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R.H.S. RHODODENDRON AND CAMELLIA YEAR BOOK 1968

22

THE RHODODENDRON AND CAMELLIA YEAR BOOK 1968

THE ROYAL HORTICULTURAL SOCIETY

Three famous rhododendron or camellia gardens are described in this book; that at Tregothnan by Viscount and Viscountess Falmouth; that at Blackhills, Morayshire by Mr. S. F. Christie, and that at the Younger Botanic Garden, Benmore, by Mr. A. Hall with a Note by Mr. J. W. H. B. Younger. Mr. Frank Knight gives an account of shows and plants seen on his visit to the American Rhododendron Society's Convention, 1967, and Mr. James Platt one on Forty Years of Rhododendron Shows in London. Mr. David Leach writes on the Ancient Curse of the Rhododendron as well as on the Efficient Production of Deciduous Azaleas from Cuttings. Mr. A. W. Headlam reports on the behaviour of New Guinea Rhododendrons in Australia while Mr. P. G. Valder discusses other types of species and hybrids he grows successfully in that continent. Mr. K. M. Harris, the entomologist at Wisley has contributed a helpful article on Pests of Rhododendrons in Britain.

The Camellia Section of the book is strong. Mr. T. H. Findlay comments with lists on the many species, cultivars and hybrids grown in the Great Park, Windsor, and Mr. George Du Brul gives a Survey of Favourite Camellias in America. In his Comment on *Camellia reticulata* Col. T. Durrant reviews the cultivars from Kunming cultivated in New Zealand. Propagation either from seed or by grafting is discussed by Mr. F. S. Tuckfield of Australia and Mr. Geoffrey Wakefield from America.

Reports of Shows and many Notes are included in this issue which is fully illustrated both in colour and black-and-white.

COVER ILLUSTRATION

Rhododendron lacteum

Photo: S. F. Christie

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Acknowledgements

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Photo : Sir James Horlick

Rhododendron sino-nuttallii × *R. lindleyi* on Gigha (see p. 195)

Rhododendron lacteum at Blackhills (see p. 25)

Photo : S. F. Christie

THE RHODODENDRON AND CAMELLIA YEAR BOOK 1968

NUMBER
TWENTY-TWO

LONDON
THE ROYAL HORTICULTURAL SOCIETY
VINCENT SQUARE, S.W1
1967

PUBLISHED NOVEMBER, 1967

Editors

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PRINTED IN GREAT BRITAIN BY
WOOD WESTWORTH AND CO. LTD.
ST. HELENS, LANCASHIRE

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FOREWORD

THE 1968 Rhododendron and Camellia Year Book is filled with articles from many parts of the world where these two genera flourish. This combination enables enough material to be gathered each year to provide an interesting and varied volume.

Descriptions of different gardens—large and small—have always been a main feature. This year's contributions, from widely different places, show how accommodating such plants are, even to the outskirts of Birmingham, where selected rhododendrons seem to prosper. The century-old camellias of Tregothnan provide an interesting contrast to the post-war plants in the Savill gardens. If they flourish as well in the latter locality as in the former, we must look for some large extensions into Windsor Great Park in future years.

Propagation in various forms is well covered. The account of camellia grafting in America should be useful to many, as well as the modern method of watering camellias in pots by capillary action. Another up-to-date feature is the striking and rearing of deciduous azalea cuttings, using electric lights, heat and other modern techniques.

Fortunately, in this country, we are not afflicted with many diseases either to rhododendrons or camellias. Those gardening in the moister western regions have often to put up with such troubles as Honey Fungus, almost as a retribution for their more favourable growing conditions. The article on "Pests of the Rhododendron", by the entomologist at Wisley, covers most of our local disorders.

Undoubtedly 1967 was an exceptionally good flowering year, despite a severe spring frost in the middle of the season, as both notes from Exbury show, and the extra large number of plants put up for and obtaining Awards. The list of Awards, together with the reports of the various shows, additions to the International Register, provide a continuity throughout all the Year Books which, with this 22nd issue, have now come of age.

GILES LODER

TREGOTHNAN—A CAMELLIA AND RHODODENDRON GARDEN IN CORNWALL

By VISCOUNT and VISCOUNTESS FALMOUTH

A DESCRIPTION of a garden, however brief, by one who has had the good fortune to have inherited it from his forbears, is often an unconscious tribute to the unrecorded work of those who have planted and tended it throughout the years. It is in this spirit that these few short notes are written about the gardens at Tregothnan in Cornwall.

The gardens of Tregothnan lie a few miles to the south-east of the cathedral town of Truro in the southern half of the peninsula. They were planted some 200 feet above the tidal waters of the river Fal, between the two main arms of the estuary, half a mile from where they merge. There is a magnificent view of the Tolverne reach of the river from the terrace in front of the south side of the house, looking down across the deer in the park towards what may best be described as the oaken fleece which clothes the banks of the river, which divides the Roseland peninsula from the west of Cornwall.

The gardens are placed on the "killas" of the district, a shaly soil derived from the slate which surrounds the granite intrusions forming the centre of Cornwall. Though lacking great depth in places, this soil is free working and has a pH value admirably suited to the growing of rhododendrons and camellias. The climate is moist with a mean average rainfall of some thirty-five to forty-five inches a year, more than half as much again as that at Kew Gardens. Indeed the whole atmosphere of this part of Cornwall is a humid one. While it is not possible to see the open sea from the grounds, the nearest shore is only just over three miles away; its influences are visible on the bird life of the district. On a quiet night after a southerly gale, the sound of the sea can be heard from the bedroom windows of the house.

It would be wrong to say the garden is never visited by frost; we had as severe a visitation as any garden in the south of England

in the winter of 1962/63. The thermometer on the south front of the house registered during one night 18 degrees of frost. Nevertheless, the climate is as mild and equable as one would expect on the south-western corner of these islands. Since early boyhood I have been often warned that the wind is the worst enemy of the Tregothnan gardens. This is indeed the case and the gaps blown in the protecting canopy of beech, ilex, insignis (*Pinus radiata*) and Turkey oak must be made good as soon as growth allows to keep out the savage gusts of the autumn and winter gales which blow with tremendous force from the Atlantic.

There has been a garden at Tregothnan for a very long time. Possibly the oldest part is the levelled bowling green, now surrounded by high beeches, laurel, camellias and rhododendrons, and one of the warmest and most sheltered parts of the garden.

Celia Fiennes, the intrepid lady traveller of the seventeenth century and a relation by marriage of Hugh Boscawen, described a visit to Tregothnan in 1695 in her journal "Through England on a side saddle". She wrote: "The garden has gravel walks round and across, but the squares are full of gooseberry and shrub trees and looks more like a kitchen garden out of which is another garden like a grove—green walks with rows of fruit trees". The 'groves' and 'green walks' remain in essence today, though the fruit trees and bushes have long since vanished.

At the beginning of the nineteenth century a fresh impetus was given to the gardens on the estate. The Norfolkman, Humphrey Repton, on his tour of Cornwall was called in to advise by the Lord Falmouth of the day. The resulting "Red Book" dated ingenuously "On the spot, September 1809" still survives in the library. It is clear that many of his recommendations were carried out, noticeably the shelter belt to the south-west of the house, which provides an attractive walk to the kitchen garden flanked by a double line of very old *Camellia japonica*. A few years after the old Cromwellian house was enlarged and refaced in the Regency style by William Wilkins, another Norfolkman, who based his ideas on the architecture of the Tudor manor of East Barsham, near Walsingham in Norfolk, and the present formal terraces were laid out.

The character of the present garden, however, owes most to the work of Evelyn Boscawen, the sixth Viscount Falmouth and his brother, the Honourable and Reverend John Townshend Boscawen, the rector of the nearby parish of Lamorran. They were the sons of Canon the Hon. John Evelyn Boscawen, at one

Photo: Viscount Falmouth

Fig. 1—A corner of the garden at Tregothnan

Fig. 2—Lady Falmouth with *Camellia japonica* 'Blackburniana' (see p. 7)

Photo: N. G. Treseder

time rector of Wotton, near Dorking in Surrey, the home of John Evelyn, the famous diarist, horticulturist and author of "Silva". Their love of gardening was, no doubt, encouraged by remembrance of the work of the diarist and countryman, for the threads of the Evelyn and Boscawen families had been closely interwoven by marriages in the preceding century. The late Canon Arthur Boscawen, son of the rector of Lamorran, carried on this fruitful alliance of church and spade by the creation of his famous garden at Ludgvan Rectory, near Penzance, until his death during the early days of the second World War. There is at Tregothnan a sale catalogue of rare and valuable rhododendrons, held at Lamorran Rectory on December 1st, 1962, many of which were raised there by Boscawen from imported seed.

During the fifties and sixties of last century the gardens were greatly extended to cover about 40 acres. Before this, some of the earliest outdoor plantings of camellias in the country are believed to have taken place in these gardens. Certainly two enormous plants, one over thirty foot high, both unnamed white

Fig. 3—*Camellia japonica* 'Hornsby Pink' at Tregothnan

Photo: N. G. Treseder

Fig. 4—*Camellia reticulata* 'Captain Rawes' over 20 feet tall at Tregothnan (see p. 8)

Photo: Viscount Falmouth

C. japonicas, would give substance to this tradition. They must be well over 125 years old and are perfectly healthy to this day. An old photograph of the 1860's shows a large number of young camellia plants close to the east front of the house. These plants were moved to the far end of the garden soon after 1897 by my grandmother, where they now flourish on a slope called "Snowdrop Hill" above a woody dell, backed by ilexes and conifers. It is still possible to see the depressions on the lawn whence they were removed.

During this century further plantings have been carried out of rhododendrons, magnolias, and rare conifers, though gravely interrupted by the two World Wars which have everywhere had such an overwhelming effect on the maintenance of private gardens. A few years after the second World War, the old head gardener, who had been on the place since boyhood, retired. He and one other gardener had been the sole stay of the gardens during the War. His devotion to the garden and his love of its plants prevented it from being overgrown, a strenuous fight, as the growth of plants and weeds at Tregothnan is exceptional for

the United Kingdom. With his retirement and the engagement of younger staff, it was decided to try and make the gardens as self-supporting as possible and independent of all outside help for grass cutting from the estate farm and woodland staff. The introduction of improved machinery has made it possible to start reclaiming ground encroached on by the ever vigorous laurel and *Rhododendron ponticum*.

For many years rabbits had been a serious hindrance to planting, but with their virtual disappearance a new series of developments has begun. The range of glasshouses in the kitchen garden had long since lost its heating system, and as they are a quarter of a mile from the nearest electricity supply, it was decided to propagate simply in pure china clay on the old concrete benches of the houses, covering them with sheets of polythene stretched on simply made wood frames. Cuttings of many varieties of camellias were inserted in the washed china clay sand, of which there is an unlimited supply from the Cornish clay pits, and though rooting was slow, it was very successful. Other plants were also propagated, but in much smaller numbers than the camellias, for which it was hoped there would be a sale, as well as to provide plants for the garden.

Then began the heavy task of clearing back the overgrown wind-breaks to yield fresh planting ground. The garden had been planned last century to have wide open grass spaces, giving views of individual plants and fine vistas of the noble trees. It was thought, therefore, all important not to crowd the present plants and thus lose the essential character of Tregothnan by overplanting, however tempting the desire for new plants and varieties might be. Thus the cutting back of the windbreaks and the grubbing of the laurels has continued while the nursery stock grows. As mentioned, the rate of growth is considerable; as much as from six to nine inches a year is normal for the new shoots of camellias in open ground, so that cuttings planted out at two years old have already reached a height of from three to four feet two years afterwards. Particularly this is the case with the strong *C. japonica* varieties, such as 'Lady Clare', 'Madame de Strekaloff', 'Canon Boscawen' and 'Mathotiana Rosea' and 'Mathotiana Alba'.

Apart from 'Lady Clare' and 'Nagasaki', no new plantings of the modern varieties were made until 1956, when *C.* 'Magnoliaeflora', 'Salutation', 'J. C. Williams' and 'Donation' were planted. 'Salutation' now stands some ten feet tall and 'Magnoliaeflora'

and 'J. C. Williams' measure 7 feet across and 7 feet high. In the last four years new varieties planted have included 'Drama Girl', 'Prince Albert', 'Gauntletti', 'Berenice Boddy', 'Apple Blossom', 'Margherita Coleoni', 'Golden Spangles' (mainly for its foliage, as this is in a very shady part of the garden), 'Leonard Messel', 'E. G. Waterhouse', 'Countess of Exeter' and 'Kimberley'. The emphasis has been laid on plants of good garden merit, rather than those which provide fine blooms for the show bench.

Notice should be taken of the camellias around the walls of the house. The great north-west camellia wall runs the full length of the stable yards, some 70 yards long and 25 feet tall. It is planted with camellias which have been trained up to the height of the roof guttering and it is a magnificent sight in mid-April when in full flower. There is a fine 'Altheaflora' (*C.* 'Blackburniana') by the side entrance to the north front. Backed by a group of tall "Blood-red Arboreums", the scarlet flowers of this plant cascade to the ground and make an ideal foil at the edge of a lawn or path (Fig. 2).

Entering the garden proper through the arch to the east of the house, you will see a tall plant of 'Madame de Strekaloff' trained beside the bow window of the library, a plant noticeable for the regularity of its blooms and its dark and luxuriant green foliage, now some 20 feet tall. If you turn west along the straight path of the Ladies Walk you will see immediately on your left the first of the Tregothnan *C.* 'Lady Clare' which astound us every year with the countless number of their splendid blooms, then erect and close behind stands *C.* 'Salutation', planted some ten years ago, backed by large plants of *Leptospermum* 'Nichollsii' planted some 70 years and now about 20 foot high.

Along the borders of the Ladies Walk young camellias, *japonicas* and *williamsii* have been planted in groups to grow on to act as ground cover for the newly cleared ground in front of the thick windbreaks. Here, too, are large plants of *C.* 'White Swan', 'Brownii Vera', with its distinctive foliage, and other unnamed *japonicas*. In front of the summer house is a large expanse of formal grass flanked by *arboreum* rhododendrons planted in a crescent at the bottom of the slope with the rhododendrons in places rising to heights of from 40-50 feet. There are also large clumps of camellias and rhododendrons and two groups of *Magnolia grandiflora*, a set piece display of red rhododendron blooms in late April and early May. Descending from the summer house by a grass path through a grove of giant tree ferns (*Dickso-*

nia antarctica), you come to the place where the greatest number of camellias has been planted at the top of what we call "Snowdrop Hill." It is here among these that the first of the *japonicas* were moved from near the house at the turn of the century by my grandmother. Many of them are unnamed today but they include 'Lady de Saumarez', 'Wilbankiana', 'Arejishi'. 'Hornsby Pink', an enormous plant (Fig. 3), 'Herme', 'Preston Rose', 'Mathotiana Alba and Rosea', 'Imbricata Alba', 'Canon Boscawen', 'Nobilissima', 'Devonia', 'Tricolor', 'Anemonaeflora' and 'Donckelarii'. Later additions include 'Lady Clare', 'Elegans', 'Adolphe Audusson', 'Sylvia', and 'Jupiter'. Some of the original plants are about 20 feet high, are most beautifully rounded in shape and flower very freely in spite of their great age.

On the other side of this hill are plants of 'Cornish Snow', which have not done well here. One of the most outstanding plants in the garden is the great free-standing *Camellia reticulata* 'Captain Rawes', well over 20 feet tall and laden with flowers each spring. Unfortunately there is no record of when it was planted, but it must be nearly 100 years old. It would be my choice as the finest camellia plant in the garden (Fig. 4).

The general impression that the gardens leave in the minds of visitors is of huge beeches and open grass covered glades sloping down towards the south-west. Banks of tall, red *arboreum* rhododendrons and the dark green leaves of the camellia plants surround the open spaces, with here and there a rare conifer or single magnolia. Movement is greatly helped by the well-planned pattern of paths, which are so essential for the deployment of modern machinery, without which a garden of this size could not be kept up, let alone improved.

The first rhododendrons and camellias come into flower at Christmas and plants continue flowering throughout the spring until late June, some of the older unnamed camellia varieties having a very late flowering season.

Since the last war attempts have been made by distinguished gardeners to name the numerous old varieties of *Camellia japonica* at Tregothnan. It is no surprise that confusion sometimes reigns. There is in the library of the house a nurseryman's list from J. E. Downing, of Falmouth. Though it is undated, it is probable from the style of the writing and the make-up of the book that it was made in the middle of the last century. Some 300 varieties are noted as on offer. Almost all the names have no similarity to the names of today.

There is a vast number of new varieties of camellia raised in Britain and overseas, but as good garden plants, the old japonicas are hard to beat and Tregothnan is fortunate to have so many of them.

Fig. 5—*Camellia japonica* 'Mrs. D. W. Davis' in the temperate house in the Savill Garden

Photo: J. E. Downward

Photo: J. E. Downward

Fig. 6—Rhododendron 'Queen Elizabeth II', so named by gracious permission of Her Majesty The Queen, A.M. May 2, 1967. Raised and exhibited by the Crown Estate Commissioners (see p. 233)

CAMELLIAS AT WINDSOR

By T. H. FINDLAY, M.V.O., V.M.H.

THE earliest records show it was in 1935 that the first camellias were planted in the Savill Garden. These comprised some six named varieties and about twelve unnamed seedlings. Amongst the named varieties is 'Adolphe Audusson', one of the very best of garden camellias. This plant is now 12 ft. high and 10 ft. through. Another that flowers from Christmas onwards is 'Gloire de Nantes', now 9 ft. × 9 ft. Others planted at this time were 'Apollo', 'Lady Clare', 'Latifolia' and 'Lady Marion'.

No further camellias were planted until 1942, when a small plant, 12 ins. or so, of 'Salutation' was planted. This is now 16 ft. high and 9 ft. through at the base.

In 1946 others were added, amongst them being the then still scarce *williamsii* group. They included a type known as 'J. C. Williams' which, however, is not the true F.C.C. plant; it is a deep pink in colour. Incidentally, it is a parent of our new and exciting 'Exaltation' (Fig. 9), the other parent of this hybrid being Gauntletti'. Other varieties planted then were *williamsii* 'Donation', 'St. Ewe', 'Mary Christian' and its sport 'Golden Spangles'. The *williamsii* deep pink is now 16 ft. × 8 ft., and 'St. Ewe' 10 ft. × 5 ft.

In 1954 a very valuable gift of camellias was presented to us by Sir James Horlick. These were plants imported from Japan in 1938/'39, and when the garden of 'Little Paddocks' was sold Sir James gave us his fine collection. These contained wonderful examples of 'Hatsu Zakura', 'Hana Fuki', 'Haku Tsuru', 'Rogetsu', 'Kouron-Jura' and, curiously enough, 'Coppelia', besides a host of others. These are, for the most part, planted in the Valley Gardens.

In 1956, through the generosity of the late Mr. Ralph Peer, a collection of the fabulous Kunming *reticulatas* arrived at Windsor. They are housed in the temperate house and have done well. The best grower is 'Shot Silk', now 16 ft. high and soon wanting a larger house (Fig. 7).

As the interest in camellias grew, so our collection mounted,

Photo: J. E. Downward

Fig. 7—*Camellia reticulata* 'Shot Silk' in the temperate house in the Savill Garden
(see p. 11)

with plants from Cornwall, Devon and most other counties in Great Britain; from Australia, America and New Zealand, from which country came cuttings of some old varieties that had been taken there by the early settlers. Other cuttings came from Portugal, Italy and from the islands of Madeira and Japan.

