compact shrub with trusses of white-tinged pink flowers; and *R. spinuliferum*, one of the most distinct of its Series.

RHODODENDRONS AND LIME

By HENRY TOD

(*The Edinburgh and East of Scotland College of Agriculture, Chemistry Department*)

LIME has been the bugbear of rhododendron growers for a very long time, and many attempts have been made to elucidate the exact role that calcium plays. One of the difficulties has been to separate the effect of calcium *per se* and the effect of an alkaline soil, and it is only recently that any real light has been thrown on the question.

In 1956 the present writer (Tod, 1956) was able to show that rhododendrons could be grown in both neutral and frankly alkaline soils where the pH had been raised by the use of magnesium carbonate instead of calcium carbonate. A paper by Leiser (1957) provided an almost exact confirmation of this work from findings in the wild where *R. occidentale* was found growing at pH 7·6–8·6, the alkaline earth producing this being magnesium instead of calcium.

These results show fairly clearly that the harmful effects of lime most probably are not due to the high pH of calcareous soils, but are due to an effect of calcium itself. For many years attempts have been made to keep rhododendrons growing in areas of calcareous soil by the expedient of constructing beds of peat and/or leaf mould, of low pH, and isolating them as thoroughly as possible. Very frequently the large amount of work involved in this has been lost by the percolation of lime-rich soil-water into these beds with the usual catastrophic results. This has always seemed to the writer to suggest an effect of the calcium ion as opposed to a pH effect, for it is rather characteristic that the lime effect appears to occur more rapidly than the "soil" pH would be likely to change (from probably about 4·5–5 to over 7).

Recently two papers by Fanning (1957*a* and *b*) made this problem more difficult in one way and much clearer in another. He has shown that the leaves of hardwoods grown on calcareous soils are rich in calcium and that as they decompose, the proportion of calcium in the leaf-mould rises steeply. This shows why the unfortunate gardener on calcareous soil who makes up beds

of local leaf-mould lands deeper and deeper in trouble—and explains many strange results hitherto inexplicable. As a result of these reports it can only be concluded that if built-up beds are to be constructed in calcareous areas for calcifuge plants they must be made up with (*a*) peat which is *not* fen peat (this latter may contain appreciable amounts of calcium) and (*b*) leaf-mould and soil imported from non-calcareous areas.

This "pure" calcium effect is a much more difficult problem to unravel as the action of calcium may occur in several different ways. The first way would be a simple poisoning of the plant by the calcium ion, in other words, a pure calcium toxicity. The other possibilities are induced deficiencies of other elements due to the presence of excess calcium—and it is extremely difficult to disentangle these conditions.

It would seem likely that the second set of effects is the more probable, since the picture shown on the leaves of rhododendrons "poisoned" by lime is fairly typical of a deficiency of one or more trace elements. The first of these which strikes the observer is manganese deficiency as shown by the characteristic interveinal chlorosis, or marbling, shown on the leaf. Other leaves suggest magnesium deficiency—in fact a number of deficiency pictures are seen, and certainly the terminal symptom shown, an almost complete yellowish pallor, is indicative of severe iron deficiency.

It is known that calcium and magnesium are in many ways antagonistic to each other: in the presence of large excess of magnesium, little calcium is taken up by the plant, and the converse is also true. This was the basic principle used in the writer's investigation (Tod, 1956) where a soil which was naturally deficient in calcium was used, and a considerable excess of magnesium carbonate was applied. This had the effect of raising the pH and, at the same time, tending to depress the uptake by the plants of what little calcium was present.

Hartge (1956) has collected the available data on the soils in which rhododendrons grow in their natural habitats and it seems likely that most of the reports of rhododendrons growing on limestone can be explained on one of two grounds. The first is that a humus layer has been formed overlying the calcareous soil which, with usually fairly high precipitation, remains acid and lime-free and the rhododendrons grow in this. This phenomenon is shown at a classic locus in Fife where a rich peat soil with a strong growth of calluna overlies a bed of strongly alkaline shell sand. In this case where, of course, the precipitation is low, the

impedance to the movement of calcium into the peat is caused by a thin layer of clay, but in wetter areas the free downward movement of the water would have the same effect. This was very clearly shown at Minterne in Dorset, where the rainfall is of the order of 50 inches per year, fully double that of the Fife site. Here there is an area on the top of a chalk ridge, known as Minterne Seat, where the calcium has been leached by the rainfall leaving a very acid soil, pH 4·1, in which calluna and bracken are flourishing. In this case the calcium has been leached from the top soil and the fairly high precipitation has maintained the downward movement of the calcium and prevented upward diffusion of calcium from the chalk into the top soil.

The second is that the limestone is of a dolomitic type, that is, a magnesian limestone, and here the magnesium-calcium antagonism comes into play. Further, HARTGE (1956) quotes BLANK's finding that when dolomite weathers the calcium fraction is leached away first, so that the *proportion* of magnesium in the soil formed from the rock tends to rise and this, in itself, will tend to depress the uptake of the remaining calcium by the plant growing in such a soil.

If, however, one is dealing with regions of moderate rainfall with free drainage and available lime in the soil, these saving conditions will not operate, and hence the difficulty with rhododendrons on calcareous soils on the eastern side of the country. It may well be that in heavy rainfall areas on the west there are successful plantings of rhododendrons on *originally* calcareous soils where the grower has never suspected the presence of lime, as their health has been preserved by this heavy leaching.

The effect of excess lime in inducing manganese deficiency is notorious, especially in the presence of high levels of organic matter in the soil, which is, incidentally, characteristic of most "rhododendron soils", and lime also induces a deficiency of iron as is so often seen on fruit trees on calcareous soils.

With these points in view it seemed advisable to attempt to establish some "normal" values for the chemical composition of the rhododendron plant, and a number of samples of leaf material have been collected, with matching soil samples, from several gardens and areas of natural rhododendron growth. The writer would like here to express his thanks to LORD DIGBY for his kindness in making the material at Minterne available, and for his hospitality and interest in the work, and to the Curator of Benmore Botanic Garden, Argyllshire, for similar facilities, and also to numerous others who have helped with the provision of leaf and

soil samples. In the table of analyses (Table I) the calcium, magnesium, potassium and phosphate values are expressed as milli-equivalents of the element per 100 g. dry matter, but iron and

TABLE I

Species	Ca	Mg	K	PO_4	Fe	Mn	*Soil* pH	*Locus*
ponticum	72·5	27·5	24·4	8·45	88	588	4·5	*A*
	71·5	33·0	23·8	9·73	64	533	4·9	*B*
	65·0	39·1	18·7	—	220	760	5·3	*C*
	56·5	39·1	19·3	5·07	114	624	5·5	*D*
	62·5	29·0	21·9	20·3	350	874	6·0	*E*
	80·0	26·5	24·4	11·4	204	312	6·3	*F*
	45·5	45·9	20·0	—	180	205	—	*G*
	65·3	21·5	22·3	9·28	81	279	4·5	*H*
	72·7	22·0	7·0	5·49	108	189	5·1	*J*
davidsonianum	44·5	10·8	12·8	15·8	218	285	5·9	*F*
	45·5	23·3	20·0	26·1	192	1400	5·3	Exper. soil
falconeri	73·8	27·0	16·8	21·1	165	1100	4·2	*E*
	115·0	26·0	7·6	10·6	94	2590	4·4	*H*
fortunei	77·9	23·0	17·1	9·71	84	1228	4·8	*L*
	81·5	19·0	14·9	9·70	90	530	5·5	*H*
hodgsonii	89·1	32·5	14·6	12·2	80	2311	4·7	*L*
	103·0	26·0	8·7	12·3	68	2720	4·5	*H*
irroratum	48·1	25·0	17·2	8·45	53	305	4·6	*L*
	36·5	16·5	7·4	7·18	49	144	5·2	*H*
calophytum	68·6	25·0	19·4	13·1	85	410	4·7	*E*
praestans	55·0	18·5	12·1	7·18	66	750	4·3	*H*
sidereum	59·6	17·5	11·3	7·59	61	763	4·3	*H*
sinogrande	58·9	21·5	13·4	9·28	88	492	4·4	*H*
triflorum	45·7	14·5	10·2	10·6	89	542	4·0	*K*
yunnanense	43·6	17·0	20·4	9·70	240	501	4·0	*K*

Locus: *A* Bush House, Midlothian; *B* Tynninghame, East Lothian; *C* Danskine, East Lothian; *D* Balbeggie, Fife; *E* Royal Botanic Garden, Edinburgh; *F* Seafield, Midlothian; *G* North of England; *H* Benmore Botanic Garden; *J* Ardcuil, Pitlochry, Perthshire; *K* Sunningdale Nurseries, Surrey; *L* Minterne, Dorset.

manganese as parts per million as the amounts are so very much smaller.

Table II gives the range of values found for healthy rhododendron leaves (from Table I), compared with the range found in the

leaves of healthy woody plants quoted by WALLACE (1951) and as found in the College Laboratory. It will be seen that the levels for magnesium, potassium and phosphate tend to be lower than in the other plants, while the levels for iron and manganese are higher, a predictable finding since, in general, the pH values are lower in rhododendron soils, leading to a greater availability of these elements. By contrast the range for calcium in rhododendron lies much closer to the "other plants" range and this finding is quite

TABLE II

Element	*Wallace*	*College*	*Rhododendron*
Ca	57–157	32–180	36–115
Mg	20– 31	15– 70	11– 39
K	36–108	11– 64	7– 24
PO_4	18– 28	8– 34	5– 26
Fe	65–200	—	53–350
Mn	30– 64	20–300	144–2720

striking when it is realized that rhododendrons grow in acid soils, where the calcium content will usually be considerably lower than in the soils in which the "other plants" grow at much higher pH levels. This would seem to suggest that the genus *Rhododendron* has greater facility for collecting calcium than the other genera, and the problem of the rhododendron in a calcareous soil may possibly be linked with an excessive uptake of calcium, leading to a general mineral imbalance.

Table III shows analytical figures for leaves showing severe deficiency symptoms. These were from plants growing in the Rhododendron House at the Royal Botanic Garden, Edinburgh, where the soil in the beds had become impregnated with lime derived, most probably from the ashes applied to the paths between the beds. When the leaf samples were taken, the beds had just been re-soiled so that the soil pH values were not really relevant, and are not quoted.

TABLE III

Species	Ca	Mg	K	PO_4	Fe	Mn	*Locus*
kyawi	61·4	53·4	25·9	11·8	214	12	*E*
nuttallii	62·5	41·8	15·3	3·8	56	23	*E*

As will be seen, the manganese figures are low in relation to the manganese range for rhododendron, but unfortunately it has not been possible to get normal leaf samples of these two rhododendrons for a comparison of "healthy" and "affected" for each species.

The great difficulty of an investigation such as this is that as soon as symptoms develop in a rhododendron, the grower tends either to move it or else to modify the soil in which it is growing or, more commonly, the symptoms appear on young plants where it is almost impossible to get enough leaf material for analysis. The writer would appeal most earnestly for any grower of rhododendrons who is troubled with this problem to get in touch with him as soon as possible. The number of leaves required for analysis is of the order of eighty for small-sized leaves, fifty medium-sized and twenty-five large.

The writer would like to express his thanks to Dr. David Purves and Mr. Shearer McIntosh for the analyses of plant material, and, as mentioned above, to all those who have been so helpful in giving access to plant material in their gardens. The identification of all the species quoted in this paper has been kindly verified by Mr. H. H. Davidian, B.Sc.

REFERENCES

Fanning, J. P. (1957*a*). *Gdnrs' Chron.*, **141**, 102.
Fanning, J. P. (1957*b*). *Ibid.*, **141**, 401.
Hartge, K. H. (1956). *Rhodod. und immergr. Laubgehölze Jb.*, 27.
Leiser, A. T. (1957). *Rhodod. Yearb.*, **11**, 47.
Tod, H. (1956). *J. Scott. Rock Gdn Cl.*, **5**, 50.
Wallace, T. (1951). *The Diagnosis of Mineral Deficiencies in Plants*, p. 34.

CRARAE AND THE RHODODENDRON GARDENS OF LOCHFYNESIDE, ARGYLL

By PATRICK M. SYNGE

LOCH FYNE is a long and comparatively sheltered sea loch which runs deep into Argyll from the Firth of Clyde. Where there is woodland shelter on its western shore, rhododendrons grow with great luxuriance.

Crarae, the home of SIR GEORGE CAMPBELL OF SUCCOTH, BT., possesses an unusually fine natural setting for a garden. This has been formed on the steep banks of a swift-running burn. There are hills behind and to the sides, but owing to recent windblow in the sheltering timber to the west, the glen is now, in parts, rather more exposed than some of the other gardens in the neighbourhood, and in consequence the plants grow more compactly.

It is hard to realize when so many rhododendrons are in flower on a balmy day in late spring, that the winds of the winter gales are the worst problem of gardens in this area. Nevertheless there is abundant evidence of this where some storm or other eventuality, has removed some of the shelter.

At Crarae the rainfall averages 75 inches in the year, not so high as in some west-coast Highland gardens, but ample for good growth. The soil is generally light and sandy with patches of peat overlying an impermeable grey boulder clay, which sets hard, almost like rock. Often there is only a shallow layer of soil over the clay or rock.

Starting our tour from the house we notice, immediately opposite the front door, two enormous *Eucalyptus urnigera*, which, at 50 years old, were recently measured and show 75 feet in height by 104 inches in girth at breast height (Fig. 5). There is a natural self-sown seedling already 15 feet high near by, while, by the gate, other progeny have been planted as a forest group and, after thinning, have made beautiful straight trunks, attractive with their peeling olive-grey bark and hanging glaucous foliage (Fig. 4).

The natural way of seeing the garden is to walk up one side of the glen, cross by the bridge below the Forest Garden, and then return on the other side, with deviations to see particular plantings,

on both sides of the glen. Everywhere there is the sound of running water and a carpet of bluebells (wild hyacinths in Scotland), while the narcissi in the grass have spread over many of the banks. They must have been a lovely sight a little earlier. Many of the outcrops of rock in the glen are covered with large azaleas, yellow, orange and flame, while hundreds more spread over an enormous rocky mound on the right of the back drive to the house. These in May are a mass of colour, which is repeated later in the year when their leaves turn red.

If we cross one of the lower bridges we come to a very sheltered and fertile area where grow the oldest rhododendrons. These have been planted along the bank of the burn and up the side of the gorge. A fine specimen of the stiff green fir *Abies concolor* var. *lowiana*, perhaps 40 feet in height, provides a striking contrast to a large *R. falconeri* planted in 1918, now with three trunks, about 20 feet in height, and covered with large creamy-yellow trusses. On the other side stands a fine specimen of *Cunninghamia lanceolata*, and a 40-foot *Eucalyptus coccifera* with very glaucous foliage.

All through the glen a great number of interesting and often unusual conifers, maples, eucalyptus, pittosporums, leptospermums, sorbus, and other trees and shrubs, have been planted, and these add greatly to the interest of the garden throughout the year: to some visitors perhaps, they may prove even more attractive than the rhododendrons! A wonderful specimen of *Clethra delavayi* on the left bank must be 9 feet in height, with several stems, and is probably one of the largest in the country. It flowers freely in July when most of the rhododendrons are over. The larch, many of them old trees and all clear-trimmed up the stem, are magnificent in the fresh green of their young growth.

There are a number of plants in the garden derived from Dr. Rock's or the late Reginald Farrer's collecting, and among the best of these are three large bushes of *R. wardii* (Rock 59164), 7 feet high by as much across. One of these has the finest deep yellow flowers of any form of this species which I have seen. This seed number was collected on Rock's expedition to South-East Tibet and North-West Yunnan in 1923–4. It is undoubtedly one of the most beautiful of all the species, with its orange-tinted buds and clear yellow saucer-shaped flowers. Here also is the bright scarlet *R. sperabile* (Farrer 888), an unusually fine specimen covered with flowers, a bush 9 feet across and 5 feet high; and also a deep ochre-yellow form of *R. trichocladum* (Farrer 876).

A fine deep mauve *R. niveum* with tight rounded trusses and a young plant of R. 'Cornish Cross', a rather pale form, which seems more attractive than the darker one sometimes seen, are planted close in this sheltered spot, as are a number of old plants of hybrids of *R. arboreum* which have made very large specimens and give great masses of colour. A little lower down the stream, sandwiched between a great clump of bamboos and a dark *Abies procera* (*nobilis*) is a very fine *R. wallichii*, 14 feet in height by 8 feet and covered with the palest mauve flowers, which are reflected in the water (Fig. 10). This species is very close to *R. campanulatum* and only really distinguished from it by the lack of a continuous indumentum on the lower sides of the leaves. There are several good specimens of this throughout the garden.

Members of the Triflorum Series have for the most part done very well in full exposure and have been planted freely, including *R. davidsonianum* (Fig. 8), *R. yunnanense*, the deep mauvish-purple form of *R. concinnum*, *R. zaleucum* and particularly *R. oreotrephes*, of which there are many varying forms. They all flower freely and fit in particularly well with the natural scenery of the glen.

R. augustinii has been planted in groups, rather varying in colour but with at least one exceptionally good mauve form among them. Across the glen they stand out with great brilliance. A large bush of a pinkish-purple form, quite distinct from the usual blue, also looks well, segregated on its own and overhanging a large rock.

Another species which seems to flower exceptionally freely, both at Crarae and in the other gardens of the area, is the yellow *R. campylocarpum*, and indeed there are few more beautiful species when it has made a large bush. It looks particularly right either in a light woodland setting as in one group here, or on the open moorland bank, and should be planted much more frequently than it is. The bells are invariably well shaped and this quality, combined with the clear lemon-yellow colour, have made it such a good parent for hybridizing.

R. rubiginosum is also unusually good, particularly a group of plants up a small side-path and growing on a steep bank. The form has larger flowers than are often seen, and is a good deep mauvish-purple in colour, and it flowers very freely (Fig. 9). A rather unusual species is the dwarf-growing *R. auritum*, which has been planted in quite large numbers; with its pale straw-yellow flowers (Fig. 13), it is very attractive and seems to flower all up its younger branches. The deep maroon *R. haemaleum* is represented by a very fine specimen beside a small pond, perhaps 4 feet high and 6 feet across, and

covered with its dark waxy bells, lighting up to a rich brightness as one looks through them towards the light. *R. aperantum* has grown into an old bush with gnarled and twisted branches, but it bears few flowers. *R. sanguineum* is in good health, a fine group, of which the largest measures 7 feet high by 9 feet across. *R. neriiflorum* and *R. haematodes* also flower well and between the species and 'May Day', the brilliant scarlet hybrid, there is little difference for garden effect, the balance being perhaps with the hybrid for its slightly larger flowers and ever abundant floriferousness. These hybrids in mass look well on the steep banks and under the young larch and eucalyptus. The eucryphias have also been planted freely and almost all the moderately hardy species and hybrids are represented, including good specimens of *E. cordifolia*, as well as *E. moorei* from New South Wales.

As we walk up the glen we look down on many plants perched in clefts on its steep and rocky sides. A fine *R. barbatum*, 10 feet high, lights up that side of the glen in April, while from the path one can also look down on some of the larger-leaved species such as *R. praestans* and *R. grande*, healthy plants which seem to gain from the shelter of the glen. From above, these plants show up particularly well, and this is almost the ideal way to place them. On the whole though, the glen and surrounding moorland is rather too exposed and open at present to allow of the superb growth of these very large-leaved rhododendrons which can be found in some of the gardens in this area. Large numbers of young seedlings of *R. macabeanum*, derived from a good coloured form, which flowered in the glen for a number of years, and also of *R. mollyanum*, have been planted out, and more are being raised. As the shelter grows from the many young trees, it is hoped that these plants will thrive, and in future years they should make groves of great magnificence. There are also several large specimens of *R. grande* in the glen, whose fine long leaves are a constant source of interest. *R. auriculatum* provides some later flowers, while two old specimens of *R. griffithianum* perched rather precariously on the east side of the glen, on ever more eroding ledges, still produce a few flowers. They look well against the old pink hybrid 'Gill's Triumph' (*griffithianum* × *arboreum*).

Numbers of *R. fictolacteum* of varying forms, and *R. rex*, are thriving, and we particularly noted one up to 12 feet and flowering well.

From the path along the west side of the glen it is well worth making a deviation to the left, before crossing to the other bank.

In the open moorland will be found a large planting of forms of *R. cinnabarinum* and *R. cinnabarinum roylei*. All these were grown from seed and show considerable variation. Some of the *roylei* are unusually fine, and have been attributed to the form *magnificum*. From this group was taken the plant now in SIR JAMES HORLICK'S Gigha garden, which was featured as the frontispiece in the last issue of the Year Book. The plants of *roylei* are 5 to 6 feet high, compact and covered with flower, glowing like a glass of wine when the light is seen through the bells. There is another group of them on the back drive, which in more shelter has grown rather less compactly. A small path leads up a hill, whence there is a wide view over the glen and Forest Garden. On the slopes trees have been planted in groups: sorbus, maples and other decorative plants, the whole area being underplanted with azaleas and rhododendrons with embothriums in groups. Of particular interest are specimens of birch with fine barks, such as *Betula albo-sinensis* var. *septentrionalis*, with pale creamy-orange trunk, and *B. ermanii*, with its darker orange-brown bark.

Salix magnifica and *Magnolia acuminata* have both made good trees in the glen; with their distinctive foliage they add interest throughout the summer. Another exciting view is across to a mass of bright scarlet *R. euchaites* in flower on the opposite bank, while behind them are bushes of yellow *R. campylocarpum* under high pruned and widely spaced hybrid larch.

If we cross the burn to the east side by the upper bridge, passing a fine *Abies pinsapo* from Southern Spain and a 30-foot specimen of *Picea albertiana* from North-West America, we can see that the decorative planting has been carried on beside the burn up into the Forest Garden, which lies on slightly higher ground above. There is also an unusually large specimen, perhaps 45 feet in height, of *Cupressus lusitanica glauca*, raised from seed sent from the Botanic Gardens in Rome.

A large plant of the pale pink *R. vernicosum* flowers very freely on this bank and presents a fine sight. Below it are masses of young Kurume azaleas planted in curves along the contours of the steep bank, and these should grow into a fine spectacle. The later flowering rhododendrons have also been planted here on the steep side of the glen, and there are healthy plants of *R. eriogynum* and 'Tally Ho' to carry on the season. In the autumn a group of *Disanthus cercidifolius* presents a lovely sight with its wine-coloured leaves, tinted with scarlet.

Here also are a few camellias. As is the experience of several

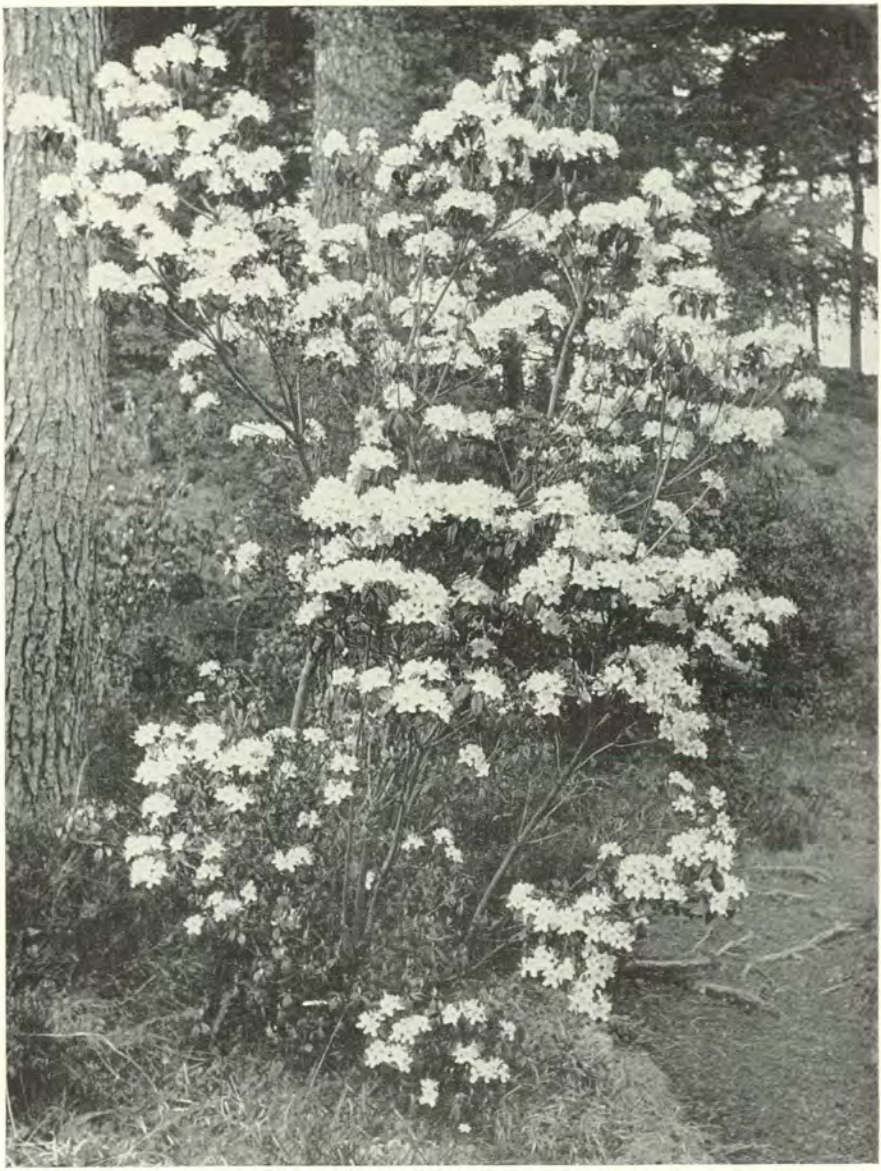
other Scottish gardens *C.* × *williamsii* and *C. cuspidata* seem to flower more freely and to grow better, than the varieties of *C. japonica*.

A specimen of the white form of *Magnolia campbellii* flowered last year and looks very hopeful for the future. It is well placed, where one will be able to look down on it. Beside it is a large *R. arizelum*, doing well and tucked in against a large mass of pittosporum. In this part of the garden a number of very free-flowering hybrids have been planted. Few rhododendrons can surpass the scarlet 'May Day' for this quality, while Slocock's 'Unique' and 'Beauty of Littleworth' and, a little later in the season, 'Albatross', make a good show. An old plant of 'Dr. Stocker' shows what a mass of white this plant can produce, while young plants of 'Winsome', 'Rosabel' and 'Sapphire' are very promising. One of the finest plants for flower in the garden is a small specimen of the pale lemon-coloured R. 'Edusa' (*campylocarpum* × 'Penjerrick'), but much more compact than 'Penjerrick' (Fig. 14). This came from Mr. Noble's garden at Ardkinglas at the head of the loch. 'Blue Diamond' makes a good contrast with *Berberis darwinii*.

On an open rocky bank members of the Lapponicum Series make a close carpet, as presumably they grow in their native habitats or as heathers grow in Scotland. Here are *calostrotum*, *rupicola*, *diacritum* (a pale mauve flower close to *hippophaeoides*), a nice compact *impeditum*, undoubtedly one of the best of this series in its better forms, *nitens*, *fastigiatum*, an enormous mat 5 feet by 3 feet across by 1½ feet high, the cream-coloured *chryseum*, *achroanthum* (Farrer 1047)—a good mauve. Towards the back are large groups of *R. lepidotum* and *R. sanguineum*, while the curious bottle-like flowers with protruding stamens of *R. spinuliferum* add a scarlet touch.

On the house are some interesting plants which include the tender celery-leaved "pine", *Phyllocladus trichomanoides*, which has reached 12 feet, while beside it *Phygelius capensis* reaches halfway up the house. This is an interesting lesson on growing this plant, which, tied tightly into the wall, flowers freely. *Hydrangea integerrima* is climbing abundantly up the walls, and it was from this plant that the specimen was taken for the plate in the *Botanical Magazine* (n.s., t. 153). Here it has proved quite hardy. A fine specimen of *Camellia reticulata semi-plena* flowers with great freedom from February to late May on the wall of the house.

In the greenhouses and frames and neighbouring kitchen garden



Photo, Michael Cox

RHODODENDRONS AT CRARAE

FIG. 8—*R. davidsonianum* (see p. 27)

Photos, Michael Cox

RHODODENDRONS AT CRARAE

FIG. 9—An unusually good plant of *R. rubiginosum* (see p. 27)

FIG. 10—A fine plant of *R. wallichii* measuring 14 feet in height (see p. 27)

Photos, Michael Cox

RHODODENDRONS AT ARDKINGLAS

FIG. 11—*R. houlstonii* × 'Penjerrick' with large *Abies nobilis* in background (see p. 32)

FIG. 12—R. 'Coresia' ('Penjerrick' × 'Cornish Cross') flowering well and measuring 15 feet × 10 feet (see p. 32)

RHODODENDRONS AT CRARAE

FIG. 13—*R. auritum*, a species not often seen (see p. 27)

Photos, Michael Cox

FIG. 14—A compact plant of the lemon-coloured *R. 'Edusa'* (see p. 30)

are great quantities of seedling rhododendrons, many of interesting species, and with the already considerable plantings over the moorland beside the glen, these give much promise for the future of a fine garden, already full of interest, but which, as the trees grow up, should increase in beauty from year to year.

At the Spring Show of rhododendrons held in Edinburgh this year SIR GEORGE CAMPBELL won the cup for the largest aggregate of points in the competition classes, with specimens from Crarae.

The garden is open every day from April 1 to the end of October under Scotland's Garden Scheme.

THE FOREST GARDEN

This consists of a series of ninety plots of various conifers and other trees grown under forest conditions and it forms a continuation of the glen, the plots being of varying sizes and following the contours. It is of great interest to foresters and in a lesser degree also to gardeners, since there are included in it a number of tree species not often seen. In addition to the plots there are a number of single specimen trees. Recently SIR GEORGE CAMPBELL gave this ground with its plots to the Forestry Commission, who now maintain it.

These plantings are probably unique in the country, and the measurements of the trees therein contributed in no small measure to the recent account of "Exotic Forest Trees in Great Britain", published by the Forestry Commission. Among the *Nothofagus* it was interesting to see that *N. obliqua* had formed easily the best trees of the genus. The plot of *Abies amabilis* is unusually fine, and has been described as "probably the best in the country", while those of *Abies magnifica* and *Cryptomeria japonica* are particularly good. It was interesting to compare a single tree of *Abies georgei* with the specimens of *A. delavayi*. The former seems to be distinct with longer, but less glaucous needles, while the tips of the young growth is bright green. The branches are quite horizontal and the leader has grown 15–18 inches each year. There is a whole plot of *A. delavayi* which has made excellent growth. They are about 18 feet high and very decorative, the needles being silvery-blue below and the cones a deep purple-blue. An unusual plot is *Cupressus funebris*, but in this country it cannot be considered a suitable forest tree. *Sequoia sempervirens* and *Pinus wallichiana* are both doing well. It is also interesting to see Sitka spruce raised from seed from SIR GEORGE'S own trees and spaced at 9 feet apart, making a very successful plot.

Eucalyptus urnigera is easily the best of this genus and looks well in association with Scots pine and larch. *E. gigantea* is very decorative as a small tree with long pendulous glaucous leaves, larger than in most other species, but it still has to prove its hardiness over a longer period. *E. niphophylla* with even larger leaves, appears to be hardy at Crarae.

ARDKINGLAS

This lovely woodland garden, the property of MR. JOHN NOBLE and his brother, MR. MICHAEL NOBLE, M.P., is situated near the head of Loch Fyne, and gets an appreciably higher rainfall than does Crarae. It is also more sheltered and the plantings along the north-east side of the drive are in the shelter of some very fine old beech trees and enormous conifers, some planted about 1810, which include a number of specimens which are among the largest in Great Britain of their particular species. The tallest *Abies grandis* is about 165 feet high and has a clean stem. A four-stemmed specimen of *Abies alba* is about 150 feet high and was probably planted about 250 years ago, a most magnificent tree. These make a superb background for the rhododendrons, of which both the growth and flowering is excellent. In twenty-four years, a delightful pale form of 'Cornish Cross' has made a bush 18 feet high by 15 feet across and covers itself with flowers. *R. mallotum*, a very good deep red form with large leaves covered below with a rusty indumentum, has reached 12 feet, while a small *R. bullatum* flowers freely at 4 feet. Two large bushes of the cream form of 'Penjerrick', twenty to twenty-five years old, are a very beautiful sight against the dark green background.

An unusual seedling raised from *R. houlstonii* × 'Penjerrick' is lovely with white flowers, tipped pink in the bud, and has probably only shown its value as a large plant (Fig. 11). Perhaps, however, the most outstanding rhododendron in the garden at the time of my visit was 'Elsie Phipps' (*R. souliei* × 'Penjerrick'), the flowers being bell shaped, slightly frilled at the edge, a delicate pink, fading almost to white, while the buds are deep pink and the leaves of *souliei* form, slightly rounded and blue-green in colour. As a small domed tree 10 feet high by 10 feet through it is of rare and unusual beauty (Fig. 15).

R. 'Coresia' ('Cornish Cross' × 'Penjerrick') is a floriferous tree 15 feet by 10 feet and covered with good pink flowers contrasting well with an 8-foot specimen of *R. campylocarpum* covered with its lemon-yellow flowers (Fig. 12). *R. maddenii* has reached

8 feet by 8 feet and covers itself with flowers. This is the form previously called *calophyllum*. *R. lindleyi* also does well. Among the late-flowering species *R. auriculatum* has grown to 12 feet high and 20 feet through and flowers well. A large group of *R. augustinii* promises well for the future. Many of the hybrids have been received as small plants as gifts from Bodnant and have only shown their full beauty on attaining a large size. Among the rarer conifers one should mention particularly *Tsuga mertensiana* and *Fitzroya patagonica*, but there are many more.

Deciduous azaleas have been kept separate and are planted in wide borders between the house and the loch, as well as alongside the walled garden. In flower these present a spectacle of great colour brilliance.

Since the war MR. MICHAEL NOBLE has been raising a large number of seedlings. He is specializing in the Maddenii Series and the more tender species like *elliottii* and *eriogynum*. He believes that while it may be difficult to improve these by hybridizing them from the point of view of their flowers he hopes to improve both the habit and the hardiness by judicious crossing.

The wild garden is now being extended further up the River Kinglas, where the steep banks provide shelter and a very delightful natural situation for these plants. It may also give the rather rare combination of pleasures of catching a salmon and landing him amid a bank of Maddenii rhododendrons in full flower.

TIGH-AN-RUDHA, ARDRISHAIG

In this garden perched just above the loch, MRS. K. L. KENNETH has brought together since 1950 a notable collection of rhododendrons, particularly of the more unusual species. Many of the plants are still relatively small, but they are growing well as befits a garden in such a favoured site. MRS. KENNETH told us that her garden was almost frost free. The rainfall is appreciably higher here than at Crarae, though only 15 miles distant. By the porch of the house a fine specimen of *R. johnstoneanum* in full flower sets the tone for the rest of the garden. It is indeed a most lovely plant with its delicate creamy bells and deeper yellow throat. An unusual species is *R. chrysanthemum*, a plant 3 feet by 3 feet, grown from seed of Rock 22272. This plant received an Award of Merit at the Edinburgh Show, and its flowers are described elsewhere in this book, but it was unfortunately over at the time of our visit. Among the tender species *R. lindleyi* flowers well, slightly pinkish in bud and shaded with yellow. There are also

the rare pale pink form of *R. maddenii*, *R. polyandrum*, covered with buds when I saw it, a small plant of *R. megacalyx* and many young *R. bullatum*. *R. brachysiphon* (K.W. 6276), a member of the Subseries Maddenii, has reached 7 feet and is flowering freely with pale pink, waxy, thick-textured flowers in rather small trusses. Of the tender hybrids R. 'Fragrantissimum' is doing well as also the rarer 'Soave' with slightly smaller flowers. Of the large-leaved species there was a good selection. A large tree of *R. falconeri*, 22 feet in height, was one of the few rhododendrons, other than *ponticum*, found in the garden when MRS. KENNETH took it over. It is a good form, with a big high truss, and is doing well in a rather exposed position. Young plants of *R. sinogrande* have been cleverly tucked into the shelter of old *ponticum* hedges, which are cut as the plants grow, and have repaid the shelter with some of the largest rhododendron leaves which I have ever seen. *R. mollyanum* is 9 feet high with pale pink flowers and *R. giganteum* promises well for the future. *R. kyawi* is also in a very well-protected position and seems to be thriving. Another notable and rare plant is *R. lanigerum* (K.W. 8251), a good specimen with a light truss of deep pink flowers (Fig. 29). Apart from its tenderness, it is a species which would be well worth growing more freely. Among other species not to be missed are *rude*, 5 feet, *habrotrichum*, *thayerianum*, *traillianum*, *mallotum*, *roxieanum* var. *oreonastes*, 4 feet, with white flowers speckled maroon in small tight trusses, *fulvum* (Rock 59091) with fine foliage, *sherriffii*, 5 feet, but not yet flowered, *concatenans*, a very good deep yellow form, *hemidartum*, with unusual strong red colour on young growth, *venator* (K.W. 6285), 5 feet across, covered with buds, *hookeri*, a very good form, *adenophorum*, a rare plant, *exasperatum*, *erosum*, *tsariense* with white flowers and leaves with a thick rusty indumentum below, *glischroides*, *vernicosum* and *beesianum* (Rock 59032).