We now have 333 named varieties and 75 unnamed. Of the named varieties 9 are species, 15 *reticulata* types, 32 *williamsii* and the remainder *japonica*.

Broadly speaking, most of the species can only be grown satisfactorily here at Windsor under glass, with the exception of *C. cuspidata*, which is perfectly hardy and is a very fine foliage plant. *C. saluenensis* gets cut during hard winters and can be killed outright in very severe weathers. While the true wild forms of *C. reticulata* do survive they never have a really satisfactory flower crop. All forms of *C. japonica* are hardy with us but vary greatly in the form of flower hardiness.

We are fortunate in being able to grow these tender species

Fig. 8—Camellias in the Savill Garden: (*left*) 'Donation'; (*centre*) 'Salutation'; (*right*) 'St. Ewe' and 'Furoan'

Photo: J. E. Downward

under glass, where all they require is winter temperature just above freezing.

I have written at length about the Kunming reticulatas in earlier Year Books, so there is no need to dwell here on these beautiful plants. Two other forms of reticulata which excite interest here are *C. reticulata* 'Mary Williams' and 'Trewithen Pink', both very good cool house plants, and both the true *C. reticulata* as collected in the wild by the late George Forrest.

Other species which are quite attractive are *C. fraterna*, *drupifera*, *sinensis*, *maliflora*, and the very pretty and graceful *C. tsaii*, a charming camellia for both open bed and pot culture. All the above five species, with the exception of *C. maliflora*, have pretty small white flowers. Forms of *C. sasanqua* are grown but they never flower.

Of the various hybrids, some are grown in the cool greenhouse. These include 'Inamorata' (*C. reticulata* × *saluenensis*), a single of soft pink colouring; 'Fair Lass', a hybrid of the *reticulata* 'Captain Rawes', and C. 'Inspiration' (Pl. 1), a reported *reticulata* hybrid. I find this hard to believe but, nevertheless, it is a very fine camellia, especially under glass.

Amongst those grown outside easily are C. 'Salutation', C. 'Cornish Snow', C. 'Leonard Messel'. This latter camellia is probably one of the best introductions of recent years. It is a hybrid of *C. reticulata* and *C. williamsii* 'Mary Christian'. It is very hardy and came through last spring's trying time with flying colours.

The Williams group of camellias should be included in every garden where camellias can be grown, for they surpass any show of flower put up by the forms of *Camellia japonica*. They also have the advantage of dropping their spent flowers, thereby providing a carpet of flowers on the ground during the weeks they are in flower.

Of the 32 named cultivars here none is better than C. 'Donation' for pure garden display or C. 'J. C. Williams' for those who prefer the simpler flowers. For myself I prefer the true F.C.C. plant of 'J. C. Williams' with its lovely soft pink single flowers.

Brighter coloured forms which have stood the test of time are C. 'St. Ewe' (Fig. 11), C. 'Mary Christian' and C. 'Golden Spangles', a variegated form of C. 'Mary Christian'. Many others are very similar in colour, but different in habit if allowed to develop naturally.

Of the 300 odd *C. japonica* cultivars we have many, I feel, that

Photo: J. E. Downward

Fig. 9—Camellia 'Exaltation', P.C. March 14, 1967. Raised and exhibited by the Crown Estate Commissioners at the Savill Garden (see p. 236)

Photo: J. E. Downward

Fig. 10—*Camellia* × *williamsii* 'Parkside' in the Savill Garden

could have been strangled at birth. Many, of course, are fantastic flowering plants when grown under glass, but for the average garden some 20 or 30 types would meet the demand.

Camellias tend to flower in early spring, and those outdoors are often browned or destroyed by spring frosts, and I am sure most of the true doubles such as C. 'Mathotiana' are rarely seen to perfection outside.

The best varieties here are some really old introductions, mostly semi-double. For example, C. 'Adolphe Audusson', a lovely red, difficult to beat even on the Show bench. Another of the same type, 'Gloire de Nantes', always starts to flower here at Christmas, and can be cut and opened indoors. C. 'Devonia' is a lovely single white flowering over a long period, and 'Lady Clare', a pink with rather pendulous habit, but fine for growing on a bank.

Many of the new introductions of *japonica* cultivars have been planted in the woodlands gardens here in company with these old and tried varieties, and it will be interesting at a later date to compare the performance of each.

The following is a list of the species and cultivars grown at Windsor with the awards received given to our plants.

Species

cuspidata
drupifera
fraterna
maliflora
reticulata
rosaeflora
rusticana
rusticana 'Kirin-No-Homare'
rusticana 'Seki-No-Yume'
saluenensis
sinensis
tsaii, A.M. 1960

reticulata Cultivars

'Buddha', A.M. 1963 (Pl. 2)
'Captain Rawes', F.C.C. 1963 (syn. 'Semi-Plena')

Fig. 11—*Camellia* × *williamsii* 'St. Ewe' in the Savill Garden (see p. 14)

Photo: J. E. Downward

Photos: J. E. Downward

PLATE 1—Camellia 'Inspiration' in the Savill Garden (see p. 14)

PLATE 2—*Camellia reticulata* cultivars: (1) 'Osmanthus Leaf'; (2) 'Lion Head'; (3) 'Professor Tsai'; (4) 'Noble Pearl'; (5) 'Butterfly Wings'; (6) 'Shot Silk'; (7) 'Buddha'; (8) 'Pagoda' or 'Robert Fortune'

'Ho-Yeh-Tieh-Chih' (syn. 'Butterfly Wings')
'Hsiao-Kuei-Yeh', A.M. 1967 (syn. 'Osmanthus Leaf')
'Mary Williams', F.C.C. 1964.
'Pao-Chu', F.C.C. 1967 (syn. 'Noble Pearl') (A.M. 1963) (Pl. 6)
'Robert Fortune' (syn. 'Flore Pleno')
'Shih-Tzu-Tou' (syn. 'Lion Head')
'Sung-Tzu-Lin', F.C.C. 1963 (syn. 'Pagoda') (Pl. 3)
'Ta-Tao-Hung' (syn. 'Crimson Robe')
'Ta-Yin-Hung', F.C.C. 1967 (syn. 'Shot Silk')
'Tiehtse-Maotan' (syn. 'Professor Tsai')
'Trewithen Pink'

Various Hybrids

(cuspidata × saluenensis) 'Cornish Snow', A.M.
× heterophylla 'Barbara Hillier' (reticulata × japonica)
(japonica 'Gauntletti' × williamsii) 'Exaltation', P.C. 1967
(reticulata × saluenensis) 'Inamorata'
(reticulata × saluenensis) 'Salutation'
(reticulata 'Captain Rawes' × saluenensis) 'Fair Lass'
(reticulata × williamsii 'Mary Christian') 'Leonard Messel'
× vernalis (japonica × sasanqua)
Inspiration ?

sasanqua Cultivars

'Azuma-Nishiki'
'Cleopatra'
'Cleopatra Dwarf Form'
'Exquisite'
'Hino-De-Gumo'
'Jaune'
(syn. 'Fortune's Yellow')
'Mine-No-Yuki'
'Narumi-Gata'
'Papaver'
'Plantation Pink'
'Rubra'
'Setsugekka'

× Williamsii (japonica × saluenensis) Cultivars

'Beatrice Michael'
'Caerhays'
'C. F. Coates'
'Charles Colbert'
'Charles Michael'
'Cherub'
'Citation'
'Coppelia'
'Cranbourne'
'Crinkles'
'E. G. Waterhouse'
'Ellamine'
'Elizabeth Rothschild'
'Farfalla'

'First Flush'
'Francis Hanger'
'Golden Spangles'
'Hiraethlyn'
'J. C. Williams'
'J. C. Williams', the true F.C.C. Var.
'John Pickthorn'
'Lady Gowrie'
'Mary Christian'
'Mary Jobson'
'Mary Larcom'
'November Pink'
'Parkside'
'Philippa Forword'
'Pink Wave', A.M. 1957
'Saint Ewe'

japonica Cultivars

'Adolphe Audusson', F.C.C. 1956
'Adolphe Audusson Special'
'Alba Plena'
'Alba Simplex'
'Alexander Hunter'
'Altheaflora'
'Ama-No-Kawa'
'Anemonaeflora'
'Angela Cocchi'
'Anna Bruneau'
'Apollo'
'Apple Blossom'
'Arejishi'
'Armedia Rosea'
'Aspasia'
'Augusto L. Gouveia Pinto'
'Auguste Delfosse'
'Australis'
'Ave Maria'
'Baronne Leguay'
'Beau Harp'
'Bella d'Ardiglioni'
'Bella Romana'
'Beni-Kirin'
'Beni-Otome'
'Berenice Boddy'
'Betty Sheffield'
'Blood of China'
'Bonesyeboni'
'Bonomiana'
'Campbellii'
'Can Can'
'Cardinal'
'Castle Grace'
'Centifolia Alba'
'C.M. Hovey'
'C.M. Wilson'
'Collettii'
'Commendatore Relly'
'Comte de Gomer'
'Conspicua'
'Contessa Lavinia Maggi'
'Coquetti'
'Countess of Orkney'
'Croussei'
'Cup of Beauty'
'Daikagura'
'David Allan'
'Devonia'
'Dian Hartman'
'Dobrei'
'Donckelarii'
'Donna Herzilia de Freitas Magalhaes'
'Dr. Max'
'Dr. Tinsley'
'Drama Girl'
'Duc de Bretagne'
'Duchess of Buccleuch'
'Edwina Folk'
'Elizabeth'

'Elegans', F.C.C. 1958
'Elizabeth Arden'
'Elizabeth le Bey'
'Ellen Sampson'
'Emmett Pfingstl'
'Emily Wilson'
'Enrico Bettoni'
'Eugene Lize'
'Eximea'
'Fanny Bolis'
'Feodora'
'Finlandia'
'Flame'
'Flowerwood'
'Fovi-No-Tsuki'
'Frau Minna Seidel'
'Fred Sander'
'Frederici'
'Furoan', A.M. 1954
'Gauntletti'
'General Le Clerc'
'Genji Karako'
'Giardino Franchetti'
'Gigantea'
'Gloire de Nantes'
'Gosho Guruma'
'Governor Mouton'
'Grace Bunton'
'Great Eastern'
'Guilio Nuccio'
'H. A. Downing'
'Haku Rakuten'
'Haku Tsuru', P.C. 1967
'Hana Fuki', A.M. 1956
'Harriett Durrant'
'Hassai'
'Hatsu Zakura', A.M. 1953
'Hazel E. Herrin'
'Heart of Gold'
'Heckla'
'Hectotiana'
'Henry Price'
'Her Majesty Queen Elizabeth II'
'High Hat'
'Hikaru-Genji' (syn. 'Herme')
'Hi-No-Maru'
'Hito-Suji'
'Imbricata'
'Imbricata Alba'
'Imperator'
'Italiana'
'James Allan'
'Jean Lyne'
'Jenny Lind'
'J. J. Whitfield'
'Joseph Pfingstl'
'Jupiter'
'Joshua E. Youtz'
'Kamesyama'
'Kasenzume'
'Kayobururo'
'Kelvingtoniana'
'Kiku Sarasa'
'Kimberley'
'Kingyo Tsubaki'
'Kishu Tsukasa' (syn. 'Admiral Nimitz')
'Kouron Jura', A.M. 1960
'Koyoden'
'Kramer's Supreme'
'Kumasaka' (syn. 'Lady Marion')
'La Pace Rubra'
'Lady Ardilaun'
'Lady Clare'
'Lady de Saumarez'
'Lady Loch'
'Lady Mary Cromartie'
'Lady McCulloch'
'Lady Vansittart'
'Lady Vansittart Pink'
'Lanarth'

'Laurie Bray'
'L'Avvenire'
(syn. 'Laurel Leaf')
'Latifolia'
'Leeana Superba'
'Leopold I'
'Letitia Schrader'
'Madame de Strekaloff'
'Madame Haas'
'Madame le Bois'
'Madame Lourmond'
'Madame Victor de Bisschop'
'Mado-No-Tsuki'
'Magnoliaeflora', A.M. 1953
'Magnoliaeflora Alba'
'Margaret Rose'
'Marguerite Gouillon'
'Marianna Gaete'
'Marion Mitchell'
'Marjorie Carylon'
'Marjorie Magnificent'
'Mars'
'Mathotiana'
'Mathotiana Alba'
'Mathotiana Rosea'
'Mathotiana Supreme'
'Mercury'
'Migalli'
'Miss Price'
'Monsieur Faucillon'
'Monsieur Paugam'
'Montironi'
'Morning Glow'
'Mrs. D. W. Davis'
'Nagasaki'
'Nancy Bird'
'Nicholsoni'
'Nina Avery'
'Nigra'
'Nobilissima'
'Ozora'
'Paulette Goddard'
'Peach Blossom'
'Pearl Harbour'
'Pearl Maxwell'
'Pink Audusson'
'Pink Ball'
'Pink Pearl'
'Pink Spiral'
'Portuense'
'Preston Rose'
'Prince Frederick William'
'Princess Baciocchi'
'Princess Charlotte'
'Princess Murat'
'Professor Charles S. Sargent'
'Purple Emperor'
'Red Ensign'
'Reg Ragland Variegated'
'Reine des Fleurs'
'R. L. Wheeler'
'Rogetsu'
'Rose Dawn'
'Rubens'
'Rubescens Major'
'Saint Andre'
'Sara C. Hastie'
(syn. 'Debutante')
'Sarah Frost'
'Satanella'
'Shime-Otome'
'Shiragiku' (syn. 'Purity')
'Shiro Chan'
'Shiro Kochyo'
'Snow Goose'
'Souvenir de Bahuaud Litou'
'Stardust'
'Stella Polaris'
'Sukiya'
'Suru sumi'
'Swan'
'Sylva'
'Taiyo'
'Takayama'

'Taroan'
'The Mikado'
'Tomorrow'
'Tricolor'
'Tricolor de Mathot'
'Triomphe di Loddi'
'Triumphans'
'Tsukimi-Guruma'
'Usu-Myorenji'
'Ville de Nantes'
'Virgin's Blush'
'Vosper's Rose'
'Wabisuke'
'Waterloo'
'White Queen'
'White Spiral'
'White Swan'
'Wildwood'
'William Bull'
'Yoibijin'
'Yuki-Botan'
(syn. 'Shiro-Botan')
'Yuki-Gasa'
'Zoraide wanzi'

Fig. 12—*Camellia reticulata* 'Shot Silk', F.C.C. February 21, 1967. Exhibited by the Crown Estate Commissioners (see p. 235)

Photo: J. E. Downward

BLACKHILLS— AN IRREGULAR GARDEN IN MORAYSHIRE

By S. F. CHRISTIE

TEN thousand years ago, Scotland's mighty river Spey debouched onto the coastal plain from a valley some twenty yards deep and ten times as wide. Today its course runs some miles to the east of this point, which is now known as Blackhills. Only a modest stream remains to bear witness to former glories. In 1911 Thomas North Christie came to Blackhills to retire from a planting career in the East and took to gardening. He laid no claim to knowledge of the art but styled himself a plantsman and set out to try and grow, as gardeners did in those days, anything and everything from exotic forest trees to the smallest alpine. The construction of a rock garden and a new flower garden occupied the first few years, and so, allowing for the interruption of the Great War, it was not till 1918 that rhododendron planting got going and was continued till a crescendo was reached twenty years later.

The Spey had bequeathed a sizeable backwater at the end of the valley referred to and, by means of a small dam at one end, the Pond, covering some four acres, was formed. On the surrounding slopes were growing Scots pines well over a hundred years of age. Into these, on the south-facing bank, was planted the Himalayan Patch, a settlement of blue-blooded aristocrats: *R. griffithianum*, *thomsonii*, *arboreum*, *barbatum*, *falconeri* and others, including a *R. zeylanicum* brought personally from Ceylon. It was a bold move.

It is difficult to realise today how little was generally known at that time regarding the genus rhododendron and its culture; even the experts were still groping. Blackhills is nearer to the North Pole than either Moscow or Labrador, and few would have believed that an attempt to establish these plants, regarded as coming from semi-tropical rain-forests, could succeed so far

Photos: S. F. Christie

Fig. 13—The South Bank of the Pond at Blackhills

Fig. 14—The Pond at Blackhills

north, or in an area with a rainfall of only thirty inches in the year. Even Inverewe, with its particularly favoured climate and double the rainfall, was then hardly known. The idea prevailed that only the mild climate of Cornwall or the west coast of Scotland, with its humid atmosphere, were suitable areas for rhododendrons unfortified by injections of *ponticum* or *maximum* blood. In the event, this has proved to be a fallacy. Of course, climate and rainfall are important but with qualifications. It is the timing of the severe frostings that matters; it is the late and early ones that are critical, and these are generally escaped at Blackhills. A rhododendron such as *R. anthosphaerum*, which starts early into growth, cannot compete with frost in May, and, for example, *R. auriculatum* cannot withstand sub-zero temperatures in October. Moderate frosts are tolerable in the dormant winter season. Unseasonable frost does occur and does just as much damage to growth or flower bud on the west coast as on the east. In general, however, Blackhills can grow plants which will not thrive further south in, say, Perthshire, because there they are subject to freezing at critical times, which those at Blackhills escape. This is because the coastal plain of Morayshire is more open to the moderating influence of the comparatively warm sea. Further, cloud sheets tend to persist over places near the coast and contain the outflow of radiation during the night period. The question of rainfall is easily resolved. Naturally, in the areas of greater atmospheric humidity and precipitation, growth is proportionately more rapid and lush. Too long a growing season may, however, have the disadvantage that the wood is slow to ripen and flowering can be delayed and less profuse. Generally speaking, rhododendrons tend to adapt themselves to local conditions. For this reason the same species may have a quite different appearance, according to the circumstances under which it is growing.

Fifty years after, it is obvious, in the Pond area, that the big Scots pines, selected to give the shade considered so absolutely essential, are sucking up tons of valuable water daily at the expense of the rhododendrons beneath. Thanks to their adaptability and built-in drought resisting mechanism, they have suffered no permanent damage. They have held their own in a forest floor composed entirely of pine-needle compost, built up over a century and a half. The proportions reached in fifty years are: *R. falconeri*, 25 ft.; *R. thomsonii*, 22 ft.; *R. sidereum*, 22 ft.; *R. arboreum*, 26 ft.; *R. fictolacteum*, 22 ft. In the same area is growing

a shapely bush of *R. viallii*, a rare plant in the Ovatum Series, with striking young growths of a bronze colour and deep lilac flowers. Also of interest are *R. megacalyx* and *R. manipurense*, both of the Maddenii group. *R. griffithianum*, one of the largest flowered of all the Himalayan species, has grown and flowered well. In the same series is *R. fortunei*, the type plant of which is surprisingly uncommon. A tender plant is *R. delavayi*, now 18 ft. high. Also worthy of mention is a fine form of *R. beesianum*, with large, pink flowers, dark green leaves and a broad purple petiole.