STRONACHULLIN, NR. ARDRISHAIG

This garden was partly planted by MRS. KENNETH of Tigh-an-rudha and is now owned by her son MR. A. G. KENNETH, who is himself a very keen and successful rhododendron grower. Many of the plants have been established for thirty years and on the very rich deep soil and in the shelter of a light woodland, have grown to a considerable size. Nevertheless MR. KENNETH reported that he had had 14° F. of frost in March, in the open. Here is perhaps the finest specimen of *R. williamsianum* which I have ever seen,

cascading down sloping rocks and following the form of their contours. It is at least 5 feet across in each dimension, and covered with graceful pale pink bells. The specimen of *R. bullatum* is also a very outstanding one, a very good pale pink form growing as a thick bush about 3½ feet high and 5 feet across and covered with flower and bud. Near this also, in a very well-protected part of the wood, is a phenomenal plant of *R. lindleyi*, a loose growing bush nearly 10 feet high and as much through, and bearing a number of large, white lily-like flowers. Probably there is no rhododendron with more perfect form of flower than this species. This plant, however, is a complete contrast to the most unusual compact form, seen in Sir James Horlick's garden on the Isle of Gigha last year. In this series *R. megacalyx* has also made a good plant though it is still much smaller.

Among the earlier flowering species *R. arboreum* is represented by a fine blood-red form, a plant with rather extra long leaves for this species, *R. beanianum*, 7 feet high by 10 feet across, is said to be the form known as *compactum*! It has good deep red flowers and is as good a plant as I have ever seen of this species. Another plant of particular interest is a form of *R. thomsonii* with very large deep red trusses of flower, in which each bell is much more open at the mouth, as well as being rather larger than is usual in this species. The calyx is also reflexed and the leaves are slightly longer than is usual, but this may well be due to the very favourable growing conditions. *R. campylocarpum* is a very fine plant 10 feet high by 10 feet through and covered with flower, while *R. smithii*, although the flowers were over, is said to be a very good form. The plant is a tall one of 10 feet. Other notable plants include *R. metternichii*, the pink form sometimes known as Wada's form, *R. erosum*, *R. pseudochrysanthum*, *R. anwheiense*, a very good pink form, *R. degronianum*, a compact plant 4 feet by 4 feet. The large-leaved species are also well represented and include *sinogrande*, *falconeri* and *rex*, a very good form.

Undoubtedly there are a great number of unusually fine plants in this garden which will well repay the visit of any rhododendron enthusiast, but I fear that this short account does not really do justice to them.

We also visited Stonefield but since this has already been described in a former issue of the Year Book by Dr. J. M. Cowan, I do not propose to add anything about it here. There are still, however, many very large and notable plants there, although it was sad to see the damage caused by wind and falling timber.

I am much indebted to the owners of these gardens both for their kindness and hospitality, and also for their help in supplying information. I am particularly indebted to SIR GEORGE CAMPBELL for much hospitality and kindness, and to his son, MR. ILAY CAMPBELL, who gave up several days to accompany me and to help with information.

DWARF RHODODENDRONS AT BRANKLYN, PERTH

By DOROTHY G. RENTON

GROWING dwarf rhododendrons in Central Scotland does not require an exceptional amount of skill provided the soil is lime-free and the situation is not too dry. Our garden in Perthshire extends to a little over two acres with a south and south-west exposure. One-fourth consists of rock garden and screes, and three-fourths informal borders and grass paths.

The larger borders are filled with trees, flowering shrubs and rhododendrons and the margins are planted with herbaceous plants of all kinds including meconopsis, lilies and spring-flowering bulbs.

We use blocks of peat extensively for edging the borders and building peat walls. These "peateries" have the advantage of looking attractive, levelling or terracing sloping borders, and conserving moisture in this very dry garden.

The smaller rhododendrons can be rather dull and inconspicuous when grown in large clumps by themselves but they make a most interesting collection when planted with some consideration. Their colours are varied and their foliage attractive and they provide a delightful background and shelter for other small ericaceous plants.

We incorporate peat in the soil when planting and give a light top dressing of peat and leaf soil annually. The only other maintenance is cutting all dead wood away from the plants as they grow older and transplanting can be done at almost any time of year provided conditions are not too dry.

The foundation of our rhododendron collection was laid by seeds from the expeditions of FORREST, ROCK and KINGDON-WARD in 1923–4 onwards. Many of the earliest numbers have been lost owing to garden neglect during the last War but most of the plants have survived, which is a tribute to their hardiness. Some of those original plants are forms of *R. racemosum* which will grow to 6 feet but they are adaptable plants and can be pruned when necessary without harm. A good dwarf form of Forrest No. 19404 has particularly bright pink flowers, but the most compact form of all is Rock No. 59638. We have grown it for twenty-eight years and it

measures only 12 inches high by 21 inches wide. One can interpret the term "dwarf" fairly widely but for the purpose of this article I have limited the choice up to 4 or 5 feet.

The truly prostrate rhododendrons we grow over the peat edges and walls and probably pride of place goes to *R. forrestii* and its small-leaved variety *repens*. They appreciate an annual top dressing of peat and leaf soil worked in below the leaves and I think they will flower more freely if not planted in too much shade. We find it an advantage to shelter them with windolite frames when they are making their new growth as in this part of the country late spring frosts take a heavy toll. The flower buds appear to go unharmed in the most severe weather unless they are showing colour.

Two other delightful creeping rhododendrons are *R. prostratum* and *R. radicans*. They both enjoy shade and moisture, but as the former flowers in April it is not quite so easy in this garden. FORREST'S form of *R. radicans* is completely prostrate and the single rosy purple flowers come in May or June (Fig. 22).

Another excellent dwarf is *R. camtschaticum*. It is deciduous and grows on a ledge in the rock garden where it gets full sun and flowers freely in June. The rose flowers are proportionately large for the size of the plant.

We now come to the Uniflorum Series which are early May flowering and therefore benefit by shade from morning sun. *R. pemakoense* makes a neat little bush up to 12 inches and the flowers are pinkish purple, but extremely frost tender. *R. uniflorum* flowers a little later which is an advantage, but otherwise I cannot tell the difference between the plants. *R. imperator* has also pinkish purple flowers, which are very pretty, but it has been slow to establish here. *R. pumilum* almost comes under the prostrate category. It has charming pink bell-shaped flowers and is quite hardy with us. *R. ludlowii* is attractive with its yellow spotted flowers, but it has also been slow to establish.

Next on the list is the "under 2 feet" class. In our opinion the best yellow is *R. chryseum*. It has a tidy habit and is completely frost resistant. The most compact-growing mauves and lilacs are *R. intricatum* and *R. fastigiatum* with pale lilac flowers. *R. impeditum*, *R. rupicola*, *R. drumonium* and the smaller form of *R. russatum* have mauve flowers shading to deep purple. *R. scintillans* is a particularly good lavender-blue when the best form is obtained. They grow in this garden in full sun and are most attractive when mixed and planted in front of the early yellow hybrids such as

Photo, Michael Cox

RHODODENDRONS AT ARDKINGLAS

FIG. 15—R. 'Elsie Phipps', a very lovely bush of the rare hybrid of *R. souliei* × 'Penjerrick', raised at Bodnant by the late LORD ABERCONWAY (see p. 32)

Photo, J. E. Downward

RHODODENDRONS IN THE SPECIES COLLECTION AT WINDSOR

FIG. 16—*R. campylogynum* showing very compact growth in an open situation.

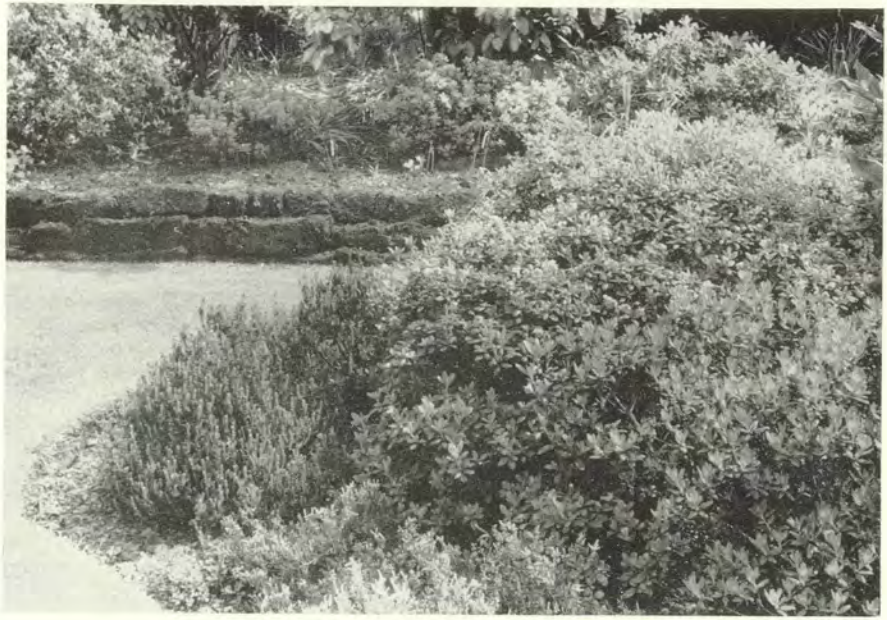


FIG. 17—*R. shweliense* (see p. 40)

Photos, Michael Cox

DWARF RHODODENDRONS AT BRANKLYN

FIG. 18—*R. callimorphum*

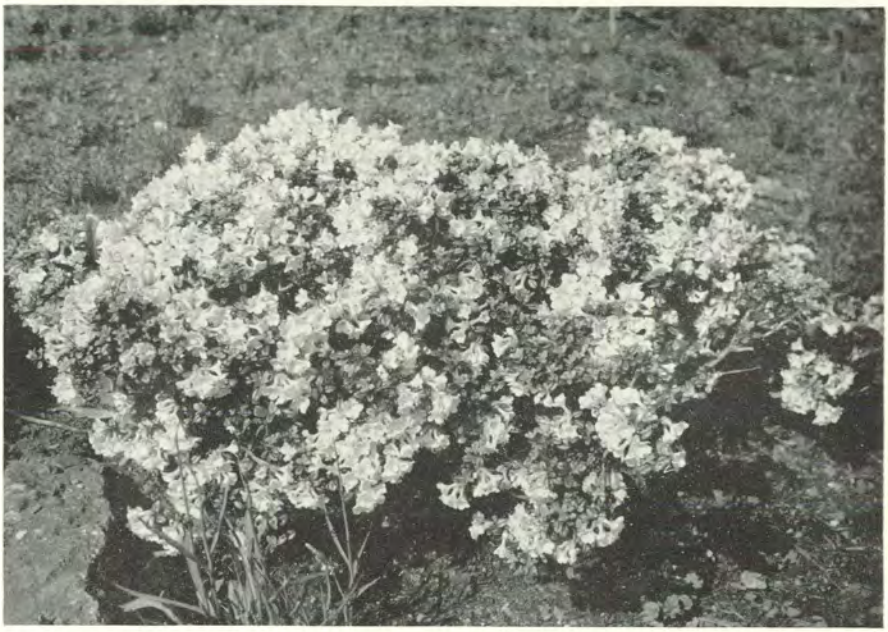


FIG. 19—*R. sargentianum*, a species with cream flowers in the Royal Botanic Garden, Edinburgh (see p. 39)

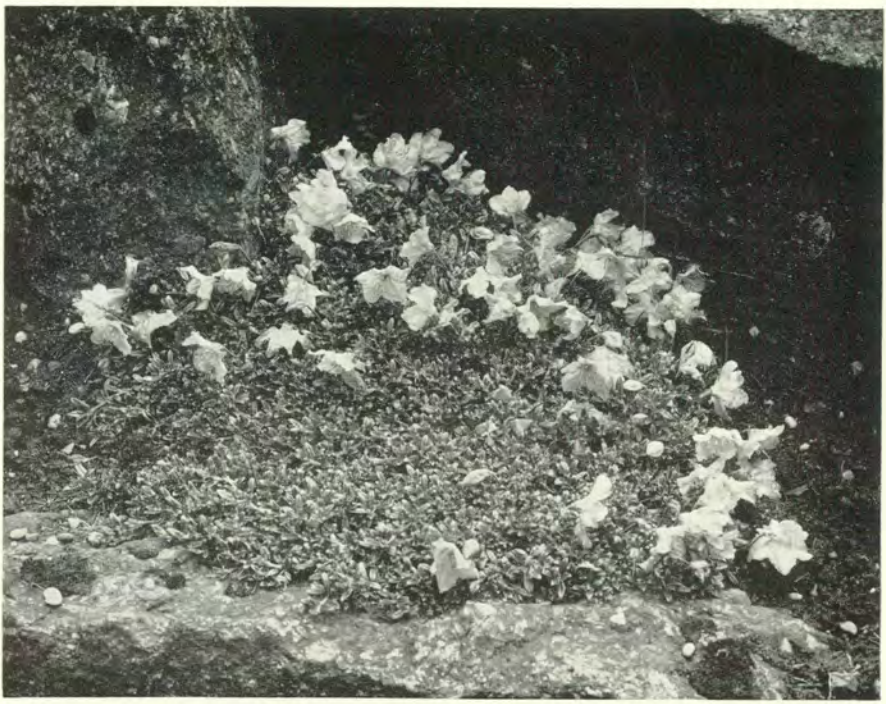
Photo, Michael Cox

DWARF RHODODENDRONS

FIG. 20—*R. lepidostylum*, a species with very fine glaucous young foliage at Branklyn (see p. 40)

Photo, Michael Cox

FIG. 21—*R. campylogynum* var. *myrtilloides*, at Branklyn (see p. 39)



DWARF RHODODENDRONS

FIG. 22—*R. radicans*, at the Royal Botanic Gardens, Edinburgh (see p. 38)

R. 'Cunningham's Sulphur', R. 'Harvest Moon' and R. 'Butterfly'. The members of the Lapponicum Series I have mentioned are, in my opinion, the most desirable but we also grow *R. fimbriatum*, *R. stictophyllum*, *R. tapetiforme* and *R. dasypetalum*. The pink-flowered *R. cuneatum* grows very much taller but it does not get out of hand, and is a good foil to its smaller companions. The tender Boothii Series provides us with the exquisite *R. leucaspis* with white wide open flowers, *R. tephropeplum* with rosy plum flowers and *R. megeratum* with yellow blossoms.

In a good season we have managed to enjoy the beauty of *R. leucaspis*, but I am afraid we are over-optimistic in trying to flower this series successfully in our area.

I have already mentioned *R. prostratum* and *R. radicans*, but the Saluenense Series includes some delightful plants of one or two feet high. *R. calostrotum* has quite large flowers shading from magenta to rose and those contrast well with the grey foliage. The variety *calciphilum* has smaller leaves, but is otherwise similar to the type. *R. saluenense* itself forms a neat bristly branched shrub with clusters of wide funnel-shaped pinkish purple flowers. *R. chameunum* is bushy and compact and *R. keleticum* makes a thick low domed bush. *R. nitens* is a slow grower, but the flowers are a nice shade of pink and it is the latest of the group to flower. They all like a little shade or moisture and flower about June. Last but not least in this height range comes *R. campylogynum* and its varieties *myrtilloides* (Fig 21) and *cremastum*. It is one of the most easily grown of the dwarf species and I have never known it affected by frost. The lovely little bell flowers carried on long pedicels, range from deep plum purple to salmon-pink and are enhanced by a grape-like bloom.

Some of the Anthopogon Series grow a little taller although in Central Scotland they prefer shelter from cold winds and therefore develop slowly. Their terminal clustered pink or white flower heads resemble a daphne.

R. anthopogon is the hardiest and *R. cephalanthum* var. *crebreflorum* is a delightful little plant. *R. primulaeflorum* closely resembles *R. cephalanthum*. *R. trichostomum* eventually makes a 4-foot twiggy shrub, but although beautiful it dislikes late spring frosts. *R. sargentianum* is a hardier plant with creamy white flowers, but is rather pale and uninteresting unless in its best forms (Fig 19).

The only Thomsonii Series which can be included is *R. williamsianum*. It grows very slowly and is temperamental about flowering, but the lovely pink bells are worth waiting for.

R. valentinianum of the Maddenii Series is reputed to be "hardier than usually supposed", but we find it decidedly slow to establish.

In the same series, *R. ciliatum*, if it escapes severe late frost, is one of the loveliest groups in early spring and is included as medium size in the "peatery". Although its recorded full height is 6 feet, we have grown it for over twenty years and it is still a broad clump 3 feet high.

R. ferrugineum and *R. hirsutum* have never made nice plants and appear to dislike every bit of our garden. There is a lovely double-flowered form of *R. hirsutum*, which may be more amenable, and *R. kotschyi* is less difficult to please.

In the Triflorum Series *R. keiskei* makes a spreading low shrub with pretty yellow flowers. *R. lepidotum*'s flowers vary from reddish purple to yellow but it is not a vigorous or exciting plant. We also grow the form *R. elaeagnoides* in the Lepidotum Series, but it has little greenish yellow flowers and is hardly worthy of its place. The complete reverse is the case of *R. lepidostylum* (Trichocladum Series). It is an exquisite unusual plant and forms a spreading low bush, under 2 feet in height. The young foliage is a quite distinct blue-green and it retains this colour throughout most of the season. The pale yellow flowers come in June and contrast delightfully with the metallic green of the leaves. It grows in an open situation, but sheltered from cold winds (Fig. 20).

We now come to the Glaucophyllum Series and consider them to be the "border line" dwarfs. *R. brachyanthum* and its variety *hypolepidotum* are shapely little leafy bushes, but the yellowish campanulate flowers are rather inconspicuous. Closely resembling *R. brachyanthum* is *R. shweliense*, but it is more attractive with pink-yellow spotted flowers (Fig. 17). These plants are grown in full sun and do not suffer from frost. *R. glaucophyllum* and *R. charitopes* are extremely pretty and are very much alike with comparatively large apple-blossom pink flowers. They seed themselves in the peat walls and some of the resultant seedlings have produced very beautiful plants. Unfortunately, the flowers are most susceptible to frost and shelter from morning sun is advisable. *R. tsangpoense* is hardier and the flowers are a disappointing shade of purply pink, but the variety *curvistylum* has smaller cherry-red tubular flowers.

In the Neriiflorum Series are a few which grow slowly with us and tend to width rather than height. *R. chamaethomsonii* and var. *chamaethauma* are a little frost tender, but are well worth a good deal of care. Some very good forms have flowered here from

Ludlow and Sherriff seed. *R. haematodes* is also a beautiful plant requiring shelter. *R. aperantum* is the dwarfest of this series, but always manages to look rather unhappy in the garden. As it grows on the high mountain tops I am trying it out in full sun but it continues to sulk. *R. dichroanthum*, *R. herpesticum* and *R. scyphocalyx* are closely allied in spreading habit and mustard-bronze flowers. We use them as border planting to some of the large varieties and to form bays for meconopsis and tall lilies. *R. sanguineum* and the black-crimson subspecies *haemaleum* and *R. didymum* also grow in the same position.

The Azalea Series also has a place among medium sizes and nothing could be lovelier than *R. schlippenbachii* and *R. quinquefolium* covering themselves with pink and white flowers before the leaves appear. *R.* (*Rhodora*) *canadense* prefers acid soil and moisture but remains dwarf and flowers freely. A little taller, the deciduous *R. albrechtii* and *R. vaseyi* take their place as point plants and light up a shady corner. The narrow-leaved *R. linearifolium* is more odd than beautiful, but it looks strangely interesting. *R. serpyllifolium* is deciduous and tiny in all its parts, but it is often cut by frost.

We grow the Kurume azalea hybrids in the rock garden, where they flower well in an open situation. Their colours are flamboyant and have to be placed with discrimination.

Some of the dwarf rhododendron hybrids, although growing more sturdily, are useful as point specimens. The *R. augustinii* crosses such as 'Bluebird', 'Blue Diamond' and 'Blue Tit', are very floriferous and quite unaffected by changes in temperature. R. 'Yellow Hammer' (*flavidum* × *sulfureum*), on the other hand, flowers earlier and is more susceptible to frost catching the flowers. There are also a few lovely dwarf hybrids which we grow with the small species. *R.* × *intermedium*, a natural hybrid between *R. ferrugineum* and *R. hirsutum*, R. 'Prostigiatum' (*fastigiatum* × *prostratum*) and R. 'Sarled' (*sargentianum* × *trichostomum* var. *ledoides*). A charming tiny is R. 'Pink Drift' (*scintillans* × *calostrotum*), but one has to be sure of getting the good rose-pink form. R. 'Cilpinense' (*ciliatum* × *moupinense*) is a choice plant, but alas it opens its flowers in March, which spells disaster, although the buds appear to be frost resistant. One year in three we see it in full beauty so we keep on trying—and hoping. Queen of the semi-dwarfs is undoubtedly R. 'Temple Belle' (*williamsianum* × *orbiculare*), in bud, deep rose, and in flower, shell pink. Its round bushy habit and complete hardiness make it a must in a prominent

position. R. 'Fine Feathers' ('Cilpinense' × *lutescens*), primrose clone, is a desirable plant but it is inclined to flower too early here. We are growing many of the lovely hybrids of dwarf parentage such as R. 'Humming Bird', R. 'Winsome', R. 'May Day', R. 'Varna', and others but as they are very young I do not feel competent at this early stage to describe their reactions in this garden. Some of these we received as small plants through the kindness of Bodnant and we have found that importations from gardens in the south or west take a considerable time to acclimatize themselves to our colder conditions. R. 'Elizabeth' has settled down well, grown rapidly and flowered magnificently, but R. 'Ethel' remains a much smaller plant. R. 'Rosy Bell' is an old hybrid (*ciliatum* × *glaucophyllum*) and is a nice plant although inclined to legginess. We have not been able to trace the name and origin of R. 'Grievii' which we have grown for over thirty years. It came from the long-since-gone nursery of Cunningham & Fraser, Edinburgh, and is still only 2 feet high. The wide open flowers are pale pink and the plant looks as if it had *ciliatum* blood.

Some of the rhododendrons I have included may not be considered true dwarfs by gardeners in the south or west, but I can only comment from personal experience.

We are situated only 190 feet above sea-level and have an annual rainfall of 30 inches. Although sheltered from the north and east we are exposed to a good deal of our prevailing south-west wind and the soil dries out very quickly. In spite of these drawbacks the plants appear to be quite happy although slower in growth than in more favoured districts. A collection of rhododendrons, dwarfs or otherwise, is a fascinating one and it combines perfectly with the varied assortment of other plants grown in this garden.

RHODODENDRONS AT LINSWEGE, OLDENBURG, GERMANY

By DIETRICH HOBBIE*

LINSWEGE, an old country village whose history can be traced back to 1124, lies between the Weser and the Ems. On the moraines of the glacial period, some 10 metres above sea-level, there are in this neighbourhood extensive moors with layers of peat up to 4 metres thick. The climate of the Gulf Stream with its moist atmosphere is, in many winters, interrupted by cold east winds which blow round the heights above Scandinavia. The average annual rainfall is about 780 mm. The lowest temperatures measured here were −30° C. in 1929 and −26° C. in 1956. The pH values in the woods, which consist of *Pinus sylvestris*, the areas in which many rhododendrons are planted, are pH 3·5–4. In the moist lowlands where there are oakwoods or meadows the pH value is 5–6.

One hundred and fifty years ago HERZOG PETER FRIEDRICH LUDWIG VON OLDENBURG had rhododendrons planted in the park round his castle. These plantations, consisting mostly of *R. ponticum*, *catawbiense* and *luteum*, still exist today and have grown into vast evergreen islands. The source of these and of later introductions of rhododendron hybrids was England. In the course of time, in the Weser–Ems and Bremen–Hamburg areas a number of tree nurseries were developed which became more and more concerned with the rearing of rhododendrons. Up to the year 1935 it was always the old kinds of rhododendron hybrids and azaleas; then a number of rhododendron novelties raised in Holland arrived; at the same time the Japanese azaleas were introduced more and more. Many trials of rhododendrons of the hardiness group "C" were continually being lost in very severe winters.

In 1928, encouraged by the late pioneer of rhododendron culture in Oldenburg, MR. G. D. BÖHLJE WESTERSTEDE, I began to sow rhododendrons in an eighty-year-old wood of *Pinus sylvestris*, with the object of raising stocks for the better kinds of rhododendrons. The acquisition of literature on rhododendrons, especially the Yearbook of the English Rhododendron Association and the book *Rhododendrons*, by CLEMENT G. BOWERS, afforded me a deeper

* Translated from the German by Vera Higgins, V.M.H.

insight into the wonderful variety in the rhododendron world. It was a visit to England in 1937, however, that gave the impetus to the present-day magnitude of the rhododendron plantations at Linswege. In particular, the magnificent rhododendrons at Exbury and in Cornwall, in their overwhelming numbers and beauty, left a lasting impression. Here the decision was taken to start breeding and, by crossing hardy types, to obtain seedlings sturdy enough for the Continent. The ready help of English and American friends provided me with seed and plant material.

Today, in 1958, there are at Linswege, on an area of 18 hectares, more than 200 different species of rhododendron. The results of the LUDLOW and SHERRIFF expedition in 1938 and of PROF. HU's expedition in the same year stand side by side with rhododendrons from many gardens in the world. Without the great assistance of the Royal Botanic Garden at Edinburgh, under the guidance of SIR WILLIAM WRIGHT SMITH, the great development that has been achieved here today would not have been possible. Encouraged by the papers in the *Rhododendron Yearbook*, I began in 1939 the hybridization of rhododendrons.

My first rhododendron hybrids were: R. 'Ammerlandense' ('Britannia' × *williamsianum*) and R. 'Linswegeanum' ('Britannia' × *forrestii* var. *repens*). Today, in large areas of the pine-woods and on open clearings, a quarter of a million rhododendron seedlings of 600 different crossings are growing. The sandy soil, almost free of weeds, damp and rich in humus, formerly heathland, offers the best growing conditions possible.

As knowledge increased, the objects of the breeding became gradually more exact and in the last few years have been achieved. The purpose was firstly, to make the rhododendron flowering period extend over three months; secondly, to raise hardy, compact shrubs with clear colours, which were especially suitable for planting along roads and for front gardens. Thirdly, it would be desirable to prolong the flowering period into July; fourthly, an attempt was made to produce lime-loving hybrids from such rhododendrons as naturally grow on limestone formations and which, according to experience, are more suitable for this purpose than the *R. catawbiense* hybrids, for instance. Fifthly, here in Linswege, the raising of yellow rhododendrons and those which are scented was begun. Back crosses, such as *repens* hybrids with garden hybrids, were made recently with the intention of reducing the influence of one parent to 25 per cent or raising it to 75 per cent. Hybrids with 25 per cent proportion, that is F_1

hybrids × F_1 hybrids, were most freely produced. Almost always there were found amongst the four participants a quarter hybrid which showed much greater hardiness.

In the space of this article I can only mention briefly the most important hybrids, so far as they have flowered. Over twenty-five combinations between *R. forrestii* var. *repens* and garden hybrids, or other species, have been made. Now after eighteen years twelve clones have been established of the combination R. 'Essex Scarlet' and *R. repens*, of which 5,000 specimens of some of them have been raised by cuttings. The best form of these *R. repens* hybrids is called 'Elizabeth Hobbie'; the colour is transparent, fiery scarlet and it flowers from May 6 to 25. Other *R. repens* hybrids of great value are: R. 'Madame de Bruin' × *repens*—central clone*: 'Ostfriesland'; flowers bright scarlet in May, hardiness "B". R. 'Earl of Athlone' × *repens* is more brilliant in colour and the flower firmer in texture than any of the *repens* raised here. Central clone: R. 'Ursula Siems' flowers extraordinarily freely about April 20. R. 'Purple Splendour' × *repens* gave here a batch of seedlings which flower more freely and are distinguished by their low bushy growth; the colour of the cross is port-wine red to blood red. Central clone: R. 'Ems'; up to now 2,000 seedlings of the cross between R. 'Prometheus' and *R. repens* have flowered; they are scarlet and, opening in the first half of May; this is one of the most valuable and notable of the *repens* hybrids that has been raised here. Central clone: R. 'Gertrud Schale'; out of a large number of seedlings we selected about twenty-five numbers which were propagated by cuttings. One unique clone of the cross *R.* (*catawbiense* × *thomsonii*) × *repens*, R. 'Isaac Newton', is a great beauty and hardy, and this clone alone was selected from some ninety seedlings for further propagation. It is worthy of note that among the many combinations of garden hybrids with *R. repens* there were many which were outstanding in growth and hardiness, yet in the flowers almost 95 per cent failed! We had this experience in crossing R. 'Edward S. Rand', 'Dr. Rütgers' and 'Caractacus' with *repens*; 90 per cent or more of the flowers did not open and almost all the flowers went black before they opened. As a result of this bad cross 2,000 eight-year-old seedlings, which had been carefully nursed, had to be sacrificed when we realized that they were worthless.

Further experiments were made here with *R. repens* hybrids.

* Herr Hobbie uses the phrase "central clone" to designate "the best clone that he knew first".

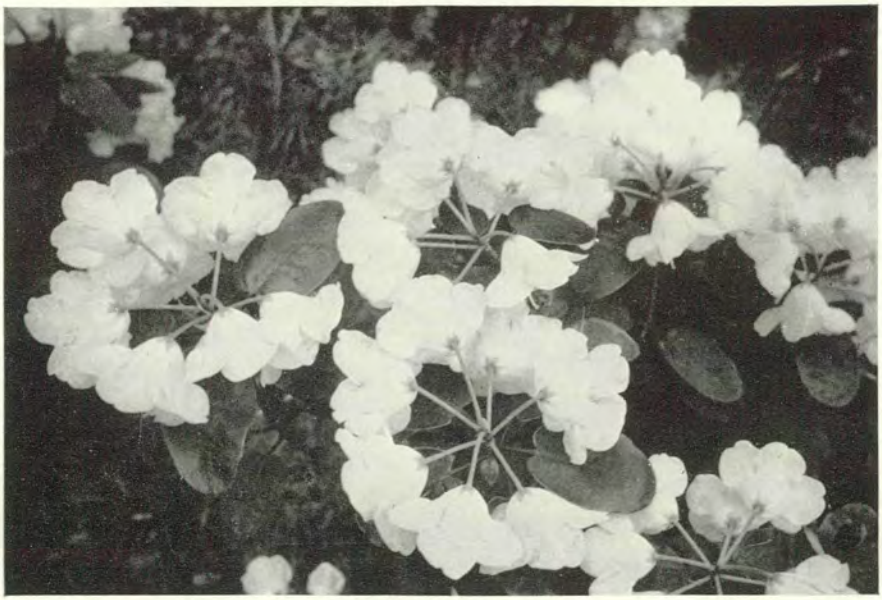
R. 'Linswegeanum' ('Britannia' × *repens*) × *metternichii* gave the R. 'Suomi' group. Thousands of seedlings of this cross flowered in 1958, dark red, deep pink and salmon pink. 'Suomi' is one of the few rhododendrons whose flowering period extends over three weeks during which the colour changes often to yellowish pink; darker stripes run down the outside of the corolla (Fig. 27). This race is very hardy and can easily be raised from cuttings. In the coming year we expect to flower several of the back crosses of *repens* with 'Britannia', 'Louis Pasteur' and 'Prometheus'. The habit of these hybrids with only 25 per cent of *repens* blood is similar to the hybrid 'Jacksonii'.

The delightful species *R. williamsianum* has been freely used here for hybridization. Ten thousand seedlings of more than sixty different combinations have resulted from this effort. The first hybrids, R. 'Ammerlandense' (R. 'Britannia' × *williamsianum*), were so lovely that they gave the impetus for further crossing with *R. williamsianum*. It is interesting to see how distinct each cross is. In order of freedom of flowering they are: R. 'Poot' × *williamsianum*, 'Staring' × *williamsianum*, 'Doncaster' × *williamsianum*, 'Homer' × *williamsianum*. Right at the end is *R. sutchuenense* × *williamsianum*. In order of beauty the *R. williamsianum* hybrids are: 'Staring' × *williamsianum* (central clone: 'W. S. Reuthe'), 'Doncaster' × *williamsianum, discolor* × *williamsianum* ('Oldenburg'), ('Cunningham's Sulphur × *wightii*) × *williamsianum*, etc. The largest rhododendron hybrids here in Linswege are 2 metres high and 3 metres across. The young growth is interesting, being in some hybrids a light brown, chestnut-brown or orange-pink. Especially noteworthy for the coloured shoots are: 'Edward S. Rand', 'Doncaster', 'Caractacus', 'Burgermeester Aarts' and *discolor* × *williamsianum*. The show of blossom on the *R. williamsianum* hybrids here this spring was of surpassing beauty! Back crosses have been made with the *R. williamsianum* hybrids also, some of which have already flowered and show great possibilities for further hybridization.

In recent years at Linswege more and more hybrids of *R. wardii* G. Sherriff 5679 have flowered; this rhododendron is one of the most beautiful of the species which I have ever seen. Even now as I am writing, at the beginning of July, late-flowering varieties of *R. wardii* are in full bloom. The scent is delicate and the flowers last a long time, a source of joy in a vase. *R. wardii* is sterile with its own pollen; one can therefore pollinate in the open with pollen from another plant, as is done here especially with the forms that

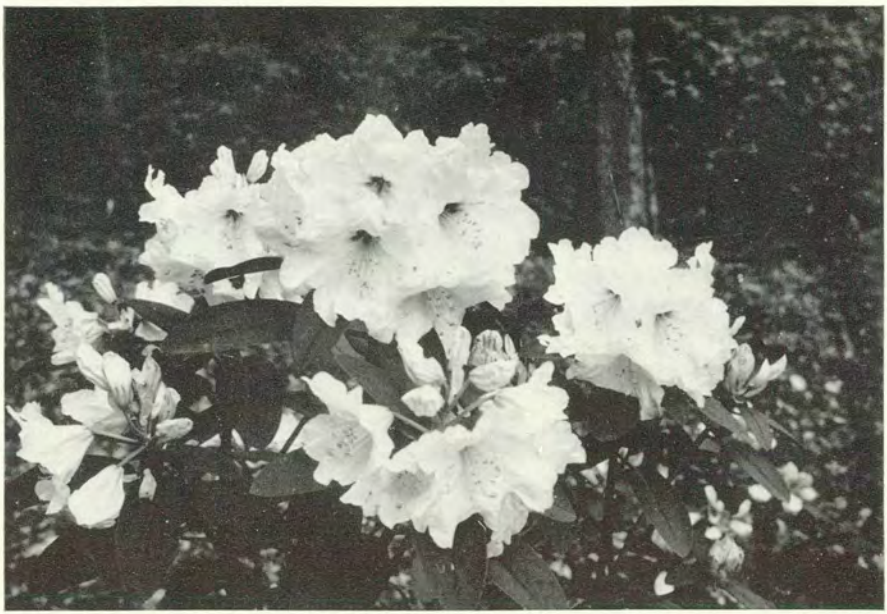
RHODODENDRONS AT LINSWEGE

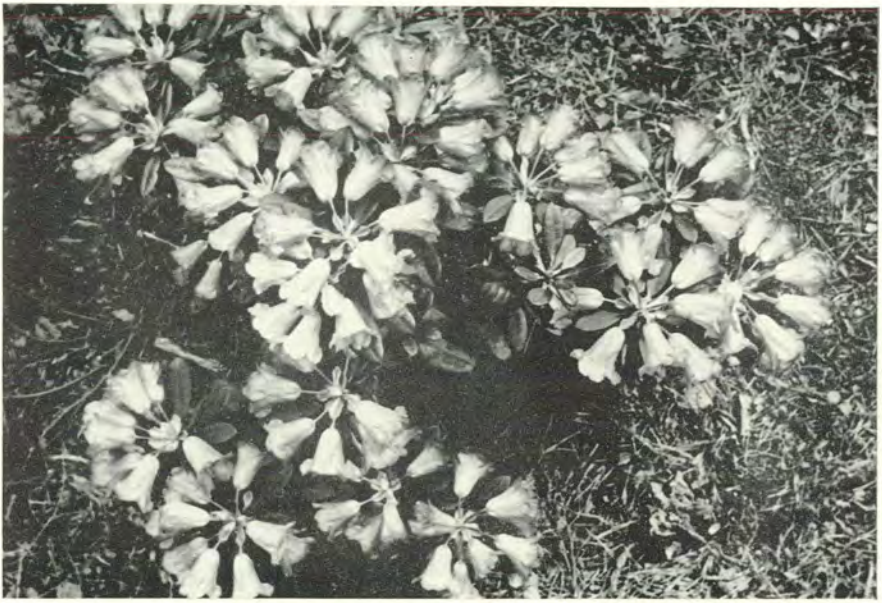
FIG. 23 (*above*) and FIG. 24 (*below*)—Groups of hybrids of *R. williamsianum*



RHODODENDRONS AT LINSWEGE

FIG. 25—(*above*)—*R.* (*wightii* × 'Cunningham's Sulphur') × *R. williamsianum*
FIG. 26 (*below*)—*R.* Inamorata g. (*R. discolor* × *R. wardii*. G. Sherriff 5679)





RHODODENDRONS AT LINSWEGE
FIG. 27—R. Suomi g. in May (see p. 46)

FIG. 28—A hybrid from *R. forrestii* var. *repens*, propagated from a cutting four years previously

Photo, Mrs. Kenneth

FIG. 29—*R. lanigerum* (K.W. 8251) at Tigh-an-Rudha, Ardrishaig (see p. 34)

Photo, J. E. Downward

FIG. 30—R. 'Mouton Rothschild' A.M. June 3, 1958. Exhibited by MR. E. DE ROTHSCHILD (see p. 138)

flower in July. Several outstanding hybrids have arisen from *R. wardii* G.S. 5679, namely *R. wardii* × *discolor* ('Inamorata'). This hybrid which has large flowers like 'Pink Pearl', cream coloured with large red flecks in the throat, blooms here very freely right into July. We raised pastel shades with *R. wardii* G.S. 5679 and pink or white garden hybrids. All the hybrids of *R. wardii* are very free-flowering and the flowers are long lasting. Great results may be anticipated, to judge by the first flowers, from combinations between the Koster × *campylocarpum* hybrids and *R. wardii* G.S. 5679.

Promising crosses, according to our experience, could be made with the following species: *R. forrestii* var. *repens*, *williamsianum*, *haematodes*, *dichroanthum*, *metternianus* (form of *R. metternichii*, deep pink in bud, opening to white, outside of the corolla often darker and striped) from K. WADA, Japan, *puralbum*, *souliei*, *chrysanthum*, 'Catalgla', *vernicosum*, *insigne*, *scyphocalyx*, *discolor* and many others. At Linswege the first requirement is that the seedlings can withstand our often very long hard winters. Hence for a long time crosses have been made here of *R. catawbiense album* 'Glas' ('Catalgla') *maximum*, *R. brachycarpum montanum* var. *lutescens*, *R. chrysanthum*, *R. catawbiense rubrum*.

Hybrids which like lime or those which we hope will tolerate high pH values as our garden rhododendrons do, have for years been bred on a large scale. In Münich, where the soil contains lime, there are already many seedlings of such crosses under the care of the Curator, FRITZ HEILER (now retired), who initiated these new methods of hybridization. The following rhododendrons have been used in such hybrids: *R. insigne*, *fortunei*, *williamsianum*, *vernicosum*, *decorum*, *didymum*, *wardii*, *lutescens* and *rubiginosum*.

The rhododendron park at Linswege is surrounded by broad meadows and oakwoods. When one remembers that it was only thirty years ago that the first sowings and plantings were begun, the genus *Rhododendron* has in this short space of time yielded a rich reward. In the spring of 1958 more than 10,000 visitors from all over the world came to enjoy the magnificent show of colour. We had visits from rhododendron experts from nine different countries who came to see what great possibilities of further breeding were inherent in our rhododendrons. With the intelligent co-operation of my head gardener, HANS ROBENEK, great advances have been made. The efforts resulting from the valuable knowledge gained in twenty years' work on breeding have been intensified still more.

Rhododendrons from Linswege are now all over the world. Trial plantings have been made in very cold areas, in Sweden almost up to the polar circle, in Finland and many other countries. In the Younger Botanic Garden at Benmore in Scotland, 100 plants of the Linswege hybrids have been growing for two years. Further hybridization will be carried out there and in other countries in the next few years. Only by means of such trials shall we obtain a survey of the possible uses of the newer rhododendrons. The collaboration between lovers of rhododendrons and breeders in many lands is wonderful. May this universal collaboration in the service of joy and beauty contribute towards a greater understanding between peoples.

LATE-FLOWERING RHODODENDRONS AND AZALEAS

By GEORGE GRAHAM

WHEN I received a request from the Editor for an article devoted entirely to late-flowering rhododendrons my first reaction was to ponder for a moment or two as to just how many people would be interested in an article such as this, and why?

Possibly the old adage that "one can never have too much of a good thing" applies here. So wide is the selection of rhododendrons now available to growers and would-be growers that nowadays one need not become tired with repetition, even in those gardens where conditions are so favourable that some species or hybrid may be found in flower almost throughout the entire year. I know one well-known garden in the British Isles, where, from the wide selection of species and hybrids grown, it is usually possible for the owner to maintain a fresh and always interesting arrangement of her favourite flowers for eleven months of the year.

While it is not possible for everyone to have their gardens so favourably situated, or have the available space to plant on such a lavish scale, there is now no reason why those who love rhododendrons should confine the period each year, in which they enjoy the flowering of their favourite plant, to the generally accepted months of May and June.

One avenue as yet unexplored, and which I think should be well worth investigating, is the selection, from existing species and hybrids, of clones flowering at different periods from that of the type plant.

Many of us who are interested in rhododendrons have at some time or another seen a plant, flowering completely out of step with its companions. Sometimes we find one in flower much earlier, or again it may be one much later than that of the general group in which they are growing, and I think this line would be well worth following in order to extend the flowering period of many of the fine species and hybrids at present in cultivation.

Over a period of years I observed four plants of *R. falconeri*, growing in one garden, extend the flowering of that species from early March until late May. Another species which comes quickly

to mind, in which there is considerable variation in time of flowering, is *R. wardii*, and I think an investigation into existing stocks of *R. auriculatum*, *diaprepes*, etc., would bring to light a number of plants suitable for this purpose.

However, as that is all very much in the future, I will try not to wander too far from those species or hybrids which are at present accepted as late-flowering. While I am taking as a guide to the term "late-flowering" those plants we normally expect to flower from July onwards, such is our climate that it is often possible to have exceptions in certain areas, and to find some of those plants flowering during the latter part of June.

Many of the late-flowering rhododendrons must have shade from the mid-day sun, and shelter from strong winds, if one wishes to have them as near to perfect as possible. If exposed to full sun—and it is during the months of July and August that we may expect to get some of the warmest days of the summer—we sometimes see a plant with all the season's flowers over in a matter of days, and in extreme cases, half-opened buds are wilted beyond recovery.

Given adequate shelter these plants will flower for weeks and when artificial watering has to be applied it should always be confined to the roots. Overhead watering quickly discolours many of the flowers, and a "NO SHOWERS" ruling should be adhered to throughout the flowering period.

The flowers of a few will also mark, when planted in an exposed position, where the wind will whip the branches against each other, thus causing considerable bruising to the blossoms. Fortunately, strong winds and gales at this season are an exception rather than the rule. So while it may strike on rare occasions we need not fear yearly trouble from this source.

These are some of the likely causes for disappointment when growing late-flowering rhododendrons, but when one has been so fortunate as to see a plant of *R. diaprepes* or R. 'Polar Bear' correctly placed and in full flower, then it is realized how important and how worth while it is to exercise much thought in selecting the proper site to provide a setting such as these plants are worthy of.

When thinking about late-flowering rhododendrons the name *R. auriculatum* comes quickly to one's mind. Introduced from China in 1900 by WILSON, this plant has remained in the forefront ever since, and justly received the A.M. in 1922. Its large funnel-shaped fragrant white flowers, usually at their best in August, with a background of fine foliage, combine to make this one of our most attractive species at this season. To be seen at its best it

should be planted in thin woodland, or in a position where it gets filtered sunshine. Shy of flowering in its early years, it makes a large bush of at least 15 feet in height, and has been widely used in the raising of many hybrids. It is generally hardy in those areas where no severe frosts are experienced before Christmas. As it does not begin to make its new growth before July, it is better to aim for short, well-ripened wood rather than lush, sappy growth, which soon falls prey to the first cold snap of winter.

This applies to many of our late-flowering rhododendrons, where growth is also late and thus leaves little time to get the new wood and buds ripened before frost sets in. In those areas where the frost danger is fairly regular each year, I prefer to keep the plants on a moderate diet to produce short firm growths rather than a lot of sappy wood.

I recall attending a meeting of the Seattle Chapter of the American Rhododendron Society called to discuss the effects of the severe frosts of 1955. On this point of what makes for hardiness, I was impressed by the observations made by one of the speakers, who was manager of one of Seattle's largest nurseries, where thousands of rhododendrons are grown annually. This was to the effect that as is the normal practice there, irrigation is part of the general nursery equipment, and is used regularly to produce strong plant growth in order to have a plant of saleable size in the shortest possible time. He went on to say that one small corner of the planting area was inadequately covered by the sprinklers, and it was found that the plant mortality rate in the area where the artificial watering was lacking was lower than where the plants came within the sprinklers' range. Obviously, this could only be directly attributed to the water shortage in that particular area restricting the plant growth, and thus producing short firm wood which was better enabled to withstand the sudden drop in temperature, which proved so disastrous to all those plants so full of sappy wood.

In the selection of varieties, individual taste and the conditions under which they are to be grown must play an important part in the choice of those selected.

However, *R. discolor*, also introduced from China in 1900 by WILSON, and flowering in late June and July, should fit in and please in any planting with space for a plant 15 to 20 feet in height. The flowers, which are up to 4 inches across and carried in a large truss, may be either white or pink. There are good forms in both colours. This plant will stand a more open position in relation to

amount of sunshine than say *R. auriculatum*, but the fragile flowers which bruise very easily must have shelter from the wind. *R. discolor* is a popular plant which is widely used in hybridizing. It was awarded the A.M. and F.C.C. in 1922, and is the parent of many first-class hybrids. *R. diaprepes*, which flowers in July and August, is not so well known or so widely grown as the previous two plants. It is nevertheless a plant well worthy of inclusion in any collection where semi-woodland conditions can be provided. This plant is one of those which definitely require the right position before it will flower freely. Too much shade will not do, and with too much exposure there is a danger of split bark—a trouble *R. diaprepes* is liable to suffer from when exposed to severe frosts. The large white or white-flushed rose flowers are 5 inches across, and fairly strongly scented. Growing to at least 25 feet in height, and with leaves up to 10 or 12 inches in length, it makes a very striking picture when in flower at this season of the year.

The type plant received the A.M. in 1926, and the form named *R. diaprepes* 'Gargantua', which is larger and has pure white flowers except for a greenish tinge at the base inside the corolla, received the A.M. in 1953 when shown by Mrs. R. M. Stevenson of Tower Court (Fig 35).

In *R. eriogynum* we have a change of colour and the flowers in this species are a fine clear red. Though often listed as a June-flowering rhododendron, my experience with this and *R. facetum*, which are very much alike, rather prompts me to include both of these among the late-flowerers. They usually come into flower just that little bit behind the main June flush of blossom, and generally are to be seen at their best in July. The bright coloured flowers of these species look better when planted just out of strong sunshine, and a position towards the fringe of woodland suits them admirably, and acts as a softener.

R. kyawi is unfortunately rather more tender, and success in growing this plant is reported chiefly from those gardens enjoying a temperate climate. This again is a plant which, undoubtedly, would be much more widely grown if a clone were to be selected from one of the hardier forms. The scarlet to crimson trusses of bloom with occasionally a shading of rose, are slightly larger than those of *R. eriogynum* and are borne a month later, in late July and August.

In the Subseries Maddenii we have one of our finest scented late-flowering rhododendrons in *R. crassum*. Growing to at least 15 feet in height it shows considerable variation in times of

flowering, and we can generally expect to find plants in flower between the end of June and early August. With its leathery foliage and bearing funnel-shaped scented flowers, mostly white or creamy white with a yellow blotch, this plant is worthy of its place in any collection. Surprisingly, it has so far been little used in hybridizing, and being moderately hardy, and able to stand up well to winds, together with its delicious scent it really ought to produce hybrids of outstanding merit.

R. maddenii is another plant worthy of trial. Plant it in a position where it gets abundant light, as it seems to flower much more freely without any top shade. *R. manipurense* is rather more tender and requires a more protected position.

A spray for stopping excessive transpiration of shrubs, especially evergreens when transplanted out of season, is now recommended in some quarters as being useful in preventing and restricting damage by frost when applied in early winter to any plant of borderline hardiness. The use of this spray for this purpose is still very much in the experimental stages as yet, but, if successful, it will undoubtedly be of great assistance to those who wish to grow many of the semi-tender rhododendrons outdoors.

Now that polythene sheeting is easy to obtain and comparatively cheap—in relation to the loss of a good plant—it can be used as a protective covering. Simple structures covered with this material can speedily be constructed and help to bring many a valuable plant safely through the rigours of our winter weather.

R. heliolepis, while not a flamboyant plant, is nevertheless attractive and bears either rosy purple or white flowers with a dark blotch, and has strongly aromatic foliage. It makes a nice bush and one mostly sees plants in the region of 4 feet high when growing in the open, but under woodland conditions it will reach a height of at least 10 feet.

R. didymum was introduced by FORREST in 1917, and is useful in that it is naturally a small plant which seldom reaches a height in excess of about 3 feet. Indeed, it is more often to be seen as a plant of only 1 or 2 feet in height. It is suitable for planting in open positions, being quite hardy. In selecting a site for it one should try to place it in a position where it can be looked up to—rather than down upon, as the dark crimson flowers appear lighter when viewed from below. For those who like something quite different, *R. micranthum* is suitable for an open position, and is worth planting. Its small white flowers, resembling those of *Ledum latifolium*, are borne quite freely even on small bushes.

Two plants in the Ponticum Series, which are quite hardy, are very useful as shelter plants, if one should wish these to be late-flowering. *R. maximum*, which has good foliage and stands up to shade exceptionally well, and *R. ungernii* of the Subseries Caucasicum. These plants bear flowers mostly of varying shades of pink, though white and deep-rose-flowering forms of *R. maximum* do occur.

When planning for late flowers in the garden it is advisable not to overlook the Azalea Series, as herein we have a number of plants to choose from, admirably suited for this purpose. With the exception of *R. arborescens* they are mostly moderate in growth, and are easily kept to the required size by cutting out any unwanted growth. They are especially valuable in giving just that touch of lightness, so useful in providing variety and contrast, when placed adjacent to plantings of the larger foliage varieties. *R. arborescens* from North America is known there as the sweet azalea, a name most likely given because of the sweet scent—somewhat like heliotrope—of this plant. While it remains a compact bush when growing in the open it is apt to become leggy if planted in a shady position. A fairly open position can be chosen with every hope of the plant doing well, as the white funnel-shaped flowers of *R. arborescens* will stand any sunshine we are likely to get during an average summer.

With *R. occidentale* there is considerable variation in the time of flowering, and it is possible to select a clone to flower during July when it is desired to have it at this particular time of the year. It is suitable either for grouping or planting as a single specimen, when it forms a nicely shaped bush, usually 4 to 8 feet in height. Choose a comparatively open position, with just sufficient shade to save the flowers from burning in summer, and to supply a little protection in winter as it is not quite so hardy as *R. arborescens*. It is, however, one of the finest autumn-colouring plants in this series, and is well worth planting where full advantage can be obtained from the magnificent variety of tints, which this plant assumes late in the season. There is considerable variation in the flowers on different plants, and colours range from white to pink with a blotch of varying shades of yellow. Two splendid late-flowering hybrids from *R. occidentale* are 'Irene Koster', rose-pink, and 'Exquisita', creamy pink. As *R. occidentale* is being widely used at present by growers on the Pacific coast for hybridizing, we may look forward to some of the fine hybrids raised in this area being obtainable here within a few years.

Photo, J. E. Downward

LATE-FLOWERING RHODODENDRONS

FIG. 31—A fine plant of R. 'Polar Bear' at Tower Court (see p. 55)

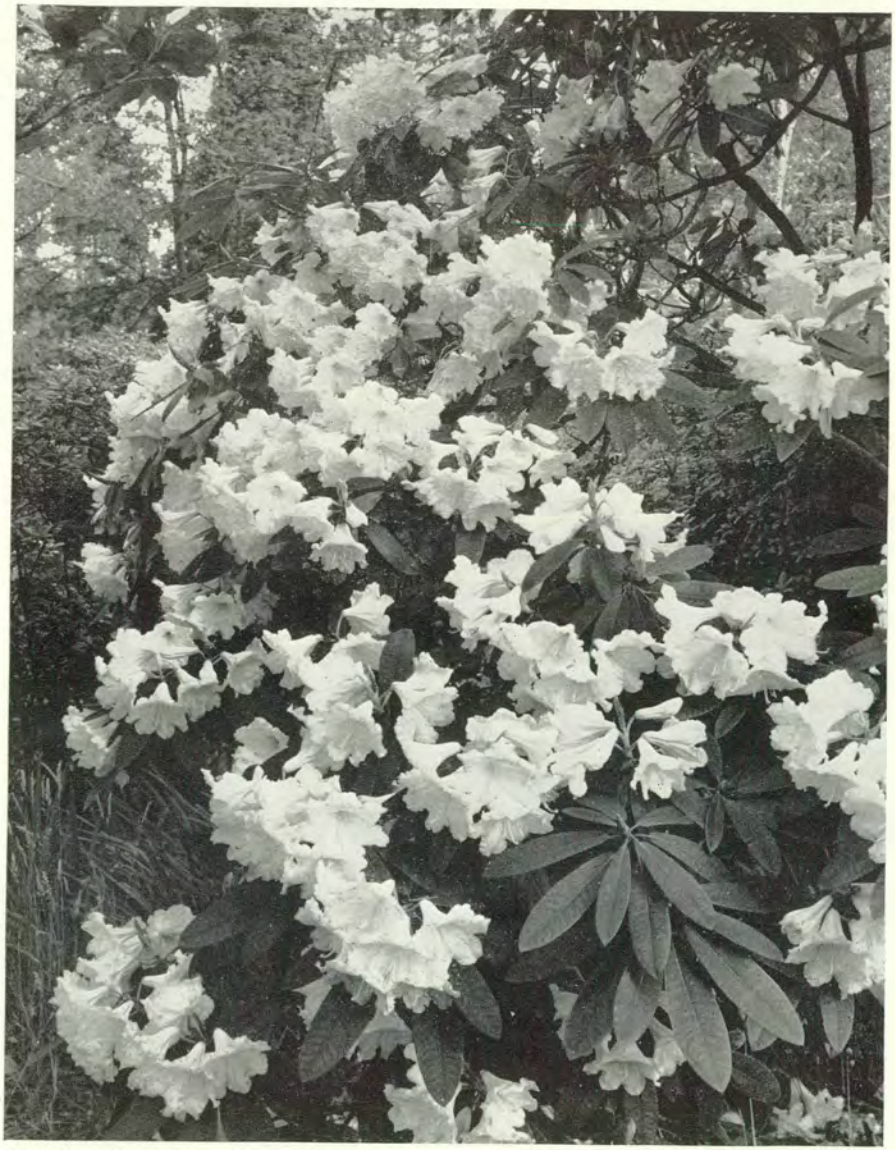


Photo J. E. Downward

LATE-FLOWERING RHODODENDRONS

FIG. 32—A close-up of the flowers of R. 'Polar Bear' (see p. 55)

FIG. 33—R. Argosy g. (see p. 56)

Photos, J. E. Downward

LATE-FLOWERING RHODODENDRONS

FIG. 34—R. 'Amor' (see p. 56)

Photos, J. E. Downward

LATE-FLOWERING RHODODENDRONS

FIG. 35—*R. diaprepes gargantua*, an unusual form of the pure white late-flowering rhododendron (see p. 52)

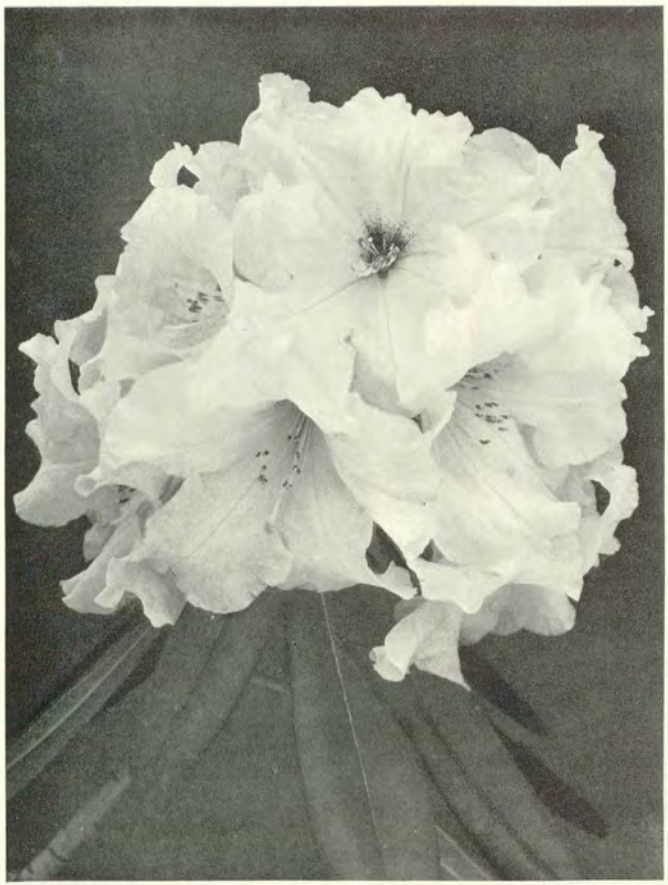


FIG. 36—R. 'Charlotte de Rothschild' A.M. May 19, 1958. Exhibited by MR. E. DE ROTHSCHILD (see p. 137)

The Swamp Honeysuckle is a very popular descriptive name for *R. viscosum* as it flourishes where the soil is moist, and there is a lovely fragrance from the white, sometimes flushed-pink honeysuckle-like flowers. While the foliage of *R. viscosum* takes on a rich crimson colouring in the autumn, unfortunately it is usually of short duration.

R. prunifolium is still a scarce plant, but one well worth waiting for, and should be included whenever obtainable. A young plant when it is growing vigorously can be disappointing, as it is then rather sparse with its flowering. This defect—if one may call it so—remedies itself when the plant gets older, as it then flowers abundantly. While *R. prunifolium* is quite hardy, the strong orange to red flowers, probably the largest of any of the Azalea Series, demand careful consideration when planting this species. We must bear in mind that these come in July when we may have long hours of sunshine, and this colour can be harsh in some positions (Fig 38).

In *R. simsii* var. *eriocarpum* 'Gumpo' we have an evergreen representative of the Azalea Series from China and Formosa, suitable for planting outdoors in many areas. 'Gumpo White' will do for planting in a rock garden, or in the forefront of a shrubbery, as it grows very slowly. Though usually in the 6 to 12-inch group, it is very effective when in flower, as these are unusually large to be borne by such a small plant. 'Gumpo Red' is really a pink-flowered counterpart, and it would be a much more descriptive name if altered to 'Gumpo Pink', as a good red in this group is a plant still to come. These two plants are especially welcome n those gardens of limited size, and a number of dwarf or alpine types such as *R. intricatum*, *R. calostrotum*, *R.* 'Prostigiatum' *(fastigiatum* × *prostratum)* could also be included here. They often flower for a second time during August, and the foliage of these plants is attractive throughout the year.

R. 'Polar Bear' (*auriculatum* × *diaprepes*), which bears large white scented flowers in August, was raised by Mr. J. B. Stevenson at Tower Court, and a clone from these gardens received the F.C.C. in 1946. Growing to at least 18 feet in height, and as much in diameter, this superb hybrid, hardier than either parent, is essentially a plant for the larger garden (Figs. 31 and 32).

R. 'Romany Chal' (*eriogynum* × 'Moser's Maroon') bears bright red flowers spotted with black and is suitable for planting in thin woodland. R. 'Red Cap' (*didymum* × *eriogynum*) is another hybrid with *R. eriogynum* blood, but in this instance—the dwarf habit of the other parent—*R. didymum*, has remained

dominant, and as a result we have a first-rate low-growing plant, bearing scarlet flowers in July. R. 'Red Cap' is suitable for planting in comparatively open positions, as the small leaves suffer little from wind damage, and the slow growth tends to form a firm, compact bush.

R. 'Lodauric' (*R. auriculatum* × R. 'Loderi') bears pure white fragrant flowers in July, and 'Lodauric Iceberg' is a really good clone with a conspicuous green mark in the centre of the large white flowers (Fig. 46).

R. 'Argosy Snow White' cl. (*R. auriculatum* × *R. discolor*) received the A.M. in 1938. Bearing large trusses of fragrant white flowers, the parentage of this strong-growing hybrid makes it advisable to plant it in light shade for maximum results (Fig. 33).

R. 'Arthur Osborn' (*R. didymum* × *R. griersonianum*) raised in the Royal Botanic Gardens, Kew, bears dark scarlet flowers. It has survived that most severe test, that of time, as this plant received the A.M. a quarter of a century ago.

R. 'Rubina' (*R. didymum* × R. 'Tally Ho') is yet another very useful plant in this colour group. The 'Tally Ho' parentage brings in some *eriogynum* blood and this probably accounts for the glowing colour of the ruby-red flowers.

R. 'Amor' (*R. griersonianum* × *R. thayerianum*), which has white flushed-pink flowers with a few crimson spots on the upper lobe, blends in nicely with most colours of rhododendrons in the late-flowering group. Receiving the A.M. in 1951, this plant will undoubtedly be more widely planted as it becomes more readily available (Fig 34).

At present, however, the position is that while the number of late-flowering hybrids is increasing yearly, only a few are available as yet, and these, mostly, can only be got from the specialist nurseryman.

R. serotinum, flowering as late as September, demands consideration for that alone, and while one considers that it has proved quite hardy, it is surprising to find no record of any hybrid from this parentage. The fragrant flowers which are white, sometimes stained with rose, and have a reddish blotch at the base of the corolla, form to make up quite a handsome truss which more than compensates for the somewhat straggling habit of growth.

I consider this as another plant with vast potentialities for introducing some hardy blood in the search for hybrids of increased hardiness in this section, while still retaining the late-flowering character of *R. serotinum*. It may be that a number of crosses using

R. serotinum as a parent have been made in private gardens, and it is to be hoped that clones from the best of these may yet become available.

The passing from flower of *R. serotinum* brings us once more to almost the close of another season of looking at, planning, and enjoying the flowering of our rhododendrons. By planting these late-flowering species and hybrids we extend the period of interest considerably; for it is in the flowers of a plant, and that alone, that many people are interested; the foliage, without the flowers, holding little attraction for them. In favoured gardens where R. 'Nobleanum' can be grown I have known this plant to begin flowering in November, and with R. 'Nobleanum Coccineum' and the pink-flowered R. 'Nobleanum Venustum', in a mild winter, provide flower into the New Year, and so set the pace for another season's display.

THE WILSON FIFTY KURUME AZALEAS

By FRANCIS HANGER, V.M.H.

AMONGST the many wonderful exhibits at the Chelsea Flower Show of 1958 was a large collection of Kurume azaleas known as the "Wilson Fifty", staged from The Royal Horticultural Society's Gardens at Wisley. These created much interest, so much so that I have been asked by the Editor to write, for the benefit of our Fellows, a short account for publication.

The space allotted for the exhibit was an oblong site immediately surrounding the obelisk. The first consideration was the necessity of camouflaging this heavy granite monument which measures 5 feet in diameter at the base, tapering gradually until it becomes 4 feet in diameter where it passes through the roof of the tent.

It should be remembered that when arranging plants together it is of the utmost importance to include only naturally associated plants and material, for nature's blending and harmonizing is always correct and is the best guide for would-be imitators.

Kurume azaleas originated from Kurume, a town about 800 miles south-west of Tokyo, and in appearance give every indication of being Japanese. When thought was being given to the arranging of these WILSON Kurumes, views and scenes of Japanese gardens soon sprang to mind. The obelisk; yes, that must be turned into a pagoda. Although pagodas are truly Chinese they are definitely oriental, and they look so well with Japanese azaleas that the pagoda was considered the best camouflage for the heavy, cold-looking, stone obelisk.

Flowering cherries proved impossible as the birds had been busy quite early in the winter and had stolen all flowering buds. Acers proved an excellent foil for the many coloured azaleas as did tall plants of *Metasequoia glyptostroboides*. But the best of the associate plants for the Kurume azaleas were the many varieties of oriental hostas, many of which were used as ground plants. Hostas were long known as funkias. Here is a group of plants which can be planted in a wet or desert position, in full sun or deep shade, in fact they cannot be misplaced. They always look so

Photo: J. E. Downward

FIG. 37—Part of the fine exhibit of Kurume Evergreen Azaleas at Chelsea Show 1958 shown by the R.H.S. Gardens, Wisley. In the corner is part of the pagoda

comfortable and natural wherever they are positioned, and their various colours and forms of foliage can be used with most flower arrangements with every confidence of success.

For a Japanese effect ferns and moss in abundance were a must, but no grass-mown paths, only large paved stepping-stones to loiter on, then view and enjoy the beauty. A small pool together with the royal fern growing by, *Iris kaempferi* and *I. laevigata* in flower on either side of the stone crossing all fitted into the scheme as wished.

The authenticity of the exhibit would not be complete without Japanese stone lanterns; this created a puzzle. Here a loyal friend who is a keen horticulturist and a wise counsellor, especially concerning such matters, came to my aid and made the necessary arrangements to lend the Society five perfect stone lanterns. All were of different design, the tallest, being about 12 feet high, tiered skywards through the branches of a lopsided acer and looked most typical, while the smallest squatted comfortably under the branches of a metasequoia.

When placing the Kurumes into position, great care was taken to keep the pastel-coloured ones together to be viewed over and around the pool immediately facing the embankment entrance. The harder colours were arranged together on the far side of the pagoda, away from the entrance where they could only be viewed by themselves, thus preventing colour clashing.

HISTORY

Kurume azaleas are small-leafed, dwarf-growing, evergreen shrubs, most free-flowering and when in bloom the flowers are so plentiful that the leaves are smothered, leaving a mass of colour ranging from pure white to flesh pink, through the pinks to deep rose salmon, pale lavender to rosy mauve, deep rose to red and even scarlet.

It may be wise here to explain how and why this group of Kurume azaleas became known as the "Wilson Fifty". During 1914 the late Dr. E. H. Wilson was sent by the Authorities of the Arnold Arboretum to the Orient in search of new and rare plants. While in Japan he was taken by the then principal of the Yokohama Nursery Company on a visit to the nurseries and gardens in the district a few miles north of Tokyo. It was here that he first became acquainted with the many variants of Kurume azaleas. He was so impressed that he obtained specimens, dried them, and sent them to the Herbarium at the Arnold Arboretum,

but it was not until 1917 that the first "Kurume azalea" plants were introduced into America.

These azaleas did not originate in these gardens and nurseries north of Tokyo, but at Kurume, a town some 800 miles south-west of that city. The original parents of these many hybrids are said to come from Mount Kirishima, the sacred mountain of Japan. WILSON states in his *Monograph of Azaleas* that "Japanese experts recognize by name more than 250 kinds of Kurume Azaleas".

It was neither possible nor wise to introduce to the Occident all these varieties and WILSON selected what he considered to be the best fifty, which are now known as the "Wilson Fifty".

Of this fifty, with the help of the Japanese experts, WILSON selected the following six as the very best of them all:

No. 2. 'Kureno Yuki'—flowers white, hose-in-hose.
No. 11. 'Takasago'—flowers pale apple blossom pink.
No. 16. 'Azuma Kagami'—flowers deep pink, hose-in-hose.
No. 22. 'Kirin'—flowers deep rose, shading to silvery rose.
No. 29. 'Kumo-No-Uye'—flowers pure salmon.
No. 40. 'Kurai-No-Himo'—flowers carmine, hose-in-hose.

This historical and valuable collection of plants was, to the writer's knowledge only complete in two private gardens in this country, Tower Court, Ascot, and Caerhays, Cornwall, and The Royal Horticultural Society is indebted to the owners of these two famous gardens, the late MR. J. B. STEVENSON and the late MR. C. WILLIAMS, for providing the cuttings during July 1946 for the attempt to establish at Wisley the "Wilson Fifty".

PROPAGATION

These azaleas are quite easily propagated from cuttings taken during late July or early August to obtain the best results. The young current year's growth should be about 2 inches in length and these should be taken with heel attached. This is a simple operation if a little care is given to the work. Take the intended cutting between the thumb and forefinger—holding the branch of the bush steady with the other hand—then pull the selected cutting a little outwards and downwards at the same time, and if ready the cutting will easily part from the parent plant with just that necessary little bit of old wood (the heel) attached. Smaller cuttings less than 2 inches as advocated are too soft and tend to damp off, and longer ones need their very soft tops pinched out to balance the cutting.

About seven cuttings can be inserted in a compost consisting of two parts sand and one part fine granulated peat around the inside of a 3-inch pot. Just remove with a sharp knife the bottom two leaves before insertion, afterwards place the pot in a warm, moist frame, where the cuttings should root as quickly as chrysanthemums, which is in approximately three weeks. Water well in, and attend to watering when necessary. Shade from fierce sunshine and do not remove the moisture from the glass covering the cuttings. Keep close and moist.

Should large numbers be needed the cuttings may be inserted in boxes or direct into the propagating bed. As soon as the cuttings have become well rooted, air must be admitted by raising the lights or glass covering the cuttings. About an inch will be found sufficient for the first few days, after which it should be increased until the young plants are truly hard. At this stage the little plants may be potted off singly or planted out in rows in a frame which has been especially prepared with good drainage, and new lime-free soil with a pH value of 5·0–5·8. By the following May or June the young plants, which must have been stopped in the meantime to provide bushy specimens, will be ready to be planted in the open nursery, and being quick growers will be ready for planting in their flowering positions the second year.

It is unwise to grow the plants in very rich soil during the early stages as this promotes long sappy growths which easily become frost-bitten.