As space became scarce on the south-facing slope, planting had to be continued on the face opposite. This was less heavily wooded and contained a stand of mature beech. Time has shown this north aspect preferable, the moisture more readily available and the leaf mould of the beeches invaluable. It is here that Blackhills' finest plant is growing. Towards the top of the bank is a plant of *R. lacteum*, 15 ft. high. Annually it produces a bountiful crop of large trusses of primrose yellow with neither blotch nor spot (Frontispiece). Its merit was recognised by the award of an F.C.C. in 1965. It is grouped with several other fine Chinese species which flower at the same time, *R*s. *rex*, *coriaceum*, *sidereum*, *fictolacteum* and *wiltonii*: all are large and flourishing. Other representatives of the Lacteum Series nearby are *R. wightii*,

Photo: S. F. Christie

Fig. 15—*Rhododendron roxieanum* var. *oreonastes* at Blackhills

R. traillianum, tall and free-flowering, and a specimen of the rare *R. nakotiltum*, whose flowers resemble a smaller edition of *R. lacteum*. Another most uncommon plant is *R. trichomiscum*, a sub-species in the Sanguineum alliance. The Taliense Series has reached popularity slowly because its members are generally slow to bloom, but here flowering specimens of *Rs. clementinae*, *doshongense*, *glaucopeplum* and *prattii* are to be seen. A tall plant of *R. roxieanum* never fails to excite favourable comment. Of the early flowering species on this side of the Pond, *Rs. moupinense*, *ciliatum*, *barbatum* and *lanigerum* are the most reliable and *Rs. hookeri* and *meddianum* var. *atrokermesinum* amongst the more tender. Late flowerers are *R. auriculatum* and its child, 'Polar Bear', which has now outgrown its parents with a trunk 45 inches in circumference. In between a small host of other species all produce colour in due season. Outstanding, perhaps, are *Rs. neriiflorum*, *wardii* and *thomsonii*. The last-mentioned are a feature which can hardly be overdone.

At the same time as the rhododendrons, other species were being collected with almost equal enthusiasm. Meconopsis, primulas, gentians and the Regius Keeper at the Royal Botanic Garden, Edinburgh, were all cultivated with care and success. The flood of Forrest's introductions was at its height. Space, again, was at a premium and the decision was taken to move into the valley, referred to in the first paragraph, known as the Warren. Its depth provided good shelter; its banks were rather more sparsely clothed with old Scots pine of the same vintage as those already mentioned, and its soil damper and more peaty. In addition its edges had been previously planted with varied conifers to provide additional protection. The importance of protection from cold and drying wind cannot be overstressed. To this end ponticum breaks were established. No doubt this was correct procedure but, to say the least, they can prove troublesome in time. Contour paths and gently graded links were cut on the lines of a Ceylon tea estate, and the planting of the Warren, the Gean Tree, the Arn Tree and Primrose patches went on till 1932. Visitors were then told to come back in twenty-five years' time. Thomas North was not to be there to welcome them; he died in 1938, leaving a memorable collection in his stead.

If not famine, then certainly war, pestilence and neglect followed. Pestilence came in the guise of a hurricane in 1953. It is worth mentioning on two counts. First, it demonstrated the amazing powers of recovery possessed by rhododendrons which

have had tons of wood hurled on their heads and dragged over their feet. Today the havoc is hardly noticeable. Secondly, that with a northern aspect, the need for shade had been over-emphasised. Its removal has had no adverse effect. Neglect was inevitable and the rhododendrons were one of the few genera that proved themselves capable of standing up to it. Lesser breeds succumbed in the struggle for existence.

Renaissance dates from the Great Gale and took over ten years. To start with, the man in charge was not very knowledgeable but, at least, he had the good sense to hasten slowly. He was unable to distinguish a species from a hybrid and anything with a flower resembling purple was to him *R. ponticum* aff. This diagnosis was only corrected after a well-shaped bush of *R. niveum* had been cut down to give room to a *thomsonii* cross. Fortunately, the *R. niveum* sprouted lustily from the remaining stump. Among the rewards for the clearing done has been the abundance of natural regeneration which has followed at selected spots. Just what determines the location of these is not obvious: the conditions of moisture, in ground and air, and light intensity are two factors, but there are others, as yet, improperly known. A proportion of these seedlings are crosses but not to be despised on that account. They can, and do, turn out as good as man-made ones. Certainly their discovery and identification add unusual interest and fit in well with the concept of this irregular garden. The identification of young seedlings is a fascinating pursuit and none too easy. Indumentum may appear only in the later stages and the junior leaves may be extremely and mysteriously bristly. Natural regeneration has not been confined to the rhododendrons. The conifers have taken advantage of the absence of rabbits to multiply themselves a thousandfold. Six species have been quick to establish their claim to unoccupied space and provide most valuable and welcome shelter as they grow. They are particularly useful in filling the gaps among semi-mature trees where the lower stems are bare and draughts may whistle through. Young *Tsuga* are especially desirable as they possess good looks and the ability to grow under a shady canopy of larger trees.

Blackhills is an intensely personal garden modelled on the classic lines of irregularity. Its terms of reference are summed up in its motto "Maximum leisure, maximum pleasure." It must be so, for it boasts no garden staff to tend its twenty-five acres. Formality has no foothold. An alliance with nature is the key-

stone of policy. The location assures peace and tranquillity. The layout is designed to please the eye and tease the imagination. The landscaping aims to produce sensations of grandeur and variety. Only melancholy and the hermit have been omitted from the classic list.

The entrance is by a rough woodland path. The first rhododendrons to be seen are closely packed in a large natural seed-bed of grass and heather. They show a variety of growth and leaf but all are progeny of two isolated *R. discolor* hybrids nearby. As they reach an appropriate size they are transferred into the wood to join their relations there. An acre or more has been planted from this source and it will be of interest to see, in due course, the variations in timing and shading in the flower. Will there be a blaze of colour all in a day or will it smoulder for a month?

The path leads to the top of a steep bank overlooking the Gean Tree patch. The Warren valley is below and a fine view is obtained of massed rhododendrons cascading down the whole depth of the opposite side. This view is framed by the Gean Tree on one side and by a veteran larch on the other. It is the first in a succession of colour pictures designed to change with the seasons. Not necessarily as close-ups, for distance lends enchantment to rhododendrons. With due regard to perspective, light and shade, the most successful results have been obtained where the eye is funnelled by converging lines of colour onto, perhaps, *R. oreotrephes*, irresistible at any season, in the depth of distance.

The background of these pictures is worked in native and exotic trees: white-barked birch, red-berried rowan, graceful *Tsuga* and majestic *Abies grandis*. The foreground is provided by serpentine stream or lake. There are three lakes designed to produce reflections from the trees and shrubs on the banks above. The use of water is not only pleasing to the eye and ear but adds life and movement so that the pictures are not all stills. The last lake to be constructed induced three new nesting species of birds to take up residence: the grey wagtail, sandpipers and tufted duck. Rising trout break the calm of a summer's evening. Perhaps the most lively use of water has been made in the Warren, where a torrent, crossed by four rustic bridges at different levels, comes dashing down the hillside in a deep gorge in imitation of a Sino-Himalayan "nullah". Around it, the vegetation has been allowed to become rather rank and the trees are more closely planted to simulate the romantic wildness of jungle conditions. The rugged sides are overhung with large specimens of

Rs. arizelum, *macabeanum*, *mollyanum* and *falconeri* especially selected for their striking foliage; big leathery leaves shaped like a rugby football. In the boulder bed of the stream, with the water running over its roots, is a *R. arizelum*, strategically sited as if in its native land.

As a result of experience the best planting has been done in the Warren, where the bigger species have room to spread their wings. The impressive Falconeri and Grande Series have been liberally used mixed with *R. thomsonii* with its attractive bark, foliage and aftermath of yellowish calyx. *R. sinogrande* is growing as an open tree, 22 ft. high, near the top of the bank in the company of equally striking *R. hodgsonii* and *R. fictolacteum*. *R. facetum* is also here. The last is a delicate subject and its position of interest. It has been found that, near the top of the ridge, with the wind in the offing the air is often too disturbed for frost to develop. The opposite applies in a well-sheltered hollow and such a site should be avoided for frost-conscious subjects. *R. macabeanum* has also grown pleasantly tree-like and retained its branches well down to earth, a policy which indicates good health and vigour. There are several varied forms of *R. fictolacteum* and an attractive cream-coloured *R. arizelum*. A free-flowering *R. basilicum* measures 19 ft. across. Here, too, is *R. lanatum*, which has a reputation for being awkward. The opportunity has been taken in the Warren to grow flowering cherries, which mix well with rhododendrons, both culturally and artistically.

After the species groves in the western end of the Warren it is almost a relief to reach the more open landscape of the eastern half. The slopes here are largely planted with home-produced crosses of respectable parentage. No attempt has been made to keep up with the large selection of modern hybrids. The old stalwarts find a place and are prodigal with their favours. Especially desirable are R. × Loderi (presented by J. G. Millais), 'Cornish Cross' and 'Dawn's Delight'. Less common and outstanding are 'Endeavour' (*lacteum* × *arboreum* f. *album*), a cone twenty feet high of pale primrose in March; 'Lochinch' ('Elsae' × *eximium*), which has buds even fatter than those of *R. sinogrande*, and the infrequent 'Elizabethae' ('Elsae' × *falconeri*), a handsome and floriferous tree with black buds and large, creamy-yellow trusses.

Nearing the end of the Warren, a hump-backed bridge and a sheet of water is just discernible through a gap in the trees. It is

an intriguing glimpse which compels further investigation. It turns out to be a lake of about four acres and an excuse for Chinoiserie overlooked by a "Palace of Pleasure", both essential attributes adding variety to the irregular garden. In the foreground is an island, reached by a crescent-shaped bridge, with prayer-stone, stone lantern and weeping willow. Two sailing boats, gunter rigged, do duty as junks. The banks are too exposed to grow rhododendrons, so the opportunity has been taken to introduce other shrubs, foliage plants and autumn colouring. A short avenue, lined by massive Fortunei hybrids, leads back to the Pond area already described. As a palliative to the possible surfeit of the genus rhododendron (there are over two hundred different species in the areas mentioned), attention can be focalised on some of the other subjects there. The most spectacular are either the Davidias or the Cercidiphyllums, according to the season of the year. Maples, eucryphias and magnolias add colour at other times. Further favourites are *Crinodendron hookerianum*, *Desfontainea spinosa* and the lily-of-the-valley bush, *Clethra delavayi*, from China.

Two flights of stone steps lead to the highest part of the garden: the Rock Garden, where some seventy species of alpine rhododendrons are to be found. Because they are so small they may be planted initially closer to one another, in the knowledge that to move them is only a matter of minutes and will not be overlooked. They must be transplanted as soon as they look like touching. The temptation to plant half a dozen at a time, to grow into each other and form one large bush, should be resisted. The result will be unsightly and they will surely kill one another. These alpines are growing in full exposure to light and air but the area is sheltered on all sides by tall beech trees. The small-leaved tribe resent a cold blast as much as their larger brethren do. The more interesting plants include a large *R. kotschyi*, two yards in diameter and a foot in height. It is one of the four rhododendrons native to Europe. The stamens are completely concealed in its rose-pink tubular flowers. A useful background plant is *R. fauriei* from Japan. Growing about four feet high, it has a pleasing pink flush in its yellowish flowers early in the season. From fourteen thousand feet in Nepal comes *R. lowndesii*. It is deciduous, requires the use of a magnifying glass to spot the growth in the spring, but produces yellow flowers the size of a half-crown which cannot be missed. Yellow and white are valuable colours in the rock garden, where the majority of plants tend to

have the purple-blue flowers of the Lapponicum Series. For that reason *R. microleucum*, the only white member of the clan, is invaluable. Amongst the yellows are *Rs. fletcherianum*, *valentinianum* and *flavidum*.

From time to time this garden has given a deal of pleasure to those who have wandered round in its quiet seclusion. It provides a marvellous and living memorial to a man who found satisfaction in planting for the future. Anyone like-minded can be assured of a welcome, inspiration and encouragement should they care to visit it.

Fig. 16—*Rhododendron quinquefolium* 'Five Arrows', F.C.C. April 18, 1967. Exhibited by Mr. E. de Rothschild (see p. 230)

Photo: J. E. Downward

RHODODENDRONS AT BENMORE

By A. HALL

THE Younger Botanic Garden is situated seven miles north of Dunoon in the valley of the River Echaig. It covers an area of approximately 85 acres and has been developed as a woodland garden. The annual rainfall varies between 80 and 120 inches in a year with an average of about 93 inches. The soil is a gravelly loam on a subsoil of pure gravel interspersed with stones, with a covering of humus up to 5 inches deep in places, and is rather peaty on the Hill (Map Nos. 13-23). Severe frosts do not occur every year, but when they do it is usually in January or February when the buds are dormant and damage is restricted to the more tender plants. Late frosts occur frequently in April or even in May and these do a great deal of damage.

For a number of years now it has been the policy at Benmore to arrange the planting of rhododendrons in their series. This is possible owing to the nature and extent of the garden at Benmore. Thus the visiting botanist or keen student of rhododendron classification can study closely related species in a comparatively small area. Some of the old established plants do not fit in with this scheme, but hold their places because of their great age or because they are most attractive in their present positions.

It is most unfortunate that there are no planting records of the older specimens although we can guess at the age of some of them with the help of articles and old photographs. The oldest Rhododendrons at Benmore are R. 'Russellianum' (*arboreum* × *catawbiense*) planted prior to 1890 and the best of these is situated in front of Benmore House on the lawn (29). In this situation it has attained a height of 40 feet and through continual natural layering now measures 70 yards in circumference. There are many other specimens of R. 'Russellianum' in the garden but most of them have been drawn up high in competition for light with the conifers; even so they are very spectacular with their great brown stems. A plant which astonishes rhododendron enthusiasts on their first visit to Benmore is a fine old *R. campanulatum* (15)

Photo : J. E. Downward
PLATE 3—*Camellia reticulata* 'Pagoda' in the temperate house at the Savill Garden

Photo : J. E. Downward
PLATE 4—*Camellia japonica* 'Guest of Honor' A.M. April 4, 1967. Exhibited by Sir Giles Loder, Bt., Leonardslee, Horsham, Sussex
(see p. 236)

Photo: A. Hall

Fig. 17—*Rhododendron campanulatum* at Benmore

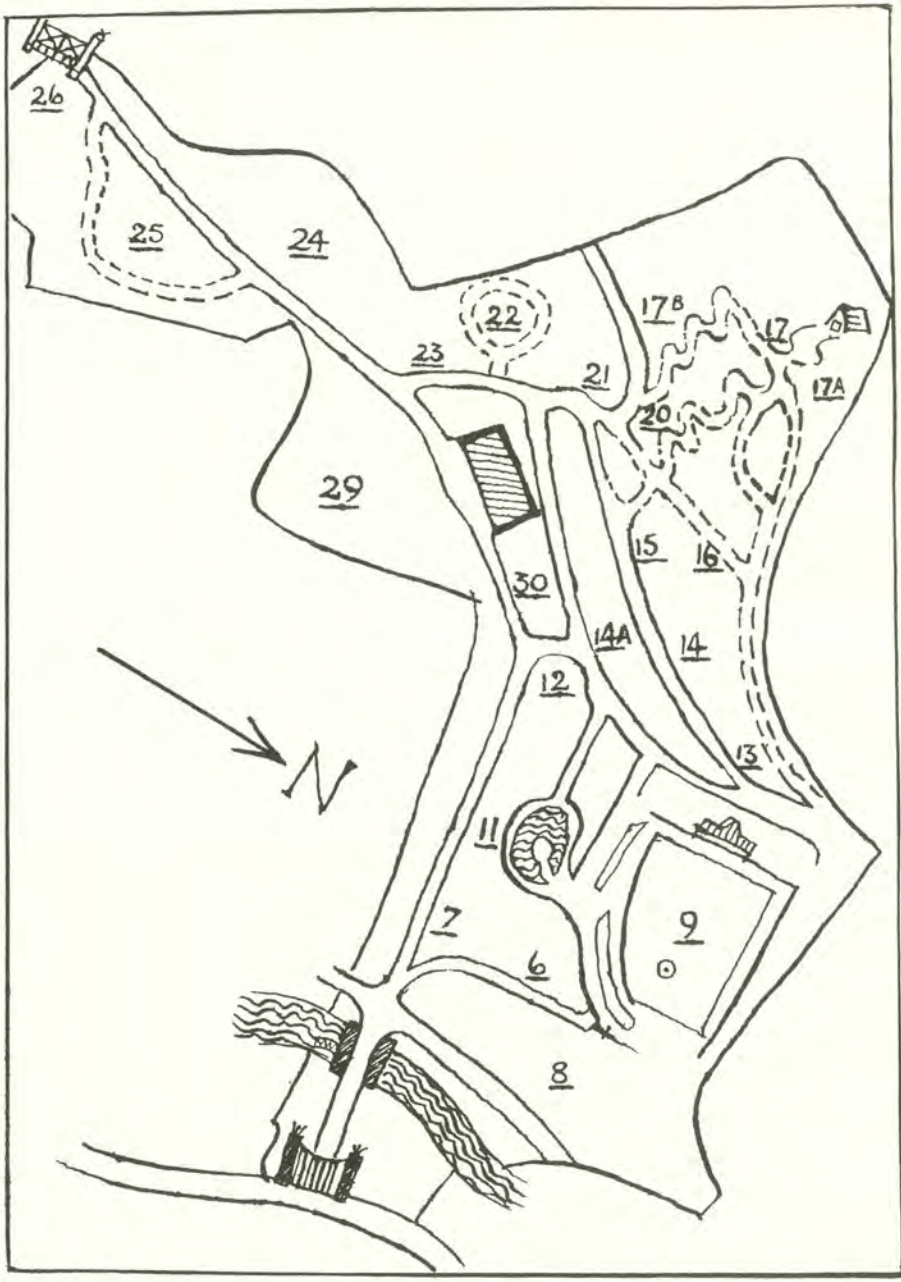


Fig. 18—Map of the Younger Botanic Garden, Benmore

which stands 35 feet high and has a single trunk measuring 4 ft. 7 ins. in circumference at breast height (Fig. 17). The rhododendron connoisseur would not rate the flower very highly, for it is a pale lavender. Not far away from this splendid plant there is another immense specimen of *R. campanulatum*—or possibly a hybrid of this species—with four stems, the largest being 2 ft. in circumference at breast height, and with flowers of a deeper colour. *Rhododendron fortunei* (30), situated by a bend in the main drive up to Benmore House, is probably the plant referred to in the Rhododendron Society Notes, Vol. III, Pt. II, 1925, by F. R. S. Balfour. He tells us that it was planted in 1909/10 by Mr. H. J. Younger and that it was 11 feet high in 1925. It is now about 20 feet high and the crown has a circumference of 25 yards. Its pinkish-lilac flowers are produced at the end of May and are quite fragrant. On the Hill (22) above the Golden Gates Avenue there are three large plants of R. 'Polar Bear' (*auriculatum* × *diaprepes*), the tallest being 35 ft. high, which flower in August and September. East of this avenue (25), an old *R. macabeanum* stands 30 ft. high, but hardly ever flowers. There are many more old specimens, mainly hybrids of *R. arboreum*, *R. barbatum*, *R. campanulatum* and *R. decorum*.

The number of species and sub-species at Benmore is somewhere in the region of three hundred, and there must be at least four hundred and fifty plants of hybrid origin. It would not be possible to mention all of these in an article such as this and I propose to discuss the most interesting plants in each area which has been planted with a Series or Group of hybrids.