HARDINESS REPORT OF THE WILSON'S KURUME AZALEAS AT WISLEY

Many readers will want to know the hardiness of these lovely dwarf evergreen plants, and the following is the hardiness report of WILSON'S Kurume azaleas at Wisley, where they have been growing since 1947. The report was made in the summer of 1956, immediately after the testing winter of 1955–6 which was comparatively mild at Wisley until the month of February. However, on October 26, 10 degrees of frost were registered on the ground and 4 degrees in the screen, following which no exceptional frost occurred until February 11. Severe weather then ensued until February 23, the climax being reached on February 20 when the minimum temperature recorded 17 degrees of frost in the screen and 25 degrees on the ground. The maximum temperature that day never rose above 23 degrees Fahrenheit (9 degrees of frost) in the screen. Added to these low temperatures was the piercing

Hardiness Report of Wilson's Kurume Azaleas at Wisley

No.	*Name*	*Hardy*	*Fairly Hardy*	*Slightly Tender*	*Tender*	*Colour*
1	Seikai	H				White, slight yellow flush
2	Kureno Yuki		FH			White
3	Shin Seikai		FH			Creamy white
4	Yorozuyo	H				White
5	Nani Wagata		FH			White, suffused salmon pink
6	Tancho				T	Flesh colour
7	Hachika Tsugi				T	White, suffused with Lavender (630/1–630/2*)
8	Irohayama		FH			White, margined with lavender
9	Hoo			ST		White, tinged with pink
10	Suiyohoi				T	Flesh-colour (630/2–630/3)
11	Takasago			ST		Pale pink
12	Kasumi Gaseki		FH			Pale Pink (021/1)
13	Bijinsui				T	Pale Pink (062/1)
14	Asagasumi	H				Rose pink
15	Kimigayo	H				(24/2) on creamy ground
16	Azuma Kagami		FH			Deep Pink (22/2)
17	Osaraku				T	White suffused and margined with lavender
18	Otome		FH			Blush Pink (527–527/1)
19	Aya Kammuri		FH			Rose (623/2)
20	Shintoki-No-Hagasane		FH			Rose shading to Pink (623/2)
21	Saotome		FH			Rose (527)
22	Kirin	H				Deep Rose shading to Silver Rose (625/2–625/3)
23	Tamafuyo	H				White, striped peach-colour
24	Kiritsubo	H				Rosy mauve
25	Omoine			ST		Pale Lavender (031/1)
26	Oino Mezame		FH			Deep rose
27	Katsura-No-Hana			ST		Rose (627/1)
28	Shin Utena			ST		Pale salmon
29	Kumo-Ne-Uye			ST		Pure Salmon (25/2)
30	Benifude		FH			Salmon (621)
31	Suga-No-Ito	H				Pure Pink (27/2–27/3)
32	Kasane Kagaribi		FH			Dull salmon red
33	Tsuta Momiji		FH			Bright red
34	Suetsumu	H				Crimson (22/1)
35	Fudesute Yama		FH			Light red
36	Ima Shojo			ST		Bright Red (721/3)
37	Rasho Mon			ST		Scarlet (020/1)
38	Waka Kayede		FH			Red
39	Yayehiryu	H				Bright Scarlet (820)
40	Kurai-No-Himo			ST		Carmine (024)
41	Agemaki		FH			Carmine
42	Hinodegiri		FH			Bright Crimson (23/1)
43	Aioi			ST		Colour of almond blossom
44	Sakura Tsukasa		FH			Rosy mauve
45	Tama-No-Utena	H				Pale salmon
46	Gosho Zakura	H				White striped Peach (24/2)
47	Ukamuse	H				Vermilion (20/1–20/2)
48	Hinode-No-Taka			ST		Crimson (625/1)
49	Osaraku Seedling		FH			White, suffused and margined with lavender
50	Hana Asobi	H				Red (623)

* Numbers represent readings from the Horticultural Colour Chart.

Photo, J. E. Downward

LATE-FLOWERING RHODODENDRONS

FIG. 38—*R. prunifolium* (see p. 55)

FIG. 39—An unusual yellow-flowered form of *R. carolinianum* recently discovered by MR. FRISBIE and shown at the Tacoma Rhododendron Show (see p. 84)

Photo, J. E. Downward

FIG. 40—R. 'Tyermannii', an unusually fine spray shown by SIR EDWARD BOLITHO, which won first prize in Class 81 at the Rhododendron Show (see p. 74)

Photo, J. E. Downward

FIG. 41—R. 'Princess Alice', a very fine spray shown by THE MISSES GODMAN in Class 81 at the Rhododendron Show (see p. 74)

Photos, J. E. Downward

RHODODENDRON SPECIES COLLECTION AT WINDSOR

FIG. 42 (*above*)—Showing the method of pruning *R. saluenense* (see p. 65)

FIG. 43 (*below*)—Vigorous young shoots on *R. saluenense* after severe pruning

north-east wind which continued night and day for approximately one week.

There are very few complete collections of the "Wilson Fifty" Kurume azaleas cultivated in this country, but individually many varieties have achieved widespread popularity. The Rhododendron and Camellia Committee when visiting Wisley to judge the Hardy Rhododendron Trials have yearly viewed the "Wilson Fifty" Kurumes. Since the war awards have been made to the following:

No. 3. 'Shin Seikai.' *A.M.* 1952
No. 8. 'Irohayama.' *A.M.* 1952
No. 15. 'Kimigayo.' *A.M.* 1952
No. 22. 'Kirin.' *A.M.* 1952
No. 31. 'Sugo-No-Ito.' *A.M.* 1952
No. 47. 'Ukamuse.' *A.M.* 1952

The Wisley collection is planted on the north side of Battleston Hill, open to the full blast of the north-east wind yet sheltered from the due north and west. The behaviour of the plants since 1956 has proved consistent with the report then compiled.

I am indebted to my colleague MR. N. K. GOULD for his help in the colour chart descriptions of the "Wilson Fifty" used in this article.

REVIEW ON SOME OF THE SERIES IN THE SPECIES COLLECTION OF RHODODENDRONS

By T. H. FINDLAY

THE object of these notes is to report on the progress since moving and the behaviour in their new position of some of the rhododendron species moved from Tower Court in 1951 to Windsor Great Park.

As this report will take three or four years to complete, it has been decided, this year, to concentrate on the alpine type rhododendrons, mostly the Lepidotes, as these have settled down more quickly and probably more easily in their new homes than have the larger-leaved species.

During the planning and setting out of this vast collection of rhododendrons we were fortunately able to give most of the plants the best possible situation for their individual requirements.

Therefore the alpine sorts were given an open situation, sheltered from the north, but fully exposed to the sun, and situated well away from overhanging trees. This area known as the Alpine Meadow is on a gentle slope, and frost can "drain away" quite easily to the lake below. Moisture is not a problem as we are able to water when necessary. The soil is almost pure sand but has been enriched by trenching in plenty of leaf-mould and peat prior to planting.

The Alpine Meadow contains some thirteen series, including Anthopogon, Boothii (those that are reasonably hardy), Campylogynum, Camtschaticum, Ferrugineum, Glaucophyllum, Lapponicum, Lepidotum, Ovatum, Uniflorum and Virgatum. The series Triflorum, Scabrifolium and Heliolepis are planted on the fringe of the meadow and form a perfect background for the dwarfer plants.

When it was decided to move this valuable collection to Windsor it was realized that one of each species would look rather lost in a large area, and that some plants might die after transplanting. Therefore all plants in the series mentioned were propagated vegetatively during the autumns of 1951 and 1952, so that when

these series were put into their new home, during 1955, we were able to plant in groups instead of as single specimens.

Small growing shrubs, such as *Acer palmatum*, *A. palmatum dissectum*, *Magnolia stellata*, daphnes, pieris and ericas, with a few dwarf conifers, were planted with the rhododendrons to give variation of foliage and to break the monotony of the "sameness" of the rhododendrons when out of flower. Large quantities of the small daffodil species and other spring bulbs have also been planted to naturalize where they will and to make a ground cover.

The largest series amongst these dwarf rhododendrons is Lapponicum, containing some thirty-eight distinct species. These were growing in full sun at Tower Court and have been given a similar position here, but with rather richer ground. Having been given more room they have all tended to bush out and become even more compact. What wonderfully free-flowering plants these Lapponicums are, with a great colour range, varying from the soft yellow of *R. chryseum*, through the pinks of *R. cuneatum* and *R. ravum* to the blues of *R. scintillans* and *R. russatum*.

We feel that this type of rhododendron looks better when forming a hump, and as these plants have settled in, the opportunity has been taken to prune back the older wood in order to encourage young growth from the base.

Our next largest series is Saluenense, which is complete, and was growing at Tower Court in a somewhat shady position; some of the older collectings had made bushes 4 to 5 feet high. When these were moved into the open position they immediately started to branch out from the base; this was especially so with *R. saluenense* and *R. calostrotum*; Figs. 42 and 43 shows severe pruning of *R. saluenense*. *R. keleticum* and *R. radicans* love this open situation and make great humps, some 2 to 3 feet across, hugging the ground all the time.

The Anthopogon Series, now very much enlarged, are supposed to like the moister ground, but have developed well here and flower freely, especially the lovely *R. cephalanthum* var. *crebreflorum*, looking more like a daphne than a rhododendron. *R. sargentianum* also thrives.

Some beautiful rhododendrons are represented by the Boothii Series, some too tender for our climate, but *R. leucaspis* and *R. megeratum* both flower freely, while *R. tephropeplum* is represented by fifteen different collectors' numbers, those of KINGDON WARD having much larger flowers than the collectings of FORREST or ROCK.

Near neighbours of the Boothii Series are those of the Glaucophyllum Series, thriving on an open sunny bank. Of these *R. charitopes* is probably the best.

Early to flower and always free-flowering are the Uniflorum Series, with the best being *R. imperator* and *R. pemakoense*. We have two forms of *R. pemakoense*, one of which suckers quite freely and forms large mats. *R. pumilum* has also settled down.

The Virgatum Series is interesting for its great variation in the different forms of *R. racemosum* of which Forrest 19404 is very dwarf; *R. virgatum* itself, a tender plant, has thriven here since it was planted two years ago.

On the whole the moving of these few series has been very successful, considering that some plants were twenty to thirty years old; they have all now become well established.

Open Planting and Taking Risks

By MRS. R. M. STEVENSON

I would like to confirm the open planting of the types now at Windsor Park in the area known as the Alpine Meadow. The Series Lapponicum, as already stated, was growing in full sun at Tower Court, but the bank was very steep and during a drought period, being practically fine sand, it was inclined to get baked; consequently these plants had periodical checks. Now in their new home at Windsor on richer soil, with water near by, they should continue to be strong and healthy.

At Tower Court, during 1952, a perfect situation fully open to the sun was selected for the Lapponicum Series, also the Campylogynum, and a few *R. cephalanthum* and quantities of *R. racemosum* (all overflows from various expeditions). This ground sloped slightly towards the lake from NE. to SW., undulating and constantly moist; one might almost say it was like a bog, but nevertheless it was well drained. These plants which had become leggy through neglect during the war years, responded almost at once, but unlike Windsor's treatment, where the plants were of reasonably good shape, they were allowed to fill in their bare spaces or patches naturally with younger shoots without having the old wood cut back. One particularly fine bush of *R. chryseum* (K.W. 4023),

measuring 2 feet by 4 feet in diameter, is a perfect round bush again and a fine sight when in flower. If a bush was too straggly and lopsided then the knife was used to trim into shape again after the young growths were flourishing and established.

R. racemosum appears to be an outstanding shrub for any situation, preferably not dense shade. At Tower Court quantities are grown on a very dry sandy, flint-stoned bank in full exposure to the sun, and thrive well: to compare these with the other large quantity alongside the new planting in a thoroughly moist sandy soil, seems quite ridiculous.

Another remarkably adaptable plant is *R. forrestii* var. *repens*, for Tower Court has quantities thriving in boggy sand near the lake; another lot on a severe slope facing SW., with moderate shade, and now the latest test by re-planting in 1956 a further quantity of mature plants, taken from dense shade into full exposure on the Tower Hill site at 450 feet, into sandy flinty soil with little humus, but with a liberal covering of spent hops spread over the surface in order to prevent over-evaporation. Leaf-mould would have served the same purpose; no further help has been given them, not even through the hottest spells of baking sunshine.

One cannot help but feel respect towards two such wonderful species as *racemosum* and *forrestii*, and no doubt other species will behave in a similar way when given the chance.

In conclusion, after years of experience one's thoughts and ideas tend to become much more bold; by risking more open planting, thinning out dense woodland, and allowing much more light on to the plants, not only are they able to breathe but become less leggy and have a better chance to set flower bud. As rhododendrons are surface rooters one golden rule should be observed—their roots must be protected either through their own natural covering, namely shade from their own branches, or, if they are not well furnished and have rather a bare main stem when the roots surface is fully exposed to the sun, then one must protect by spreading liberal quantities of leaf-mould, bracken, peat or spent hops over the surface.

THE RHODODENDRON SHOW

April 29 and 30, 1958

By PATRICK M. SYNGE

THE Rhododendron season of 1958 was a memorable one, distinguished for the great masses of flower in nearly all areas, but it was a late season and thus at the Show we were able to enjoy finer specimens of such species as *R. lacteum* than had probably been exhibited for some time, while other usual favourites such as *R. augustinii* and *falconeri* and the great sprays of Kurume azaleas were much more sparse than usual.

The New Hall was well filled both with exhibits from nurserymen and the competitive classes and presented a very colourful display. Messrs. W. C. Slocock Ltd. were awarded a Silver-gilt Flora Medal for a fine mixed group of well-flowered plants staged at the end of the hall under the clock. At the back were six large standards of 'Pink Pearl'. Among the other rhododendrons the pale rose-coloured *R. metternichii* contrasted well with the deep purple 'Cetewayo'; 'Blue Tit' likewise looked well as a neighbour to the white evergreen azalea 'Kure No Yuki'. More bright colour was provided by such brilliant evergreen azaleas as 'Orange Beauty' and 'Ivette'.

As one entered the hall the first group to be seen was a large one from Messrs. John Waterer, Sons and Crisp Ltd. in which large plants of 'Loderi King George' and 'Loder's White' were prominent. Succeeding years do not in any way alter my opinion of the value of 'Loder's White' as one of the very best hardy hybrids. Other noteworthy plants here included the peach-pink 'Beaulieu', 'Handsworth White', the bright red 'King George' and the pink 'St. George'. Messrs. Hilliers as usual included some rarely seen plants in their group and also a few of the more tender rhododendrons. There was a very fine form of *R. schlippenbachii*, while the white R. 'Gibsoni' × *formosum* and 'Princess Alice' were beautiful, although in most areas only suitable for the cool greenhouse. The creamy yellows were represented by a good plant of 'Diane' and the deep reds by 'Gaul' and 'A. J. Ivens'. This group was awarded a Silver Flora Medal as was that of the Knap Hill Nursery, who showed mixed rhododendrons and

deciduous azaleas. Among the older hybrids the white 'Beauty of Littleworth' and 'Endsleigh Pink' were prominent and are still well worth planting. A large tree of 'Ascot Brilliant' × *thomsonii* was also noteworthy. Some of their deciduous azaleas had great brilliance of colour.

Messrs. G. Reuthe had an interesting group which received a Silver Flora Medal. The yellow 'Canary' and 'Mary Swaythling' were attractive. Messrs. F. Street showed as usual some very compact and well-flowered plants both of azaleas and rhododendrons. Among the latter 'The Bride', 'Zuyder Zee' and 'Marinus Koster' were noticeable, and are all good garden plants.

In Class 1, for one truss of eight species, there were five entries among which that from Lord Aberconway and The National Trust was the winner. They showed *arboreum, basilicum, hodgsonii, coryphaeum, calophytum, rex, thomsonii* and *wasonii*. All were good, well-filled trusses. Sir Henry Price was second with *arboreum, arizelum, niveum, calophytum, fictolacteum, lacteum, sinogrande* and *thomsonii*, the truss of *lacteum* being a very nice yellow. The Earl of Stair was awarded third place for his group of *arboreum, arizelum, campanulatum, eximium, grande, neriiflorum, macabeanum* and *sinogrande*, while the group from Mr. E. de Rothschild was highly commended. This included an interesting form of a pale blush-pink *crinigerum*, heavily spotted and with a dark blotch at the base of the flower. The leaf had thick tawny indumentum on the underside.

In Class 2, for one truss of each of three species, the first prize went to three most lovely specimens of *lindleyi, macabeanum* and *sinogrande* var. *boreale* shown by Sir Edward Bolitho. The *lindleyi* was unusually fine with six flowers and the *macabeanum* was a good deep yellow. Wing-Comdr. F. L. Ingall was second with *fargesii, lacteum* and *sutchuenense*, while Mr. E. M. King was third. Among his flowers was an unusually large truss of *rex*, almost pure white, while the leaves were larger than usual and had a considerable amount of tawny indumentum on the underside. Among other noteworthy specimens in this class was a very fine *lacteum*, with an unusually tall truss, from the Earl of Stair.

Class 3 required one truss of each of three species and was limited to exhibitors who had not won a prize in the previous two classes during the last five years. Mr. M. Haworth-Booth was first with *arizelum, hodgsonii* and *thomsonii* var. *grandiflorum*, Mr. R. Strauss, second, with *haemaleum, irroratum* and *rex*, while

Mr. E. G. Kleinwort was third with *caloxanthum*, *orbiculare* and *wightii*.

The McLaren Cup, the first prize in Class 4 for one truss of a species, was awarded to the Earl of Stair for a very outstanding specimen of *macabeanum* with an enormous truss (Fig. 44). Sir Edward Bolitho was second with the same species and Mr. E. M. King, third, with *rex* raised from K.W. 4509. Class 5 called for a spray of any one species and there were a number of very well-flowered *lacteum* shown. The first prize was awarded to Sir Henry Price for this species and the third prize to Wing-Comdr. Ingall for the same species, while the second place was won by Lord Aberconway with *calophytum*.

Classes 6 to 34 required either one truss or spray of a particular species or from a particular series. In Class 6, for *R. arboreum*, the Earl of Stair won first prize with a truss of a white form, heavily spotted inside, while Sir Henry Price and Sir Giles Loder won second and third places respectively with rosy pink forms. For species of the Arboreum Series other than *arboreum*, a very deep-coloured form of *niveum*, with a tight truss, won first prize for Sir Henry Price. Mrs. R. M. Stevenson won second place with a looser truss of the pale mauve *floribundum* and Lord Aberconway was third with a rather small, pale pink truss of *argyrophyllum*. In Class 8, for the Barbatum Series, Sir Edward Bolitho was first with *glischrum*, Lord Aberconway, second, with *morii* and Mr. de Rothschild, third, with *crinigerum*. In Class 10 the Earl of Stair showed an unusually fine pale mauve truss of *campanulatum* for first prize, while the Crown Estate Commissioners, Windsor, were second with *campanulatum* var. *aeruginosum* with deeper purplish flowers. This variety is chiefly distinct for the wonderful metallic bluish bloom on the young foliage and for this quality it is well worth growing, though unfortunately only rarely seen. It was surprising that there were no entries for Class 12, where a truss of *falconeri* was required. In the classes for other members of this series, however, there were a number of entries of *rex* and *fictolacteum*. A more unusual one was the richly coloured, deep, rosy crimson *lanigerum*, which won a third prize for Sir Edward Bolitho in Class 14, while the small pinkish crimson truss of *arizelum* var. *rubicosum* shown by Sir Henry Price was highly commended by the judges in the same class. The flowers had a delicate silky texture, while the thick rusty indumentum on the under-surface of the leaves was also decorative.

Among the noteworthy flowers from the species classes were

two from the EARL OF STAIR, an enormous specimen with pale creamy flowers of *sinogrande*, which won first prize in Class 18, and a superb specimen of *lacteum*, which won first prize in Class 20. This was undoubtedly one of the outstanding exhibits of the Show and I have never seen a better specimen of this species, which is far from easy and certain in cultivation. It was a tall compact truss with very deep yellow flowers. SIR GILES LODER and SIR HENRY PRICE also had good specimens of the same species to win second and third places respectively in the same class. For first prize in Class 21, for a member of the Megacalyx Subseries, LORD ABERCONWAY showed a lovely truss with five flowers of *dalhousiae*, a beautifully formed pale creamy flower with a pale green throat. SIR GILES LODER and the Crown Estate Commissioners showed *lindleyi* for second and third places. This class is always one of the most spectacular in the Show. The Crown Estate Commissioners, Windsor, showed for first place in the next class, for a member of the Maddenii Series other than the Megacalyx Subseries, a very beautiful truss of the sweetly scented *polyandrum* with thick white waxy flowers. It had eight open flowers which is a high number for this species. The same exhibitors won the next class for a rhododendron of the Haematodes Subseries with a very deep blood-red, almost maroon specimen of *catacosmum* (Forrest 20078). The class for the Neriiflorum Subseries was one of the most popular in the Show and had seventeen entries. MRS. R. M. STEVENSON won first prize with an excellent specimen of *euchaites*. It is rare to see good specimens of *R. aperantum*, which seldom seems to flower very freely in this country, although apparently being most free-flowering in its native habitat. The spray shown by LORD ABERCONWAY for first prize in Class 25 was, however, the exception, having four trusses of deep waxy crimson red bells each with a prominent dark nectary at its base.

R. roseotinctum, grown from Rock 23636, is a rarely seen species and fittingly won first place for the Crown Estate Commissioners in Class 26, for any member of the Sanguineum Subseries other than *aperantum*. The flowers are dull rosy pink, deeper in colour on the outside and with a prominent calyx. In Class 29 MR. DE ROTHSCHILD showed for first place an unusually fine *caloxanthum*, with rather deeper-coloured flowers than usual, almost a pale apricot, while on the outside of the bell was a pinkish orange blush. He also obtained second prize in this class for *myiagrum*, a specimen with almost pure white flowers. *R. quinquefolium* was given an Award of Merit at this Show when shown by

Mr. de Rothschild and also won for him the first prize in Class 34. It was a very fine specimen, the flowers being pure white and appearing before the leaves. It is also one of the best species of the Azalea Series for fine autumn colour. The second prize in this class was won by Lord Aberconway with a very fine deep pink form of *albrechtii*, flowering very freely. As a contrast the small, compact, pale pink *cephalanthum* var. *crebreflorum* (K.W. 6967) was also most attractive and won first prize in Class 36 for the Crown Estate Commissioners. In this class Mrs. Stevenson's white *primulaeflorum* (K.W. 4384), Lord Aberconway's *kongboense* with small, deep, pinkish crimson flowers, and a smaller *cephalanthum* (Forrest 6756), were also noteworthy.

Another rather unusual variety was the specimen of *campylogynum* var. *charopoeum*, with relatively large pale lilac flowers standing on long pedicels, which won first prize in Class 37 for the Crown Estate Commissioners. Their spray of *bullatum*, a pure white form, in the next class was also very lovely. For the second place in this Class Capt. Murray Adams-Acton showed a beautiful *edgeworthii*, with slightly smaller flowers but with some pink on the outside of the newly-opened flowers. Lord Aberconway won the first two places in the class for a member of the Glaucum Series. His spray of the mountain form of *glaucophyllum* was more brightly coloured and compact than is usual in this species and contrasted with a larger flowered but paler form which won second place for him. Mr. de Rothschild had an unusually large-flowered and well-coloured form of *desquamatum* for first place in Class 40, and he also won the class for the Lapponicum Series with a small-flowered but very deep yellow specimen of *chryseum*. This was a very popular class, with twenty-two entries, and also noteworthy were Mrs. Stevenson's *microleucum*, Sir Henry Price's *russatum*, a very deep coloured form, and a pinkish purple *cuneatum*, a species rarely seen. Among the other species classes I noted especially Lord Aberconway's *forrestii* var. *repens* in Class 43, a very free-flowered form of *calostrotum* (L. and S. 15796) from the Crown Estate Commissioners in Class 44, a finely coloured form of *spinuliferum* from Mr. de Rothschild and a free-flowering *spiciferum* from the Crown Estate Commissioners in Class 45. This seemed very close to Mrs. Stevenson's deep pink *pubescens* which won third place in the same class, but the leaves were distinct. Mr. Thoburn showed an unusually creamy form of *racemosum*, with a very pale pink flush on the outside, for first place in Class 46. In Class 52 Mr. de Rothschild had a good

large-flowered form of *lutescens*. LORD ABERCONWAY's lovely pink form of *davidsonianum* was outstanding and won first prize in Class 58. He also won second prize with the rarely seen white *bodinieri* in the same Class for members of the Yunnanense Subseries.

From Class 61, Section II of the Schedule began, and the exhibits were all hybrids. The main class for eight hybrids of rhododendron was won by MR. DE ROTHSCHILD with some magnificent specimens from Exbury. There were 'Cornish Cross', 'Fortune', 'Queen of Hearts', 'Janet', 'Avalanche', 'Lionel's Triumph', 'Matador' and 'Yvonne'. The truss of 'Avalanche' was particularly lovely with very pale blush-pink flowers, that of 'Yvonne' had flowers of great size. The Crown Estate Commissioners were second with 'Damaris', 'Col. Rogers', 'Damaris' × *lacteum*, 'J. G. Millais', 'Boddaertianum', 'Luscombei' and a *thomsonii* hybrid. The *lacteum* hybrid with 'Damaris' was well flowered and an attractive pale yellow. LORD ABERCONWAY was third with 'Bartia', *arboreum* × *calophytum*, 'Col. Rogers', 'Aspansia' × 'Ethel', 'Gill's Crimson', 'Tregedna', 'Mureum' ('F. C. Puddle' × *barbatum*) and an *arboreum* hybrid. This group was distinguished by its brilliant reds and 'Mureum' in particular was a lovely bright glowing colour. It was undoubtedly one of the strongest coloured specimens in the Show and stood out on the bench from a distance.

In Class 62, for three hybrids, there were nine entries and the first prize went to the MISSES GODMAN for 'Barclayi', 'Elsae' and *falconeri* × *thomsonii*. This last was rather an unusual plant with pale flowers and large leaves, with a very light indumentum below. The EARL OF STAIR was second with three large-leaved hybrids, *niveum* × *falconeri*, *hodgsonii* × *sinogrande* and 'Elsae', MR. DE ROTHSCHILD, third, with 'Gaul', 'Naomi' and 'Red Admiral'. 'Gaul' is a magnificent deep red and the 'Naomi' had a large truss of strong pink flowers. In Class 63, for three hybrids shown by an exhibitor who had not won a prize for five years in either of the two preceding classes, MAJOR A. E. HARDY won first prize with 'Queen Wilhelmina', *campanulatum* × *floribundum* and 'Carita'. SIR EDWARD BOLITHO was second with three bright reds and MR. E. G. KLEINWORT, third. Class 64, for three sprays, was won by LORD ABERCONWAY, who also gained third place. There were eleven entries for Class 65, for which the Loder Challenge Cup is the first prize. One truss of a hybrid only is required. MR. DE ROTHSCHILD was first with 'Fortune', the clone to which the F.C.C.

had been given, Waterer's were second with 'St. George', a pale pink truss with large flowers, and the Crown Estate Commissioners third with 'Damaris'. MR. DE ROTHSCHILD showed for fourth place 'Janet' with large white flowers. There were only five entries for the Crosfield Challenge Cup, for six hybrids raised by or in the garden of the exhibitor, and it was won by MR. DE ROTHSCHILD with 'Fortune', 'Lionel's Triumph', 'Yvonne', 'Janet', 'Queen of Hearts' and 'Mariloo'. This last is one of the finest pale yellow hybrids yet raised. LORD ABERCONWAY was second and SIR EDWARD BOLITHO, third. Class 67, for sprays of three hybrids raised by or in the garden of the exhibitors, was won by LORD ABERCONWAY, who also gained third prize. For first place he showed 'Ethel', 'Elizabeth' and 'Calrose' and all the sprays were exceptionally fine.

For six hardy hybrids classified as "A" or "B" in Part Two of the 1956 *Rhododendron Handbook* there were only two entries and the first prize was awarded to Slocock's for 'Unique', 'Lady Primrose', 'Pink Pearl', 'Mrs. Davies Evans', 'Purple Splendour' and 'Unknown Warrior'. The second prize was won by Waterers.

SIR GILES LODER's 'Guardsman', a very fine deep red truss with prominent stamens, won first place for a truss of any hybrid of the Arboreum Series, while MRS. R. M. STEVENSON was second with the old white 'Boddaertianum' and LORD ABERCONWAY, third, with 'Cardinal'.

Among the hybrids other particularly notable flowers included MR. DE ROTHSCHILD's 'Lamellen' (*campanulatum* × *griffithianum*) in Class 71; SIR GILES LODER's 'Cornubia, × *griffithianum* in Class 72, a particularly beautiful truss of large pale pink flowers; SIR EDWARD BOLITHO's 'Red Robe' in Class 75, for members of the Neriiflorum Series. Class 76 for *thomsonii* hybrids had fourteen entries and the *calophytum* × *thomsonii* shown by SIR GILES LODER for first place was particularly attractive with pink flowers and prominent red petioles.

R. concatenans × *R. ciliicalyx* was an outstanding spray in Class 80 and won first prize for the Crown Estate Commissioners. The flower was a good olive-yellow colour and much more closely resembled *concatenans* than its other parent. Class 81, for any hybrid of which one parent is a species of the Maddenii or Edgeworthii Series, always attracts some lovely exhibits and SIR EDWARD BOLITHO's 'Tyermannii', which won first prize, was no exception. It was an enormous spray with four trusses of up to five flowers in each (Fig. 40). 'Princess Alice', (Fig. 41) an unusually large spray

with very pale blush-pink flowers, flushed with a deeper colour on the outside, won second prize for the Misses Godman and Sir Edward Bolitho was third, also with 'Johnnie Johnston', a hybrid raised from the double form of *R. johnstoneanum*. Also of note in this class was 'Laerdal' (*dalhousiae* × *johnstoneanum*) with pure white trumpet-shaped flowers with a yellow blotch in the throat and an interesting cross of *maddenii* × *oreotrephes* with white flowers with a green blotch at the base. 'White Wings' (*bullatum* × *ciliicalyx*) was highly commended and is indeed a beautiful plant for a cool greenhouse or for growing in a very sheltered position in the west or south-west. Class 82, for a hybrid between the Triflorum and the Lapponicum Series, often results in a competition in blueness and this year it was won by a very finely-coloured specimen of. 'Bluebird' (*augustinii* × *intricatum*) from the Crown Estate Commissioners, Windsor. 'Blue Tit' from Mr. Kleinwort was second and an unusual dark mauve hybrid from Sir Giles Loder, third.

In Class 87 Mr. de Rothschild's 'Jason' (*lacteum* × 'Penjerrick') was unusually fine, as befitted indeed a hybrid of such very distinguished parentage. It had a large truss of very pale creamy white flowers and the perfect shape of bell of 'Penjerrick'.

In Section III the Lionel de Rothschild Challenge Cup for Class 100, a group of plants and/or cut blooms on a table, was won by the Crown Estate Commissioners, who had an attractive display including large vases of *pubescens*, while in the front were such attractive dwarf plants as *calostrotum*, 'Bluebird' and 'Remo'.

Class 101, for any evergreen azalea, had only one entry owing to the lateness of the season and Class 102, for three sprays, no entries at all, although usually this is one of the most popular classes in the Show.

The specimen plants in Class 104, for dwarf rhododendrons, and in Class 105, for any evergreen rhododendron, were very fine. Both classes were won by the Crown Estate Commissioners, who showed in Class 104 a flat-topped and very large specimen of *R. impeditum* covered with deep mauve flowers, and in Class 105, an enormous plant of 'Blue Tit' which measured 41 inches by 52 inches.

THE SCOTTISH RHODODENDRON SHOW, 1958

By MRS. R. M. STEVENSON and FRANCIS HANGER, V.M.H.

ORGANIZED by the Gardens Committee of the National Trust for Scotland and run in conjunction with the Scottish Rock Garden Club Committee, the Scottish Rhododendron Show for 1958 was a great success. The show lasted three days, April 22–24 inclusive, and was held in the Music Hall, George Street, Edinburgh.

Rhododendrons filled the large ground floor to capacity, and many of the well-patronized classes would have benefited from more space to display the wonderful blooms and excellent foliage of the large-leafed species and hybrids. These grow to perfection in the west and south-west of Scotland, where the heavy rainfall, and in places the effect of the Gulf Stream, suits them admirably.

The two large upper rooms on the second storey accommodated the rock and alpine plants and here again the gardens of central and eastern Scotland rival any others in Great Britain for their excellent culture of rare and difficult rock and alpine plants. This is especially so with primulas, and when viewing the exhibits it rapidly became evident that not only has Scotland the climate and conditions for rhododendrons and alpine plants, but also the enthusiastic horticulturists and growers to attend to their various requirements and bring them to perfection.

The cruel dry, hard, cold weather of late March and the first half of April certainly did all in its power to ruin the show, but this same enthusiasm triumphed over the many difficulties, producing exhibits which were a joy to judge and gave so much pleasure to the visitors to the show.

Following the very favourable winter of 1956–7, when the number of entries for the rhododendrons was 302, it is more than gratifying to report that immediately after this month of unfavourable weather there were only 14 entries less than the record entry of 302 for the previous year.

Keenness, hard work and the "never say die" spirit of the Scottish gardeners as usual gained their reward, resulting in an excellent show and fully recompensing any who made long journeys to attend.

The Sir John Stirling Maxwell Rhododendron Trophy awarded to the exhibitor with the highest aggregate of points in the competitive classes was won by SIR GEORGE CAMPBELL, BT., Crarae, Inveraray, Argyll, with 25 points, LT.-COL. SIR JAMES HORLICK, BT., Isle of Gigha, Argyll, was a very good runner-up with only one point less—24, while the GIBSON FAMILY, Glenarn, Rhu, Dunbartonshire, were again only one point further in arrears with 23 points.

The judges awarded the National Trust for Scotland Rhododendron Trophy to COL. CARRICK-BUCHANAN, Corsewall, Stranraer, Wigtownshire, for his first-prize exhibit in the well-contested Class I.

AWARDS

CLASS I. 6 species, 1 truss of each (9 entries).

First: Col. Carrick-Buchanan displayed excellent blooms with wonderfully clean foliage of *R. macabeanum*, *R. sinogrande*, *R. basilicum*, *R. grande*, *R. eximium* and *R. magnificum*. All six blooms in this fine exhibit were perfect specimens; *R. macabeanum* was outstanding and the trusses of *R. magnificum* and *R. sinogrande* not far behind in excellence. Second: The Earl of Stair, Lochinch, Stranraer, Wigtownshire, showing *R. sinogrande*, *R. lacteum* and *R. macabeanum* in fine form, together with *R. meddianum*, *R. calophytum* and the blood-red *R. arboreum*. Third: Major Iain Campbell, Arduaine, by Oban, Argyll.

CLASS II. 3 species, 1 truss of each (11 entries).

First: The Earl of Stair, for his lovely rich yellow *R. lacteum*, equally good coloured *R. macabeanum* and *R. mallotum*. Second: Mr. F. L. Ingall, Corsock House, Castle Douglas, Kirkcudbrightshire, with *R. fargesii*, *R. sutchuenense* and *R. lacteum*. Third: The Gibson Family, Glenarn, Rhu, Dunbartonshire.

CLASS III. 1 species, 1 truss (14 entries).

First: Col. Carrick-Buchanan, with a fine specimen of *R. macabeanum* surrounded with perfect clean large leaves. Second: Mr. F. L. Ingall, with a delightful pink *R. sutchuenense*. Third: Sir George Campbell, with a good coloured *R. niveum*.

CLASS IV. 1 species (*lepidote*), 1 spray not more than 12 inches in height above the top of the vase (25 entries).

The judges found it difficult to assess this class, being compelled to pass by many fine exhibits without awarding a prize. However,

The Gibson Family triumphed by getting the first prize with an excellent pink *R. virgatum*. Second: Sir James Horlick, with lemon-yellow *R. valentinianum*. Third: Sir George Campbell's *R. racemosum*. Two highly commended were awarded: one to Sir James Horlick and the second to Mr. E. A. Strutt, Galloway House, Garlieston, Wigtownshire.

CLASS V. Arboreum Series, 1 truss (17 entries).

A wonderful blood-red truss of *R. arboreum* easily won first prize in this class for Mr. A. G. Kenneth, Strona Chullin, Ardrishaig, Argyll. Second: Mrs. K. L. Kenneth, Tigh-an-Rudha, Argyll, with a good pink *R. arboreum*. Third: Sir George Campbell, Bt., with *R. niveum*.

CLASS VI. Barbatum Series, 1 truss (8 entries).

A fine coloured *Rhododendron smithii* won first prize for Mr. A. G. Kenneth; *R. hirtipes* was second for the Earl of Stair, and a fine deep coloured *R. barbatum* took third prize for Major Iain Campbell.

CLASS VII. Boothii Series, 1 truss or spray, not more than 12 inches above the top of the vase (5 entries).