Areas (7) and (8) are planted with rhododendrons of the Fulvum, Campanulatum and Neriiflorum Series, while the North Avenue (6), in the centre of this area, serves to separate the three series and is planted with a group of mixed hybrids and species. This area (6-8) is fairly thickly planted with *Pseudotsuga menziesii*, *Picea sitchensis* and *orientalis*, *Abies procera*, *alba* and *nordmanniana* and *Araucaria araucana*. Many of these are 100 feet or more in height and natural regeneration is prolific from all except the last two species. First to flower here in mid-February is *Rhododendron pocophorum* in the Neriiflorum Series, but an earlier January flowering form of this most useful winter-flowering species can be seen on the Hill (17). *R. mallotum* opens crimson flowers at the end of February and lasts well into March when a blood red form of *R. chaetomallum* is also in flower. These three species, together with *R. beanianum*, which flowers in April, all

have a woolly indumentum in varying shades of brown and are eminently worthwhile foliage plants. *R. floccigerum*, easily recognised by the scattered indumentum, flowers from March onwards and a number of forms with Rock numbers, fairly constant in their orange-red flowers, may be seen here. In April *R. neriiflorum* and its ssp. *euchaites* never fail to flower abundantly, while in May *R. sperabile*, with thick tawny indumentum, is the outstanding species flowering in this area together with its ssp. *weihsiense* which has white indumentum on the underside of the leaf. Does not this sub-species really merit specific rank? *R. dichroanthum* ssps. *scyphocalyx* and *apodectum* are in flower from mid-May well into June, the former with a most unusual shade of orange, which evokes cries of extreme pleasure or intense dislike from the visiting public. In the glade (7), which is the setting of the Campanulatum Series, the bright red flowers of *Rhododendron fulgens* are first to open, usually in March. It is soon followed by the very variable (in leaf and in flowers) *R. campanulatum* and its ally (so close an ally as to be almost inseparable) *R. wallichii*. In April, *R. tsariense*, a small, straggly shrub, produces lovely delicate pink flowers. Last to flower here is *R. lanatum*, a very woolly shrub bearing pale yellow flowers in May. *R. succothii* (KW 3666), previously known as *R. fulgens* aff. has not yet flowered at Benmore, but from a foliage point of view seems to be a strange bed-fellow in the Campanulatum Series. There is a good *R. uvarifolium* in the North Avenue (6) with a deeper rose more heavily blotched flower than most of the others in the garden. *R. ririei* has very attractive purple flowers, much more beautiful than many forms of this species and a hybrid of *R. arboreum* with bright scarlet flowers held its blossom for five weeks in spite of very heavy rain and almost continuous gales throughout March of this year. Other noteworthy plants in the North Avenue (6) are *R. smirnowii*, not very elegantly shaped but like a 12 ft. ball dotted with lilac-coloured flowers in May and June; a loose-growing *R. cinnabarinum* var. *roylei* dripping with lovely plum red flowers which, in June, appear to outnumber the leaves; and *R. viridescens*, only 5 ft. high but 18 ft. wide, a late flowering shrub with greenish yellow flowers in profusion usually into July. Outstanding hybrids here include the Bodnant bred R. 'Rapture' (*griersonianum* × *zeylanicum*) with vivid red flowers and good foliage; the Rothschild R. 'Flashlight' (*callimorphum* × *campylocarpum*), whose flowers are yellow flushed with pink; and a *R. thomsonii* hybrid with bright red flowers.

To the north-west of this area lies the Formal Garden (9), where a collection of garden conifers is being assembled. In the dwarf conifer borders a number of interesting rhododendrons can be seen. *R. campylogynum*, 18 ins. high, has numerous rose-coloured flowers in June. *R. radicans* forms a low cushion and has scaly purple flowers on long pedicels, also in June. *R. sargentianum* is the only species of the Anthopogon Series at Benmore; it is not the fine yellow form but carries small cream flowers in April. Young plants of *Rhododendron cowanianum* are growing here until they are big enough to be planted out in the Trichocladum Series at the top of the Wild Bank (13). One wonders if this species *really* belongs to this series, for with its reddish purple flowers it seems to be most aberrant among the other yellow flowered members. Nearby are a number of small plants of *R. yakusimanum*, including the F.C.C. form.

Standing in the Formal Garden facing west, one looks up to the slopes of the Wild Bank (13). Here are numerous specimens of *R. rubiginosum*, some more than 20 ft. high, varying in flower colour from lilac to rose, and varying also in time of flowering from the end of March to May. They are all most handsome plants and together with fine specimens of *Chamaecyparis pisifera* 'Plumosa', *C. lawsoniana*, *Taxus baccata* 'Fastigiata', *Pittosporum tenuifolium* (35 ft. high) and *Eucryphia lucida* form a background to the ever changing seasonal picture produced by such shrubs as the variable *Rhododendron fulvum*, the best plant a lilac form with a crimson blotch, *R. rex*, *R. vernicosum* 'Loch Eck' (A.M. form), a Benmore plant with large white flowers, *R. irroratum*, *R.* 'Nobleanum Album' (*arboreum* × *caucasicum*) and a marvellous old plant of *R.* 'Fastuosum Flore Pleno', 13 ft. high, has a trunk measuring 22 inches in circumference and has double mauve flowers which open half-way through June.

On the top slopes of the Wild Bank (13) the Trichocladum and Glaucophyllum Series have been established. *Rhododendron rubrolineatum*, with its yellow flowers flushed with red, is the most interesting of the former series. *R. glaucophyllum* is a good garden plant, especially in its varieties *tubiforme* and *luteiflorum*. When well flowered the latter is a marvellous plant, but unfortunately it is bud tender and moreover it is subject to die-back. *R. brachyanthum* var. *hypolepidotum* is also subject to die-back at Benmore. *R. tsangpoense* is an interesting plant with plum rose flowers in June and deep purple markings on the upper surface of the leaves in winter.

From the top of the Wild Bank one can walk to the top of the Rock Face (14) and look down on to the slopes of the Hybrid area (14a) and across the Azalea lawn (12) to the Pond (11). The triangle at the foot of the Rock Face is planted with a collection of hardy hybrid rhododendrons raised by Herr D. Hobbie, of Germany, and includes R. 'Linswegianum', 'Ammerlandense', 'Elisabeth Hobbie', 'Gertrude Schale', 'Dr. Karl Forster' and others. These appear to have been bred from the point of view of low stature and of hardiness in the more austere climate of Bremen. *R. williamsianum* and *R. forrestii* var. *repens* and such hybrids as *R.* 'Britannia' and 'Essex Scarlet' were some of the parents used. There is no question of the fact that Herr Hobbie has raised plants of great floriferousness which are perfectly hardy at Benmore. Some, such as 'Elisabeth Hobbie' and 'Gertrude Schale' are splendidly low growing and make excellent ground cover plants; others, however, such as 'Ammerlandense' and 'Dr. Karl Forster', in the Benmore climate attain a size no doubt not anticipated by their breeder. The remainder of the area to the south and east, but above the main road, is planted with hybrid rhododendrons, including *R.* 'Grosclaude', 'Grenadier', 'Albatross', 'Loderi King George', 'Loderi Helen', 'Loderi Stag's Head', 'Ibex', 'Ivanhoe' and many others.

Moving south along the path at the top of the Wild Bank we come to rhododendrons of the Fortunei Series (16), under spruce, fir, Douglas fir and Scot's pine, but not so thickly planted as in the Fulvum Series area. Here *R. griffithianum*, which flowers but feebly, *R. calophytum*, a poor pale form, a young specimen of *R. houlstonii*, a number of plants of *R. vernicosum*, *R. erubescens*, and a number of specimens of *R. orbiculare* showing variation in leaf sizes, can be seen in close proximity. Thirty yards to the east is a group of *R. sutchuenense* var. *geraldii* varying in flower colour from lilac to pink, each with a purple blotch.

Another outcrop of rock at the foot of the Fortunei area is the setting for a small collection of evergreen azaleas (16). The Kurume types have proved to be hardier than most of the Glenn Dale types, many of which have been lost. But no evergreen azalea can hold a candle to the *ciliatum-virgatum* hybrid *R.* 'Multiflorum', also to be seen here, which never fails to smother itself in flower. Possibly because of its immense floriferousness it has proved to be a short lived plant.

Continuing south, we come into a more open area (15) where the trees are mainly tall Lawson's Cypress and where species of

the Cinnabarinum series have been grouped together. Here two forms of *R. cinnabarinum* can be seen in flower in April. One is uniformly cinnabar-red, the other, from Nepal, is cinnabar-red with yellow lobes (and very different to *R. cinnabarinum* var. *blandfordiaeflorum*). *R. cinnabarinum* var. *purpurellum* is in flower three weeks earlier than the type and *R. c.* var. *roylei* 'Magnificum' is a splendid sight in June. *R. concatenans* produces its apricot flowers in May and is also a very good foliage plant. The hybrids associating with these species are *R.* 'Royal Flush' (*cinnabarinum* × *maddenii*), *R.* 'Lady Chamberlain', 'Gleam' and 'Salmon Trout', all progeny from *R. cinnabarinum* var. *roylei* × *R.* 'Royal Flush', orange form, R. 'Lady Rosebery Pink Delight' (*cinnabarinum* v. *roylei* × 'Royal Flush', pink form), *R.* 'Sirius' (*c.* var. *roylei* × *crassum*) and *R.* 'Mozari' (*ambiguum* × *concatenans*).

The Heliolepis Series is situated uphill from here in a westerly direction (20). Once again *Rhododendron rubiginosum* is the outstanding species showing a remarkable variation in time of flowering and shade of flower. Four or five years ago, this area (20) was a solid jungle of species of the Heliolepis and Triflorum Series. Most of the plants were tall, leggy and mis-shapen and many had to be destroyed. However, some of the better forms were cut back and within three years had not only broken from close to the base but had grown again into shapely plants.

Further uphill to the west (17) the Triflorum Series occupies the remainder of the open area on the hill face up to the deer fence at the top of the garden, and provides a wealth of interesting material. Here we have a so-called red-flowered form of *R. augustinii* which flowers in March, a full six weeks before the blue-flowered forms. That so distinct a plant should be named *R. augustinii* is cause for wonder to the gardener anxious to master the intricacies of rhododendron nomenclature. *R. lutescens* flowers early, of course, usually in February, and continues into April, but unfortunately the good forms are not represented in the Benmore collection. (Is it coincidence or not that apparently there are no really good yellows of any rhododendron at Benmore?). Among a number of specimens of *R. davidsonianum* the only really good one is a pink form from Caerhays Castle. *R. siderophyllum* is represented by a pure white form in flower early in April and *R. concinnum* in various colours ranging from flowers of a fine deep purple to white spotted brown. *R. zaleucum* is also immensely variable and most of our plants are of con-

siderable size and smother themselves with flowers each year. Much the most remarkable, however, is a form with much larger pale yellow flowers under the number KW 20837. The same form is in cultivation in other west coast of Scotland gardens and once again the Benmore plant appears to be paler in colour than those elsewhere. *R. rigidum* and *R. yunnanense* are well represented in this area, and *R. ambiguum* regenerates so freely as to be almost a weed. *R. oreotrephes* does likewise. An unusual form of this species, KW 21021, blooms in June and the flowers are purple and much more tubular in shape than is usual.

To the north (17a) and south (17b) are heavily wooded areas on steep slopes which have been chosen as sites for series which contain species known to be more or less tender. In the north area a pale yellow form of *Rhododendron auritum* of the Boothii Series flowers well late in April. The hardier *R. tephropeplum* is a more colourful plant of the same series with rose-coloured flowers, and the more tender *R. sulfureum* is growing well but has not yet flowered. After a very mild winter, *R. bullatum* flowered well, as did its hybrid, *R.* 'Suave'. *R. pendulum*, which one does not always see in a rhododendron collection, has flat, creamy-white flowers with brownish markings; it may be hardier than is supposed, for it grows well enough in the rock garden at the Royal Botanic Garden, Edinburgh. The Maddenii series is represented in both the north and south areas. *R. crassum* enjoys the wet climate of Benmore and makes strong growth yearly; it is, of course, the hardiest of its series and also produces natural seedlings. *R. ciliatum* often suffers from late frosts due to its time of flowering, otherwise it is, of course, quite hardy. *R. johnstoneanum* and *R. lindleyi* are thriving, and young plants of *R. burmanicum*, *R. formosum*, *R. supranubium* and *R. lindleyi* received from Brodick in 1963 flowered this year and show promise of becoming established in the area. *R. kyawi* has been making strong growth for a year or two but has not flowered; maybe it is requiring more light. Hybrids in this area which are flourishing meanwhile are *R.* 'Countess of Haddington' (*ciliatum* × *dalhousiae*), *R.* 'Countess of Sefton' (*edgeworthii* × 'Multiflorum'), *R.* 'Fragrantissimum' (*edgeworthii* × *formosum*), *R.* 'Princess Alice' (*ciliatum* × *edgeworthii*) and *R.* 'Harry Tagg' ('Albescens' × *ciliicalyx*).

Below the south area, but still on the slopes of the hill, the Falconeri and Barbatum Series (21) are planted under mixed conifers with an occasional oak or beech. The Falconeri Series rhododendrons are all making strength growth but are most

reluctant to flower in this situation. *R.* 'Fortune' (*falconeri* × *sino-grande*), planted here in 1958 and now over 10 feet high, produced a dozen flower buds this year, only to have them ruined by 6 degrees of frost on two successive nights in April just as the buds were showing colour.

The Barbatum area is dominated by a *Sequoia sempervirens*, almost 100 years old. *R. smithii* is a good plant with attractive flower and bark; it can stand a few degrees of late frost without losing its flowers. A young plant of *R. barbatum* (L. & S. 17512) has lovely bronze new shoots in June, whilst another young plant of the same species, a graft from one of the original Hooker plants of *R. barbatum* growing at Leemoor, Dartmoor, has bright red bud scales on the young shoots, up to 4 inches long, which persist for a number of weeks. *R. exasperatum* is also very attractive when the young shoots are developing, but I have not seen it in flower. *R. bainbridgeanum* is a pretty little plant, 4 feet high, with pale rose flowers, most attractive in April. Also in flower in this area in April are *R. glischrum*, with deeper rose flowers and good foliage, *R. morii*, white flowered and spotted with crimson, and *R. strigillosum*, whose very bright scarlet flowers and long, narrow, bright green leaves combine to make a very handsome plant. Last to flower here is *R. habrotrichum*, a tall shrub with soft, hairy leaves and pale rose flowers.

To the south we have the Grande Series (22), where most of the species are making excellent growth but with a few exceptions are reluctant to flower. *R. macabeanum* and *R. grande* both flower well and *R. praestans* flowers most years. *R. macabeanum* is the most attractive of these three species, but even so we only have poor pale forms at Benmore. *R. sino-grande* is making tremendous growth, especially on young plants in this area, but *R. magnificum* suffers terribly from the cold winds.

East of the Grande Series on a slope above Benmore House, the Taliense and Arboreum Series (23) are planted under larch, spruce, western hemlock, oak and beech. *R. niveum* is 20 feet high and has neat compact trusses of smoky purple flowers in April. *R. arboreum* can be seen growing alongside forma *roseum* and var. *cinnamomeum*. *R. floribundum* at Benmore is a splendid garden plant, 12 feet high, with interesting bullate leaves and neat lavender trusses; it is attractive both in and out of flower. In June, *R. insigne*, with its pink flowers spotted with crimson and framed against the stiff matt green leaves, has the kind of quiet beauty which can hold its own against the more flamboyant

azaleas which clamour for attention. In the Taliense Series, *R. bureavii* is a very fine foliage plant which is most loathe to flower. A good form of *R. adenophorum* has large flowers, 12 to a truss, rose fading to white. *R. balfourianum* var. *aganniphoides* usually flowers well at Benmore and is a good foliage plant.

The Golden Gates avenue runs south from here and on the bank on the right (24) there are numerous old plants placed here many years ago without regard to series. In March, 15 feet high specimens of *R. oreodoxa* and *R. smithii* are a delight to the eye. *R. niveum*, also 15 feet high, is purple in April, and nearby *R. hodgsonii*, 17 feet high, opens its lilac flowers in May: between these we have a plant of *R.* 'Crarae', presented to the garden by the late Sir George Campbell in 1963, thought to be a hybrid between these two species. *R. morii* carries so much flower in April that it is difficult to see the leaves; moreover, I am told that the flowers are larger and much less blotched and spotted than the form with which Captain Collingwood Ingram received the Award of Merit. The partially deciduous *R. cinnabarinum* var. *blandfordiaeflorum* has long, tubular flowers of red and apricot and is last to flower here in June and July.

On either side of the avenue (24) are plants of the Irroratum Series. There are two species which flower in February. *R. anthosphaerum* carries lilac flowers on a bush 8 feet high, and two weeks later *R. agastum* opens deep rose flowers which are very attractive. Unfortunately this shrub has been badly crowded and is a poor shape. Two plants of *R. aberconwayi* are both pale pink forms. There are numerous specimens of *R. irroratum* in the area, some of them quite old, with flowers of varying shades of pink, cream and white, and also varying considerably in time of flowering. *R. venator* has scarlet flowers in June.

The Irroratum Series merges into the Ponticum Series (25) and the best shrubs here are of *R. smirnowii*, about the same size and colour as the plant which I described in the North Avenue. *R. hyperythrum* carries white flowers in May and in June *R. brachycarpum* has large trusses of pale yellow flowers flushed with pink.

Three 20 feet high specimens of *R. auriculatum* (25) are surrounded by plants of *R. griersonianum* and well-known hybrids such as *R.* 'Mayday' (*griersonianum* × *haematodes*) and *R.* 'Tally Ho' (*eriogynum* × *griersonianum*). Two shrubs labelled *R. caloxanthum* × *griersonianum* were very striking this year. They were smothered with flower the colour of which is difficult to describe;

salmon pink lightly flushed with crimson is as close a description as I can get.

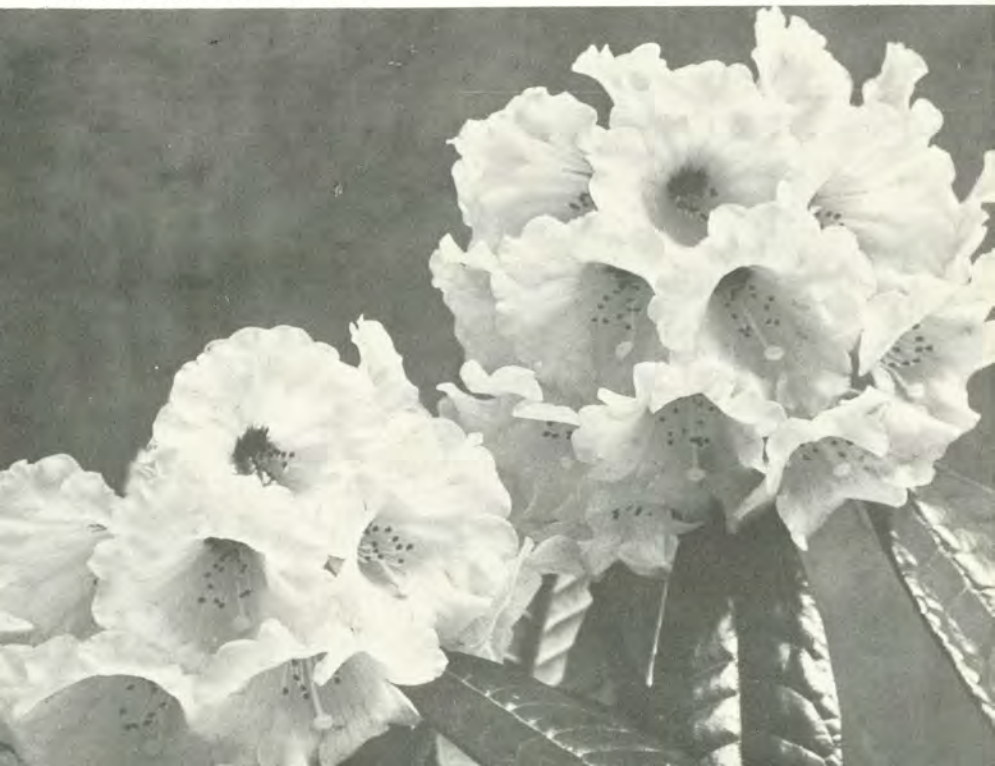
The Lacteum Series area (25) is very sparsely populated. There are a number of plants of *R. traillianum* and *R. dryophyllum*, one of *R. beesianum* which I have not seen in flower, and one of *R. lacteum*, as yet only 3 feet high.