Only two entries favoured the judges' eyes. First: The Gibson Family. Second: Mr. A. G. Kenneth. Both with a spray of *R. leucaspis*.

CLASS VIII. Campanulatum Series, 1 truss (6 entries).

First: The Earl of Stair, with a grand blue truss of or near the 'Knaphill var.' with a lovely tawny brown indumentum. Second: Major Iain Campbell. Third: Sir George Campbell.

CLASS IX. Falconeri Series, 1 truss (13 entries).

From a good entry Major Iain Campbell was first with *R. hodgsonii*, with clean beautiful foliage. Second: Mrs. K. L. Kenneth, with *R. lanigerum*. Third: Sir George Campbell, with *R. arizelum*.

CLASS X. Grande Series (except *sinogrande*), 1 truss (10 entries).

Here *R. macabeanum* won a first, second and third. First: The Gibson Family. Second: Col. Carrick-Buchanan. Third: Sir James Horlick.

Photo, J. E. Downward

FIG. 44—A very fine truss of *R. macabeanum* shown by the EARL OF STAIR in Class 4 at the Rhododendron Show. The McLaren Cup was awarded for this exhibit (see p. 70)

Photos, J. E. Downward

FIG. 45—R. ('Fusilier' × Jalisco g. 'Elect') 'Winkfield' A.M. May 19, 1958. Shown by Crown Estate Com-

FIG. 46—R. 'Lodauric Iceberg' A.M. June 17, 1958. Shown by Messrs. W. C. Slocock Ltd., Goldsworth Nurseries,

CLASS XI. *R. sinogrande*, 1 truss (5 entries).

First: Major Iain Campbell's truss. Second: Col. Carrick-Buchanan. Third: Mr. A. G. Kenneth.

CLASS XII. Heliolepis or Trichocladum Series, 1 spray not more than 24 inches in height from the top of the vase (5 entries).

First: Sir George Campbell with a very fine pink spotted form of *R. rubiginosum*. Second and third: Major Iain Campbell.

CLASS XIII. Neriiflorum Series, except Sanguineum and Forrestii Subseries, 1 truss or spray not exceeding 12 inches from the top of the vase (13 entries).

This well-contested class produced excellent sprays. First: Sir George Campbell, with *R. euchaites*. Second: Mrs. K. L. Kenneth, with a very desirable form of *R. beanianum*. Third: Mrs. K. L. Kenneth, with *R. beanianum* var. *compactum*.

CLASS XIV. Neriiflorum Series—Sanguineum and Forrestii Subseries. One truss or spray not exceeding 12 inches from the top of the vase (9 entries).

First: Messrs. E. H. M. and P. A. Cox, Glendoick, Perth, with *R. sanguineum*. Second: Mrs. K. L. Kenneth, with good coloured yellow *chrysanthemum*. Third: Messrs. E. H. M. and P. A. Cox.

CLASS XV. Thomsonii Series, 1 truss (15 entries).

A perfect truss of *R. hookeri* gained a first for Mrs. K. L. Kenneth. Second: Mrs. K. L. Kenneth, with *R. thomsonii*. Third: Major I. Campbell, also with *R. thomsonii*.

CLASS XVI. Fortunei Series, 1 truss (14 entries).

First: Messrs. E. H. M. and P. A. Cox, with a deep purplish mauve *R. sutchuenense*. Second: Sir James Horlick, with *R. sutchuenense* var. *geraldii*. Third: Sir George Campbell, with *R. fargesii*.

CLASS XVII. Irroratum Series, 1 truss (12 entries).

A truss of heavily spotted deep red *R. ramsdenianum* was judged a first for Sir George Campbell. Second: Major Iain Campbell, and *R. pankimense* came third for Sir George Campbell.

CLASS XVIII. Lacteum Series, 1 truss (9 entries).

The Earl of Stair's fine yellow *R. lacteum* easily gained first. Second: Mr. F. L. Ingall, with a less yellow *R. lacteum* with red blotch. Third: Mrs. K. L. Kenneth, with *R. beesianum*.

CLASS XIX. Uniflorum or Anthopogon Series, 1 spray not more than 12 inches in height above the top of the vase (5 entries).

A lovely spray of *R. pemakoense* was judged a first for Sir James Horlick. Second: Sir George Campbell, with *R. anthopogon*, and again, *R. pemakoense*, a third for The Gibson Family.

CLASS XX. Taliense or Fulvum Series, 1 truss (15 entries).

From a large entry Sir George Campbell won a first with *R. fulvum*. Second: Messrs. E. H. M. and P. A. Cox, again with *R. fulvum*. Third: *R. uvarifolium* caught the judges' eye for Mr. A. G. Kenneth.

CLASS XXI. Any other Elepidote Series not falling into above Classes V to XX, 1 truss (4 entries).

First: The Gibson Family's *R. makinoi*. Second: Mr. A. G. Kenneth, also with *R. makinoi*.

CLASS XXII. 6 hybrids, 1 truss of each.

There were only three entries in this class. First: Sir James Horlick, with six fine varieties. Second: The Earl of Stair. Third: The Gibson Family.

CLASS XXIII. 3 hybrids, 1 truss of each (8 entries).

First: The Gibson Family were outstanding with *R. sinogrande* × *hodgsonii* and *R.* 'Elizabeth'. Second: The Earl of Stair. Third: Sir James Horlick.

CLASS XXIV. 1 hybrid between Lepidote Rhododendrons, 1 spray not more than 18 inches in height above the top of the vase (11 entries).

Here *R. chrysomanicum* (*burmanicum* × *chrysodoron*) triumphed for Sir James Horlick. Second: R. 'Song Bird' ('Blue Tit' × *russatum*) for the same exhibitor. Third: Sir George Campbell, with R. 'Yellow Hammer'.

CLASS XXV. 1 hybrid between Elepidote Rhododendrons, 1 truss (15 entries).

First: Sir James Horlick's truss of R. 'Avalanche'. Second: Messrs. E. H. M. and P. A. Cox, with R. 'Lady Linlithgow'. Third: Major Iain Campbell, with R. 'Shilsonii'.

CLASS XXVI. 1 hybrid raised by exhibitor, truss or spray not more than 18 inches in height above the top of the vase.

The Gibson Family's beautiful truss of *R. sinogrande* × *hodg-*

sonii was judged to be first. Second: R. 'Betty King' (Luscombei × *thomsonii*) for Sir James Horlick. Third: Sir James Horlick again with R. 'Titness Triumph'.

CLASS XXVII. 1 named hybrid, of which *R. thomsonii* was one parent (7 entries).

A very large truss of R. 'Shilsonii' gained first prize for Major Iain Campbell. Second: Messrs. E. H. M. and P. A. Cox, with R. 'Lady Linlithgow'. Equal third: The Earl of Stair and Sir James Horlick.

CLASS XXVIII. 1 named hybrid, of which *R. arboreum* was one parent (6 entries).

First: Major Iain Campbell, with R. 'Cornubia'. Second: The Gibson Family, with R. 'John Holms' resembling a blood-red *R. arboreum*.

CLASS XXIX. 1 vase of Rhododendrons for decorative purposes (2 entries).

An arrangement of *R. monosematum* displayed in a black vase won first prize for Sir George Campbell.

We cannot end this account of the Scottish Rhododendron Show without special mention of the two exhibits staged from the Royal Botanic Gardens, Edinburgh, and the Younger Botanic Garden, Benmore.

The group arranged on a corner site, immediately on the left inside the main rhododendron room, consisted of large generous vases of many rare and beautiful species. Amongst the well-arranged more tender ones were *Rhododendron carneum*, *R. bullatum*, *R. veitchianum*, *R. taronense*, *R. griffithianum* and *R. delavayi*. Other vases of blooms included *R. fulvum*, *R. macabeanum*, *R. arboreum*, *R. irroratum*, *R. mollicomum* and overshadowing the whole collection for beauty and perfection was *R. mollyanum*, which was probably the best vase of rhododendrons in the whole show.

The second group was exhibited on tabling in the Alpine section on the first floor. Here the species which caught the eye were *Rhododendron parmulatum*, *R. floribundum*, *R. chaetomallum*, *R. floccigerum*, *R. morii* and *R. strigillosum*, whilst amongst the hybrids special mention should be made of *cinnabarinum* × *formosum* 'Rose Mangles' and *burmanicum* × *formosum*, both shown in first-rate quality.

Summary

The impression gained at the Show was that although Scottish growers attain greater success with rhododendron species than the southern growers, yet the latter still hold the upper hand with the hybrids. However, so much enthusiasm abounds amongst the growers in Scotland that we feel sure we in England will have to continue to look to our laurels to keep ahead with the hybrids.

WASHINGTON (U.S.A.) RHODODENDRON SOCIETY SHOWS

By LEONARD F. FRISBIE, *President*

THE winter and spring, 1957–8, made up a good rhododendron season for the north-west section of the U.S.A. Following one of our very mildest of winters came an early spring and a rather erratic flowering time, with many of our plants of species coming into production ahead of our shows.

The Washington Rhododendron Society shows have come to reflect the objectives and programmes of the Society. One consistent purpose has been to dilute the overwhelming American obsession with the spectacular hybrids. A deliberate emphasis on species has helped to arouse public interest and to extend the growing of these fascinating plants in our home gardens. The Society has done a major work in introducing fine forms of American native azaleas to the west coast, along with natural hybrids of these found in the eastern mountains. An extensive selective-collection programme involving our western natives has been responsible for the general distribution of hundreds of plants of fine forms of *Rhododendron occidentale*. A Gardener Assistance Programme has helped many of the Society members to grow successfully species from seeds and to root cuttings of both evergreen and deciduous rhododendrons.

The Tenth Annual Tacoma Rhododendron Show was held in the Oakland Community Centre in Tacoma, Washington, May 10–11, with DR. CHARLES S. BERRY, of Tacoma, as chairman. The massive hybrids were out in force at the show. A large plant of 'Betty Wormald' outclassed all pink sorts in general popularity, with 'Eureka Maid', 'Marinus Koster', 'Mrs. Charles Pearson' and 'Luscombei' as companions in this class. A very good specimen of 'Hon. Jean Marie de Montague' pleased everyone in the red-flowered class. Other popular choices were: 'Britannia', 'J. H. Van Nes', 'Mars', 'Vulcan' and 'Romany Chai'. A plant of 'Scarlet King', one of the late EDGAR STEAD's hybrids from New Zealand, proved to be an especially good red-flowered hybrid. Plants of 'White Swan' were prime favourites with the many who like white flowers. This is a very stately hybrid with tall, built-up trusses. A small plant of 'Exbury Naomi' won universal approval.

It was gratifying to Society leaders that both members and the general public were not unduly awed by the impressive display of evergreen hybrids. They seemed to take them in their stride and to be sufficiently mature in judgment to be more interested in the many unusual and interesting plants of different types. Many plants of evergreen azaleas were present, and the Society's selections of clones that perform well in this special climatic area, which hold colour in the sudden-summer May sun that often follows a cool April, received flattering attention. The Glenn Dale 'Glamour', a beautiful pink-flowered sort, behaves itself commendably at all times. 'Willie' (*R. kaempferi* × 'Malvatica'), a slightly different shade of pink in the flower, does equally well. The Glenn Dale 'Treasure' received the nod over the popular *R. mucronatum album*, and was accorded an enthusiastic reception. 'James Gable', an azalea with deep red, non-fading flowers, and fine habit, was listed as top in its class.

The Knap Hill-Exbury clones were especially well received. 'Ginger', 'Brazil', 'Maryclaire', 'Flamingo', 'Gold Finch' and 'Sandpiper' each showed its own special merit in authoritative fashion, but 'Home Bush' won the hearts of all, as it has done at previous shows. Not nearly so gaudy nor so spectacular as some of the others, yet it has a neatness, grace and charm that pleases.

Species were in short supply this year because so many plants had flowered exceptionally early, but *R. luteum* and *R. mucronatum* were out in numbers and both were well liked. In the American native azalea class *R. vaseyi*, *R. nudiflorum* and *R. atlanticum* all attracted much interest. Two highly selected forms of *R. carolinianum*, eastern U.S.A. evergreen mountaineer, met with an immediate and favourable response. A pale pink-flowered form with no trace of blue, and of good plant habit, held its own with the better-known rhododendrons on display. A white-flowered form, an old show favourite in Tacoma by this time, met with full appreciation. A third variant of this species is, perhaps, of even greater value than the two just mentioned. It has clear yellow flowers in a pale shade, Mimosa Yellow (H.C.C. 602/2). This writer discovered the plant growing at Lem's Nursery, in Seattle, and brought it to the Lemons Beach Garden, in Tacoma, where it has been under observation for the past two years. It seems that there has been no publication describing this particular form of the species, which is an excellent decorative plant for our west-coast gardens; however, due to its hardiness and yellow flowers eastern U.S.A. gardeners will be especially interested (Fig. 39).

A somewhat exciting plant at the show was *Rhododendron occidentale* Tacoma No. 158. This was the first of the selected forms to flower domestically, after transfer from the wilds of Oregon and California. Colouring was up to the standard displayed in its native habitat. The exceptional interest was due to the fact that a great many complimentary plants of this form have been distributed throughout western Washington from Seattle to Portland by the Society. Plants have also been sent to Wisley and to Edinburgh and to New Zealand. It has been found that the form must be well established before colour is at its best, and plants must be grown in full sun. The white flowers with a yellow blotch and considerable pink markings, the bright red twigs and reddish foliage along with red buds give the sizeable, well-flowered plant of this form a rather brilliant garden appearance.

'Snowbird' (*R. canescens* × *R. atlanticum*), a natural hybrid from the east has become a perennial favourite in Tacoma. The whorled, eccentric habit, the plethora of tubular white flowers and the pervading spicy-sweet, somewhat pungent fragrance charms everyone without exception. A tawny-coloured deciduous hybrid was the result of a local cross between *R. occidentale* and *R. luteum* which won an award for Mrs. John Skupens, Sr., of Tacoma. A very pleasant characteristic of the show this year, remarked by many visitors was the fragrance that was noticeable throughout the building, due entirely to American native azaleas.

Members of the Washington Society who have benefited from the Gardener Assistance Programme were asked to display their successful work, and these displays held leading interest for all visitors. Truly remarkable progress has been achieved. Seedlings of species in various stages of growth, flats of rooted cuttings and small models of plastic tents for deciduous cuttings won an R.H.S. Affiliated Societies' Medal and a first place for three sisters, all home gardeners, Mrs. Charles Foise and Mrs. Rose Torre, of Fife, and Mrs. Anna Maher, of Seattle.

Mrs. John Skupens, Sr., Tacoma home gardener, won first place for the use of ferns and primulas in a fine display of rhododendrons and azaleas. Dr. Charles S. Berry and Leonard F. Frisbie had a combined, non-competitive display featuring numerous hybrids, species and deciduous azaleas.

I. S. Broxson, of Tacoma, won first place for the best commercial display and for five plants of hybrids with 'Marinus Koster', 'J. H. Van Nes', 'Mrs. Charles Pearson' and 'Mrs. Furnival'. Mr. and Mrs. Roy Hacanson, of Puyallup, won the

Banksian Medal awarded by permission of the Council of The Royal Horticultural Society, with numerous blue ribbons for first places in various classes including landscaping of display.

FOURTH ANNUAL COWLITZ COUNTY RHODODENDRON SHOW

Staged in the Shop Building of the Mark Norris Junior-Senior High School at Longview, Wash., this fast-developing show in south-west Washington, under the chairmanship of Mrs. Earl (Dr.) Pearce, assisted by Dr. Marion Clark, W. S. Mainer and Mrs. W. S. Haverman, presented the public with a very effective display of various types of rhododendron plants. Here again the evergreen hybrids provided an impressive and colourful background. A plant of 'Alice' in beautiful condition won an award as Best Plant in Show for Mr. and Mrs. Garland Kistner, of Longview. Plants of 'Souvenir of W. C. Slocock' and 'Mrs. Betty Robertson' gave close competition. 'Betty Wormald' was well liked here also, and 'J. H. Van Nes', 'Blue Peter' and 'Mrs. G. W. Leak' received a great deal of attention.

Mrs. W. S. Strange, of Castle Rock, and Mrs. R. E. Reichert, of Longview, two home gardening women, had a fascinating joint display featuring 'Mrs. Betty Robertson' and the pink-flowered azalea 'Fedora', along with flats of seedlings and rooted cuttings, plastic tents, etc., evidencing the importance of the Society Home Gardener Assistance Programme. The entire display was set in woodland material which was appropriate, because Mrs. Strange's garden is located in one of our naturally attractive woodland areas. These ladies carried off top awards in this class.

The Riverside Nursery of Castle Rock centred a display around the cream hybrid, 'Souvenir of W. C. Slocock', in excellent flower. Attractive companion material simulated actual garden conditions. Fruitland Gardens, of Longview, displayed many fine hybrids, with 'Betty Wormald' as a feature. Appropriate companion material brought first-place awards to the exhibit. 'Conestoga' (*R. carolinianum* × *R. racemosum*), a hardy hybrid originated by Joseph Gable, of Stewartstown, Pennsylvania, proved to be one of the most popular plants in this show. The hybrid is quite intermediate and it is attractive in both flower and foliage. It produces a wealth of small pink flowers and is a quality hybrid with an airiness that is a relief from the mass of the bulky hybrids. Sear's Farm Store, of Longview, had an outstanding display, beautifully landscaped, which won first honours in this class. Evergreen

azaleas were featured along with colourful companion plant material, fencing, walks and a background of evergreen hybrids.

MR. and MRS. GARLAND KISTNER, of Longview, won first honours in the show with a display of colour that was handled very well indeed. Fine hybrids of all sorts were included with a variation in types that proved attractive. Companion plant material was featured, including charming dwarf conifers. A small pool added interest. A grand plant of *R. calendulaceum*, with flowers of a soft orange shade, won friends for the native American species.

THE SEATTLE RHODODENDRON SOCIETY SHOW

May 1958

By HARRY R. MADISON

Seattle, Washington, U.S.A.

A VERY mild winter and an unusually warm spring brought out the rhododendron blooms from three to four weeks earlier than is normal. Some exhibitors were hard pressed to keep from being bloomed out, and others displayed late flowering varieties and species. Spectators had an opportunity to view rhododendrons seldom seen at the annual shows, although the dates of the Seattle show this year were identical with those of the preceding year. The dates extended from May 16 to 19.

Co-sponsored by the Bellevue Chamber of Commerce, the show staging was managed by HAROLD JOHNSON under the direction of MRS. HUGH BAIRD, the show chairman. President DONALD K. MCCLURE of the Seattle Rhododendron Society reported a heavy daily attendance at the displays.

Landscape Display Section: First place in the commercial landscape displays were awarded to the Homestead Nursery and Floral Company. The dual honour of winning the Frederick and Nelson Perpetual Cup for the best landscape display and the Seattle Trust and Savings Bank Perpetual Cup for the best plant in the show went to this exhibit. The display simulated a woodland planting. Among moss-covered rocks and logs were rhododendrons such as 'Doormouse' with its pink bells, 'Mme. Fr. J. Chauvin' in pink with a prominent blotch, the lavender 'A. Bedford', complemented by the yellow 'Diane' × 'Damaris' cross. Taller *R. occidentale*, azaleodendron, and several 'Mrs. Furnival' rhododendrons formed the background, intermingled with hemlock and maple. While in the foreground were low-growing white azalea 'Wendy' and the lovely pink hose-in-hose azalea 'Mrs. Fisher', other associated

plants and ground covers were in abundance, such as *Vaccinium vitis-idaea*, lingenberry minor, *Kalmia latifolia*, *Andromeda polifolia* and maidenhair fern. The crowning plant, however, was a 5-foot 'Mrs. Furnival' loaded with flowers and bedecked with blue ribbons proclaiming it to be the best plant in the show.

First in the smaller size commercial displays, less than 200 square feet, and runner-up for the best display in the show, was a landscape in contemporary modern by E. PERRINE, landscape architect. It was the first attempt in the history of the Seattle Rhododendron Society shows at contemporary modern. Not only was it very well executed, but it was equally well received. Definitely there is a place for this type of styling for the modern patio, and I am sure it will gain in popularity in the future. The focal point of the display was a series of three black elevated discs filled with white marble chips. Starting with a disc 6 feet in diameter, each one above and offset from the other, and diminished in size to give the feeling of depth. Coloured lights emphasized the vertical spacing between. A background was formed by a screening of flamingo pink corrugated fibre glass in sweeping curves. This too was back lighted, throwing off a warm pinkish glow. With these basic props there was a skilful blending of plants in colour. On one side of the discs was a bed of 'Lady Bligh' rhododendrons in tones of flamingo pink, *Abies fraseri* formed the background, and in the foreground were dwarf evergreen huckleberry. To the right of the focal point discs, was a bank of water-melon pink 'Queen Mary' rhododendrons. Here the background was a 7-foot pink dogwood underlaid with the ground cover epimedium. Variegated hosta with dwarf huckleberry formed a complementary foreground. A 2½-foot red-thread leaf Japanese maple in an attractive red-brown ceramic container placed on the top disc gave the impression of completeness to the entire display.

Rhod-a-Zalea Gardens won second place in the large class landscape display with a group of fine rhododendrons in a woodland planting, mostly of the older varieties, such as 'Pink Pearl', 'Mrs. E. C. Stirling', 'Eureka Maid', 'Mme. de Bruin', 'Duchess of Edinburgh', etc. Other fine rhododendrons in good condition were 'Queen of the May', 'Mrs. Lionel de Rothschild', and azaleas 'Dr. M. Oosthoek', 'Floradora', and dwarfs such as 'Phoebe' and 'Mrs. A. G. Whitelegg'.

Second place in the smaller landscape display was the Bonny Brook Nursery. Here the dominating feature was a 5-foot 'Pink Pearl' in top condition, supplemented by a 5-foot 'Jon Dekens'. *R. williamsianum* vied for the limelight in the foreground with

azalea 'Gumpo'. Many beautiful associated plants, such as *Pieris japonica* and *P. forrestii*, halesia, *Nandina domestica*, enkianthus and others, were grouped with the rhododendrons and azaleas.

Prentice Nursery and Decorating Company was the third-place winner. The central attraction in this large display was a waterfall among the huge rockery, with a large bronze crane beside a pool at the base of the falls. The background was built up of many "Morgan" hybrid rhododendrons. Of the named varieties in combination there were the purple 'A. Bedford' and the creamy 'Mrs. Betty Robertson', 'Purple Splendour' and yellow azaleodendron 'Broughtonii Aureum'. The brilliant red R. 'Griersims' stood off alone. In the foreground, the white evergreen azalea 'Treasure' was planted in drifts. Of the associated plants, the most prominent were English yew, Japanese cut-leaf maple and weeping maple. Sagina moss was used profusely around the rocks and as a ground cover.

Sears Roebuck Company received Honourable Mention in the large class of displays. It was dominated by a Japanese motif and included a circular opening in a background cedar fence, while on the spacious lawn in the foreground was a Japanese manikin. 'Pink Pearl', 'Naomi', and 'Purple Splendour' were used in abundance.

A very interesting and different type of exhibit was presented by the Mount Ranier Alpine Gardens and it took third place in the smaller size landscape displays. It was composed of thirty-two alpine rhododendron varieties and species, with many associated plants. All were well labelled for identification. A few of the outstanding plants were *R. ledoides*, *R. keleticum*, both in purplish red, and the odd bell-shaped *R. campylogynum* var. *cremastum* in wine colour. Azaleas 'Rosebud' and 'Progress' were the best named varieties.

Another competitive landscape display was entered by Pacific Northwest Nurseries Inc., which was in the smaller size group. It had a very fine large plant of the white R. 'Queen of the May', a good R. 'Mme. Chauvin', purple 'Purpureum Grandiflorum', with a purple beech and *Acer palmatum*, the green Japanese maple.

Hopkins Nursery had a split cedar fence in the rear of a planting of a *mollis* × *occidentale* hybrid, 'Blue Peter', 'Alice', and a group of light red 'Prof. J. H. Zaayer' with azalea 'Glamour'. Associated plants were Mugho pine, Table Mountain pine and *Viburnum davidi*.

Wright Nursery and Landscape Service exhibit was centred around a patio fountain with pale lavender rhododendrons, light red azaleas and red-leaf Japanese maple.

Seven Firs Nursery had a small setting using a garden bench as the focal point, with three good purple rhododendrons complemented by yellow 'Altaclarense' azaleas. The theme was a gardener's nook with garden tools and burlap-balled rhododendron plants in preparation of planting.

As usual, the University of Washington Arboretum displayed a fine collection of species and hybrid rhododendrons and azaleas under the direction of BRIAN MULLIGAN. Outstanding was a group of five 8-foot high 'Mrs. E. C. Stirling', 'Countess of Derby', and a fragrant *fortunei* hybrid of unusual shaped tubular flowers, whose colour was a good shell-pink with a yellow throat. In another group were several fine 'Vulcan' and three large pink azaleas 'Exquisita'. Of the unusual associate plants were *Vaccinium floribundum* from Ecuador and *Vancouveria hexandra*, the foliage plant with a tiny white tubular flower that appears to be mounted upside down on the stem. The plants are about 12 inches high, and are indigenous to the west coast of North America, from Vancouver Island to California, but are not at all common.

Seedling Class: The top honour in the seedling rhododendron class went to the hybridizer, MR. HALPHDON LEM of Seattle, for his Nerid-discolor × 'Goldsworth Yellow' hybrid. The lax truss containing from nine to ten blooms, 2¾ inches in diameter by 2 inches, were pale peach in colour with a large and prominent calyx. Buds were deep salmon colour, leaves 2 inches by 6 inches of a good bright green.

Second award was won by the late ANDRE OSTBO for a cross between 'R. W. Dyke' × 'Mrs. Donald Graham'. The clear light pink without markings, except for a darker throat, was also the recipient of the American Rhododendron Society Plant Award. The blooms were large, up to 4¾ inches in diameter by 2 inches, trumpet-shaped and approximately nine flowers in a lax truss. Another OSTBO hybrid, recently named 'Edward Dunn', was in third place. It also received a Plant Award. In all there were about twenty plants in the seedling class.

Cut Truss Section: Seedling Class: In first place was the magnificent shell-pink complex rhododendron hybrid 'Marinus Koster' × 'Snow Queen', won by its hybridizer, H. L. LARSON of Tacoma. The huge 5½-inch blooms by 1¾ inches, were of good substance and the tight truss of fourteen flowers measured 8 inches by 8 inches. Leaves averaged 2½ inches by 6½ inches and were dark green.

The number two truss in the seedling class was a Darlene cross *griersonianum* × 'Armistice Day', won by H. LEM of Lem's Nursery.

It had a brilliant *griersonianum* red, the blooms were 3¾ inches in diameter by 2 inches in a lax truss of about fifteen flowers.

Plant Section: Named Varieties: The winning plant was a 3½-foot 'Vulcan' rhododendron in a large tub. The mass of bright red was unequalled in any previous show here. It was owned by G. S. REDMAN.

Other winning plants were a 'Mrs. E. C. Stirling', second place, won by DONALD K. MCCLURE; 'Pygmalion', third place, by MRS. CHARLES D. SULLY. Azalea 'Ginger' won first place for Prentice Nursery and Decorating Company, and first place was awarded to LINDLEY JANZEN for his azalea *R. nudiflorum* and also second place for his azalea 'Narcissiflora'.

Cut Truss Section: Named Varieties: A few of the winning varieties are as follows: Rhododendron 'Mrs. Donald Graham', first place won by L. H. MARS; 'Queen of the May', first place by DON GRANT; 'Zuider Zee', first place by DONALD GRAHAM.

The cut-truss section was not too well filled out in the show. These came mostly from the individual home growers and due to the mildness of the winter and spring, the height of the bloom had already passed by at the time of the show. Also due to the favourable growing conditions of the previous season, the bud set was considerably below average.

Educational Exhibit: A complete demonstration on the growing of rhododendrons from seed was presented by FRANK DOLESHY. Data on soils, fertilizers and sawdust mulches for the growing plants was included.

Taking everything into consideration, the show was a fine success and it has done much to stimulate further interest in rhododendrons.

RHODODENDRON NOTES

Gibberellic Acid

THE accompanying illustrations (Fig. 47) show clearly the effect of Gibberellic Acid on rhododendron seedlings. In this case it is a box of what may prove to be *R. burmanicum* from seed collected by KINGDON-WARD on Mount Victoria.

Five applications were given of Gibberellin at six-day intervals, beginning on May 8. The most remarkable feature at the start was the change in colour of the young foliage to a very dark almost translucent green. This is clearly seen in the first illustration. This darkening began to wear away in the young growth as soon as the applications ceased. As will be seen in the third illustration the colour is back to normal.

The right-hand half of the box is, of course, the control.

E. H. M. Cox

Glendoick, Perthshire.

Rhododendrons at Inverewe

Although Inverewe can make no claim to possess a really representative collection of rhododendron species, and has but an inconsiderable number of the newer hybrids, I doubt if in the past season any other rhododendron garden in the country can have provided a better display.

Cold north-east winds and a covering of snow, which persisted almost till the end of March, delayed the earlier blooms, but from April onwards the garden continued to be emblazoned with the colour of rhododendrons until towards the last days of July. A climax was reached with the blooming of the azaleas about the third week of May.

The reds of *R. barbatum*, of which there are many plants, matched and accompanied by that of the hybrid 'Cornubia' (*arboreum* × 'Shilsonii'), which was raised by MR. SMITH at Penjerrick about 1901, are the most outstanding feature near the beginning of the season. Of R. 'Cornubia' MILLAIS says "there is

no finer spring flowering red rhododendron than this when seen under healthy conditions", and with this remark, we at Inverewe can heartily agree.

Then come the yellow *R. campylocarpum* of which again there are many—some say too many—but there is much to be said for the assemblage of plants of a single kind upon a grand scale, instead of a multicoloured miscellany, especially when an outstanding plant has been chosen and there is room for other interesting species elsewhere. Moreover, behind and along with the *campylocarpum*, are many *R. thomsonii* which bloom about the same time. Looking down upon them from a high viewpoint, with their background of tree and sea and mountain moorland, the sight is impressive as well as picturesque. All the *R. campylocarpum* at Inverewe (bar one of course) are the offspring of a single plant introduced by Osgood Mackenzie about the year 1890. Self-sown seedlings were picked up here and there in the grounds and replanted. As might be expected they vary considerably. Most are desirable, some of a deeper yellow are among the very best of their kind, and only a few, pale and emaciated-looking among the rest, are perhaps less pleasing.

From the same viewpoint massed plantings of Triflorum Rhododendrons and individual specimens planted at a distance among the pine trees absorb attention when one is looking in another direction. Splashes of pink, mauve and lavender from *R. davidsonianum*, *yunnanense*, *rubiginosum* and *desquamatum* are all the more arresting when the picture is framed, as it has been on a recent occasion, by a double rainbow.

There are several large groups of azaleas (Ghent and molle hybrids and some of the Kurumes) in the garden, which must by now have furnished a small fortune for the makers of coloured camera film, but these are not much more attractive than the massed plantings of the common yellow *R. luteum*, which adds its scent to the surrounding air. When we first came to Inverewe I was tempted to remove some of the old-fashioned hybrid R. 'Purpureum Elegans', which is listed "Z" in the *Rhododendron Handbook* of 1953—"not worthy of cultivation". However, I refrained, to discover that if it is planted amongst the yellow azalea the effect is striking, for they flower at the same time. Thus planted and not too closely scrutinized it is deserving, as most will agree, instead of the lowest rating, of several stars.

From June onwards the Rhododendron Walk, flanked on either side at a distance by high banks, provides a memorable panorama.

Photo, E. H. M. Cox

Fig. 47—The effect of the use of Gibberellic Acid on Rhododendron seedlings. The photographs were taken on January 12, July 6 and August 3, those on the left being treated, those on the right untreated (see p. 93)

FIG. 48—R. 'Mrs. T. H. Lowinsky' (see p. 101)

Photos, M. Haworth-Booth

TWO VERY FREE-FLOWERING OLD HARDY HYBRIDS

FIG. 49—R. 'Caucasicum Pictum' (see p. 101)

While there is some colour here throughout the season, with good specimens of *R. fargesii*, *fictolacteum*, *campanulatum*, *arboreum* and other species, it is the older, late-flowering hybrids which dominate the area. They are now too closely packed together, but I have not yet been able to decide which to remove, for they come into bloom in sequence and each contributes an important quota to the general effect. Many of these hybrids have lost their labels and consequently are unnameable, but among the few that can definitely be identified, 'Princess of Orange', 'The Duchess of Teck' and 'Loder's White' are no less attractive than 'Dr. Stocker'. Probably the most interesting individual plant is, however, the modern 'Grossclaude' (*eriogynum* × *haematodes*) raised by the late LIONEL DE ROTHSCHILD in 1941 and given an Award of Merit in 1945.

When most of the hybrids are over, a number of unnamed azaleas continue to bloom for two to three weeks more. One I know as "late pink", another of the Malvaticum type has flowers of a darkish orange red. Both are valuable garden plants.

The largest specimen plant of *R. sinogrande* failed to flower this year, but a large *R. hodgsonii* near it was covered in bloom. *R. callimorphum* and *orbiculare* were both magnificent. I was glad to come across two plants of different forms of *R. cerasinum*, which had escaped my notice before; both were flowering for the first time.

Why *R. giganteum* has never as yet flowered at Inverewe is difficult to explain. The plants are of a fair size and must be of the same age as the famous one at Arduaine. Perhaps they have not been given enough shelter at Inverewe or they may object to the very sour peat. One of the original *R. lacteum* still survives, though it is not a happy looking plant; nevertheless, it bore a few trusses. *R. roxieanum* with tight trusses of white flowers flushed with pink is unusually floriferous here. A fine specimen of *R. zeylanicum* also flowered very freely, late in the season.

Finally, among hybrids classified as "F", "usually a greenhouse shrub", mention may be made of R. 'Fragrantissimum' and 'The Countess of Haddington'. Both flower with the utmost profusion. Two very large plants of the former can be depended upon to hide their foliage in a white mantle of sweet-scented blossom every year, and they have no special protection though they are growing in a well sheltered part of the garden.

Inverewe, Poolewe, Ross-shire. J. M. COWAN

Rhododendrons at Lochinch

This has been the most remarkable season that I can remember for everything flowering, not excepting weeds!

We have not made any particular experiment, but some of our rhododendron crosses have flowered magnificently. One particularly interested me, as it was almost the first I ever made. It was a cross of the two latest flowering species I then possessed; that was *R. eriogynum* × *R. diaprepes*. We called it 'Lady Jean', not yet shown, but it is a very good late flower for July. I used not to be satisfied with the colour, but this season, bushes over 10 feet high and really covered, were magnificent, after everything else, except *R. auriculatum*, was over.

R. auriculatum is in full flower at the beginning of September, as is *Catalpa*, which has never flowered here before (I think), and *R. zeylanicum*, *lacteum*, *sinogrande* and *macabeanum* were specially good.

R. 'Review Order' (*R. euchaites* × *griersonianum*) × *haematodes*, another of our crosses, makes a remarkable show, with R. 'Lord Stair' (*R. taggianum* × *lindleyi*), flowering up through it.

Lochinch Castle, STAIR
Wigtownshire.

Winter on the Isle of Gigha, Argyllshire

It was the worst winter and spring I have experienced since I went to Gigha in 1944. Constantly recurring night frosts from January onward to May (16° once) partially ruined what otherwise would have been a wonderful flowering year. I lost very few plants actually, although four small *saluenense* camellias which didn't like 9 inches of snow—and some small *R. lindleyi* × *sinonuttallii* cut right back—but the very lovely *R. lindleyi* var. on the Bank had not one bloom. The 'Fragrantissimums' in the wood lost 90 per cent of their bloom and the early-flowering type, when it did flower, had minute blooms not an inch across. Most trusses had a black spot or so showing a frozen bloom; 'Lady Chamberlain' trusses all or nearly all were lightly frosted and many killed. I should have thought I should have suffered far worse. So much for the Rhododendrons. Olearias came through well on the whole although I lost individual plants of *semi-dentata* and *forsteri*. *O. traversii*, right on the top of my small

hill in view of the Atlantic, wasn't touched; badly cut a bit lower down and killed outright at the bottom of the hill. Very few of the "Kurume Fifty" suffered badly, I lost two or three small ones.