To the west is a mixed planting of Falconeri and Grande Series. *R. praestans* and *R. basilicum* stand side by side and flower at the same time. There are also three old plants of *R. mollyanum* over 15 feet high, one of which received an F.C.C. under the clonal name of 'Benmore' in 1957. Unfortunately, and very remarkably, the plant has not since flowered. Six plants of *R. falconeri*, up to 20 ft. high, flower only occasionally, whereas an early form of *R. arizelum* flowers regularly in March.

The Thomsonii Series (26) is situated at the end of the Golden Gates avenue. Here *R. stewartianum* and *R. eclecteum* can be seen in February showing a variety of colour forms from pale

Fig. 19—*Rhododendron mollyanum* 'Benmore' in the Younger Botanic Garden

Photo: Royal Botanic Garden, Edinburgh



yellow to deep pink. There are a number of plants of *R. hookeri* with good foliage and stems but they are of Kingdon-Ward collecting and of the pink form. In April one particular plant of *R. thomsonii* is so heavy with blossom the branches are weighted down to the ground. In contrast *R. dasycladum*, with leaves just over an inch long and small trusses of rose-coloured flowers, is a very delicate plant indeed.

R. campylocarpum and *R. wardii* are especially welcome in May when their yellow flowers make a change from the procession of reds which have gone before, but no less welcome is the rose of *R. callimorphum*. Towards the end of May *R. cerasinum* blossoms in two distinct forms. One has pale flowers with a cherry-red band round the rim, the other is a uniform brilliant scarlet and almost as good as *thomsonii*, falling short only in leaf and stem.

In the Year Book of 1964, Mr. R. L. Shaw gave an account of the Natural Regeneration of Rhododendrons at Benmore, and of the conditions which had unwittingly led to the occurrence of this phenomenon. This regeneration has continued to develop and further species which have been seen to produce natural seedlings in the last four years can be included.

The drift of seedling *R. arizelum* also has *R. basilicum* and *R. fulvum* involved (Fig. 20). Six closely planted specimens of *R. coriaceum* which had been cleared of *R. ponticum* now give shelter to a stand of seedling *R. coriaceum*, some of which are 2 feet high. On the Golden Gates bank a large drift of seedlings, some of them 2 ft. 6 ins. high, shows marked characteristics of *R. falconeri*, with a hint of *R. hodgsonii* in one or two of them.

Regeneration of the Fortunei Series is still as Mr. Shaw described it, but in the Barbatum series we can add *R. barbatum* and *R. strigillosum*, although seedlings of the latter are infrequent and usually show mixed parentage.

No seedlings of the Cinnabarinum Series have been observed but *R. concinnum* and *R. yunnanense*, of the Triflorum Series, are regenerating.

Seedlings of the Neriiflorum Series can be seen in many parts of the garden, but it is very difficult to separate the species involved. *R. floccigerum* has been noted in addition to those mentioned by Mr. Shaw.

R. glaucophyllum seedlings have been seen on the Rock Face as well as *R. brachyanthum* and a few more seedlings of *R. griersonianum* have appeared, but they are still few and far between.

Fig 20—Natural Regeneration at Benmore involving *Rhododendron arizelum*, *R. basilicum* and *R. fulvum*

Photo: A. Hall

Other series not mentioned in 1964 but which are now definitely involved in natural regeneration are as follows. The Arboreum Series in which seedlings of *R. arboreum*, *R. floribundum* and *R. niveum* are occurring. The Heliolepis Series in which *R. rubiginosum* is producing numerous offspring in various parts of the garden. The Trichocladum Series, but it is not possible to name a species from the foliage alone. The Thomsonii Series, where seedlings have emerged recently and where *R. wardii* and/or *campylocarpum*, *R. williamsianum* and *R. callimorphum* are thought to be involved. Seedlings of *R. campanulatum* and also of *R. auriculatum* can be seen near old established plants of these two species, but so far only one or two seedlings of *R. irroratum* have been seen, even though we have a fair number of old plants of this species.

These, then, are some of the rhododendrons at Benmore. There are many others. The garden is open officially from April to September, but enthusiasts will be admitted, indeed welcomed, at any time of year.

Mr. J. W. H. B. Younger writes:

I have been asked to supplement Mr. Hall's article on the

garden at Benmore with a short account of how it came into being and how it has been developed, and also with a note on the plants at Eckford.

In 1925 my father handed over the estate of Benmore to the Forestry Commission and a year or two later Benmore House became a Forestry Training School. It was proposed that the garden and policies be put into the care of the Edinburgh Royal Botanic Garden, whose Regius Keeper, Sir William Wright Smith, was an old friend of his. Sir William jumped at the conception of sending over from the East plants which might be expected to thrive better in a Western climate and lost no time: hundreds and hundreds of plants came over, a start was made in clearing *ponticum* and the foundation laid for development towards what the garden is today.

The war put a stop to progress and the garden took some time to recover; in the last few years, however, it has been under the dynamic direction of Dr. Fletcher and now contains one of the finest collection of plants in the West of Scotland.

About 1930 my father moved into Eckford, until then the Factor's house, and Sir William gave him a large selection of plants, and these, now some 35 years old, form the foundation of our collection. They consist mainly of species rhododendrons and have grown to such an extent that we have the embarrassment of overcrowding. Most of them have shelter from trees overhead, with reasonable protection from wind, and being on the hillside escape some of the frost in the valley below.

In this short note on them I have picked out some which are perhaps less common, and extend a hearty invitation to anyone passing by and interested to come in and take cuttings.

Of the older plants, one of our finest is *R. meddianum* var. *atrokermesinum*, now 15 ft. high and 42 ft. round, in full flower this year in early March. Of interest is *R. sherriffii* with thick brown indumentum under its leaves. *R.* 'Seta' flowers early, all too often to be cut by frost. A little later come the white flowers of *R. siderophyllum* in contrast to two of the more attractive of the Glischrum's *R. glischroides* and *R. vesiculiferum*. In April-May we are at our most colourful. *R. delavayi* is quite hardy with us and we can normally look for flowers on *R. lindleyi* unless an exceptionally hard winter's frost has penetrated its buds. Next to one of ours is a rival plant of *R. lindleyi*, given to us by the Gibsons, of Glenarn, which seems to be hardier. Worth notice are *R. aperantum*, *R. setiferum*, fine plants of *R. habrotrichum* and

the lovely dark red flowers on the 'Review Order' given to us by the late Lord Stair. Finally, *R. kyawi*, now 13 ft. high and 40 ft. round, flowers months after the risk of frost but is most reluctant to provide us with layers.

During the last few years we have been setting our sights higher, but we cannot compete with the climate of Brodick or Logan. Among casualties have been *R. dalhousiae*, *rhabdotum* and *parryae*, but *ciliicalyx* and *burmanicum* have flowered the last three years, while *megacalyx*, *auritum* and *sulfureum* have so far survived.

The big-leaved rhododendrons flourish on our rainfall and damp atmosphere. We have had flowers on most of them this year, including a *sinogrande*, which is 24 ft. high. But Benmore and ourselves are disappointed at their inconsistent flowering. Dr. Fletcher has suggested that this may be due to lack of sunshine, as our hillsides rob us of two hours in the morning and another two hours in the evening. We must console ourselves with the reflection that no gardener worth his salt can ever be completely satisfied.

Fig. 21—*Rhododendron* 'Red Lacquer', A.M. March 14, 1967. Exhibited by Captain Collingwood Ingram (see p. 234)

Photo: J. E. Downward

Photo: Pearl Freeman

Fig. 22—Roza Harrison

ROZA HARRISON

ROZA HARRISON, who died recently after a long and painful illness, was a happy and radiant woman whose gaiety and immense courage never forsook her. To spend a day, even an hour or two, in her company was always an enriching experience, for it was impossible not to take unto oneself some of her gaiety and spiritual exuberance.

After a severe operation in January, 1967, she endured the discomfort of the long journey, from her home in Cornwall, to London, to attend a Rhododendron Committee Meeting in Vincent Square, only to enter hospital again the very next day for further treatment. Such was her courage. This committee meeting was to be her last public engagement, but how appropriate a one it was.

Mrs. Harrison was a beautiful woman of Danish extraction who first became known in this country as a member of the team of dancers in "Chu Chin Chow", the fascinating musical show of the early twenties. This she did in part training for the ballet which, in early life, she intended to be her career. How she must have enjoyed all the gaiety and fun of such a life. However, when seventeen, she met and married John Barr Stevenson, later of Tower Court, Ascot, and immediately was transformed from a town girl into a country woman whose early interest and recreation was riding—she hunted regularly with the Garth. Entry into the great houses of the country could never change her innate simplicity; she was not too proud to use a push bicycle during the late War, and was often seen shopping in the village with all the impedimenta of string bags and baskets, always with a smile and a joke on her lips.

There must be very many rhododendron enthusiasts of the younger generation who did not see the magnificent garden at Tower Court created jointly by Jack and Roza Stevenson. Many would have said that the soil conditions could but lead to failure owing to its extreme acidity—fit only for Scots Pine and Sweet Chestnut. But the Stevensons overcame all difficulties and in fact were so successful that the Tower Court garden became world famous for its great collection of rhododendron species. In her

work with rhododendrons Roza was in her element. Seed sent by great collectors from China, from Burma and Tibet, and in fact from all over Asia (in a lesser degree from North America also) came pouring into this country. She had the knack and the green fingers to handle this mass of material, and was successful not only in growing plants from this seed but in classifying and cataloging all the resulting progeny to the extent that the Tower Court collection of rhododendron species was easily the best documented in the world.

However, Tower Court was not merely a garden devoted to species of rhododendron. One has only to study Part II of the Rhododendron Hand-book to appreciate that the Stevensons produced many rhododendron hybrids of great merit. It would be correct to say that Roza was responsible for all these matings, and it is due to her that we have in our gardens today lovely plants such as R. 'Amor', R. 'Azor', R. 'John Barr Stevenson', R. 'Rozamarie', R. 'Robert Keir', R. 'Remo' and R. 'Tessa' (her own pet name) to name a few. Possibly her greatest achievement, however, was R. 'Polar Bear', a cross between *auriculatum* and *diaprepes*, a giant plant blooming in late July with huge trusses of scented white flowers which not only adorns the garden but pervades the evening air with sweetness.

Alas, great tragedy was to be Roza's lot, for in 1950 her husband was found dead in his chair. She was left penniless with a considerable mortage on the property, and, because his signature had not been witnessed, Stevenson's will proved to be invalid according to English Law. She rose bravely to her greatest challenge. Luckily she was advised to seek counsel from a Scottish Writer to the Signet, and after protracted negotiations her husband's will was proved valid by Scottish Law and such as he left was hers absolutely.

Roza decided to sell the rhododendron species collection to the Commissioners of Crown Lands, as the Crown Estate Commissioners were then called. The story of these negotiations cannot yet be told, but the greatest in the land came to her aid and the collection moved to Windsor Great Park, where it stands as a lasting (we hope) testimonial to two great gardeners. This sale helped with the mortgage but Roza still had to live. Those who knew her in the fifties will forever remember her giant strength both of body and determination. Aided only by her splendid and loyal gardener, Robert Keir, she personally started a most successful selling business. The two of them, unaided, dug up

some thousands of plants, some of them weighing many hundredweights each, and loaded and despatched them; she also propagated thousands more. Thus she carried on for eleven years.

It rejoiced the hearts of all her many friends when in 1961, suddenly and unexpectedly, her engagement was announced to Major-General Eric Harrison, of Tremeer, St. Tudy, Cornwall, himself a keen and knowledgeable gardener. Tower Court was sold and many of her good plants found their way to her new and lovely home. Roza absorbed many of the local interests and became an expert dog handler, and in fact was successful in several field trials. She loved to work her labrador when out shooting with her husband. She joined him also on the river and caught many a salmon in their local river, the Tamar, and in Scotland.

"What a happy ending" all her many friends thought; and, in spite of the disease which took hold of her, thus it was.

Our sympathy goes out to Eric Harrison, the husband of one of the gayest and most gallant of women.

ERIC SAVILL

FORTY YEARS OF RHODODENDRON SHOWS

By JAMES PLATT

THE first recorded Rhododendron Show in the annals of the R.H.S. was held on Tuesday, April 27th, 1926, in the Society's Hall in Vincent Square by the Rhododendron Society for one day only. The large number of visitors who attended it, from the opening hour till its close, testified to the interest in rhododendrons at that time. Accommodation for exhibits was taxed to the full. At the time it was said "the display of colour could hardly have been excelled". Exhibits ranged from the small flowers of the Lapponicum Series to the *griffithianum* (*aucklandii*) type and hybrids.

A feature of this Show was the class for the best group of rhododendrons staged by an amateur, which was keenly contested. The first place was awarded to Lady Aberconway and the Hon. H. D. McLaren (later Lord Aberconway and President of the R.H.S.), from Bodnant. The exhibit contained many new species and a finely grown plant of *R. williamsianum* which gained the prize for the best plant exhibited. The second prize was awarded equally to Mr. Lionel de Rothschild, of Exbury, and Mr. A. M. Williams, of Werrington. The Exbury exhibit had fine hybrids, including *R.* Loderi and *R.* Kewense × *R. thomsonii*. Mr. Williams's exhibit contained a comprehensive number of species, among them *R. haematodes*, *R. litiense*, that form of *R. wardii* which was known as *R. croceum*, *R. souliei*, *R. fittianum* and numerous examples of the Triflorum and Lapponicum Series. His *R. dichroanthum* was particularly fine. The fourth prize was shared by Lady Loder, of Leonardslee, and Mr. Barclay Fox, of Penjerrick, Cornwall, both of whom staged remarkably good hybrids. If, in the classes for species and hybrids, we substitute a few initials or a change of surname, due to marriage, we find, with a few exceptions, many of the same families and gardens among the prizewinners, as today. An interesting class was that for evergreen or deciduous flowering trees or shrubs suitable for growing with rhododendrons.

The number of classes is not mentioned in the Rhododendron Society's report of the Show. However, reference is made to the seventeen special classes, added to those contained in the original schedule, twelve of which catered for species and some of which had in all probability not been seen before by many of the visitors to the show. A truss of *R. griersonianum* won a first prize for Mr. J. C. Williams, whose *R. argyrophyllum* and *R. faberi* (from Wilson's seed one suspects) also took first prizes.

The exhibits contributed by nurserymen were described as meritorious. The firms exhibiting included Messrs. W. C. Slocock, Messrs. R. Veitch and Son, Messrs. Hillier and Sons, Mr. Reuthe, Messrs. Waterer Sons and Crisp and Messrs. Wallace, all of whom in some form or another still continue to exhibit at the Society's shows. Messrs. R. Gill and Co., Messrs. C. B. Van Nes and Messrs. R. & G. Cuthbert, who had exhibits at this Show, no longer exhibit. Messrs. Gill, from Penryn, Cornwall, were showing outstanding Himalayan species such as *R. dalhousiae*, *R. nuttallii* and *R. cinnabarinum* var. *roylei*. Among the hybrids shown were several which received the A.M. Lord Swaythling's *R. campylo-*

carpum × *R. fortunei* was among them, as was Messrs. Wallace's *R.* 'Mrs. A. M. Williams' and Messrs. Waterer's *R.* 'Sir John Ramsden'.

Mr. A. M. Williams received a F.C.C. for *R. haematodes* and the A.M. for two forms of *R. wardii* shown as *R. croceum* and *R. astrocalyx*. This was the year in which Mr. George Johnstone's *R. sinogrande* received the F.C.C. in March.

The Rhododendron Society held its second Show, this time a two-day one, due no doubt to the success of the first one, on May 3rd and 4th, 1927. Mr. Lionel de Rothschild was chairman of the Show committee.

In his report on the Show, Mr. G. H. Johnstone remarked that the season had been very poor, the worst for many years (a complaint heard frequently over the years), with severe frost and snow, and that the flower heads were smaller than normal. However, there was an outstanding exhibit, that of the Lapponicum Series, staged under the direction of Mr. J. B. Stevenson, in which 36 out of a total of 56 named species were shown. It should be remembered that all this time E. H. Wilson was still alive and that the rhododendrons he had collected in the first decade of the century had had time to settle down and show their value. George Forrest, whose first expedition was in 1904, had sent back large collectings of rhododendrons from that year till his 1924-25 expedition, had lectured to the Royal Horticultural Society in 1923 on botanic exploration of N.W. Yunnan and Tibet and was soon to set out on his final and fatal expedition of 1930-1931. Kingdon Ward, whose first expedition was in 1913, was still actively collecting, in Assam and the Mishmi Hills in 1927-1928, and was to continue to do so for many years. Professor Joseph Rock, starting in 1923-1924, had made his first two expeditions in which he covered much of Forrest's country and sent back voluminous seed. The impact of *R. griersonianum*, which Forrest had collected in Yunnan in 1917, as a parent plant of an increasing number of hybrids, had hardly begun to be felt. This species received the F.C.C. in 1924, and it was not until 1929 that 'Vanessa', raised at Bodnant and one of its first recorded hybrids, received the same award.

A hybrid which received the A.M. at this Show was *R.* 'Betty' (*R. fortunei* × *R. thomsonii*), raised by Sir Edmund Loder and shown by Bodnant. Mr. A. W. Williams also received this award for the beautiful dwarf species *R. russatum*, raised from Forrest's seed. Mr. E. J. P. Magor showed *R.* 'Cinnkeys', an interesting

hybrid between the Himalayan *R. cinnabarinum* and *R. keysii.*

There were 62 classes in the schedule, the first three being trade classes. Messrs. R. Gill staged a vast quantity of Himalayan and Chinese plants, for which they were awarded the challenge cup and first prize. The exhibit was criticised for its density, it being "necessary to look amongst a mass of *decorums*, etc., to find *searsiae*, *genesterianum*, *sperabile* and others which were likely to appeal to the specialist as well as to the public". In Messrs. Wallace and Co's exhibit, hardy hybrids, mostly of Messrs. Koster's raising, preponderated. They also showed 'Smithii Aureum', *hippophaeoides* and *fastigiatum*. Messrs. Waterer and Messrs. J. Cheal were third and fourth with hardy hybrids staged among a groundwork of azaleas. Messrs. Van Nes also staged a group in this class, again with hardy hybrids, in which red predominated. In Class 2, Messrs. Stewart and Sons were showing Malvatica × *kaempferi* azalea hybrids. Class 4 was for a group, not exceeding 150 feet, shown by an amateur. The first prize went to a wonderful exhibit of both hybrids and species from Bodnant in which *augustinii* and pinkish forms of *yunnanense* furnished the background. Their species included a particularly good *callimorphum* and the yellow form of *wasonii*. Hybrids included 'Penjerrick' and 'Cornish Cross'. A group from Exbury was third with what was considered the finest known form of *campanulatum* and Farrer's *supranubium* among species, and Exbury's own 'Cornish Cross', among other hybrids. Admiral A. Walker-Heneage-Vivian was third with an exhibit chiefly remarkable for its profusion of sweet-scented hybrids ('Countess of Haddington' and 'Fragrantissimum').