We are mulching a great deal with early August-cut bracken put through an old hand chaff-cutter and run by belt off the Ferguson tractor.

JAMES HORLICK

Gigha.

Some Rhododendrons at Glenarn

Notes on a few of the big-leaved crosses made here may be of interest.

R. sinogrande flowered I think for the first time in Scotland in 1933 in the garden of the late JOHN A. HOLMS, that great old enthusiast at Arisaig, and we took advantage of it to make a number of crosses, two of which set seed.

1. *sinogrande* × *grande.* I think we have six plants which are now from 8 to 15 feet. Two of these flowered this year, for the first time. Both the flowering buds and the young growth are very susceptible to frost. The truss is larger than *grande* and more lax than *sinogrande*—really more like a bigger and finer form of *grande.* The young growth which escaped any frost this year is very striking, opening like white lamb's lugs, changing to a coppery tinge and finally to a very metallic green. The mature leaf is very large and altogether lacks the coarseness of *sinogrande.* A typical leaf measures 20 inches by 7 inches.

Several were given to friends at about the 12-inch stage.

2. *sinogrande* × *hodgsoni.* The *hodgsoni* parent was the darkest we knew, almost red-purple. Very few good seeds were set, the pods being mostly chaff. About eleven seedlings survived of which we have four plants left (the others again to friends). This plant was given an A.M. at Edinburgh this year under the name 'Ronald'. Our four vary from 12 to 15 feet. The mature leaf is much greener than the other cross and has more felt on the underside. The new growth is not so attractive, but three of the four plants are more-than-usual shapely, each sending up a pronounced leader which keeps well above the rest, with a pyramid effect. It has the merit (for show purposes the de-merit!) of making poly-flowering buds at many points and when this happens the result is rather

startling because the compound truss is as big as the outside of a large soup tureen. The flowers are striped. The best comparison we can suggest is an enormous *R. insigne* but the colour is much deeper, more subtle and not so crude, being a very deep rosy cherry at first, ultimately, and rather quickly, bleaching to a very pale pink. The plant is very much more bud-hardy than the other cross, both as to growth and flower. A typical leaf measures 18 inches by 6 inches.

We tried a number of other crosses with *sinogrande*, notably with *lacteum*, but none of them worked.

3. *sinogrande* × *falconeri*. This cross has been made earlier by others, but we re-did it in 1936. In our view it is an improvement on both parents. The truss is a very much finer and bigger form of the *falconeri* parent, a friend of ours who troubled to count made it 39 pips per truss; the leaves are magnificent, a mature leaf goes 24 inches by 9 inches. The leaf structure is very much more like the *falconeri* parent and once again it avoids the coarseness of the *sinogrande* leaf. Also it does not get so tattered by wind as does *sinogrande*, even in a fairly exposed position. We find that *falconeri* can keep its foliage in good order after even the worst winter gale, whereas *sinogrande* can look very dishevelled. The truss of this cross is very compact as would be expected and fully as big as most *sinogrande*.

Three other puppies coming on, so to speak, are *arizelum* × *macabeanum*, *falconeri* × *macabeanum* (both 1951 seed) and *sinogrande* × *macabeanum* (and the vice versa cross) but this last was only made in 1955.

4. *R. "pallidum"*. This came to us in the form of an exceedingly small pinch of seed in 1939, under the number L. & S. 3745.* It was described as (?) Thomsonii Series. Edinburgh doubts the number. It is an intriguing affair and nobody seems to know much about it. It first flowered here in 1946 and so it has the merit of a young start. The authorities in that year dubbed it, somewhat hesitatingly, as *thomsonii* var. *candelabrum*, but changed their tune very soon. It is not in the least like any form of *thomsonii* ever seen by mortal man. Our tallest here is around 6 feet and it grows in a bushy way. The growths are very slim and slender and the leaf orbicular, or near that. The peculiarities are (and we have a dozen or so scattered round) that not one of them deviates from

* The Gibson plant, although grown as L. & S. No. 3745, does not agree with the herbarium specimen of the same number. It would be interesting to see other plants in cultivation under this number. If this is a new species, as it may well be, they would afford corroborative evidence.—J. M. Cowan.

the pattern. The mature foliage on every plant and the flowers are all exactly the same. As to the flowers they may perhaps be likened in colour to the beef jelly which those of us, who are old enough to remember, were fed with in our youth if we were off colour and needed a tonic (my wife inspired that one!). But it is an odd affair and it is also one of those very attractive, but, unobtrusive plants which one can hunker-down beside and watch. The truss, so called, is usually two pips, occasionally three, with the colour I have attempted to describe. The flowering points are not very profuse, but the plant has the habit of turning last year's leaves into just an almost scarlet colour at the very same time as it opens its flowering buds. The result is quite delightful, although one must admit not very impressive, because more attention is paid by a casual observer to the moulting leaves than to the flowers which are just beside those leaves. The colour picture is grand, but the leaves so soon fall down; and although they harmonize wonderfully with the flowers, they tend to obscure the latter. One last point, the underside of the new growths of *R. "pallidum"* are distinctly gummy to the touch. A new variety of *R. thomsonii* was described in 1937 by Dr. Cowan under the name var. *Pallidum*. It has not, as yet, appeared in the *Rhododendron Handbook*.

A. C. Gibson

Glenarn, Rhu,
Dunbartonshire.

Residual Herbicides

On Rhododendrons and Camellias

For some years, selective weed-killers have been used on lawns and amongst specified agricultural and market-garden crops. Our attention was drawn two years ago to what are described as Residual Herbicides, which were claimed to destroy seeds at the time of germination without materially affecting established plants.

We used two different compounds known as Herbon and Dowpon, and we sprayed a considerable area which was thickly planted with rhododendrons, azaleas and camellias. By spraying with Herbon Red and Dowpon mixed, once in the dormant period between the end of October and January, we found we had an 70–80 per cent control of the usual weeds which continue growing

during an average mild winter, and an equally good kill of established couch and all other grasses. It must be remembered that Dowpon kills all grasses, and must, therefore, never be used on lawns or among Bamboo and ornamental grasses. Herbon Blue should be applied not more than twice during a wet summer, or three times during a dry summer, at regular intervals between March and September.

Since these herbicides are capable of killing seeds at the time of germination, it is obvious that they have some detrimental effect on plant growth, but it is our experience that the amount of weed control achieved outweighs the small degree of damage which may occasionally be detected. Such damage as occurs takes the form of inhibiting growth for a short period, or if an overdosage is given, of causing some temporary marginal discoloration of leaf.

It is well to bear in mind the following points:

1. The ground should be cleaned before the first application.
2. These herbicides are not a complete control of all weeds but a gradual building-up of more or less clean ground can be achieved.
3. They are a soil treatment, not a foliage spray.
4. The sprayer must be accurate, preferably with a controlled pressure.
5. They must not be taken internally, otherwise are non-toxic to human beings, animals and birds.
6. Deep cultivation during the period when the herbicides can be expected to remain active, will disturb the soil surface, and destroy the herbicidal skin.
7. Do not spray seed beds, the seedlings will be killed as they germinate.

Herbon Red

For established plantations, or unplanted ground, a one-pint tin is sufficient for 605 square yards.

Herbon Blue

Four oz. per 200 square yards for the first application, and $2\frac{2}{3}$ oz. per 200 square yards for the second and third applications.

Dowpon

Unfortunately this is not yet obtainable in smaller packets than 5-lb. cartons, which is normally sufficient to treat one acre.

H. G. HILLIER

Winchester.

Some Notable Rhododendrons

Amid the thousands of rhododendrons now available in this country some stand out as of quite exceptional garden quality. Among hardy hybrids, I have in mind several old-stagers that are still unbeatable. What rhododendron can make a mass of lovely colour visible for miles around in full exposure in a cold district, like the vivid, fresh, rose-pink 'Caucasicum Pictum'? (Fig. 49) What more shapely bush, seemingly upholstered with orchids, than 'Mrs. T. H. Lowinsky' (Fig. 48)? And surely, no newer purple outshines the old 'Purple Splendour' in its colour. Among the reds 'Mars' is still my favourite, but the new 'The Hon. Jean Marie de Montague' is quite first class as an earlier-opening true red. Mention of reds reminds me of the remarkable qualities of 'Elizabeth'. In late April or early May this is a landmark that shines from afar, and a near inspection reveals flowers of exquisite shape and presentation as well.

Nowadays, when the experimental crosses have mostly all been made, we plan new hybrids with great care and we can count upon achieving satisfactory results, as we have the benefit of the pioneer work already done.

Some years ago I felt the need for a dwarf (maximum 3 feet) hybrid, category 'A' for hardiness, not flowering until early June, having an orange-pink flower of beautiful shape. Study of the effects of hard frost on rhododendrons in many parts of the world convinced me that *R. catawbiense* var. *compactum* ("Mount Mitchell form") almost alone had the necessary hardiness coupled with small size. To obtain the required flower colour the other parent presented no choice. Only *R. dichroanthum* had the ability to conquer the purple flower colour and give us the required warm orange-pink. Fortunately this valuable species also carries great hardiness (*vide* the account of frosts in North-west Pacific in the previous issue of this Year Book) and a fairly dwarf habit. Thus Rhododendron 'Zanna', shown at Chelsea this year, was conceived and produced. Of the many hundreds of seedlings raised, few show any great variation. The foliage is midway in character, the habit dwarf and bushy, and the flower colour is carmine to orange-pink. Such is the hardiness that the second growth made is always held through winter. This may or may not be an advantage but the plant seems to fulfil all our requirements.

Another species that came well out of the terrible test on the North-west Pacific was *R. williamsianum*. Whoever crosses this with *dichroanthum* will have a very useful rhododendron, but, for

some reason, the young foliage of these crosses is apt to be tender in this country. 'Jock' (*R. williamsianum* × *griersonianum*) has this defect with us, and 'Grayswood Rose' (*R. williamsianum* × *venator*) is not quite as reliable as one could wish.

There is certainly a need for an improved yellow-flowered hybrid. 'Moonstone' (*williamsianum* × *campylocarpum*) is very pretty but lacks depth of colour perhaps. It may be a step on the road.

Later-flowering rhododendrons are badly wanted, for after all, what other shrub grows better untouched by the human hand at all than this labour-saving genus? In a search for a good rich-coloured late flower I have bred and flowered an F_2 generation of 'Flameheart' ('Azor' × *auriculatum*). Although many are highly attractive, none has yet combined the colour of *R. griersonianum*, the flower size of *discolor* and the late flowering date of *auriculatum*.

MICHAEL HAWORTH-BOOTH

Haslemere.

Yakusimanum Hybrids

In 1951 we flowered at Bagshot for the first time a young plant of *Rhododendron yakusimanum*. This was obtained as a layer from Exbury some time previously. The compact dome-shaped habit and tight trusses of blooms at once suggested to us the possibility of raising a race of dwarf compact hardy hybrids flowering mid- to late-season.

With this end in view *R. yakusimanum* was crossed with R. 'Corona', 'Doncaster', 'Britannia', 'Fabia', 'Fabia Tangerine' and a more compact and hardier form of 'Fabia' we grow under the name of 'Fabia' (Waterer's Form).

The first of these crosses to flower was a plant from the cross *yakusimanum* × 'Britannia'. This plant was lifted from the open ground at the end of April 1957, opened under glass, and exhibited under the name of R. 'Pink Cherub' at the Chelsea Flower Show in 1957. In colour it was a pleasing shade of light bright pink, but its chief merit was its compact habit of growth and compact full trusses of flowers. It was selected for trial at Wisley.

In 1958 all the crosses flowered. There was a noticeable similarity in the crosses of *R. yakusimanum* with 'Corona', 'Doncaster', and 'Britannia', as regards colour and habit generally

but considerable diversity as to foliage. All were compact and showed distinct traces of their parentage, the individual crosses being readily recognized. The *yakusimanum* × 'Fabia' forms gave more diversity both in colour and foliage, and the trusses of flowers were more open with fewer flowers to each truss. All flowered very freely and the results are very promising.

Many of these crosses were seen by members of the R.H.S. Rhododendron Group when they visited our Bagshot Nurseries, on May 14 of this year, and were very favourably commented on. These crosses have now been planted out in ordinary nursery rows under open nursery conditions for further test and selection.

In May and June of this year a further series of crosses was made with the object of increasing the colour range, while at the same time retaining the compact, dwarf, dome-like habit of *R. yakusimanum*. The result of this series of crosses we expect to see in 1964 or 1965. Our objective is the creation of a dwarf race of mid- to late-flowering hardy rhododendrons more suited to the smaller gardens than the older race of free-growing hardy hybrids, and at the same time to miss the late spring frosts which sometimes spoil the early-flowering rhododendrons.

P. WISEMAN

John Waterer, Sons & Crisp, Ltd.
The Nurseries,
Bagshot, Surrey.

A WORLD-WIDE STUDY OF CAMELLIA CULTIVARS

OVER the years many factors have contributed to the present world-wide confusion in the status and application of camellia cultivar names. The acuteness of the situation was brought to light at the 1955 International Horticultural Congress, when no camellia organization considered itself in a position to accept an invitation to serve as the International Registration Authority for the genus. Something had to be done.

The L. H. Bailey Hortorium, at Cornell University, Ithaca, New York, proposed a five-year project designed to accomplish three things: (1) preparation of a master file of all cultivar names known to have been used for camellias; (2) preparation of a documentary record composed of herbarium specimens, notes, and colour photographs of as many cultivars as can be found in cultivation, with special reference to those in America, the British Commonwealth, and Japan; and (3) production of an annotated international check list based on the data obtained. This programme, supported by a grant from the Longwood Foundation, went into effect October 1957.

RALPH N. PHILBRICK, added to the Hortorium staff to work on this project, is the principal investigator. The programme has the counsel of an Advisory Committee composed of: ARTHUR C. BROWN, Secretary, American Camellia Society; WILLIAM HERTRICH, Huntington Botanical Gardens; H. HAROLD HUME, University of Florida; RALPH S. PEER, President, American Camellia Society; CHARLES E. PUDDLE, Bodnant Gardens, England; J. ROBERT SEALY, Royal Botanic Gardens, Kew; PROF. E. G. WATERHOUSE, Secretary, Australian and New Zealand Camellia Research Society; and WILLIAM WOODROOF, Chairman, Nomenclature Committee, Southern California Camellia Society.

The production of an annotated international check list is considered the most practical approach towards elimination of the present confusion in camellia cultivar names. Equally essential, to ensure in so far as possible that names of current cultivars in the check list are associated with the proper plant, is documentation in the form of herbarium specimens, notations, and photographs of those cultivars. It is believed that this documentation will provide

a permanent record which will be more useful than any one written description.

Many of the cultivars whose names are in the literature before 1900 are no longer grown. Many of the early descriptions are so inadequate that positive identifications cannot be made from them. Plants grown today and bearing one of these older names may or may not be the same cultivar as that to which the name was applied originally. Therefore, no solution of all the problems of synonymy that exist within the cultivated camellias is to be anticipated. At the same time, the check list, supported in part by the documentary record, can serve as the starting-point for modern camellia cultivar nomenclature and form the basis for the future. Publication of this international check list is not a part of the present project. It is anticipated that it will be turned over to an existing camellia organization for publication and maintenance—through an international registration authority.

It is well known to camellia specialists that workers in Europe, East Asia, Australia, South Africa, and the United States have not consistently and systematically informed one another of the names of new originations, nor have they made a critical comparison of the plants growing in various parts of the world under the same cultivar names. Increasing international commerce in camellias now compounds this confusion. In many instances the effect has been that the same cultivar is known by different names in different countries and—at least within the United States—by different names in the separate centres within the country. Often it is not known which of these names has priority of usage, or if any one of them properly belongs to the particular cultivar. Instances where two or more cultivars are passing under the same name are equally abundant.

In June 1958 Mr. Philbrick transferred his base of operations from Los Angeles to the Bailey Hortorium at Ithaca, New York. A file on the origins of cultivars and of cultivar names is in preparation. Valuable data for this have been obtained from the excellent library of Ralph Peer and that assembled through William Hertrich's interests at the Huntington Botanical Garden. Many other sources remain to be consulted. Preparation of a bibliography of world camellia literature, especially as it relates to cultivars and their nomenclature, is now in progress.

In the spring or summer of 1959 Mr. Philbrick plans to visit England and Belgium to study living collections there. In London, Brussels, and Geneva he will study catalogues and records of

cultivar names. Following more extended work in the camellia centres of western and southern United States, he expects to return to Britain during the blooming season of 1961 to study, photograph and prepare herbarium specimens. In 1962 a visit will be made to Japan for the same purpose.

Co-operation of camellia specialists is needed to determine locations of private holdings of catalogues, unpublished data on parentages of camellia cultivars, and the locations of outstanding living collections, together with information on their history and their availability for study purposes.

Persons having information or material that would be useful to this study are invited to advise MR. RALPH N. PHILBRICK accordingly, addressing him at the L. H. Bailey Hortorium, Cornell University, Ithaca, New York.

CAMELLIAS IN THE HUNTINGTON BOTANICAL GARDENS, SAN MARINO, CALIFORNIA

By WILLIAM HERTRICH
(*Curator Emeritus*)

CAMELLIAS in the Huntington Gardens number several thousand, ranging in size from small seedlings to the specimen plants 18 feet tall. *Camellia japonica* is represented in greatest numbers with over one thousand different cultivars. Other species represented are *C. reticulata, C. sasanqua, C. saluenensis, C. rusticana, C. taliensis, C. cuspidata, C. fraterna, C. maliflora, C. oleifera, C. pitardii.*

The collection had its beginning in about 1895, when three camellia plants were bought, by a former owner of the premises, as part of the landscape arrangement in connection with the planting adjacent to the residence. The late HENRY E. HUNTINGTON acquired the property (540 acres) in 1903 for the purpose of converting part of it into a private residential park for family use. At that date camellia culture in Southern California was restricted primarily to a few commercial establishments growing *Camellia japonica*, mostly for the cut-flower trade.

The first purchase of camellia plants for the Huntington estate was made about 1908 or 1909, when an opportunity presented itself and two dozen shrubs were obtained from a local plant nursery which was discontinuing its operation of growing camellias for the cut-flower trade. The second addition to that small beginning occurred in 1913, when an entire collection of oriental plants became available. The occasion was the disposition of a house, plant-stock and property located in neighbouring Pasadena. It had been a landmark as a Japanese tea-house and garden. The house structure itself may still be seen in the Oriental Garden on the spot to which it was then moved. This portion of the Huntington Gardens was under construction in 1912. It was designed to give pleasure to the Huntington family during their residence there; not only as a part of the unique landscaping scheme but also to provide a large, natural grouping of oriental shrubs and small trees, of which camellias are now predominant.

In 1915 the Huntington Gardens placed an order for a small collection of camellias with the Yokohama Nursery Company in Japan. These plants did not arrive until the spring of 1918. From that time on, until 1942, other modest additions were made to the camellia collection. During that period about one hundred cultivars were established on the canyon slope adjacent to the Oriental Garden and under the tall oak trees (*Quercus agrifolia* and *Q. engelmannii*) north of the family residence.

From about 1912 seedling growth was evolved and, wherever suitable locations could be found, the young plants were set out. By 1942 over a thousand such seedlings were well-established plants and ranged from 2 to 15 feet in height, providing excellent understock for grafting. The steady additions from year to year have increased the collection to about 1,100 cultivars, spreading over an area of about ten acres, and form an excellent opportunity to test the various cultivars as to their likes or dislikes relating to exposure and soil conditions. The allotted space is formed of two differently situated parcels of ground; (1) the canyon side, providing both eastern and western slopes shaded in various degrees by over-hanging live oaks and other tall-growing trees. Soil conditions here range from light loam to heavy clay; (2) a flat piece of ground known as the North Vista, shaded more densely by over-hanging foliage in some spots than in others. In certain locations quite open, light, porous soil prevails. In both of these sections leaves from oaks and other trees provide a natural mulch, on the acid side, which is an ideal condition for camellia plants. The various cultivars have their particular flowering habits and, with a collection of over a thousand, the flowering period in the aggregate covers six months of the year, from October to May.

Climatic conditions in Southern California are favourable to outdoor camellia culture generally. However, geographical factors enter into consideration. A condition of all-day exposure to sun, accompanied by low humidity, is not to the liking of camellia plants. This is particularly true in the interior valleys. The Huntington Garden is located about twenty-five miles inland from the Pacific Ocean. Not too far to benefit by cooling trade winds and very seldom affected by the dry winds originating in the interior desert regions. In the coastal areas, where the humidity is higher, the same plants will thrive exposed to almost full sun. The question has been asked if the industrial "smog" affects the flowers or foliage of camellia plants in this region. It is a question which cannot be answered at this time with any degree of certainty,

as far as the health of the plants is concerned. It is the personal opinion of the writer that no conclusive evidence of damage to the health of the camellia shrubs has been noticed. In 1937 and in 1949, when a low temperature of 20° F. was experienced, apprehension arose with regard to the camellia collection and its safety under those severe conditions. Damage to bud, flower or foliage was not noted on any of the plants of *C. japonica*, *C. sasanqua*, *C. reticulata*, *C. saluenensis*, *C. maliflora* or *C. sinensis*.

The Huntington Botanical Gardens is located in Southern California in an area adaptable to the culture of camellias under normal soil conditions. Nevertheless, failures do occur which may be traced either to disregarding general planting principles or ignoring the good advice given at the time of the acquisition. In many instances, failure is the result of too-deep planting, over-watering or, more rarely, to over-feeding with a highly concentrated fertilizer. Proper placing of camellia plants, when planting, is rewarding and should be planned carefully. If planted in connection with a building, the east or north exposure is to be preferred. Camellias placed under trees grow very well, as a rule, but it must be taken into consideration that very low and dense overhead protection can produce too much shade resulting in darker green foliage with fewer flowers. In the inland areas, care must be taken not to plant camellias against solid walls which receive many hours of exposure to full sun. The foliage of *C. japonica* regularly burns from the reflection of the sun on a wall. The long periods of heat and low humidity in the interior valleys, give this precaution particular force and was proved during the unseasonal heat of 1953. Experience has proved that certain cultivars of *C. japonica* can tolerate more sun than others. Where unavoidable conditions exist and adequate protective measures are not easily provided, it might be well to choose from among the following for all of these have proved to be fairly sun tolerant; 'Are-Jishi', 'Pink Perfection', 'Lady Clare', 'Covina', 'Daikagura', 'Blood of China' and 'Lallarook' among the *japonica* species, and 'Captain Rawes', 'Buddha', 'Tali Queen' and 'Lionhead' among the *reticulata*. Most of the cultivars of *C. sasanqua* are fairly sun tolerant in Southern California.

One of the advantages of planting camellias under oak trees, besides that of shade protection, is the accumulation of leaf-mould. This produces a slightly acid reaction in the soil, a condition favourable not only to camellias but to companion plantings such as azaleas, rhododendrons and kalmias. The principal drawback to

this practice is its adverse affect on the oak trees (*Quercus agrifolia*) since the amount of water required for the plants disturbs the balance of the oak trees' normal water needs. Study of the alternative plant material as a substitute for the oaks has resulted in the recommendation of the following suitable shade trees: *Prunus caroliniana, Pittosporum undulatum, Ligustrum japonicum, Pinus halepensis* and other broad-headed pines. All of these possess potential beauty and dignity for such uses. Furthermore they have proved themselves adaptable to Southern California. Also considered for experiment, is the familiar *Sequoia sempervirens* (California Redwood). When the health of the oak has been weakened, the dread disease of oak-root fungus, *Armillaria mellea*, all too frequently sets in and is fatal to the host it attacks. *Sequoia sempervirens*, thus far, has proved resistant to this fungus. However, the recommendation of the California Redwood must be tempered by the fact that it is not a spreading tree. A possible added disadvantage is its habit of producing many surface roots which might compete for the nourishment which the smaller plants need and must find fairly close to the surface of the soil. In Southern California the successful culture of camellia shrubs depends, in some instances, on planting methods. Some of the failures can definitely be traced to this initial step. The peril of the plants often lies in setting them too deep, particularly where large holes have been prepared in heavy soils. Unless adequate drainage is provided, a reservoir is thus formed and holds water and the result is saturation, a condition detrimental to camellias. Two important rules which must be observed are thorough firming of the back-fill (soil taken from the hole and mixed with other suitable material) and ample allowance for subsequent settling. In extremely compact, non-pervious clay, soil holes should be dug which are shallower and are two to three times as broad. In this case, the ball of earth should be placed at least half above the surrounding grade. This requires a fill of suitable soil above the existing grade and some means of retaining the top soil. Very satisfactory results have been achieved in the Huntington Gardens by following this method.

Camellia plants can be safely moved at almost any season provided they are not in new, lush growth. The period closest to dormancy is just preceding flowering and the closer it is to the dormant period the safer it is to transplant them. Self-sown seedlings in the field usually form long tap-roots lacking the necessary fibre-roots and are difficult to transplant if the tap-roots

CAMELLIAS IN THE HUNTINGTON BOTANICAL GARDENS

FIG. 50—*Camellia japonica* 'Margarete Hertrich', a Formal Double type flower

CAMELLIAS IN THE HUNTINGTON BOTANICAL GARDENS

FIG. 51—*Camellia sasanqua* 'Setsugekka'

are cut. At least, it causes a considerable set-back. In transplanting the older plants it is best to ball the root system and cover it with burlap or, when the specimen is excessively large, to provide a box for the ball of earth around the roots. The burlap need not be removed, since it soon decays. However, it should be loosened by cutting the binder cords. The first camellias acquired for the Huntington estate in 1908 presented a difficult planting problem. The plants had been under cultivation in very gravelly soil, too open and loose to be able to hold a ball and not firm enough to be boxed. Consequently, bare root procedure had to be followed. Some of the plants, 8 to 10 feet tall, were pruned back about 20 per cent and transplanted without serious difficulty, despite the fact that the best season for such work was several months past. The weather, moreover, was warm. Overhead protection from burlap canopies and syringing several times a day apparently provided the necessary safety elements, for they recovered remarkably well. In Southern California very little rainfall occurs during the summer months, from May to October, and consequently watering of camellia plants is an important part of the culture procedure. The humidity occasionally drops below 20 per cent during the autumn season in inland areas. This factor often calls for judicious irrigation to keep the plants from dropping flower buds. The type of soil involved is of particular significance in gauging the frequency rate of irrigation. Over-watering is a danger only in heavy clay soil, adobe or earth having an impervious sub-strata. The method followed in the Huntington Gardens allows for deep irrigation each week except during the rainy season.

Uniform moisture around the root system of camellia plants is requisite for their health and can best be maintained by good mulching. Decayed stable fertilizer is a safe medium for camellia plants. Peat moss is also useful. These can be supplemented by commercial fertilizer applied during the growing season. Highly concentrated types such as blood meal, fish meal, tankage, ammonium sulphate, etc., should be used with extreme caution so as to prevent root burning. The various advertised brands, especially those specifically prepared for camellias, in either granulated or liquid form, should prove very beneficial if properly applied in controlled dosage.

Propagation of camellia plants in the Huntington Gardens takes place primarily by the method of grafting. This method also serves to propagate varieties and cultivars which are notably difficult to

increase by cuttings. The use of heavy understock, ¾ inch to 1 inch in diameter, produces large plants in a shorter time than any other method. The period for camellia dormancy begins about December and, lasting to April, is the most satisfactory time for the grafting procedure. Cleft grafting is the method customarily followed at the Huntington Gardens and is done chiefly in the early part of the calendar year. Understock, to be used for grafting, should be cut as low to the ground as practicable for working on the scion. The cut should be on a slight slant to avoid accumulation of moisture around the scion. Cleft grafts are usually placed on the high side of the understock for the obvious reason mentioned above. In this garden there have been occasions when as many as four to six scions have been used in extremely heavy understock of 3 to 5 inches in diameter.

Fruits and seeds are produced freely in some cultivars and others very sparingly or not at all. The ripe, or mature, stage of the fruit is indicated as the hull begins to split. The capsules of certain cultivars retain the same light green to medium shade of green into maturity, while others turn a deep olive-green or dark brown. Moreover, the physical structure and aspect of the capsules differ among the different cultivars. Some remain fairly smooth and green and others become warty and ribbed. The seed itself, on the other hand, is far more uniform in appearance. It is almost invariably black or dark brown. It is rounded on one side, single ribbed or angled on the other and is smooth. The seed should be hand gathered before the ripe capsule splits open enough to scatter it abroad. If it can be planted at once, before the seed coat hardens, it will usually germinate quickly. If later seeding is desired, the hardening of the seed coat may be retarded by storing the seed in dampened peat moss or in a mixture of equal parts of peat moss and sponge rock and keeping them in a container in a cool place.

Young camellia plants occasionally overload themselves in setting flower buds, nearly exhausting their strength to produce flowers, in which case a programme of disbudding is advisable. In the old plants, the oversetting of flower buds is noted frequently in such cultivars as 'Pink Perfection', 'Mrs. Confer', 'Uncle Sam', etc. We have noticed, in a few instances, that nature herself steps in to displace surplus buds. By actual count, one plant of 'Pink Perfection', about 15 feet tall, by a comparable spread, dropped over 2,500 buds during the season, yet retained another 2,000 buds for full flower development.

Careless watering of the camellia plants during the autumn

months may affect them in such a manner as to cause bud dropping. Autumn months in Southern California are inclined to be very warm and low in relative humidity. Therefore, the watering during that season should have careful consideration.

Pest control of the plants in the Huntington Gardens has been a negligible feature of their culture since the collection was started. One theory about this fortunate circumstance is that it may be due to a wide coverage by an overhead sprinkler system. The use of such equipment helps greatly in preventing insect infestation by keeping the plants clean and healthy. A corollary practice, if and when any infestation is noticed, consists of spraying with either a 2 per cent light oil spray for scale, or nicotine or malathion sprays for aphis.

Occasionally the work of a few leaf-eating beetles is noticed. In some years this is more true than in others. It is very difficult to detect the culprits because they hide under leaf debris during the daytime and feed at night. Poisoning them by means of lead-arsenate sprays or dusting, has proved a fairly reliable control method. The two beetles believed responsible for leaf damage are *Pantomorus godmani* and *Brachyrhinus cribicollis*. The omnivorous looper, *Sabulodes caberata*, which is also known as one of the measuring worms and a native of California, is a menace to camellia buds and leaves as it feeds into them before they begin to unfold. A good stomach poison is the best control for such worms. Lead-arsenate may be used in powder form or in a solution. A half-ounce to one gallon of water is the most effective proportion. This poison is also good to use against the small beetles, which cause similar damage.

In Southern California the flowering habit of camellias extends from October to May depending somewhat on the climatic conditions which may advance or retard the blooming season. The great majority bloom from November to April and are classed as "early, mid-season or late" and apply respectively to November and December, January and February and March and April. The great majority of cultivars bloom in two out of three periods but, in certain instances, long-flowering shrubs will be found in bloom through three periods. 'Are-Jishi' is an outstanding example of long-flowering for, frequently, blooms are found on 'Are-Jishi' as early as October and as late as May though, at no time, profusely. A test record of some of the late-blooming cultivars was made May 30, 1953, and revealed interesting plant performance. 'Pink Perfection', as representative of the large shrubs, was bearing as many

as fifty blooms a day. From five to ten flowers were in full bloom on 'Lallarook', standard 'Uncle Sam', 'Mrs. Confer', 'Pink Dawn', 'Holly Queen', 'Kishu-Tsukasa', 'Rose Queen', 'Princess Baciocchi', 'Te Deum', 'Mme. Le Bois', 'Florence Stratton' and 'Glen 40'. As a mediant check, the following shrubs were bearing twenty blossoms each; 'Mme. Haas', 'Otome Pink', 'Brooklynia', 'Blood of China', 'Mathotiana Alba', 'C. M. Hovey', 'Il Cygno' and 'Feasti'. It is reasonable to assume that this late-flowering schedule, occurring with such a wide assortment of cultivars, will not be repeated very often.

CAMELLIA RUSTICANA IN CALIFORNIA

By RALPH PEER
(*President, American Camellia Society, Los Angeles*)

SINCE about 1951 plants of *C. rusticana*, obtained either from seeds or imported scions, have been growing in the Los Angeles area. All such plants retain their natural dwarf habits and in fact it seems probable that the lack of cold weather may be retarding their development.

In Japan, the only country where *C. rusticana* grows under wild conditions, it is generally accepted that Japanese botanists are correct in classifying it as a sub-species of *C. japonica*. The natural habitat of *japonica* growing wild in Japan is at low altitudes along the sea-coast. *Rusticana*, on the other hand, is generally found at elevations between 800 feet and 5,000 feet in the mountains of western Japan. The botanical theory on the subject is that although *rusticana* will grow well as an individual plant near the sea-shore, it will quickly hybridize with the *japonica*, which will grow only at low altitudes. Actually Japanese scientists have noted a belt of such hybrids at altitudes around 300 to 500 feet, with "pure" *japonica* predominating from there down to the sea-shore.

Aside from certain slight botanical differences, the basic special peculiarity of *rusticana* is its ability to live under the snow during the winter-time. *C. japonica* will die under winter conditions in which *C. rusticana* flourishes and develops rapidly. *Rusticana* will grow in any situation suitable to *japonica*, but the reverse proposition is certainly not true.

A visit to the western mountains of Japan makes clear immediately the conditions required by *rusticana* for its continued survival through the ages. In the first place, *rusticana* grows only on the *western* slope of these mountains. It occurs generally in the form of thickets at the bottom of mountain valleys. In this region a great deal of moisture drifts in from the Sea of Japan, and in the winter-time this moisture falls as snow, beginning in December and continuing until the end of March. At all seasons of the year, however, there is ample moisture in the form of either rain or snow.

On the other hand, the prevailing winds are from west to east and very little moisture passes over the 6,000-foot range. On the eastern slope, there is much very cold weather, but very little snow. *C. rusticana*, if transplanted to the eastern side, would most certainly die from lack of moisture and exposure to icy winds.

On the western side, however, there is a regular rhythm every winter—snows come in December, usually covering the ground to a depth of 3 feet or more; in January there will be an additional snowfall up to 8 or 10 feet. This will start to melt at the end of March or early in April. Indications are that *rusticana* is no more cold-resistant than *japonica*, but it does have a special ability to thrive under snow without light. In this respect it is not different from similar low-growing conifers.

About three years ago investigations indicated the winter climate of the mountain slopes on the west side of Lake Tahoe in California is substantially the same as that prevailing in the high valleys of the western mountains of Japan. On the other hand, the summer conditions are quite different, as there is practically no rainfall between May and October in this part of California.

In 1956, a plant of *C. rusticana* was brought from Los Angeles and grown successfully during the succeeding winter. It was planted at the edge of an artificially prepared grass plot and therefore received water from sprinklers during the summer season. The next year an additional seven plants of *rusticana* were brought to my garden located in the midst of a virgin forest of conifers at Tahoma, California. Towards the end of March, there were 14 feet of snow over most of these plants and yet all survived except for incidental damage. The wind blew away part of the snow-bank exposing one branch and this of course was frozen. The weight of the snow broke down an overhanging bush which in turn broke the camellia under it during the melting process. One branch remained however and this camellia continues growth. The gophers stripped the leaves from another plant. Two plants blossomed and a third is in bud (June 20, 1958).

About all that can be concluded from these experiments is that *C. rusticana* can be grown successfully alongside of *C. japonica* anywhere and in addition it will thrive in areas where the plants, due to local weather conditions, will surely be covered by snow toward the end of December and remain fully covered until the danger of being destroyed by blizzard winds is ended. It is not possible, however, to grow *rusticana* in the open and unprotected

if the local temperature drops below about 15 degrees; that is substantially the same rule as for *C. japonica.*

It is not easy to find the special snow conditions favourable for the survival of *C. rusticana,* and it would indeed be foolish to conclude that we now have available a type of camellia plant which will withstand any and all types of winter weather.

It is interesting to note that many different varieties of *C. rusticana* are to be found in farm gardens in the western mountains of Japan. In form, they seem to be all the same as garden types of *japonica,* except smaller in size. There are semi-double and complete double forms, many of which have been transplanted to California by mailing scions.

CHATSWORTH *CAMELLIA RETICULATA* 'CAPTAIN RAWES'

By FRANCIS HANGER, V.M.H.