The first prize in Class 5, for a smaller group not exceeding 72 feet, was divided between Sir John Ramsden, with an exhibit consisting chiefly of hybrids, and Mr. J. C. Williams, with an exhibit of species, from Caerhays, many of which were probably new to visitors to the Show. *R. lindleyi* was among them and *R. tephropeplum*, which was described as "being a most attractive pink flower, seed of which was collected from the limestone cliffs of south-eastern Tibet". *R. lyi* and *R. weyrichii* were also in the exhibit. Colonel Stephenson Clarke had a group with a good range of species and a form of *R.* 'Earl of Athlone' which seemed superior to any other found in the Show. The next two classes were for species among which was a form of *augustinii*, from Bodnant, of "monumental proportions". In Class 11, for a bloom of a single species, Mr. G. W. E. Loder (a President of the

Society and later the first Lord Wakehurst) was first with a pure white *decorum*, while Mr. Magor was second with *R. xenosporum*, which was thought to have been a rogue in a pan of *R. adenogynum* and is now considered to be a form of *R. detonsum*, both being of the Taliense Series. A yellow form of *R. falconeri* won a second prize for Mrs. Tremayne, of Carclew. There were no entries in the Grande Class. Mr. Magor took a first prize with *R. morii*, that beautiful species from Formosa, which at the time was entered in the Class for the Irroratum Series (it is now a Barbatum). Mr. J. B. Stevenson's magnificent truss of *R. nuttallii* appears to have quite flattened the other entries in the classes for Maddeniis. Mr. G. W. E. Loder's *R. faberi*, in the Taliense Class, was one of the features of the Show, being "outstanding in colour, form and evidence of cultivation".

A glance at the schedule will show that the present day rhododendron shows follow much the same lines with classes for species or series, hybrids and evergreen azaleas. The hybrids then exhibited were generally what are termed good old-fashioned

Fig. 23—*Rhododendron lanigerum* 'Chapelwood', F.C.C. February 21, 1967. Shown by the Crown Estate Commissioners in Class 1 of the Ornamental Plant Competition (se p. 229)

Photo: London News Agency

varieties or those with *R. fortunei*, *R. griffithianum*, *R. thomsonii*, *R. cinnabarinum* and *R. campylocarpum* blood, with the exception of interspecific hybrids made by Mr. Magor, Mr. J. C. Williams or at Werrington, using Chinese species with the older Himalayans.

The third Rhododendron Show, held on May 1st and 2nd, 1928, was memorable in that it was the first exhibition under the direction of the new Rhododendron Association formed in 1927, of which Mr. Lionel de Rothschild was President. The Association consisted of members paying an annual subscription and produced its first Year Book in 1929. This first Year Book contained a list of species prepared by Mr. Lionel de Rothschild and one of hybrids. It is on these two lists that the present day Rhododendron Handbook, Parts I and II, is based.

Prizes were offered for no less than 60 classes, of which all but two attracted entries in spite of severe frost shortly before the Show. There were exhibits from Wales, Cornwall, Scotland and Ireland. The same nurserymen as in 1927 staged groups. The special challenge cup offered by Mr. Lionel de Rothschild was awarded to Mr. Barclay Fox; the Loder Cup, for the best hybrid, went to the same exhibitor; and the McLaren Cup, for the best species, was won by Mr. E. J. P. Magor, who was a very successful exhibitor. Mr. A. M. Williams showed *R. russatum*, which was a shade nearer to blue than any species previously exhibited. Lt.-Col. R. C. Messel received the A.M. for his Loderi hybrid 'Linley Sambourne' and the same award was given to Messrs. Waterer's 'Mars', a *griffithianum* hybrid raised before 1875.

In June, 1928, H.R.H. Princess Mary, Viscountess Lascelles, opened the Society's New Hall. Lord Lambourne, the President, in his address reminded Princess Mary that it was exactly twenty-four years previously that King Edward, accompanied by Queen Alexandra, had opened the Hall, which we now refer to as the Old Hall. Since this opening the Royal Family has maintained its interest in the activities of the Society. There are repeated references of visits to the Rhododendron Shows by the Prince of Wales, the Princess Royal (the former Princess Mary), the Duke and Duchess of York or the late Duke of Kent. Such visits still continue.

The Rhododendron Show was held in 1929 in the recently opened New Hall for the first time.

The weather before this Show, which was held on April 30th, was appalling with severe frost followed by cold east winds which continued to blow for weeks. The result was that few of the tender species were to be seen, and the absence from the list of

exhibitors of names that were connected as a matter of course with the showing of rhododendrons. However, the organisers of the Show made a great effort and an excellent collection of species and hybrids was to be seen, some perhaps for the first time at the Association's exhibition.

There were admirable trade exhibits, such as that of Messrs. R. Gill & Son containing 500 plants, some of them of great size, which this firm managed to balance on a table 300 feet long. The exhibit was described as "the most comprehensive collection ever staged in this amount of space". Messrs. R. Veitch & Sons were showing *R.* 'Emasculum' and *R. russatum* var. *cantabile* among other good plants, and *R. wardii*, one truss of which was just breaking into bloom of a verdant yellow. This species was described then by Mr. George Johnstone as "not amenable to general cultivation". Mr. Reuthe could, then as now, be depended upon to produce uncommon plants. Noticeable among his plants was one of *R. stenaulum* (shown as *R. mackenzieanum*) which had not then reached flowering size. Messrs. Wallace were showing hardy hybrids, including 'Mrs. A. T. de la Mare' and 'Mrs. G. W. Leak'. Messrs. Slocock showed in a very attractively staged group some of their own hybrids, 'Mrs. W. C. Slocock', 'Dairymaid', 'Goldsworth Yellow' and 'Mrs. Ashley Slocock' being among them. Messrs. Cheal & Sons and Messrs. Cuthbert staged groups of azaleas covering 200 feet each.

There was no group from Bodnant that year in Class 6, but Mr. de Rothschild staged what was considered to be probably the best arranged exhibit of rhododendrons ever shown in London. In it the medium growers, such as those of the Triflorum Series, were mingled with the smaller ones with a charming colour scheme of mauves graded to pinks. Here, for example, were plants of Forrest's 19404, *R. racemosum* and Kingdon Ward 4456, *R. lysolepis* well placed next to *R. chryseum*, then known as *R. muliense*. Admiral W. Heneage-Vivian's group included larger species such as *R. falconeri*, *eximium* and *niveum*, as well as hybrids. Mr. J. C. Williams was showing a wide range of species, with a vivid scarlet *R. haematodes*, a fine form of *R. fictolacteum*, *R. eritimum*, a white green-eyed form of *R. augustinii* and the beautiful but capricious *R. stamineum*. Col. Stephenson Clarke was also showing species as well as hybrids such as *R.* 'Earl of Athlone' and *R.* 'Dr. Stocker' × *R. campylocarpum*. His species included Forrest 13512, a good *R. sulfureum*, and *R. polylepis* (as *R. "harrovianum"*). The Earl of Stair brought a beautiful pure

white *R. arboreum* from Lochinch. From both Bodnant and Wakehurst there were trusses of the then rare *R. adenopodum*. The highlight of the Show was Mr. A. M. Williams' *R. lacteum*, the embodiment of a yellow rhododendron. There was also Mr. G. Johnstone's *R. weyrichii* with "its amazing colour scheme of salmon and magenta". Lady Falmouth showed that *R. falconeri* for which the garden at Tregothnan is famed.

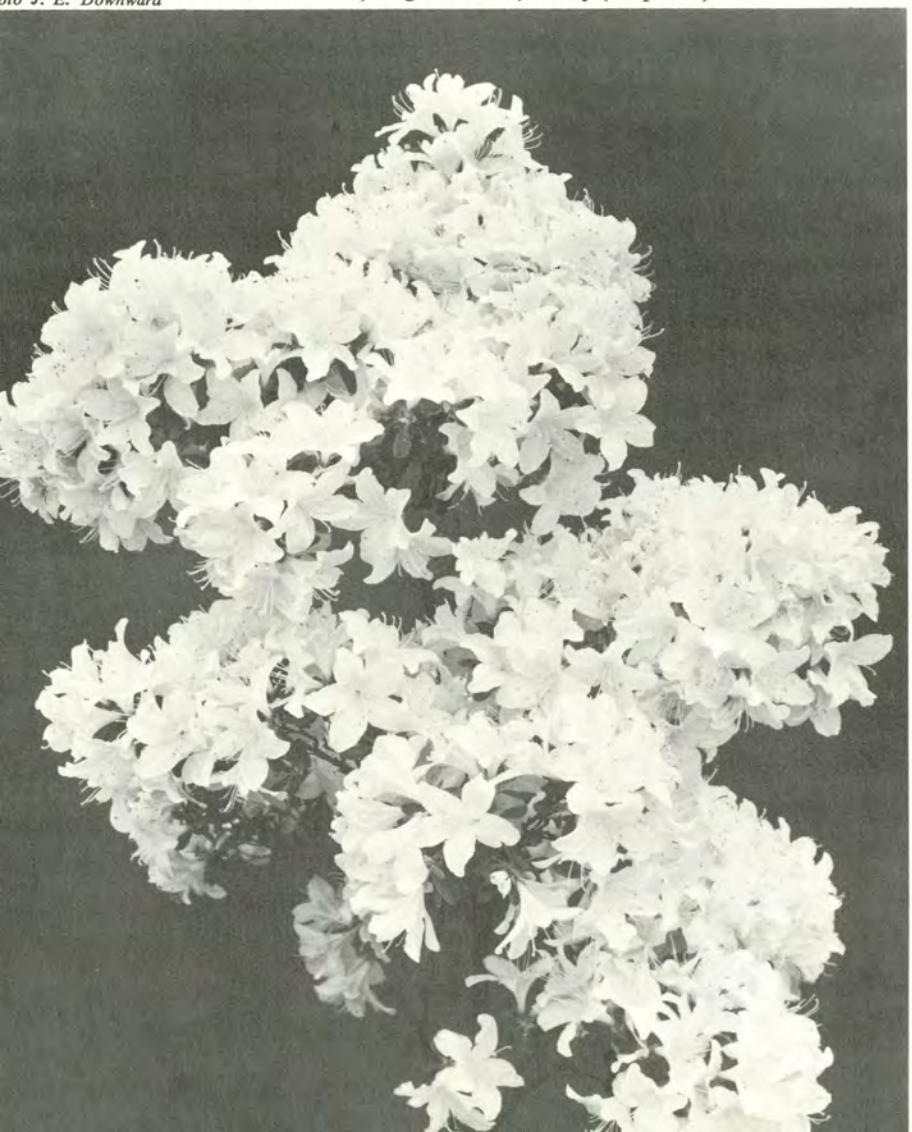
There does not appear to have been anything out of the usual in the classes for hybrids. *R.* 'Penjerrick' won several prizes. Three species received the A.M.: *R. keiskei* and *R. impeditum* (as *R.* "*semanteum*"), shown by Mr. Harry White, of the Sunningdale Nurseries, Windlesham, and *R. tephropeplum* raised from Farrer's seed from Upper Burma and sent from Bodnant. Messrs. Slocock's *campylocarpum* hybrid also received this award.

A pleasant aspect of the Rhododendron Shows was the yearly dinner party given on the Monday night by Mr. Lionel de Rothschild, President of the Association, to exhibitors and competitors. These dinners became famous for their friendly and warm atmosphere. The invitation card was simply worded "working dress". In the words of Mr. Harold Hillier, V.M.H., "they were really first class affairs. Everybody who was staging attended, from the garden boy to the duke, and we all turned up in working clothes". Mr. Frank Knight, V.M.H., who was present at every one of the shows between 1930 and the outbreak of war, helped to stage the competitive exhibits from the Knap Hill Nursery. He recollects that they just dropped work for the time being and were Mr. Lionel de Rothschild's guests for dinner in the restaurant. Mr. Knight can still picture some of the faces at the top table: The Hon. H. D. McLaren, Mr.J . C. Williams, Mr. P. D. Williams, Mr. J. B. Stevenson, Mr. E. J. Magor, the Marquess of Headfort, Sir Frederick and Lady Moore, Mr. Armytage Moore and Mr. E. H. Wilding, among others. Then there were well-known rhododendron personalities, who had been working on the groups in the Hall: Mr. R. W. Wallace, Mr. H. G. Elphick (Wallaces), Mr. Fred Rose (Town Hill Park), Mr. J. Comber (Nymans), Mr. Francis Hanger (Exbury), Mr. Charles Michael (Caerhays Castle), Mr. Dick Gregory (Werrington), Mr. Arthur Bedford (Exbury), Mr. Gomer Waterer (Knap Hill), Mr. F. C. Puddle (Bodnant), Mr. G. Reuthe, Mr. Oliver Slocock, Mr. Robert Keir (Tower Court), Mr. R. E. Gill (Falmouth), Mr. W. T. Andrews (Veitchs, Exeter), Mr. George Taylor (Bulstrode Park) and Mr. A. W. Coates (Wakehurst).

The Rhododendron Shows for the next few years showed little change of pattern. In 1930 *R. basilicum* made its first public appearance and failed to come up to expectation. Mr. Magor was showing fine trusses of *R. lanatum*. *R.* 'Mother of Pearl', a sport of *R.* 'Pink Pearl', received the A.M. for Messrs. Waterers. Lt. Col. L. C. R. Messel's 'Susan' received the same award. It was a hybrid of *R. griffithianum* × *R. decorum* and should not be confused with the lavender-blue 'Susan', a cross between *R.*

Fig. 24—*Rhododendron* 'Palestrina', F.C.C. May 22, 1967. Exhibited by Mrs. R. Y. Paton, Virginia Water, Surrey (see p. 229)

oto J. E. Downward



campanulatum and *R. fortunei*, raised by Mr. J. C. Williams, which received the F.C.C. in the Wisley Trials, 1954. In 1931 that hybrid of 'Dr. Stocker' and *R. campylocarpum*, which is now called 'Logan Damaris' and still rated as one of the best yellows, was passed over in one of the classes in favour of a "bloodless *niveum* cross". Col. Stephenson Clarke's yellow *R. eximium* was much admired and there was still a poor opinion of *R. basilicum*.

Once again, in 1931, Mr. J. C. Williams staged a group of many species, including rarities, and hybrids of great interest and merit. His *R. dichroanthum* was far superior in colour to any other example in the Hall. Both Bodnant and Exbury had magnificent large groups. Among hybrids Mr. de Rothschild was showing *thomsonii* × *diphrocalyx*, later named 'Adder', a dark red with an undivided calyx covering two-thirds of the corolla. The Hon. H. D. McLaren put up *neriiflorum* × *griersonianum*, to be named 'F. C. Puddle', no doubt one of the early "bloody reds" from Bodnant. *R. quinquefolium* received an A.M. at this Show. The most interesting hybrid to receive this award was R. 'Astarte' from Bodnant, which, a cross between *R. dichroanthum* × R. Penjerrick, formed a small bush with bright salmon-pink flowers. It was this year that Mr. Lionel de Rothschild's outstanding hybrid, 'Lady Chamberlain', received the F.C.C. This cross between *R. cinnabarinum roylei* and the tender hybrid Royal Flush (*R. cinnabarinum* × *R. maddenii*) produced seedlings with the attraction of Royal Flush but more hardy.

Mr. R. C. Jenkinson recalls that it so happened that Mr. J. C. Williams was showing Royal Flush some years before. Seeing it and admiring it, Mr. de Rothschild asked if he might have trusses of each form with pollen at the end of the Show. Mr. Williams consented. Thereupon Mr. de Rothschild got into his car and drove off at top speed to Exbury, having instructed his head gardener to prepare *R. cinnabarinum roylei* by daylight. On arriving at Exbury, Mr. de Rothschild completed the cross after dark.

In 1929 Mr. Lionel de Rothschild presented the Rothschild Challenge Cup for the best non-competitive group of rhododendrons and azaleas staged by a trade grower in the Rhododendon Show. This cup was to be a great stimulus and produced many fine large exhibits. It was first awarded in 1931 and won by Messrs. Waterers. Subsequent winners were the Knap Hill Nursery, Messrs. R. Wallace, Messrs. Slocock and Messrs. R. Gill. Messrs. Slocock eventually won the cup outright after three

wins, but put it up again in perpetuity. From 1940 to 1945 the cup was not awarded. It finally passed to the Royal Horticultural Society when the Rhododendron Association was wound up in 1945.

The best bloom in the 1932 Show on May 3rd and 4th was one of Barclayi 'Robert Fox' entered by Lady Aberconway and the Hon. H. D. McLaren. Their 'F.C. Puddle', which was very fine, received the A.M. and was considered a worthy exhibit for the Crosfield Cup. Another fine truss was that of Mr. G. H. Johnstone's *R. sinogrande*, a huge one, too. Lord Headfort's truss of *R. taggianum*, which received the A.M., was described as having "a lovely white flower and a great addition to our gardens if hardy". Mr. E. H. Wilding showed a spray of *R. oreotrephes* × *cinnabarinum* with flowers of a good clear pink. Such crosses between members of the Triflorum Series and *R. cinnabarinum* were recommended to hybridists as giving satisfactory results and being exceedingly floriferous and hardy. Sir John Ramsden's 'Aries' (*R. thomsonii* × *R. neriiflorum*), Captain Collingwood Ingram's 'Calfort' (*R. calophytum* × *R. fortunei*) and Mr. A. M. Williams's 'May Day' received the A.M. The latter has developed into one of the most popular bright red hybrids of medium growth.

The Show held on May 2nd and 3rd, 1933, was preceded by disastrous frosts on April 19th and 22nd which put Bodnant, Werrington and several other gardens completely out of action. Gardens in the west of Scotland and west of Cornwall escaped. Gill of Falmouth had one of their usual exhibits with many species and hybrids. Their giant *R. falconeri*, though it was in keeping with the size of the Hall, rather dwarfed the rest of their group. Messrs. Wallace, Slocock, Hillier and the Knap Hill Nurseries all had well arranged exhibits.

Lord Stair brought particularly good *R. dalhousiae* and *R. bullatum* from Lochinch, which were in perfect condition in spite of the long journey. *R. johnstoneanum*, then described as a scarce plant, was also a prizewinner. Lady Loder's beautiful 'Sunkist' (*griffithianum* × 'Loderi Pink Diamond') and White Lady ('Halopeanum' × 'Loderi Pink Diamond') were much admired and coveted. Mr. de Rothschild entered his 'Naomi' in the competition, a pink hybrid with a queer shading of yellow which received the A.M. a week later at a fortnightly show. Messrs. Waterer also received the A.M. for their *griersonianum* hybrid 'Bonfire', a fine red. Their 'White Swan' (*decorum* × 'Pink Pearl') was judged the best new trade hybrid and carried off the Associa-

tion's cup. It subsequently received the F.C.C. in 1957 after trial at Wisley.

In 1934 there were no complaints about the weather and the Show held on May 1st and 2nd was described as a good one. The Knap Hill Nursery won the Rothschild Cup with a well arranged and well balanced exhibit. Their best hybrid was considered to be 'Snow Queen', a lovely thing raised at Leonardslee. They also included some scarce plants such as *R. pubescens* KW 3952 which had, up to then, been rather under estimated. Messrs. Gill had, as usual, numbers of large plants in their exhibit, including *R. sinogrande*. Messrs. Hillier had a good plant of *R. basilicum*. A good form of *R. reticulatum* was on Mr. Reuthe's stand, a species which he has frequently shown in recent years. Messrs. Slocock, Waterer and Wallace were mainly showing hardy hybrids. The classes for species and hybrids were well filled and well contested. Two dwarf species received awards: Mr. de Rothschild's very blue *R. scintillans* an F.C.C. and Colonel Messel's charming pink *R. crebreflorum* (KW 6967) the A.M. Two reds were among the hybrids to receive the A.M., Lady Loder's splendid dark red 'Sussex Bonfire' and Mr. de Rothschild's 'Bibiani', a dark red and hardy *arboreum* hybrid.