SEVERAL years ago I was invited to judge the Horticultural Trade exhibits at the Bakewell Show. I had read and heard many praises of this particular show, how it was the largest one-day show in the country, how it was held on the finest site of any show with the mountains of the Peak District enclosing it on all sides. I determined to go and arrived at Bakewell from Wisley by train, on the afternoon prior to the show, to find all these praises more or less substantiated.

It has so happened that my horticultural career has brought me into contact with a number of the grand and historical mansions of England, most of which prove more than interesting, although many are now unfortunately falling into decay, brought about by death duties and other taxation.

As I was taking tea the thought came to me that here was I with an evening to spare, quite close to that "mansion of mansions", Chatsworth, where that "gardener of gardeners", SIR JOSEPH PAXTON, was Head Gardener to the bachelor Duke, the 6TH DUKE OF DEVONSHIRE. Together they gardened on a scale unfortunately impossible these days. Special houses were erected to provide homes for new plant introductions such as *Victoria regia*, a tropical flowering perennial which is best treated as an annual and first flowered in this country about 1849, at Chatsworth, under SIR JOSEPH'S supervision.

Musa cavendishii, the dwarf stoloniferous banana, so successfully grown commercially in the Canary Islands, was first fruited in this country at Chatsworth during 1836 and shown the same year before The Royal Horticultural Society in London, when those Gardens were at the height of their fame.

PAXTON gardened in a very fortunate horticultural period for a very rich and enthusiastic horticulturist who allowed him to let his brain take its course and plan greenhouses for many new plants and choice fruits. It must be remembered that SIR JOSEPH PAXTON planned the large glass Crystal Palace for PRINCE ALBERT at the great Show of 1851, making what appeared to be a failure into a

most successful show. Most of these sensational happenings have been recorded during the past century but it may come as a surprise to most camellia-lovers to know that PAXTON, about 1840, built a glass case to accommodate three camellias: *C. japonica* 'Alba Plena' (which was planted and grown as a bush in the centre of the wall) and two plants of *C. reticulata* 'Captain Rawes', the form often known in this country as *semi-plena.*

While all this was passing through my mind I determined to get a car and not lose the opportunity provided to visit this place where so many horticultural wonders were performed over 100 years ago. On arrival at Chatsworth I soon realized why over 250,000 people visit the place yearly, for here was a wonderful park, a mansion full of treasures, with a garden surrounding it full of choice trees, water displays and surprises at every turn. But imagine my surprise to find growing in the glass case the two finest plants of *C. reticulata* 'Captain Rawes' that I have ever seen. Each of these plants is still in perfect health although both must be nearly 120 years old, as investigations have proved them to be the original camellias planted by SIR JOSEPH PAXTON for his employer, the 6TH DUKE OF DEVONSHIRE, when the glasshouse was first erected.

The glass cover is in good order, 32 feet 8 inches in length, 9 feet 6 inches wide, with double doors at each end and another central pair. The glasshouse is built against a high wall and is 24 feet high. A bush plant of *C. japonica* 'Alba Plena' is planted in the middle immediately in front of the centre doors and on either side, trained against the walls, is a *C. reticulata* 'Captain Rawes', see plan.

I am informed that according to records by the 6TH DUKE OF DEVONSHIRE in *Handbook to Chatsworth and Hardwick*, written in 1844, the Camellia House was built in SIR JOSEPH'S "reign", about 1840, and the C. 'Captain Rawes' planted about that time. These two centenarians have been exceedingly well cared for down the generations, being well tied in and pruned, and now completely cover the wall. When I saw them they appeared in every way to be perfect specimens and I understand that each plant carried upwards of 1,100 blooms this past spring.

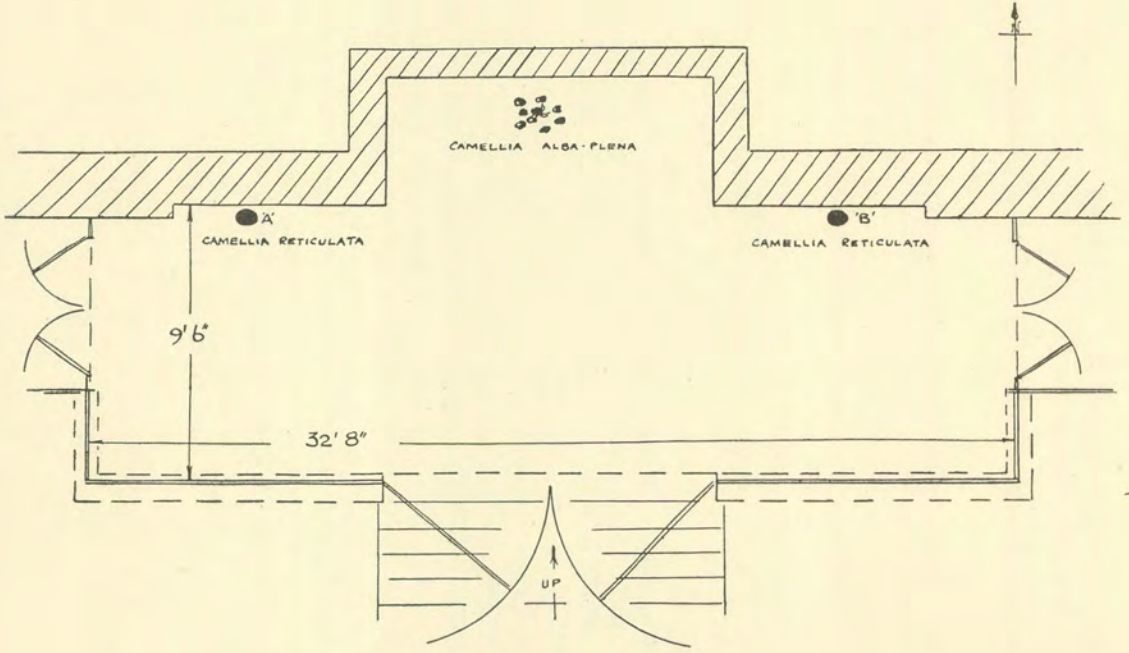
MR. FRANCIS THOMPSON, C.B.E., Director of the Devonshire Collections, has very kindly investigated the matter for me and the following are his findings:

"The 6TH DUKE, in his *Handbook to Chatsworth and Hardwick*, describes the laying-out of the Portland Walk and the general

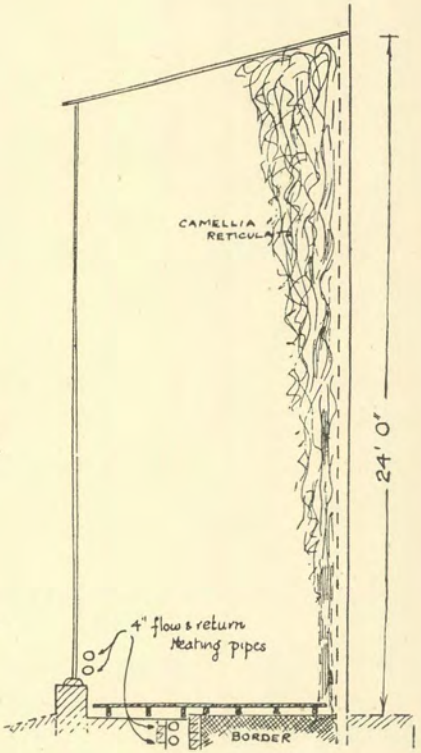
THE GLASS CASE.

CHATSWORTH GARDENS.

(1/4" SCALE)



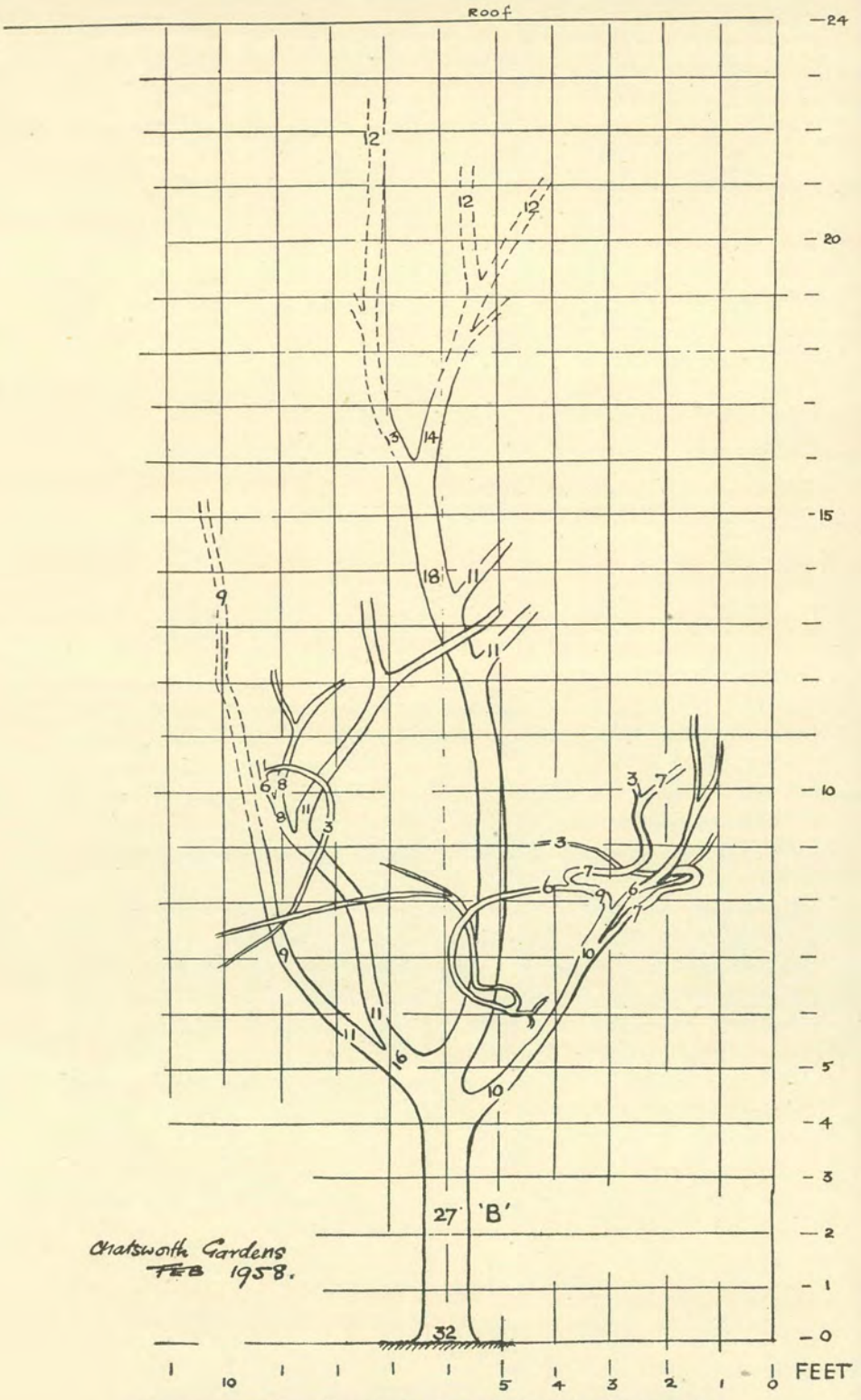
PLAN



SECTION

reconstruction of the garden in this area under PAXTON's direction, and tells how the ground between Flora's Temple and the south-west corner of the Stables was redeemed from waste and became the site of a 'conservative wall', heated with pipes and protected by glass. This wall was PAXTON's idea. The DUKE himself had been content with a more modest scheme. 'My first improvement at Chatsworth', he writes, 'of which I was not a little proud, was a wooden covered walk from house to stables. . . . It was demolished by greater works.' I think there can be no doubt that these 'greater works' were the Camellia House. Now, the Handbook was written in 1844, and from the way in which he speaks of the new work on this front I should regard it as practically certain that it had already been in existence at least a few years. So I should guess that the Camellia House was first built in, say 1840 or thereabouts. And wouldn't you think it probable that the camellia was planted as soon as ever the glasshouse was ready for it?"

MR. B. C. LINK, the present Head Gardener at Chatsworth, fully appreciates the importance of these two large *C. reticulata* 'Captain Rawes', and he is to be congratulated on the general good health of the plants. The text Fig. on p. 122 gives the approximate girths in inches of most of the main branches. Plant A has a main stem 25 inches in circumference, 2 feet from the ground, while plant B is two inches larger, i.e. 27 inches at a like distance from the base. Both plants completely cover all the space allotted to them to a height of 24 feet. MR. LINK has informed me that during the war both plants were rather neglected and were allowed to grow through the top ventilators, preventing the complete closing of the house. As soon as labour became more plentiful the necessary pruning was carried out to rectify this, thus allowing the house to be completely closed during the severest of frosty weather. Only during such weather does the Camellia House require artificial heating. The glasshouse faces full south and is never shaded. No doubt in the south of England slight shade during the hot months of May, June and July would be necessary. To get the excellent results obtained at Chatsworth MR. LINK gives the camellias frequent hosing down during the summer months, which apparently proves sufficient moisture for the plants' needs. During the winter, and immediately before the flowers open, about four good waterings are necessary to prevent bud drop and to give the plants a little help in the development of their huge blossoms. The water is supplied from a pond in the gardens, and the pond gets its lime-free water by drainage from the moors around.



Dimensions of *Camellia reticulata* 'Captain Rawes' at Chatsworth

Mr. Link, who has these plants in his care, kindly gave me the following information on pruning and manuring:

"We do very little pruning on *C. reticulata* except near the top ventilators and the sides of the house just to keep them in check. This is done after the flowering period, although a number of blooms are always removed for general use. The remainder is left and tied down. This must have been the practice for practically the full life of the trees as they are now 2 feet through in thickness of growth. 'Alba Plena' has been allowed to grow on to fill the centre archway as this does not produce any length of new growth.

"After the flowering period the trees are given a mulch of well-rotted cow manure. We find this is sufficient and they have always kept healthy and give fine blooms."

My thanks are due to: The Duchess of Devonshire, Mr. Francis Thompson and Mr. B. C. Link for their willing co-operation in helping me to place these historical camellias on record.

CAMELLIA COMPETITION

April 15 and 16, 1958

By ROBERT E. ADAMS

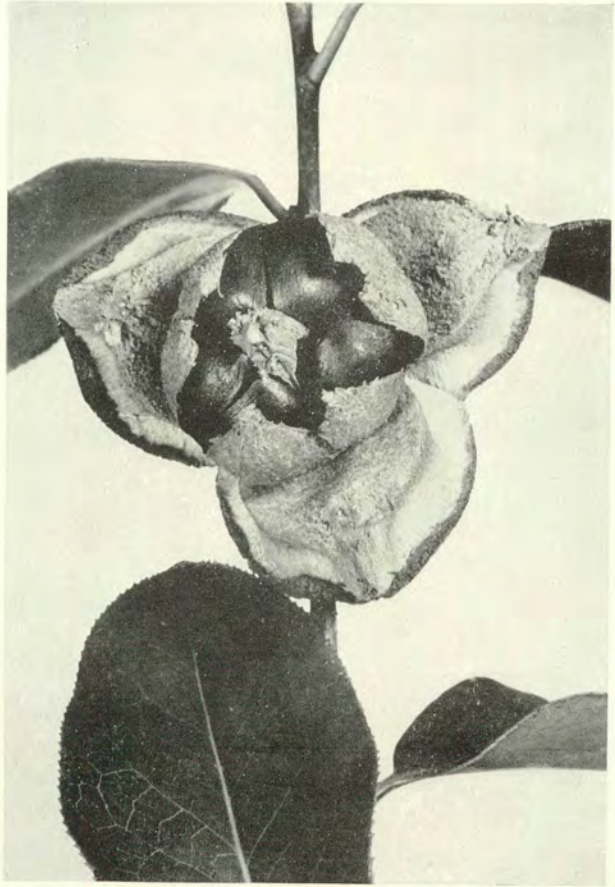
THIS year the Camellia Competition was undoubtedly the best seen in our Hall for a very long time. Despite a very cold spring there were 25 exhibitors and 648 exhibits. For comparison it is interesting to note, for example, that in 1951 there were only 8 exhibitors and 97 entries. The first eight classes in the competition are for single varieties of *Camellia japonica*. In Class 1, for 'Alba Simplex' or 'Devonia', the first prize went to the MISSES GODMAN, for 'Devonia'. The second prize went to MR. TRY, and the third to the Crown Estate Commissioners of Windsor Great Park. For Class 2, single specimens of 'Jupiter' or 'Juno' were called for, and in face of very keen competition, where 10 exhibits were shown, the DUKE OF DEVONSHIRE won first prize with a fine specimen of 'Jupiter', followed by Messrs. Waterer, Sons & Crisp, second, and third SIR GILES LODER, both showing 'Jupiter'. In passing it might be noted that all the plants were morphologically alike although the varietal names were different and it would appear that there is a need for an official ruling on the varietal status of the two epithets.

Lately, the name 'Kimberley' has been much questioned by our authorities on nomenclature and, although there may be some doubt, the two exhibits shown in Class 3 agreed with the plant generally known by this name. Here the first prize went to MR. DE ROTHSCHILD and the second prize to Messrs. Waterer, Sons & Crisp. Red, single-flowered varieties were also included in Class 4 and here MAJOR-GEN. HARRISON won first prize with 'Silva'; second prize went to MR. TRY, for an unnamed seedling, and the third to MRS. PRESTON. A nice specimen of 'Takayama' was shown by LORD ABERCONWAY and the National Trust, but it did not quite warrant the special attention of the judges in a class where the competition was very keen. Class 5, for single-flowered, white varieties not specified in Class 1 had eight exhibits and MRS. URQUHART creditably won the first prize with a bloom of 'Surusume'. There were eight exhibits of single-flowered pink varieties in Class 6. Here again competition was keen and it is

Photo, J. E. Downward

FIG. 52—*Camellia reticulata* 'Paochucha' P.C. March 4, 1958. Shown by MRS. B. L. URQUHART

FIG. 53—*Camellia reticulata* 'Pagoda' from the Huntington Botanical Gardens



CAMELLIAS IN THE HUNTINGTON BOTANICAL GARDENS

FIG. 54—*Camellia pitardii* in fruit

FIG. 55—An open seed-pod of *Camellia reticulata* 'Chang's Temple'

particularly interesting to note that the three prizes were all given to 'Hatsu-Zakura'. Messrs. Waterer, Sons & Crisp were first, the Crown Estate Commissioners second, and MR. DE ROTHSCHILD third, with a bloom from the magnificent plant he grows at Exbury. Undoubtedly this camellia is an outstanding one and although it is generally available in trade channels it is not seen in gardens as much as its merit warrants. Finally, in this Subsection, Class 8 called for a little collection of any three, single-flowered varieties and it brought forth some very interesting replies. The first prize went to a trio from the Crown Estate Commissioners, consisting of 'Furoan', 'Hatsu-Zakura' and a delightful, unnamed seedling of a rich, red colour; second prize went to MR. DE ROTHSCHILD and the third to MR. TRY. The three varieties shown by SIR GILES LODER were highly commended and in particular was noticeable a nice bloom of a single-flowered form of 'Tricolor'.

Throughout the country the camellia most commonly grown under glass is probably 'Adolphe Audusson' and, every year without fail, this plant gives a magnificent show of flower. In Class 9, catering for this variety, the exhibits were of the highest class and the MISSES GODMAN took first prize with a bloom nearly 5 inches across; second and third prizes went to MR. BARRANGER and Messrs. Waterer, Sons & Crisp respectively. Exhibits of 'Donckelarii' were catered for in Class 10 and despite very keen competition the one from MR. BARRANGER was head and shoulders above other entries. Such a display as in this class shows the marked variation in shape, form and colouring of the plant and, indeed, the unfortunate variations in the spelling of the varietal epithet.

Another camellia which gives a rich return for its cultivation is 'Latifolia' but, for some unknown reason, good specimens are rarely to be seen in this competition. Special congratulations should therefore go to MR. BARRANGER for a singularly good exhibit which won him first prize. For growing out of doors, 'Lady Clare' has few rivals and prize winning in Class 13, where this plant was exhibited, was not easy. MRS. URQUHART took the first with a fine specimen nearly 5 inches in diameter, followed in second place by SIR GILES LODER, and third, MR. DE ROTHSCHILD. This year the exhibits in Class 14 for 'Magnoliaeflora' were below par but notwithstanding the judges acknowledged a good exhibit from DR. ROBERTS, who worthily took the first prize. In Class 15, stipulating semi-double, red varieties not specified elsewhere, MRS. URQUHART won first prize with 'Sacco Vera'. Second

prize went to MR. BARRANGER and MRS. URQUHART won the third with a variety shown under the name of 'Saturnia'. Here COL. SIR RALPH CLARKE showed a good specimen of 'Nigra', a variety seldom seen, but not, presumably, of sufficient merit to warrant the particular attention of our judges.

Any semi-double, white varieties not specified elsewhere were exhibited in Class 16. There were seven exhibits and the first prize went to Messrs. Waterer, Sons & Crisp for 'Gauntlettii', followed by MR. DE ROTHSCHILD for second prize, showing the same variety. The uncommon 'Le Leys', entered by LORD ABERCONWAY and the National Trust, won third prize. In the class calling for any semi-double variety not provided for elsewhere, MRS. URQUHART was a truly worthy winner with a magnificent specimen of a variety called 'Nancy Bird'. This plant was 4½ inches across, coloured bright pink on a pale background and flecked with some limited, pale crimson streaks. To round off the Sub-section, twelve exhibitors entered for Class 19, which demanded any three, semi-double varieties. MRS. URQUHART was first with her spuriously named 'Saturnia', 'Lady Vansittart' and a good flower of 'Donckelarii'. Second prize went to MR. BARRANGER, with three flowers not showing any great variety in colour or form, and third prize was awarded to MR. TRY.

As ever competition was bound to be at its keenest in Class 20 for 'Elegans' and here there were eleven good exhibits. In face of sharp competition the first prize was worthily awarded to Messrs. Waterer, Sons & Crisp, the second to the DUKE OF DEVONSHIRE and the third to MR. TRY. Paeony-formed or anemone-formed, red varieties were shown in Class 23, where Messrs. Waterer, Sons & Crisp again took first prize with a very fine bloom of 'Anna Bruneau'. Second prize went to the Crown Estate Commissioners for their exhibit of 'Althaeaflora' and MRS. URQUHART gained the third with the lesser-known variety 'Red Prince'. In a similar class for white-flowered varieties there were only three exhibits, but, as no prize was awarded, a rather nice example of 'Platipetala' was unacknowledged. Inevitably that distinctive camellia, 'D. Herzilia de Freitas Magalhaes', was bound to win first prize in some part of the Competition and it did so in Class 25 when shown by MRS. URQUHART. This magnificent variety—which MRS. URQUHART was instrumental in bringing from Portugal—is anemone-formed and coloured pale crimson with a distinct purplish tinge around the edges of the petals and the larger petaloids. Camellia 'Eugene Lize', which is rarely seen

in our Competitions, won second prize for LORD ABERCONWAY and the National Trust, while another unusual variety, 'Ha-Na-Tachi-Bawa', was given third prize when shown by MR. DE ROTHSCHILD.

In the view of many people the best bloom in the Show was that of 'Augusto L. Gouveia Pinto', in Class 26, for any anemone- or paeony-formed variety not provided for otherwise. The specimen shown by the MISSES GODMAN was 5 inches across and far outshone the other exhibits. This old variety is rarely grown but it is well worthy of cultivation, particularly under glass, and the exhibitors are to be congratulated on showing a flower of such perfection. A worthy second prize was given to Messrs. Waterer, Sons & Crisp for showing the American variety 'R. L. Wheeler'. Another class which offered serious competition to all competitors was No. 27, for three anemone- or paeony-formed varieties. MRS. URQUHART proved to be a worthy winner with three blooms, in perfect condition, of 'D. Herzilia de Freitas Magalhaes', 'Red Prince' and the rarely seen 'Kenny'—an anemone-centred variety of good substance and a rich pink. The second prize went to Messrs. Waterer, Sons & Crisp and the third to MR. TRY.

Variation in form and colour was to be found in Class 28, for 'Contessa Lavinia Maggi', and the first prize went to a flower of what we associate with the generally accepted form. This was shown by Messrs. Waterer, Sons & Crisp. Second prize went to MRS. URQUHART for a variety with a distinctive pink blush. An interesting variant showing a few stamens was exhibited by MR. TRY, but it went without an award. The DUKE OF DEVONSHIRE was the undoubted winner of the first prize for 'Mathotiana'; his dark red form was particularly outstanding and besides being a good colour, it was 4½ inches across. Variety 'Mathotiana Rosea' was called for in Class 31 and amid a high standard the first prize went to the Crown Estate Commissioners, the second to MRS. URQUHART, and the third to Messrs. Waterer, Sons & Crisp. As far as 'Mathotiana Alba' was concerned, in the next class, MRS. URQUHART secured the first prize with a large bloom of fine quality and Messrs. Waterer, Sons & Crisp were second. Eight exhibitors entered in Class 34 for 'Imbricata Rubra' and MR. BARRANGER won first prize with a bloom of tightly-packed petals, while a specimen of more open character won second place for MR. DE ROTHSCHILD.

In Class 35 the high quality of flowers exhibited by the MISSES GODMAN gained them first prize with a really good bloom of

'Souvenir de Bahuaud Litou'. MR. DE ROTHSCHILD won the second prize. In Class 36, where any rose-formed or formal double, red variety not catered for in other classes was called for, the exhibits were of the highest standard and a particularly good bloom of 'Coquetti' gave Messrs. Waterer, Sons & Crisp first prize. The second prize went to MRS. URQUHART and the third to MR. BARRANGER. In Class 38 the first prize was won by MRS. BUTLER with a formal double flower of a pleasant, flesh pink shade. MR. HAWORTH-BOOTH obtained second prize with a good specimen of 'Kumasaka'. Class 39 was for any rose-formed or formal double variety not provided for elsewhere and here MRS. URQUHART won first prize with an example of 'Dr. Balthazar de Melo'. What must have been a very close second was awarded to the MISSES GODMAN for a beautiful bloom of 'Augusto L. Gouveia Pinto'. Class 40, which catered for three rose-formed or formal double varieties, was won comfortably by the MISSES GODMAN with first-rate specimens of 'Augusto L. Gouveia Pinto', 'Souvenir de Bahuaud Litou' and 'Imbricata Alba'. MRS. URQUHART was second with three imbricated varieties. A close third prize went to MR. TRY, who showed three unnamed varieties.

As in earlier classes the high standard of competition was maintained in Class 41, where exhibitors had to show any six varieties of *Camellia japonica*. By bringing together high-class blooms and showing the variety in various forms of the species MRS. URQUHART was awarded first prize and, in particular, we noticed good specimens of 'Lady Vansittart', 'Nancy Bird', and the little seen 'Somnambula'. A worthy second went to the DUKE OF DEVONSHIRE who, unlike MRS. URQUHART, showed good specimens of common varieties like 'Mathotiana', 'Jupiter' and 'Alba Plena'.

Leaving varieties of *Camellia japonica*, Class 42 was for *C. reticulata* (Wild Form) and with only two exhibits the first prize went to MR. DE ROTHSCHILD for a good pale pink form. Where double and semi-double forms were shown, in Class 43, SIR GILES LODER won first prize for a magnificent specimen, measuring some 6 inches across, of 'Captain Rawes'. The second prize went to the DUKE OF DEVONSHIRE for a richly-coloured, well-shaped flower, and MRS. URQUHART won third prize for her specimen of 'Captain Rawes'. From favoured gardens there were eight exhibits in Class 44, for *C. saluenensis*, and here COL. SIR RALPH CLARKE was first, followed by the Crown Estate Commissioners (who showed a well-selected dark form), and MR. DE ROTHSCHILD was third. With the increasing popularity of *Camellia williamsii*, a high standard

of exhibits was to be found in Class 45 for any single variety of this hybrid. The Crown Estate Commissioners won first prize for *williamsii* 'Parkside'. DR. ROBERTS won second prize and LORD ABERCONWAY and the National Trust took third for the particularly dark form, *williamsii* 'Mary Christian'. Of all camellias, that which has taken pride of place in recent years is *williamsii* 'Donation' and here, appropriately, it was good to see that the first prize went to COL. SIR RALPH CLARKE. SIR HENRY PRICE was second and MAJOR-GEN. HARRISON third, with a form of a somewhat darker shade than that generally seen.

Interest was shown in Class 49, catering for any other hybrid of *C. saluenensis*, and MR. DE ROTHSCHILD earned the first prize with his variety 'Apple Blossom', a plant which stood out above its fellow exhibits. Ten exhibitors entered for Class 51, where any three species and/or varieties and/or hybrids with one bloom of each, could be shown. In each of the prize-winning exhibits *C. japonica* was prominent. The MISSES GODMAN were first with three good varieties showing pink, deep red and white flowers. Messrs. Waterer, Sons & Crisp had a similar format and won second prize. The DUKE OF DEVONSHIRE gave variety to his trio by using *C. reticulata* and he obtained the third prize. In the next class it was even more difficult than the previous one, for, in this case, the exhibitors had to show six blooms, instead of three, with the same conditions. SIR GILES LODER was a worthy winner with flowers of the highest class and in particular a magnificent specimen of *C. reticulata*. Among his flowers was noted the variety 'Mary Thomas' and, from the very nice specimen shown, it might well be asked why this plant is not found in other classes or, indeed, in many other gardens.

Cold, unseasonal weather was responsible for limited exhibits in Class 61, for *Camellia cuspidata*, and here again SIR GILES LODER is to be congratulated on the exhibit with which he gained first prize. A spray of any single-flowered variety of *C. japonica* was needed for Class 62 and the first prize was worthily awarded to the DUKE OF DEVONSHIRE for a spray of 'Jupiter'. The second prize went to MRS. PRESTON and the third to SIR GILES LODER. MR. TRY showed a good specimen of 'Alba Simplex'. In Class 63, where any semi-double varieties were needed, MR. BARRANGER was first with his spray of the large-flowered 'Mercury', followed by MRS. PRESTON, showing 'Lady Clare', and SIR GILES LODER, showing 'Dobreii'. In the case of anemone- or paeony-formed flowers in sprays for Class 64, MISS MARSH showed a specimen of what

might be the true 'Saturnia' and the well-flowered branches were deservedly given first prize. In Class 65, for a spray of rose-formed or formal double varieties, the first prize went to the Misses Godman for 'Imbricata Alba', followed by the Duke of Devonshire with 'Alba Plena', while the third place was taken by the Misses Godman. For Class 66, three varieties of *C. japonica* had to be shown in sprays and Mr. de Rothschild won the first prize with a pink and two red-coloured varieties. To obtain second prize the Duke of Devonshire showed, in his trio, a good spray of 'Eximea', a plant which is to be found masquerading under many disguises. Along more unusual lines Mr. Try, for the third prize, included 'Contessa Lavinia Maggi' and a very good spray of 'Mikado'. Some really good exhibits were entered in Class 68, for sprays of *C. reticulata*, and the first prize went to Sir Giles Loder for a magnificent exhibit. The Duke of Devonshire won second prize and Lord Aberconway and the National Trust were third. Outstanding in Class 69 was the plant of *C. saluenensis* which won first prize when entered by Mr. de Rothschild. The one shown had a rosy pink flower, and it will be interesting to know if the form has been used in any hybridizing at Exbury.

In Class 70, where a single spray of *williamsii* was required, Sir Giles Loder won first prize for his *williamsii* 'Donation', followed by Lord Aberconway and the National Trust with the same variety, and the latter exhibitor also filled the third place with a semi-double form of *williamsii*. Although there were only two exhibitors in Class 74, this was an interesting one which called for any six species and/or varieties and/or hybrids showing a spray of each. Sir Giles Loder shrewdly made the centrepiece of his section *C. reticulata*, supported mainly by a good form of *williamsii* and 'Tricolor'. It was a particularly interesting combination and illustrated the range of beauty in the genus. Without doubt it would have taken a very good group indeed, ably to have challenged the prize-winner's arrangement and selection of material. For Class 82 the exhibitors had a somewhat difficult task of showing three camellia plants in bloom and, against considerable opposition from Messrs. Waterer, Sons & Crisp, who won second prize, and Mr. Cutts, who won third prize, the Misses Godman carried the section with three magnificent plants, all of which were laden down with flowers: indeed on the plant of *williamsii* 'Donation' there was more bloom than foliage. The three pots attracted considerable attention from the large number of visitors to the Show and Mr. Peer will be gratified to learn that the

Photo, J. E. Downward

FIG. 56—*Camellia japonica* 'Augusto L. Gouveia Pinto' A.M. April 15, 1958. Shown by THE MISSES E. and E. GODMAN (see p. 136)

Photo, J. E. Downward

FIG. 57—*Camellia japonica* 'D. Herzelia de Freitas Margalhaes' P.C. April 1, 1958. Shown by MRS. B. L. URQUHART

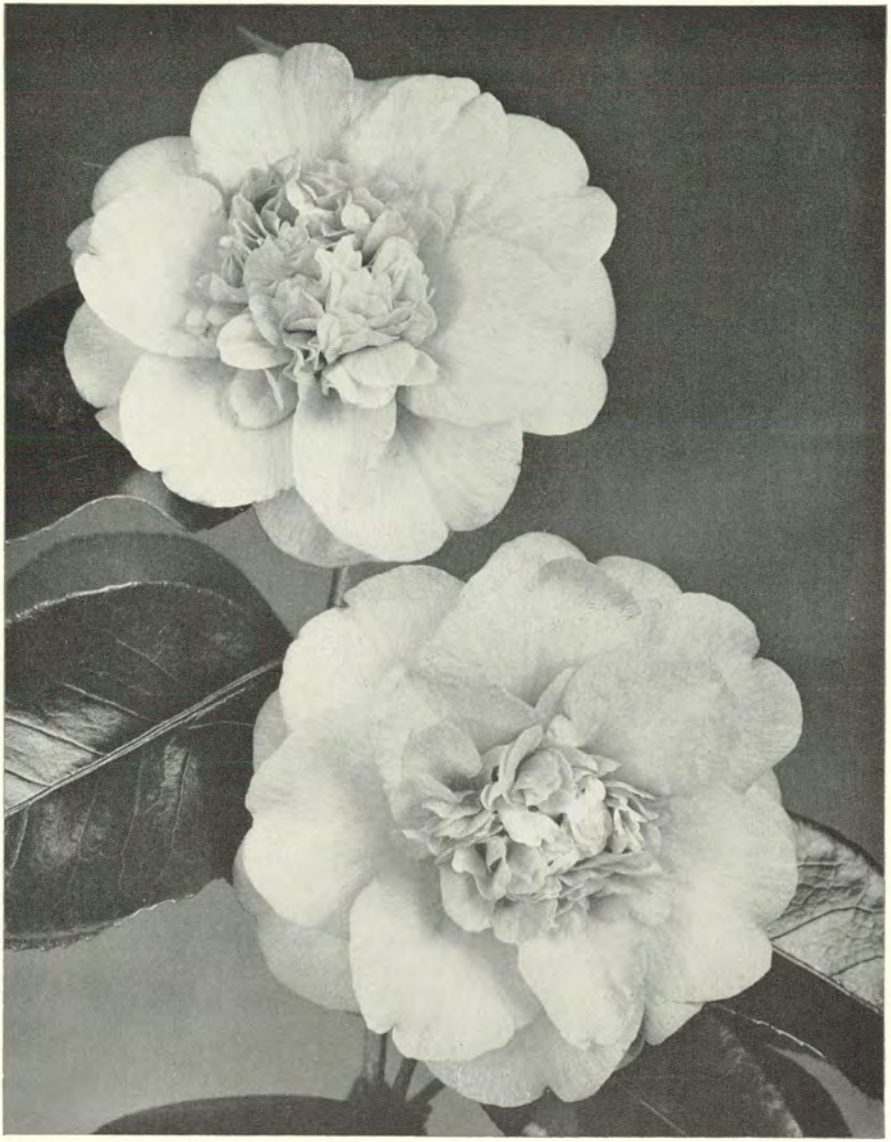


Photo: J. E. Downward

FIG. 58—*Camellia japonica* 'Elegans' **F.C.C.** January 21, 1958. Exhibited by the Crown Estate Commissioners, The Great Park, Windsor (see p. 136)

FIG. 59—The Rhododendron Show, April 29 and 30, 1958

Photos, J. E. Downward

FIG. 60—A fine collection of Camellia varieties for which a Gold Medal was awarded. Exhibited by Messrs. J. Waterer, Sons and Crisp Ltd on March 18, 1958

trophy which he kindly presented, was worthily given for this exhibit; undoubtedly it was the best in a Show where the exhibits were of the very highest class.