1935 seems to have been a paragon of a year. The spring was without many frosts and there were few severe gales. Curiously after a mild winter it was a late season. The result was that many kinds of rhododendron usually seen at the Show (April 30th and May 1st this year) were not out and others usually over were shown. Let's try and picture the effect in the New Hall. There were the large trade stands of Messrs. Hillier (300 feet super), the Knap Hill Nursery and Messrs. Gill, and those for rhododendrons capable of being grown in the open at Kew of Messrs. Slocock, Wallace and Cuthbert and another from Messrs. Gill of cut flowers. There was the class for amateurs for a group of cut flowers not exceeding 180 square feet, won by Mr. de Rothschild with a magnificent and beautifully arranged exhibit. Second to him came Admiral Heneage-Vivian's group. Mr. J. C. Williams had an exhibit in the smaller class for amateurs. Colonel Stephenson Clark had a similar one. Lord Swaythling had an exhibit in the class for a group of alpine rhododendrons. And there were the remaining 71 classes. No wonder that the effect was very fine from the top of the steps leading to the dais, marred a little in some opinions by a group of azaleas in the centre whose colours clashed with those of the rhododendrons. The quality of the

Photos: J. E. Downward

Fig. 25—Rhododendron 'Gipsy Moth', P.C. July 18, 1967. Raised and exhibited by Mr. A. F. George, Hydon Nurseries, Godalming, Surrey (see p. 234)

Fig. 26—Rhododendron 'Carolyn Hardy', A.M. May 22, 1967. Raised and exhibited by Captain Collingwood Ingram (see p. 230)

flowers was unsurpassed in spite of the quantity, for this was the largest rhododendron show ever held.

The species shown ranged from the tender, the large-leaved, the dwarfs and the alpines. There were the usual hardy hybrids, those raised in Cornwall at Caerhays, Lamellen, Penjerrick and by Messrs. Gill, and the start of the almost tidal wave of beauties from Bodnant and Exbury with some from Townhill, Tower Court and Leonardslee. There were entries from Trengwainton and Trewithen, but hybrids from these two gardens were yet to become known. Hybrids from these famous rhododendron gardens, now almost household words, had not yet reached the general public. Bodnant and Exbury-raised hybrids were beginning to appear more and more in various classes often under their parentage and still nameless.

Fine hybrids were being raised in the trade, the most popular perhaps being those with *R. campylocarpum* blood such as *R.* 'Letty Edwards' raised by Messrs. Slocock, or *R.* 'Mount Everest' which was a best seller and is still one of the finest whites.

Mr. Lionel de Rothschild was, however, most generous in distributing the best forms of his rhododendron hybrids and Knap Hill type azaleas to the trade.

New names, those of Lady Londonderry, Lady Norman, Lord Headfort and Lord Digby, for instance, were appearing among those of prizewinners.

Two rhododendrons received the F.C.C., Lord Aberconway's 'Coreta', a deep crimson scarlet raised from Loderi × *zeylanicum*, and *R. forrestii* var. *repens*, a free flowering form from Tower Court. Six other species received the A.M. They were Lord Aberconway's pink form of *davidsonianum*, *crinigerum* and *pectinatum* from Exbury and *deleiense* KW 8615, *pumilum* KW 6961 and *megeratum* from Townhill Park. Mr. J. J. Crosfield's 'Blue Diamond' also received this award as did 'W. Leith', a beautiful *decorum* × Loderi hybrid with pale greenish cream flowers raised by Admiral A. W. Heneage-Vivian. An interesting feature of the Show was a contribution from the Laboratory at Wisley on the Rhododendron White Fly.

The Rhododendron Association held four more shows before the outbreak of war in 1939. That held on 28th and 29th April, 1936, was honoured by a visit from H.M. King George VI, who had become Patron of the Association that year. There were two highlights in the Show, Mr. Lionel de Rothschild's large group exhibit, containing a huge range of species, and that of Messrs.

Gill. The latter was somewhat of a novelty in that though it covered the biggest space allotted to a trade exhibit it did not contain a single plant in flower. It was in fact a representative collection of large-leaved varieties beautifully cultivated. No awards were given at this Show. On the whole the Show, adversely affected by frost, was below the accustomed quality and quantity. The same could not be said of the Show held on the 4th and 5th May, 1937. It was undoubtedly the finest Show ever held from the quality of the blooms and the number of exhibits in the classes. The trade groups were, however, not quite as fine or as numerous as they had been in previous shows.

The Coronation Cup was won by Lady Loder with a single truss of 'Loderi King George' exhibited in her entry in Class 8. Several Bodnant and Exbury hybrids now well known appeared at this Show. There was the blood-red 'Choremia' from the former garden and 'Carita', a delicate primrose, from Exbury. An F.C.C. was awarded to Admiral Heneage-Vivian's pure white *R. lindleyi* and the A.M. to Lord Aberconway's 'Cowslip' (*williamsianum* × *wardii*).

The penultimate Show of the Rhododendron Association was held on 3rd and 4th May, 1938. It was much on the same lines as previous shows, with fine groups from Exbury and Borde Hill and the trade. Lord Aberconway's 'Dorinthia' (*R. griersonianum* × *R.* 'Hiraethlyn') received the F.C.C., while his 'Phidias' received the A.M., as did Admiral Heneage-Vivian's 'Kewdec White Lady' and Mr. de Rothschild's 'Naomi Nautilus'.

The Rhododendron Association held its final Show on May 2nd and 3rd, 1939. The outbreak of hostilities not only disturbed the sequence of the Rhododendron Show, then a firmly established annual event, but it also put an end to the publication of the Association's Year Book. Thus a report of the Show held in 1939 was never published. It followed on the lines of its predecessors. The quality of the flowers was very high in spite of the inclemencies of the weather. Mr. Lionel de Rothschild staged what was to be the last of his great exhibits from Exbury. There were splendid trade exhibits, Hilliers received a Gold Medal for theirs and the Knap Hill Nursery the Stevenson prize for the best rhododendron plant in the Show with a large 'Mrs. Lionel de Rothschild' covered in perfect trusses. Mr. J. J. Crosfield, of Embley Park, Romsey, received a F.C.C. for his *R.* 'Blue Diamond'. It was also at this Show that Lord Aberconway's *R.* 'Elizabeth' received the A.M.

Although there were no shows during the war years, the Joint Rhododendron Committee met regularly, and in the years 1939 to 1946 made awards to 117 rhododendron species and hybrids.

The Rhododendron Association was still in existence in 1945 when the first Show was held on May 1st. It was distinguished by a particularly fine exhibit from Major Edmund de Rothschild, of Exbury, an exhibit well up to the standard set by his father, the late Lionel de Rothschild, who died on January 28th, 1942. However, the Association was wound up in the autumn of the same year when the Rhododendron Group was founded within the Royal Horticultural Society. The first post-war Show with classes organised by the Society was held on April 30th and May 1st, 1946, and a report on the Rhododendron Show has been included yearly in the Rhododendron Year Book which was first published in 1946, becoming subsequently the Rhododendron and Camellia Year Book.

The Show in 1946 was comparatively small. There were no exhibits from the great private gardens as in the years before the war, but there was one group, from the Crown Estate Commissioners, a new source which in successive years was to play a part of increasing importance. This group was formed of material grown in the now famous Savill and Valley Gardens in the Great Park, Windsor. In subsequent years the Rhododendron Show was to increase in size. Not only were the Competitive Classes filled with admirable entries, but the trade supported the Show with exhibits more frequently than not of Gold Medal standard. The decision in 1964 to award once again the Rothschild Challenge Cup for the best non-competitive group of rhododendrons and azaleas staged by a trade grower has been fully justified. It has restored the incentive. Competition has been keen, although Messrs. Slocock have won the cup regularly each year. In addition there were welcome exhibits from as far-afield as the West of Scotland. The visitor is now, no doubt, disappointed if, for example, there is no exhibit from the National Trust for Scotland, Brodick Castle Gardens, Isle of Arran, with its customary splendid trusses of large-leaved species or hybrids and tender rhododendrons. There are welcome entries from exhibitors such as Major A. E. Hardy, of Sandling Park, Kent, and Major-General and Mrs. E. Harrison, of Tremeer, Cornwall, from Wing-Commander F. L. Ingall, of Corsock House, Kirkcudbrightshire, and Mr. S. F. Christie, of Blackhills, Morayshire. Mr. Peter Cox has joined his father, Mr. E. H. M. Cox, in exhibiting from Perth,

and Major E. W. M. Magor carries on exhibiting from Lamellen, Cornwall. A newcomer to Trade Exhibitors is the Hydon Nurseries of Godalming.

Such was the interest in rhododendrons, that in 1959 a Competition was staged on March 24th and 25th for early-flowering species and hybrids. The large number of entries showed that the decision to hold such a competition was justified. Again the Competition attracted many entries the following year and it is now established as a pleasant forerunner to the Show. The trade are now invited to exhibit in what used to be the amateur competition, which is only reasonable when large private gardens are trading in plants.

As a result of years of hybridisation, improvement is always being made not only in the range of colour but also in the stature of the plants, the size of blooms and their lasting quality. A race of hardy dwarfs—some almost creeping plants—is being developed using such species as *R. forrestii* var. *repens*, *R. williamsianum* and the very compact *R. yakusimanum*. At the other end of the scale there is Slocock's *R.* 'The Master', whose enormous truss won the Loder Cup in 1966. The Knap Hill type of azalea has come into its own. These large, highly coloured and scented azaleas have taken the place of the older Ghent and Mollis, although some of these still remain popular. Rhododendrons of all kinds are more popular than ever and the Rhododendron Show flourishes.

The writer wishes to record his thanks to Mr. Harold Hillier, Mr. R. C. Jenkinson, Mr. Frank Knight and Mr. Oliver Slocock for much information freely given.

Fig. 27—*Rhododendron prattii* 'Perry Wood', A.M. April 18, 1967. Exhibited by Major A. E. Hardy (see p. 233)

THE AMERICAN RHODODENDRON SOCIETY'S NATIONAL CONVENTION, 1967

By F. P. KNIGHT, V.M.H.

The American Rhododendron Society held its Annual Convention at Asheville, N. Carolina, from May 7th to 9th, 1967. Eighteen of the twenty-five Chapters of the Society were represented, and altogether about 300 persons attended. A Rhododendron Show was staged by the South-eastern Chapter on Monday and Tuesday, May 8th and 9th. I was privileged in being authorised by the Council of the R.H.S. to accept an invitation to take part in the Convention Programme and also to assist in the judging of the Flower Show.

The proceedings opened on the afternoon of Sunday, May 7th, when, under the chairmanship of Mr. "Buck" Thorne, the President of the South-eastern Chapter, a "Rhododendron Round Table" dealt for nearly three hours with a range of subjects under the heading of "New and Interesting Items". The participants were Drs. David Leach, Donald Wyman, Carl Phetteplace, Fred Galle, Thomas Wheeldon and myself.

Dr. Leach gave a fascinating talk on his work on breeding rhododendrons and included up-to-date information on the work he had carried out in raising deciduous azaleas from the Ilam strain which he had imported from New Zealand. He mentioned particularly two of his own raising which he had named 'Spring Salvo' and 'Tang'. He drew particular attention to the quality of the Shammarello and Dexter hybrids (still not well known in the U.K.) and mentioned among his own hybrids 'Mist Maiden'. Dr. Leach then gave much help to those amateur rhododendron enthusiasts who do not possess suitable greenhouse facilities for raising seedlings by describing the use of plastic ice-boxes under fluorescent lights for this purpose.

Dr. F. C. Galle, the Director of Calloway Gardens, Pine Mountain, Georgia, stressed the importance, as far as his area was concerned, of planting the native azaleas of the S.E. United

States. He mentioned that, due to climatic conditions, named cultivars of Ghent, Mollis, Exbury and Knap Hill azaleas were short lived in Calloway Gardens.

Dr. Thomas Wheeldon, M.D., drew freely from his deep knowledge of the evergreen Satsuki azaleas. He had been associated with the late B. Y. Morrison in forming a collection of these. He stated that the Satsuki azaleas have been cultivated for over 300 years but are only now becoming better known in the U.S.A. I felt that I would like to read a fuller account of Dr. Wheeldon's work, which has been particularly concerned not only with growing an extensive collection, but with helping to straighten out the names of these. He stated that no less than 264 clones had been properly named and described at the time of Mr. Morrison's death, and that he cultivates the complete collection in his study-garden at Richmond.

Dr. Carl Phetteplace, M.D., the Vice-President of the American Rhododendron Society, had planned to give an account of much valuable work being done in Oregon and Washington, but because of the time factor he spoke instead on yellow-flowered cultivars, of which he is particularly fond. I recall very clearly seeing in 1961 the fine specimen of Rhododendron 'Crest' in his garden on the Mackenzie River in Oregon. He thought that 'Crest' had everything as a flower, but wished it had a better habit of growth. No doubt, Dr. Phetteplace will have the opportunity of describing the work he and members of the West Coast Chapters are doing when the 1968 Convention meets on the West Coast.

My contribution to the afternoon programme was in two parts. I endeavoured to describe what has and is being done in the U.K. to raise yellow-flowered hybrids and also to bring the audience up-to-date with the use of *Rhododendron yakusimanum* as a parent.

I emphasised particularly the importance of breeding rhododendrons for small gardens and pointed out the valuable work being done by E. H. M. and Peter Cox for this purpose. I mentioned 'Chikor' from Glendoick and 'Chink' which was raised at the Savill Garden. I forecasted that *R. glaucophyllum* var. *luteiflorum* would make a useful parent for producing small plants with yellow flowers. I gave all the information I could in the time allowed on the various hybrids from *R. yakusimanum* which have so far been named, and stated that in my opinion no resultant plant to date is as beautiful as the F.C.C. form of the species. I doubted the wisdom of continuing crossing such a

Photo: J. E. Downward

Fig. 28—*Rhododendron* 'George Johnstone', A.M. April 18, 1967. Exhibited by Captain Collingwood Ingram (see p. 231)

lovely, compact plant with those of the stature of 'Sir Frederick Moore' as the progeny tend to run away from this essential character.

Coloured slides were used to illustrate many of the points made by the speakers and many lovely plants were portrayed on the screen.

The evenings of May 7th, 8th and 9th were occupied after partaking of real Southern hospitality by longer talks than those given at the Sunday "Round Table". On Sunday evening, Dr. Wyman gave a very valuable illustrated review of "Sixty Years of Rhododendrons and Azaleas at the Arnold Arboretum". To bring out the particular points he made on the introduction of many of the hybrid rhododendrons into the U.S.A. he showed pictures taken in many gardens, including several in the U.K. I found the mention and illustrations of the old Waterer hybrids particularly nostalgic, for during my ten years as Manager of Knap Hill Nursery (1930/40) I saw very old specimens of many which he mentioned and which were still there but no longer propagated.

On Monday evening there were two speakers, Dr. Mark Cathey, of the U.S.A. Department of Agriculture, Beltsville, on "Regulating Rhododendrons with Light and Chemicals". I had seen some of his work at Beltsville in 1966 and with this advantage was able to enjoy his talk all the more. I know of no more fascinating speaker than Dr. Cathey, and both he and Dr. David Leach have mastered the art of combining speech with the use of slides. Dr. Cathey's talk is too specialised for me to attempt to summarise here and we must wait for the full account of the Convention which will appear in the American Rhododendron Society's Bulletin.

The second speaker that evening was Dr. Robert Ticknor on "Weed Control". This was a technical talk by an expert on dealing with weeds among rhododendrons, and here again I recommend reading it in full.

On the afternoon of May 9th, Dr. David Leach gave what for me was the outstanding talk of the Convention. He entitled this "Sex and the Single Rhododendron". Dr. Leach, among many other accomplishments, has studied the science of Genetics in Plant Breeding. He has put to practical use his deep knowledge and he let us all into the secrets of the breeding of his own rhododendron hybrids in a talk which held everyone's rapt attention. Dr. Leach knows what he is doing when he is considering the

crossing of rhododendrons. He sets a target for himself and does not waste time and effort, and I look forward to reading an account of his talk. The spoken word, coupled with the wonderful coloured slides from his own photographing, demonstrated the ideal use of this method of giving a lecture.

On the evening of that day I was the guest speaker following the annual banquet. I listened with pleasure to the proceedings of the Annual General Meeting so ably conducted by Edward Dunn, the President, with help from his colleagues. It was after 9.30 p.m. when I commenced my talk on "Some Notable Rhododendrons in the United Kingdom". To prepare for this I had spent several months collecting from thirty-four gardens famous for their rhododendrons in the U.K. coloured transparencies of outstanding plants. I can never adequately express the thanks I owe to those who so freely allowed me to take my pick from the numerous slides they sent to me. I used 125 to illustrate my talk and I feel fairly confident in saying that perhaps never before could so many lovely rhododendrons have been shown on the screen for such a purpose.

I started with a coloured map of the U.K. and then asked my audience to accompany me in their imagination from Lands End to look at gardens in England, Wales, Scotland and Northern Ireland, and I was thankful that in doing so I have personally visited most of the gardens I dealt with.

To strike a personal note, I simply cannot describe the thrill I experienced in taking part in such a Convention, the meeting again with so many old friends, and the making of new ones, the thoughtfulness of the officials and the almost embarrassing hospitality was such that my wife (whose first visit this was to the U.S.A.) and I will never forget. We feel we never can do enough for American visitors who drop in to see us at Wisley.

In conjunction with the Convention was the Rhododendron Show, which with Drs. Galle, Leach, Phetteplace and Wyman, I helped to judge. A few days before (May 1st and 2nd) I had acted as the Steward for the Classes of Hybrids at the R.H.S. Rhododendron Competition in London and the contrast was, to say the least, remarkable. Gone was the carefully planned precise schedule I had been used to for so many years and in place of this were 45 classes, which had a much wider interpretation, many based simply on the colour of the flowers. I was not long in adapting my experience as a judge so that I could help my colleagues to attach the blue, red or white ribbons to the appropriate

entries, and we all enjoyed selecting the best "amateur truss in the Show" for the tricolor ribbon.

In common with most similar Conventions, part of the programme consisted of visiting gardens. I had to miss the organised tour to several local private gardens on the first day in order to act as a judge at the Flower Show, but after judging was completed I visited Pearson's Falls with Dr. Yelton (the Convention Programme Organiser) and Drs. Wyman and Phetteplace. Here I noted many native plants, including *Hamamelis virginiana*, *Betula lenta*, *Magnolia fraseri*, *Quercus borealis*, Hickory, and *Uvularia sessifolia*. I visited the Biltmore Gardens and estate on May 9th. My chief interest in this 12,000 acre estate was the famous collection of American native azaleas. We had the great advantage of being taken through this by Dr. Henry Skinner, who has made a special study of the species and their native habitats. He, with Mr. Sylvester, the head gardener, gave us the history of many of the remarkable specimens we saw. I liked particularly the very dainty flowers of *Rhododendron alabamense*. A white-flowered form of *R. calendulaceum* was pointed out to us. I tried, as I usually do, to note as many plants as possible, and here I jotted down *Elliottia racemosa*, about 14 ft. high; *Illicium floridanum*, 10 ft. high, in full flower; *Stewartia malachodendron*, 15 ft. × 15 ft.; and *Magnolia ashei*, 18 ft. × 15 ft.