FLORAL DECORATION

In keeping with the Camellia Competition, entrants in the section for floral decoration maintained the high standard. Here the outstanding exhibit was one shown by MRS. MCDONALD, of Thames Ditton, and took first prize. The exhibitor arranged a collection of flowers of 'Margharita Caleonie', so that the formal red flowers contrasted attractively against a large black tray. By the careful method used in arranging the flowers the exhibitor made up for the lack of variety or bright colour in her exhibit. The second prize went to MRS. BAIRD, of Colchester, using 'Preston Rose' and the third to MRS. BUTLER, of Lingfield. Also of interest in this section was a pleasing arrangement of 'Nigra' by COL. SIR RALPH CLARKE.

TRADE EXHIBITS

The Nursery Trade was well represented in the Main Hall and there were groups from Messrs. Waterer, Sons & Crisp—who had an exhibit devoted solely to camellias—Messrs. Haskins Bros., and Messrs. Hillier & Son. Here, in some cases, potential customers must find it distracting to see really good groups of plants sometimes labelled in a slipshod manner and there were examples, on one exhibit, of a plant given three different names or three different combinations of the same name.

Among the most attractive of the trade stalls was that of Messrs. L. R. Russell, who showed their camellias, together with other plants in full flower. In particular a pleasant combination was made with a large plant of *Berberis lologensis*, happily associated with a plant of the sweetly-scented *Magnolia kobus*. As for the camellias themselves, the majority of common garden forms were to be seen, together with an interesting pink variety, 'Peach Blossom' which, it is suggested, outshines the more common 'Magnoliaeflora'. The variety was not shown in the Competition and more is the pity. Undoubtedly, it would be interesting to see it more often and, perhaps, for it to receive the attention of the Rhododendron and Camellia Committee at some future time.

Some Hybrid Camellias

IT was in the Year Book dated 1955 that I wrote an article under the above title.

In this series of notes I described, somewhat reluctantly due to pressure from our botanist friends, a plant which I had named Camellia 'Barbara Hillier', as a variety of *Camellia* × *williamsii*. I say reluctantly, because from observations I regarded this plant as intermediate between *C. reticulata* and *C. japonica*.

The subject of the parentage of this plant was raised again this spring when in February we placed it before the Rhododendron and Camellia Committee, in the hope that it might be deemed worthy of some award.

From the Secretary I received a letter thanking us for the exhibit and saying that the Committee would be glad of the opportunity to see the plant again when more information regarding its parentage was available.

Thereupon I decided to send a further specimen to Kew for MR. SEALY'S examination.

It was with no little satisfaction that I received from DR. GEORGE TAYLOR, Director of Kew, a copy of MR. SEALY'S report, in which he agrees that the plant is probably a hybrid between *C. japonica* and *C. reticulata*, and that this hybrid plant is very likely the same plant as that described as *C. heterophylla* Hu.

It is therefore on this authority that I designate the plant *C. heterophylla* 'Barbara Hillier'.

It should perhaps be pointed out that, although the material in both cases was derived from the same plant, in the first instance it was pot-grown and probably was slightly starved and smaller in all its parts than the later material, which was taken after it had been transferred to the open ground and had grown well for a further two years. In this way the former attribution to *C.* × *williamsii* may have arisen.

The following report from MR. SEALY will no doubt interest some readers:

> "So far as the corolla, androecium, and gynoecium are concerned, this plant agrees with *C. reticulata* Lindl. The perules

however, are much less hairy than is usual in that species. *C. reticulata* is variable in its leaves, but none of the variants agrees with this plant in shape, and the base is never rounded as is sometimes the case here; moreover, in *C. reticulata* the lower epidermis is always 'roughened' (verruculose) in the dried state and cork-warts are absent, whereas in this plant the epidermis is smooth and there are small bodies which seem to be cork-warts. The significance of these two apparently trivial characters is that they are features of *C. japonica* and are known to be passed on to some of its hybrids; in *C. japonica* some variants may have leaves rounded at the base. It is therefore possible that 'Barbara Hillier' may be a hybrid as suggested.

Actually the plant greatly resembles *C. heterophylla* Hu, and I think it can be referred to that 'species' despite the fact that the flowers have only seven petals whereas the flowers of *C. heterophylla* were semi-double, with up to twenty petals *fide* Hu. *C. heterophylla* was described from a plant growing in a temple garden at Shunning hsien, Yunnan, and in my account of the genus I have drawn attention to the fact that it differs from *C. reticulata* in precisely the same way as 'Barbara Hillier' —leaves sometimes rounded at base and very blunt at the apex with the lower epidermis smooth apart from tiny scattered bodies which I take to be cork-warts; I have also hazarded the suggestion that it might be a hybrid of *C. japonica* and *C. reticulata.*

It is curious that, although these two species have been in cultivation for over a century, it is only during recent years that putative hybrids between them have come to light. The late Mr. C. P. Raffill told me long ago that he, and others, had tried repeatedly to cross the two species but without success. The fact that *C. japonica* is diploid and *C. reticulata* is hexaploid may have some bearing on the matter."

In the same article I adopted the name—"Camellia × Borde Hill Hybrids" and under this Grex name I placed C. 'Salutation' A.M. 1936.

Now that Mr. Sealy accepts the existence of hybrids between *C. reticulata* and *C. japonica,* I hope before long he will agree that C. 'Salutation' is a hybrid between *C. reticulata* and *C. saluenensis,* which is the parentage given to me by the late Colonel Stephenson R. Clarke, C.B., V.M.H., whom I have always regarded as the greatest amateur "all rounder" in the gardening world of this century.

C. 'Salutation' looks every inch a *reticulata* hybrid, and may be separated from the *C. williamsii* cross by the disposition and the size of its flowers, its sparse habit of branching, its widely separated leaves, which so much resemble *C. reticulata*.

The leaves are consistently elliptic, 3⅘ inches to 5 inches long, and 1⅗ to 2⅕ inches wide, cuneate, abruptly acuminate, regularly but shallowly serrated, becoming entire towards the base; midrib raised, surface of blade matt above, polished beneath.

In a discussion on 'Salutation' in the 1957 issue of the Year Book my view was supported by MR. HANGER and MR. GOULD. It should be pointed out, however, that in MR. G. H. JOHNSTONE'S contribution to the same book the chromosome count of 2n = 30 made by the John Innes Horticultural Institution would not support the view that *C. reticulata*, which is a hexaploid (2n = 90), was one of the parents. MR. SEALY writes that he has no reason to change his opinion that the plant was not a *reticulata* cross.

H. G. HILLIER

Winchester.

Some Newer Camellias

The following newer varieties have recently flowered in our nurseries and brief descriptions of them may be of interest to some readers of the Year Book.

'ANNA BRUNEAU'. First-class plant, originating in France and now reintroduced. Full paeony form, red 4-inch flowers freely borne on young plants, good grower, making a solid rounded bush, good foliage.

'ALEXANDER HUNTER'. Australian, and much used for hedges in that country. Vigorous erect habit. Single to semi-double, rich scarlet, 5 to 6 inches in diameter, fully open flower, flat and plate-like, rich dark foliage. Received a Preliminary Commendation by R.H.S., March 19, 1957.

'DÉBUTANTE'. American variety. Vigorous upright growth, good foliage, full paeony form, light pink, flowers 3 to 4 inches diameter, tightly packed petals resembling powder puff. A good plant for British gardens.

'DAIKAGURA'. Japanese variety. Rich dark foliage, of open habit, early flowering, often in flower December. Bright rose pink

splotched white, paeony form. Needs protection from strong winds owing to its open habit.

'HAKU-RAKUTEN'. Chinese variety, stiff upright habit. One of the best semi-double whites, with curved and fluted petals, flowers four and a half to five inches in diameter, a good plant.

'H. A. DOWNING'. American variety. Vigorous bushy growth, good foliage, large flowered, rose-red veined blood-red, semi-double. Mid season.

'OZONRAN'. Of Japanese origin. Strong growing and bushy habit, semi-double white blotched and striped red, prominent central boss of yellow stamens. Impossible to find two flowers marked exactly alike.

'VIRGIN'S BLUSH'. Another American variety, available in this country. White flushed pink, paeony form. Vigorous upright growth, flowers three to four inches in diameter. Should be a good plant for British gardens.

'C. M. HOVEY'. An old variety reintroduced. A large formal double dark red, a medium-growing bush, flowers 5 inches diameter.

'PAULETTE GODDARD'. An American variety, very large semi-double loose paeony form to anemone form. Large dark red. Vigorous upright grower.

'J. J. WHITFIELD'. American variety. Dark red flowers, 4 to 5 inches diameter, loose paeony form to anemone form. Good upright grower, a good introduction.

C. J. WILLIAMS

John Waterer, Sons & Crisp, Ltd.
The Nurseries,
Bagshot, Surrey.

CAMELLIAS AND RHODODENDRONS WHICH RECEIVED AWARDS IN 1958

Camellia japonica 'Augusto L. Gouveia Pinto', A.M. April 15, 1958. For a number of years this plant has been grown by the exhibitors, who state that it does best when afforded the conditions of a cold greenhouse. The flower consists of four rows of petals together with large petaloids massed in the centre to give a bloom of Paeony form. In colour the flower is Carmine (H.C.C. 621), paling towards the margins and edged with white in varying degrees. Stamens are absent. Exhibited by The Misses E. and E. Godman, South Lodge, Horsham (Fig. 56).

Camellia japonica 'Elegans' F.C.C. January 21, 1958. According to PAXTON'S *Magazine of Botany*, Vol. 2, 1836, this handsome camellia was raised from seed by MR. CHANDLER, at his Vauxhall Nursery in 1819. It is a hardy evergreen shrub of vigorous habit, with elliptical dark green glossy leaves, 3–5 inches long with serrulate margins and pointed, recurved tips. The flowers are from 10–12 centimetres across, near H.C.C. 21. Carmine in colour, and sometimes blotched and striped with white. The outer petals are rounded in shape, and there is a central mass of petaloids and fertile stamens, giving the flower its characteristic "anemone" form. Exhibited by the Crown Estate Commissioners, The Great Park, Windsor, Berks. (Fig. 58).

Camellia (reticulata × williamsii 'Mary Christian') 'Leonard Messel' A.M. April 29, 1958. This hybrid is typical of the *williamsii* grex insomuch as it can be grown well out of doors and blooms early in the year. The flowers are semi-double, 4 inches across and contain about fourteen petals, each coloured a bright shade of Camellia Rose (H.C.C. 622/3). In the centre of the flower the stamens are bunched together prominently. Exhibited by Mrs. L. C. R. Messel, M.B.E., and The National Trust, Nymans Garden, Handcross, Sussex.

Rhododendron (dalhousiae × nuttallii) (Victorianum g.) 'Cream Trumpet' F.C.C. April 22, 1958. Although occasionally seen out of doors in one or two of the most favoured gardens, this plant can only be grown really well in a cool greenhouse. Three or four pendulous flowers usually make up each truss. The corolla is funnel campanulate, 5½ inches long and as much across and the base

constricted. In colour it is white with the large orange stain in the throat extending on to the upper lobe. Reference to the cross was first made in 1879. Exhibited by the Royal Botanic Garden, Edinburgh.

Rhododendron (Azalea) 'Amber Rain', A.M. May 19, 1958. On this particularly good azalea the rounded truss is made up of eleven flowers. Each is 2 inches long and 3 inches across and coloured Buttercup Yellow (H.C.C. 5/2), besides an orange blotch on the upper lobe. Exhibited by Messrs. John Waterer, Sons & Crisp, Ltd., The Nurseries, Bagshot, Surrey.

Rhododendron (Azalea) 'Dart'. A.M. June 3, 1958. A singularly large, nine-flowered truss is to be found on this azalea. Each flower is $3\frac{1}{4}$ inches long and $4\frac{3}{4}$ inches across and coloured pinkish orange in the early stages, later maturing to a light shade of Carmine Rose (H.C.C. 621/1). The upper lobe is spotted yellow and the stamens vary, some being petaloid. Exhibited from the R.H.S. Gardens, Wisley, Ripley, Surrey.

Rhododendron (Azalea) 'Twilight Sky', A.M. May 19, 1958. This attractive seedling from the Exbury strain has a large, globular truss of flowers with the corolla of each $2\frac{1}{4}$ inches long and 3 inches across. In colour the flowers are white with a dark yellow blotch on the upper lobe. Exhibited by Messrs. John Waterer, Sons & Crisp, Ltd., The Nurseries, Bagshot, Surrey.

Rhododendron ('Albescens' × ciliicalyx) 'Harry Tagg', A.M. April 22, 1958. At the meeting of the Rhododendron and Camellia Committee in Edinburgh, this hybrid received its award as a cool greenhouse plant and, by reason of its tenderness, cultivation is necessarily restricted. The flowers are white with a faint, greenish-yellow stain on the upper lobe besides a faint tinging of pink on the outside. The corolla is shallow campanulate, 3 inches long and $4\frac{1}{2}$ inches across and three or four such flowers make up each truss. There is a slight scent to the blooms. Exhibited by the Royal Botanic Garden, Edinburgh.

Rhododendron (elliottii × 'Fusilier') 'Beefeater', A.M. June 3, 1958. By back-crossing R. 'Fusilier' on to its parent, *R. elliottii*, a plant giving a large, flat-topped truss of some twenty-six flowers has been evolved. The corolla is $2\frac{1}{2}$ inches long and the same measurement across and coloured Geranium Lake (H.C.C. 20/1), besides some limited, pale spotting. Exhibited from the R.H.S. Gardens, Wisley, Ripley, Surrey (Frontispiece).

Rhododendron (Sir Frederick Moore g.) 'Charlotte de Rothschild', A.M. May 19, 1958. In mid-season this tall, large-flowered hybrid will give a fine display of colour. The heavy truss

is made up of fourteeen flowers each on long, red-stained pedicels. The campanulate corolla is 3¼ inches long and 4¼ inches across and whitish pink in colour, with chocolate spotting in the throat and the outside stained deep pink. Large, frilled lobes give the plant added attraction. Exhibited by E. de Rothschild, Esq., Inchmery House, Exbury, nr. Southampton (Fig. 36).

Rhododendron chrysanthemum, A.M. April 22, 1958. Dr. J. F. Rock collected seed from which this plant was raised, under his number Rock 22272, on his expedition to North-West Yunnan twenty-six years ago. The low-growing plant before the Committee was true to type having leaves 4 inches long and a flat-topped truss composed of six flowers, each coloured Sulphur Yellow (H.C.C. 1/3). Exhibited by Mrs. K. L. Kenneth, Tich-an-Rudha, Ardrishaig.

Rhododendron (Fabia g.) 'Tangerine' × 'Romany Chal', A.M. May 19, 1958, subject to its being given a clonal name. This new hybrid has a lax, flat-topped truss made of eleven flowers. The corolla of each is 2½ inches long and 3¾ inches across, open campanulate in shape and coloured a rich shade of yellowish apricot suffused with a tinting of pale, rosy pink, while the reverse shows some deep pink staining. Exhibited from the R.H.S. Gardens, Wisley, Ripley, Surrey.

Rhododendron ('Fusilier' × Jalisco g. 'Elect') 'Winkfield', A.M. May 19, 1958. The presence of *R. griersonianum* can easily be seen in the breeding of this hybrid through the typically lax- and flat-topped truss. The campanulate corolla is 2½ inches long and 3 inches across and coloured pinkish yellow, freely suffused with pink, while the upper three lobes on the reverse side are stained Mandarin Red (H.C.C. 17) and the throat tinged crimson and crimson spotted. In colour the petaloid calyx is the same shade of Mandarin Red. Exhibited by Crown Estate Commissioners, Windsor Great Park, Berks (Fig. 45).

Rhododendron ('Beau Brummell' × elliottii) 'Mouton Rothschild', A.M. June 3, 1958. Like its parent, *R. elliottii*, this hybrid has a tightly packed, globular truss of flowers. The campanulate corolla is 2 inches long and as much across and Blood Red (H.C.C. 820/2) in colour besides some singularly heavy, dull brown spotting over the inside. Exhibited by E. de Rothschild, Esq., Inchmery House, Exbury, nr. Southampton (Fig 30).

Rhododendron (hodgsonii × sinogrande) 'Ronald', A.M. April 22, 1958. By crossing two species which grow well in Scotland, the exhibitors have obtained a fine plant of imposing habit

and one which, in its hybrid swarm, shows considerable variation. From the plants available this particular cultivar was selected for an award. It has a large, heavy truss and whitish flowers extensively stained a shade of pale, rose-purple besides some variable, darker staining on the outside. About thirty flowers make up the truss. The leaves are 14 inches long and 5½ inches across, beneath tomentose, soon glabrous, and the stout petiole is 2 inches long. Exhibited by Messrs. A. C. and J. F. A. Gibson, Glenarn, Rhu, Dunbartonshire.

Rhododendron (Lodauric g.) 'Lodauric Iceberg', A.M. June 17, 1958. Among the later-flowering hybrids this one, raised by the exhibitors, is certainly outstanding and a particularly good spray of blooms was exhibited. Its truss is a heavy one, thirteen-flowered and inclined to be flat-topped. The campanulate corolla is 4 inches long and 5 inches across and white in colour, with a small, pale crimson blotch in the throat. There is some scent and the lobes of each bloom are reflexed and slightly frilled. In addition, this plant has fine foliage, the leaves being a pale olive green and 9 inches long by 3 inches across. Exhibited by Messrs. W. C. Slocock, Ltd., Goldsworth Nurseries, Woking, Surrey (Fig. 46).

Rhododendron quinquefolium A.M. April 29, 1958. This charming deciduous azalea is rarely seen in gardens as it is not of the easiest culture. Notwithstanding, Mr. de Rothschild showed a particularly fine vase of cut sprays well covered with delicate, white flowers each faintly marked on the upper lobes with olive-green spotting. The corolla was rotate-campanulate in shape and 1½ inches across. In the main the flowers occurred in pairs although some did so singly. Exhibited by E. de Rothschild, Esq., Inchmery House, Exbury, nr. Southampton.

AWARDS TO RHODODENDRONS AFTER TRIAL AT WISLEY, 1958

THE Council of The Royal Horticultural Society has made the following awards to rhododendrons after trial at Wisley on the recommendation of the Rhododendron and Camellia Committee.

The number in brackets after the description of the variety was that under which it was grown in the trial.

A. BEDFORD. (Introduced by the late L. de Rothschild, Esq., sent by Messrs. Walter C. Slocock Ltd., Goldsworth Nursery, Woking, Surrey.) **F.C.C.** June 4, 1958. A hardy hybrid rhododendron. Plant 6 feet high, 6 feet spread; vigorous, upright habit, very free-flowering; leaves 6½ inches long, 2½ inches wide, dark glossy green. Flower truss 6 inches diameter, 6½ inches deep, compact, dome to conical-shaped, fourteen to sixteen flowers per truss; corolla 3¼ inches diameter, 2¼ inches long, funnel-shaped, margins slightly frilled and waved, Cobalt Violet (H.C.C. 634/1) with paler colour in throat, heavy spotting on upper petal at throat maroon. Flowering from May 27, 1958. [746]

BLUE PETER. (Raised and sent by Messrs. John Waterer, Sons & Crisp Ltd., Bagshot, Surrey.) **F.C.C.** May 23, 1958. A hardy hybrid rhododendron. Plant 8 feet high, 12 feet spread; vigorous, upright habit, very free-flowering; leaves 7 inches long, 2¼ inches wide, very dark glossy green. Flower truss 4½ inches diameter, 4½ inches deep, compact, conical-shaped, fifteen flowers per truss; corolla 2¾ inches diameter, 1¾ inches long, fully expanded funnel-shaped, margins frilled, Cobalt Violet (H.C.C. 634/2) at margin fading to almost white at throat, heavy spotting on upper petal at throat maroon, stamens white. Flowering from May 18, 1958 (**A.M.** 1933). [211]

MOUNT EVEREST. (Raised and sent by Messrs. Walter C. Slocock Ltd.) **F.C.C.** May 13, 1958. A hardy hybrid rhododendron. Plant 12 feet high, 9 feet spread; vigorous very upright habit, very free-flowering; leaves 5 to 5½ inches long, 2¼ inches wide, dark dull green. Flower truss 5½ inches diameter, 5½ inches deep, conical-shaped, ten to twelve flowers per truss; corolla 2¾ inches diameter, 2 inches long, funnel to campanulate-shaped, pure white speckled brown on upper petal at throat, buds white, style conspicuous with yellow tip. Flowering from May 1, 1958 (**A.M.** 1953). [133]

ORANGE BEAUTY. (Sent by Messrs. Knap Hill Nursery Ltd., Lower Knaphill, Woking, Surrey). **F.C.C.** May 13, 1958. An evergreen azalea. Plant 3 feet high, 5½ feet spread, vigorous, compact, very free-flowering, flowers borne in clusters of three and four; corolla 1⅝ inches diameter, 1¼ inches long, funnel-shaped, Scarlet (H.C.C. between 19/1 and 19/2),

spotted deeper colour on upper petal at throat. Flowering from May 5, 1958 (**A.M.** 1945). [543]

AVON. (Raised and sent by The Royal Horticultural Society's Gardens, Wisley, Ripley, Woking, Surrey.) **A.M.** May 23, 1958. A deciduous azalea. Plant 4 feet high, 3 feet spread, vigorous, compact upright habit, very free-flowering; leaves 2¾ inches long, 1¾ inches wide, medium green. Flower truss 6 inches diameter, 3½ inches deep, compact, dome-shaped, fourteen flowers per truss; corolla 3¼ inches diameter, 2½ inches long, fully expanded funnel-shaped, margins slightly waved, Straw Yellow (H.C.C. 604/1), spotting at throat golden yellow, stamens long, Straw Yellow (H.C.C. 604/1). Flowering from May 19, 1958. [278]

CETEWAYO. (Raised by Messrs. Knap Hill Nursery Ltd. and sent by Messrs. Walter C. Slocock Ltd.) **A.M.** June 4, 1958. A hardy hybrid rhododendron. Plant 5½ feet high, 8 feet spread; vigorous, very free-flowering; leaves 4¼ inches long, 1½ inches wide, medium to dark glossy green. Flower truss 4 inches diameter, 3¾ inches deep, compact, dome-shaped, twelve flowers per truss; corolla 2 inches diameter, 1$\frac{9}{10}$ inches long, campanulate-shaped, margins waved, Beetroot Purple (H.C.C. 830/1), spotting at throat slight amber, buds darker colour, almost black. Flowering from May 20, 1958. [703]

FROME. (Raised and sent by The Royal Horticultural Society's Gardens.) **A.M.** June 4, 1958. A deciduous azalea. Plant 4 feet high, 4 feet spread, vigorous, compact upright habit, very free-flowering; leaves 4½ inches long, 2 inches wide, dark glossy green. Flower truss 5 inches diameter, 4 inches deep, compact, dome-shaped, twelve to fourteen flowers per truss; corolla 2¾ inches diameter, 2⅛ inches long, fully expanded funnel-shaped, margins waved and frilled, Saffron Yellow (H.C.C. 7), overlaid Fire Red (H.C.C. 15/1) in throat, stamens long, golden yellow. Flowering from May 21, 1958. [279]

FURNIVALL'S DAUGHTER. (Raised, introduced and sent by Messrs. Knap Hill Nursery Ltd.) **A.M.** May 23, 1958. A hardy hybrid rhododendron. Described *R.H.S. Journal*, **82**, p. 445 (**H.C.** 1957). Flowering from May 16, 1958. [207]

GOLDSWORTH PINK. (Raised, introduced and sent by Messrs. Walter C. Slocock Ltd.) **A.M.** May 13, 1958. A hardy hybrid rhododendron. Plant 12 feet high, 10 to 12 feet spread; vigorous, compact upright habit, very free-flowering; leaves 6½ inches long, 2½ inches wide, dark glossy green. Flower truss 7 inches diameter, 7 inches deep, compact, dome-shaped, eleven flowers per truss; corolla 4 inches diameter, 2¾ inches long, fully expanded funnel-shaped, margins wavy and frilled, Solferino Purple (H.C.C. between 26/2 and 26/3), with pale cream blotch on upper petal at throat, buds deeper colour. Flowering from May 9, 1958 [744]

MRS. A. T. DE LA MARE. (Sent by Messrs. Walter C. Slocock Ltd.) **A.M.** May 23, 1958. A hardy hybrid rhododendron. Plant 4½ feet

high, 5 feet spread; vigorous, upright compact habit, very free-flowering; leaves 5½ inches long, 2 inches wide, medium dull green. Flower truss 8 inches diameter, 7½ inches deep, dome-shaped, twelve to fourteen flowers per truss; corolla 3½ inches diameter, 2½ inches long, fully expanded funnel-shaped, margins waved, white, spotting on upper petal at throat greenish yellow, buds tinged pink. Flowering from May 14, 1958. [100]

MRS. DAVIES EVANS. (Raised and sent by Messrs. Knap Hill Nursery Ltd.) **A.M.** June 4, 1958. A hardy hybrid rhododendron. Described *R.H.S. Journal*, **82**, p. 446 (**H.C.** 1957). Flowering from May 23, 1958. [380]

MUCRONATUM. (Sent by Messrs. Knap Hill Nursery Ltd.) **A.M.** May 23, 1958. An evergreen azalea. Plant 3 feet high, 5 feet spread, vigorous, spreading habit, very free-flowering, flowers borne in pairs; corolla 2½ inches diameter, 1¾ inches long, funnel-shaped, margins slightly waved, white lightly spotted amber, stamens white. Flowering from May 18, 1958 [694]

PORT KNAP. (Sent by Messrs. Knap Hill Nursery Ltd.) **A.M.** May 13, 1958. An evergreen azalea. Plant 3 feet high, 5 feet spread, vigorous, spreading habit, free-flowering, flowers borne in threes; corolla ⅞ inch diameter, ⅝ inch long, funnel-shaped, Phlox Purple (H.C.C. 632/1), fine spotting on upper petal at throat crimson. Flowering from May 3, 1958. [584]

RYDE HERON. (Sent by Messrs. Knap Hill Nursery Ltd.) **A.M.** June 25, 1958. An evergreen azalea. Plant 2½ feet high, 5 feet spread, vigorous, spreading habit, very free-flowering, flowers borne singly and in pairs; corolla 2¼ inches diameter, 1¾ inches long, funnel-shaped, Rose Bengal (H.C.C. 25/2), spotted Rose Bengal (H.C.C. 25) at throat. Flowering from June 19, 1958. [701]

STOUR. (Raised and sent by The Royal Horticultural Society's Gardens.) **A.M.** June 4, 1958. A deciduous azalea. Plant 4½ feet high, 5 feet spread, vigorous, compact upright habit, very free-flowering; leaves 4 inches long, 1½ inches wide, medium glossy green slightly tinged bronze. Flower truss 5½ inches diameter, 4 inches deep, compact, dome-shaped, thirteen flowers per truss; corolla 2¾ inches diameter, 2¼ inches long, fully expanded funnel-shaped, margins wavy, Mandarin Red (H.C.C. 17/1), upper petal at throat blotched Tangerine Orange (H.C.C. 9). Flowering from May 18, 1958. [280]

THAMES. (Raised and sent by The Royal Horticultural Society's Gardens.) **A.M.** June 4, 1958. A deciduous azalea. Described *R.H.S. Journal*, **81**, p. 458 (**H.C.** 1956). Flowering from May 15, 1958. [131]

TRENT. (Raised and sent by The Royal Horticultural Society's Gardens.) **A.M.** May 23, 1958. A deciduous azalea. Plant 3 feet high, 5 feet spread, vigorous, compact slightly spreading habit, very free-flowering; leaves 3½ inches long, 1½ inches wide, medium green slightly tinged reddish-bronze. Flower truss 5½ inches diameter, 3 inches deep,

compact, dome-shaped, ten flowers per truss; corolla 3 inches diameter, 2½ inches long, funnel-shaped, margins waved, Chrome Yellow (H.C.C. 605/1), tinged Salmon (H.C.C. 412) at margins, spotting at throat golden yellow. Flowering from May 16, 1958 [141]

WONDERLAND. (Raised and sent by Messrs. Walter C. Slocock Ltd.) **A.M.** June 25, 1958. A hardy hybrid rhododendron. Plant 12 feet high, 14 feet spread; vigorous, very free-flowering; leaves 7 inches long, 2½ inches wide, dark green. Flower truss 7 inches diameter, 6½ inches deep, compact, flattened dome-shaped, twelve flowers per truss; corolla 3½ inches diameter, 2¾ inches long, fully expanded funnel-shaped, margins waved and frilled, white, light spotting at throat mustard, buds creamy pink. Flowering from June 17, 1958. [367]

GOLDEN SUNSET. (Raised by the late L. de Rothschild, Esq., introduced and sent by Messrs. John Waterer, Sons & Crisp Ltd.) **H.C.** June 4, 1958. A deciduous azalea. Plant 3 feet high, 4 feet spread, vigorous, compact slightly spreading habit, very free-flowering; leaves 4 inches long, 1¾ inches wide, light to medium green slightly tinged bronze. Flower truss 5½ inches diameter, 5 inches deep. compact, dome-shaped, ten flowers per truss; corolla 3½ inches diameter, 2½ inches long, fully expanded funnel-shaped, margins waved, Straw Yellow (H.C.C. 604), tinged Fire Red (H.C.C. 15/3) and heavily blotched Saffron Yellow (H.C.C. 7), stamens long, pale yellow. Flowering from May 26, 1958. [968]

Awards were also given to the following rhododendrons growing in The Royal Horticultural Society's collection of plants at Wisley.

CORNEILLE. A.M. May 23, 1958. A deciduous azalea. Plant 4 feet high, 4 feet spread, vigorous, compact slightly spreading habit, very free-flowering; leaves 1¾ to 2 inches long, ¾ inch wide, medium green. Flower truss 3¾ inches diameter, 2 inches deep, compact, dome-shaped, eight to ten flowers per truss; corolla hose-in-hose, 1½ inches diameter, 1⅜ inches long, funnel-shaped, margins frilled, Carmine Rose (H.C.C. 621/3), with outer petals deepening at margin to Carmine Rose (H.C.C. 621/1).

SIR WILLIAM LAWRENCE. A.M. May 13, 1958. An evergreen azalea. Plant 4 feet high, 3 feet spread, vigorous, erect upright habit, very free-flowering, flowers borne mainly in pairs with some threes; corolla 1¾ inches diameter, 1¾ inches long, fully expanded funnel-shaped, a glowing shade of Solferino Purple (H.C.C. between 26/1 and 26/2), fine spotting on upper petal at throat maroon.

SOME NEW CAMELLIAS FROM AUSTRALIA AND NEW ZEALAND

THE following details of new varieties of camellias, raised in Australia, have been recorded with the Australian and New Zealand Camellia Research Society and are reprinted from Number 4 of their *Camellia Annual*, by kind permission of their Honorary Secretary and Editor, PROFESSOR E. G. WATERHOUSE, and their Council:

C. japonica 'Clarissa'. Raised by MRS. HUME TURNBULL, Toorak, Melbourne. A seedling from 'Spencer's Pink' planted 1947. Flower, single pale pink with rose stripes, 4½ inches in diameter. Vigorous grower and easy to propagate.

C. japonica 'Margaret Alwyn'. Raised by DR. C. R. MERRILLEES, St. Kilda, Victoria. Seedling from 'Gloire de Nantes'. Incomplete double flower, 4 to 4½ inches in diameter. Midseason. Colour, rose-pink, somewhat similar to its female parent.

C. sasanqua 'Mary Jennifer'. Raised by DR. C. R. MERRILLEES, St. Kilda, Victoria. A seedling from 'Showa no Sakae'. Flower, 3 inches in diameter, ten to fifteen petals, pale to medium pink colour with darker margin. No perfume.

C. japonica 'Margaret Crozier'. Raised by MR. C. F. COLE, Canterbury, Victoria. Parents' 'Spencer's Pink' (seed) × 'Elegans' (pollen), hand crossed in 1946. Flower incomplete double, 4 inches in diameter. Colour, delicate rose-pink. Vigorous upright grower. Early bloomer.

C. japonica 'Margaret Ellen'. Seedling from 'Strawberry Blonde' raised by MRS. M. THOMPSON, Pymble, N.S.W. in 1948. First flowered 1956. Formal double of a slightly deeper shade of salmon-pink than its parent. Foliage dark green and glossy. Growth good. Early to midseason.

C. japonica 'Ann Shaw'. Raised by MRS. SHAW about 65 years ago at Bayview, N.S.W. The plant is still in existence and bears white flowers with slight pink streaks and several branches with full informal double pink flowers, edged white, in the manner of 'Lady Loch' but much flatter in the centre where the petals are very twisted and crowded. It is this pink form which MR. J. SHAW,

aged 76, wishes to register in the name of his mother who planted the seed in his early boyhood. This camellia has been distributed and exhibited in N.S.W. under the name of 'Lady Loch' but is now recognized as a separate variety.

C. williamsii 'Clarrie Fawcett'. No. 9 in a batch of seedlings from *C. saluenensis* raised by E. G. WATERHOUSE in 1946 and given to MR. W. G. HAZLEWOOD, Epping, N.S.W., in 1948. Semi-double, amaranth rose, mid-season, free flowering and in type somewhat similar to 'Margaret Waterhouse'.

C. williamsii 'E. G. Waterhouse'. A *saluenensis* hybrid raised by E. G. WATERHOUSE in 1946. Flower formal double with many rows of petals, beautifully imbricated. Colour, Fuchsine Pink, 621/2. Foliage matt green and closer to *japonica* than to *saluenensis*. Midseason to late.

C. williamsii 'E. G. Waterhouse Variegated.' Ground colour white, occasionally marked Fuchsine Pink. This form originated on a plant that had been grafted.

C. williamsii 'Crinkles'. No. 6 in the batch of seedlings raised by E. G. WATERHOUSE from the one plant of *C. saluenensis* in 1946. Many-petalled semi-double amaranth rose, petals crinkled. Strong stocky growth.

C. williamsii 'Bowen Bryant'. No. 10 in the batch of seedlings raised by E. G. WATERHOUSE from the one plant of *C. saluenensis* in 1946. Large semi-double. Vigorous growth, free flowering, June to September.

C. sasanqua 'Gay'. A seedling raised by DR. DUCKER, of Lindfield, N.S.W., and given to MRS. A. S. MCCLOY of Wahroonga. Parentage unknown. Size of bloom, 2½ to 3 inches. Single white, slightly cupped. Blooms from April till August. Applicant, MRS. MCCLOY.

C. sasanqua 'Lucinda'. A seedling raised by DR. DUCKER of Lindfield, N.S.W., and given to MRS. A. S. MCCLOY, of Wahroonga. Pink bloom with petaloid centre. Size, over 3 inches. Blooms from end April to early August. Parentage unknown. Applicant, MRS. MCCLOY.

C. japonica 'Polar Bear'. Seedling from 'Great Eastern', raised by E. G. WATERHOUSE in 1944 and planted by GORDON WATERHOUSE at Kurrajong Heights, N.S.W., in 1946. Large creamy white bloom, 4 inches in diameter, with rounded outer petals and open centre showing short stunted stamens mingled with small

petaloids. Foliage resembles that of 'Great Eastern'. Applicant, GORDON G. WATERHOUSE, Kurrajong Heights.

C. japonica 'Merrillees'. Seedling from 'Great Eastern' raised by E. G. WATERHOUSE in 1944 and planted by GORDON WATERHOUSE at Kurrajong Heights, N.S.W., in 1946. Large full informal double white. Very large outer petals, ruffled, with low centre of twisted petaloids. Leaves very serrated. Midseason. Applicant, GORDON G. WATERHOUSE, Kurrajong Heights, N.S.W.

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Figures in Clarendon refer to Illustrations.

An asterisk denotes award after trial at Wisley. (a) denotes Azalea.

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