During the afternoon of May 9th, with Drs. Yelton, Wyman, Skinner, Phetteplace and Mr. Seth Kelsey (*Robinia kelseyi* was named after his father) I visited the garden and woodlands of Mr and Mrs. Shinn at Leicester, near Asheville. They live in a wooden house in a clearing surrounded by about forty acres of woodland consisting of native trees, shrubs and undergrowth. Near the house they have planted with great skill a collection of native plants which would take many pages to record, while in the woodlands away from the centre they have planted or encouraged the growth of many more. I cannot think of a couple more dedicated to plant life. Mr. Shinn is an engineer, but all the spare time he and his wife can find is devoted to caring for their unique collection of plants and those in the Botanic Garden at Asheville. I noted the names of 63 species in their own garden and woodland, and I feel the following must be mentioned: *Trillium catesbaei*, *discolor*, *erectum*, *luteum*, *salcatum* and *vaseyi*; *Sarracenia flava* and *S. purpurea*; *Cypripedium acaule*, *pubescens*, *reginae* and *spectabile*; *Habenaria flava*; *Xerophyllum asphodeloides*; *Asarum canadanese*; *Arisaema dracontium*; *Parnassia asarifolia*.

The Convention broke up on the morning of May 10th, and during that day and the next I realised one of my main ambitions by botanising among the native flora along the Blue Ridge Highway and the Great Smoky Mountains. During the whole of my life I have experienced an overpowering urge to find out what grows wild in any district in which I happen to be. We were fortunate in being the guests for several days of Mr. and Mrs. Jack Randolph at Jackson, Tennessee, and had the good fortune to be taken by car into the mountains. The weather on May 10th was perfect and first we visited Linville Falls, a favourite beauty spot in N. Carolina. I saw numerous plants often in great quantities, some of which I have cultivated. We found the painted trillium (*T. undulatum*) in flower, numerous Indian Paint Brush (*Castilleja coccinea*). I walked on carpets of *Mitchella repens*, *Epigaea repens* and *Shortia galacifolia*. The two latter were growing among *Ribes rotundifolium*. *Rhododendron vaseyi* varied in colour from very pale to very deep pink, *R. calendulaceum*, *R. catawbiense*, *R. maximum*, *R. carolinianum*, *Gaultheria procumbens*, *Oxydendron arboreum*, *Leucothoe editorum*, *Pieris floribunda*, *Dirca palustris*, *Halesia carolinanum*, Amelanchier in great numbers. *Podophyllum peltatum*, masses in flower in thin woodland. *Cornus florida* was still flowering in the hills, but finished in the valleys.

We visited Cherokee and I thought of William Bartram and his travels there nearly two hundred years ago. I noticed the stumps of *Castanea dentata* which had been attacked by the fungus *Endothia parasitica* but were producing sucker growths. We stayed for two nights in a motel in Gatlinburg, and on May 11th we spent a long day in the Great Smoky Mountains and motored up to 6,000 ft. with many stops. In the valley it was warm but before we reached Clingman's Dome we saw icicles hanging from north facing cliffs and at the summit there was a thick blanket of driving rain. This was an outstanding day for native plants and we were also fortunate in seeing one native bear. I made notes of about sixty species of plant, including *Kalmia latifolia* (these were countless and varied in colour), *Calycanthus floridus*, *Sassafras*, *Hydrangea arborescens*, *Euonymus americanus*, *Robinia hispida* (in flower), *Vaccinium corymbosum*, *Phacelia fimbriata* (an acre at least in full flower), *Lyonia ligustrina*, *Tiarella cordifolia*, *Trillium grandiflorum*, *Magnolia fraseri*, *Dentaria laciniata*, *Sedum ternata*, *Prunus pennsylvanica* (numerous trees in flower), *Amelanchier laevis* (in flower), *Sambucus pubens*,

Aralia spinosa, *Houstonia caerulea* (masses in flower), *Streptopus roseus* (in flower), *Medeola virginiana*, *Conopholis americana* (a broomrape), *Maiantheum canadense*, *Galax aphylla* and *Cladastis lutea*. It was most interesting to see the trees in full leaf in the lower altitudes and to note that many were still leafless at the summit. In the heavy rain I walked under *Abies fraseri* and *Picea rubens*, and in the wet moss which formed the forest floor there were thousands of seedlings of the Abies.

ig. 29—*Camellia japonica* 'Altheaflora Gigantea', A.M. February 21, 1967. Exhibited by Mrs. S. Williams, Scorrier House, Cornwall (see p. 235)

hoto: J. E. Downward

SOME COMMENT ON CAMELLIA RETICULATA

THE PEER MEMORIAL LECTURE

Given by Colonel T. Durrant, D.S.O., M.B.E., T.D., at the Annual Conference of the New Zealand Camellia Society, held in Waitangi, August, 1967.

IF the 20th century revival of interest in the Genus Camellia can be attributed to one man, that man must be the late Ralph Peer, in whose honour this memorial lecture was instituted. The choice of subject, "Some Comment on *Camellia reticulata*", is also apposite, since he played an important and decisive part in the introduction to Western countries of what are now known as the "Kunming Reticulatas".

These beautiful camellias have a fascination all of their own, arising as much from their romantic history as from their magnificent flowers. Their origin, as garden varieties, or possibly hybrids, of the species *C. reticulata*, dates back over 1,000 years into the 9th century A.D., and they have been the subject of a considerable amount of Chinese writing. The production of such magnificent plants from the relatively simple wild species forms, pre-supposes a fantastic degree of knowledge and expertise in the fields of plant breeding and horticulture, on the part of those early Chinese workers.

In the 11th century, P. Chao, a Chinese literary naturalist, listed and described 72 varieties of this camellia and there are many references in subsequent Chinese literature to them. When one sees the glorious flowers of such varieties as 'Chrysanthemum Petal', 'Purple Gown', 'Pagoda' and 'Shot Silk', it is staggering to think that the plants now flourishing in New Zealand are, in fact, horticultural prolongations of the original plants which first delighted the eyes of those ancient Chinese gardeners. Since they have always been propagated by vegetative methods (i.e. grafting) and no new generation has arisen from seeds, these plants must be some of the oldest vegetable organisms in the world. The oldest giant Kauri trees (*Agathis australis*) in the nearby Waipoua

Forest are said to date from approximately A.D. 1100. The Kunming Reticulatas pre-date these by several centuries.

Dr. T. T. Yü, of the Academia Sinica, Peking, is the principal source of our knowledge of these plants, and in his lecture to the R.H.S. Camellia and Magnolia Conference, held in London in 1950, he said: "Love of the flower has resulted in the development and preservation of the superior varieties, and its culture is the favourite amusement of the nobility, the literary and the rich . . . in olden times several pairs of camellia plants were given as a portion of marriage dowries". In 1958, Dr. Yü issued a short description of these camellias, which was written, of course, in Chinese and published in Peking. Here is a translation into English of some of his comments on the Kunming Reticulatas:

"The country of our ancestors is a vast and spacious land, with very rich and fertile soil and many different climates. Consequently, there is also a very varied vegetation, the greatest variety in the world. Amongst the many species a great number are valued either for their beauty in the art of gardening or for some other special usefulness. Our ancestors long ago discovered this fact. Moreover, they carefully nurtured and cultivated them and they preserved a great variety of species of high quality fruit trees, vegetables and flowers. This being not only a gift of nature but also the result of many years' hard work by the people and diligent cultivation, it deserves our special attention and affectionate care. Amongst the flowers, camellias, peonies, plum blossom and chrysanthemums have for long been well known throughout the world. However, the camellia of the Yunnan mountains has only recently roused the interest of the people of the other parts of the world.

"The Yunnan camellia is most highly valued in the art of gardening. The shape of the tree is majestic and very beautiful. It can reach more than 10 meters in height and it can live for several hundred years. The leaves are perennial dark green. The flower is very big and its form most beautiful; its colour is very bright and attractive. There is a great range of varieties. It blooms during late winter and early spring, which is the season when most plants are hibernating. It is equally suited as a pot plant or as a plant in the ground, indoors or outdoors. It can be claimed that it is one of the most special and valued plants of the cultivated species.

"Those who have travelled past K'un Ming or Ta-Li will have retained a very deep impression of the camellia plant.

During the period just before and after the New Year, be it in a private court yard, big or small, private or public garden, you are certain always to see a few pots of these flowers in full bloom. Everyone will be able to tell you, just as if they were speaking of their family treasures, some very rich, poetic names, such as, 'This particular plant is called Pine Cone Scales, that one is called Nine Hearts and Eighteen Petals'. In the larger temples there are always a few of these old flower plants. The tallest can reach as high as 12 feet, their width being two or three feet, and the age of the tree being more than two to three hundred years, with several thousands of bright, gay and colourful blossoms. To see the flowers has become a must for all those who go on a sight seeing excursion. During the New Year, friends present these flowers to each other. When girls are getting married camellia flowers are used as wedding decorations. The facts tell us that the cultivation of the camellia is very common in Yunnan, and that this tradition has a long history.

"As for the history of the cultivation of the camellias at Yunnan, it was already quite common during the early period of the Ming Dynasty, when they had already been cultivated for more than five hundred years. The earliest written record was in the *Ch'ing T'ai T'u Ch'ing* of Ming, which said: 'There is a camellia, a product of Chou Nan, in front of the temple of the Heavenly King. Its flowers bloom in the winter months; there are three colours—pink, vermilion and pure white interspersed. When the blooms wither, the corollas of the flower do not fall to the ground. The local people thought it was a kind of deity and dared not pluck it'. In the article 'Chu Fang P'u it is recorded: 'The precious pearl camellia has a thousand leaves surrounding the bud and it takes eight months to bloom. Its colour is like red cinnabar and most pleasing. It is said that in Chen Nan there is a plant about three yards in height and with a thousand blooms which are all drooping down. They are very very beautiful'. Again in the article 'Yunnan T'ung Tse' it is recorded: 'The camellias of Yunnan are the rarest in the world. The Chin An Hsieh Shao Shou of the Ming Dynasty said there were 72 varieties. The *Yu Chuan T'eng Mei* records that the plant has ten distinguishing qualities and that there are a hundred poems written about it. *Chao-Pi* made almost a hundred different genealogical tables, taking the dark red, supple branches and the curled up petals as the distinguishing

mark'. This is also one of the earliest records of the Yunnan camellia. Unfortunately, these genealogical tables of *Chao-Pi* are lost. In the K'ang Wu year of the Chinese Republic, Fang Shu-Mei, a native of P'an Lung Shan, compiled a booklet called 'A Short History of the Chen Nan Camellia'. A great portion of the book consists of a collection of verse and poems written about the Camellia throughout history. However, simultaneously, it served as evidence of the existence of 72 varieties of camellias. From this book we can see that a great portion of the ancient names of these flowers are still retained and are very popular today. This book is written as a reference for all garden lovers and for those who love flowers, with the view of fostering the appreciation not only of camellia, special to Yunnan, but of other species of *Camellia* as well, so that they may spread in the courtyards of our country and the gardens all over the world.

"The species mentioned in this book can all be found in the Botanical Research Department of the Chinese Science Faculty in Hei Lung T'an of K'un Ming, as well as in the people's Botanical Gardens of K'un Ming".

Camellia reticulata first appeared outside China in 1820 when Richard Rawes, Captain of an East Indian Merchantman, brought home a plant of a then unknown camellia for his friend, T. C. Palmer, of Bromley, Kent. This was followed in 1824 by another importation brought by John Damper Parks for the Royal Horticultural Society. These plants were the variety we now know as *C. reticulata* 'Captain Rawes', and their first blooming in England was a horticultural sensation of the first magnitude.

It is doubtful if, in 1850, Robert Fortune actually sent home the first plant of the formal double *reticulata* which now bears his name (syn. 'Pagoda'), since there is extant an enthusiastic description of a very large plant only a short time after this date. His specimen was described in the Botanical Magazine of 1857 and then named *C. reticulata flore pleno*. Since both of these were sterile forms it was obvious that they were garden cultivars, and it was not until 1924 that George Forrest collected specimens and seeds of a wild, single flowered *reticulata* found growing on the hillsides at Tengyueh, in the Yunnan Province of China. This has proved to be a very free growing, vigorous plant which sets seed readily to both chance and controlled pollination.

In 1938 the Journal of the Royal Horticultural Society pub-

lished an article by Hsu Hsen Yü, under the title, Recent Progress in Botanical Exploration in China. In this he referred to numerous varieties of beautiful camellias for which Yunnan was famous and provided the first clue that some, so far unknown, varieties of *C. reticulata* were growing there. World War II overshadowed such peaceful and desirable things as botanical research, and it was not until 1948-49 that three eminent collectors, Dr. W. Lammerts, Mr. Ralph Peer, both of the United States, and Mr. Walter Hazelwood, of Australia, obtained shipments of some of these plants.

Unfortunately, harsh treatment by quarantine authorities caused heavy casualties, and it is understood that the five plants which Walter Hazelwood imported were eventually destroyed. We have been informed by the owners of the two leading Camellia Nurseries in Australia that their present *reticulata* stock plants all came from the United States, i.e. from the Lammerts-Peer shipments.

After intensive propagation in the United States, 20 varieties were offered to the public and began to find their way into gardens all over the temperate parts of the world. In 1955, William Hertrich, in Vol. II of "Camellias in the Huntington Gardens", published descriptions and black and white pictures of each of the 20 varieties, but it was very soon obvious that there were some serious problems of identity and nomenclature to be solved. In his 1950 Conference paper, Dr. Yü had used names transliterated from Chinese and, as a synonym, also gave a translated name. Example: HOYEHTIECHIH or Thick Leaf Butterfly.

It was considered in the United States that the use of transliterated Chinese names would be impossible in Western countries and that very free translations should be used instead. So HOYEHTIECHIH became 'Butterfly Wings', CHANGCHATIECHIH became 'Chang's Temple', and so on. Under the rules of horticultural nomenclature, undoubtedly the transliterated names take priority, but it is unlikely that they will ever be commonly used. It appears that, even in China, several names were in use, in different areas, for the same camellia and that minor flower variations were given qualifying names. An example of this is TZEPAO ('Purple Gown'). On a mature plant occasional flowers show narrow, whitish stripes vertically disposed on the centre petals. This is then called TZEPAO-YUTAI, but all the evidence we have indicates that the striping is casual and not a mutation which can be separately propagated. Different Chinese

names, HUNGMARNAO and PEIMARNAO, are used for TAMARNAO ('Cornelian') according to the amount of white showing in the flowers. Since the variegation in TAMARNAO is probably virus induced and varies widely from plant to plant, and season to season, the use of different names does not appear to be justified. A possible explanation is that the Chinese name describes a flower and not necessarily a cultivar.

While the priority name for any given cultivar can be arrived at by study of the available information published about it, problems of identity are very much more difficult to determine, and it is to this matter we must now turn our attention. One can only speculate as to the cause of the present confusion, but it is quite certain that the 20 names published as growing in the Huntington Gardens are attached to a much smaller number of actual cultivars. Some of the missing cultivars may never have left China; they may have succumbed to quarantine treatment or died subsequently. It is certain that bad nursery practice led to considerable mis-labelling, even of the easily recognisable varieties.

In 1963 we were able to establish direct contact with the Botanical Institute at Kunming and received most courteous offers of assistance. We sent them the schedule of *reticulata* varieties which was published in the New Zealand Camellia Bulletin, Vol. III, No. 3, and supported this with colour slides of typical flowers of all the varieties growing here. In November, 1964, we succeeded in obtaining a shipment of 28 plants in 14 varieties, which were sent out to Hong Kong. There the soil was removed, the roots packed in moss and the plants sent on by air to New Zealand. Here we must thank Mr. Ralph Dean and his staff, who made the arrangements for us in Hong Kong.

On arrival, the plants were in very poor condition, many completely defoliated and showing lesions of *Glomerella cingulata*, the presence of which fungus was determined in the quarantine laboratory. The Plant Quarantine authorities in Auckland and Hamilton handled the plants with very great care, and without this co-operation the shipment would have been lost. After quarantine treatment with suitable fungicides, the plants were put into a peat-pumice mixture and placed in a large polythene tent in our propagating house. All but one or two commenced to grow but the new shoots were collapsing as soon as their growth run was completed. This is fairly typical in the presence of *Glomerella cingulata* and it seemed unlikely then that the

shipment, obtained after so much trouble, expense and correspondence, would survive. Some were already dead.

Some time previously, Messrs. Glaxo Laboratories Ltd., of Great Britain, had kindly sent us a quantity of the systemic fungicide Griseofulvin for the purpose of an experiment with camellias. This was in a fertilizer formulation and was now used on the ailing plants with dramatic results. Dying back of new growth ceased almost immediately, quite extensive lesions on main stems ceased to spread and, after continuous application of the Griseofulvin at monthly intervals, the plants have made regular healthy growth, flowering for the first time in 1966. Eighteen plants have survived in good enough condition to produce some propagating material.

After considering the evidence obtained from this and earlier shipments, the information supplied to us from the Botanical Institute, and all the available literature on the subject, it is possible to make some observations on the identities of the cultivars of *C. reticulata* now in circulation. We have made repeated importations of these plants since 1954, have re-imported plants of doubtful identity from many sources and have examined a very large number of plants growing in New Zealand and Australia. In endeavouring to establish identities, it is necessary to take into account the fact that considerable variations of colour and flower form occur in *C. reticulata* and judgments must be based on typical flowers from mature plants. Recently grafted plants frequently show wide variation in leaf shape and size and only leaves from mature plants can be used for identification purposes.

Fortunately, there are some varieties about which there is no doubt and these need only be listed or discussed briefly. In each case transliterated Chinese names are given first, translated Chinese names second and the common trade name last.

1.	Tsueban T'ung-Tsao-Pien	Rose Flower	'Chrysanthemum Petal'
2.	Sungtzelin	Pine Cone Scale	'Robert Fortune', 'Pagoda'
3.	Tzepao	Purple Gown	'Purple Gown'

Note: Tzepao-Yutai is used to describe this camellia when narrow vertical striping occurs on the centre petals. Recent

comment from Kunming on our colour pictures suggested that they showed a flower of Tzepao-Yutai. Our observation is that this is a casual flower variation (not virus induced) and not a mutation.

4.	Tayinhung	Large Pink Large Spinel Pink	'Shot Silk'
5.	Tataohung	Large Peach Red Large Crimson	'Crimson Robe'
6.	Hoyehtiechih	Thick Leaf Butterfly	'Butterfly Wings'
7.	Moutancha	Peony Camellia	'Moutancha'

This variety has been difficult to establish and plants imported from U.S.A. proved either to be not 'Moutancha' at all, or were very heavily infected with virus and failed to survive. We do not know of a successful plant in New Zealand and have not seen one in Australia. Under the label "Peony Camellia", two plants of this, showing no signs of virus, were included in our 1964 shipment. They have flowered successfully (see below) and are a remarkably

Fig. 30—*Camellia reticulata* 'Moutancha' in New Zealand

Photo: Col. T. Durrant

beautiful camellia with gradation of colour from Rose Madder (H.C.C. 23 to 23/3). Flower size averaged 16 cm. wide and 10 cm. high, with 25 petals and some petaloids. The form is semi-double to open peony. First propagations from the plants are growing strongly and show no signs of virus.

8.	Buddha	Buddha	'Buddha'
9.	Confucius	Confucius	'Confucius'

Numbers 8 and 9 are said to be recent *reticulata-pitardii* hybrids raised in Yunnan. Both are good camellias, well known and present no identity problems.

10.	Tiehtse-Maotan Mayehtiehchich	Reticulate Leaf Butterfly	'Professor Tsai'

Dr. Wu Chen-Yi, writing to us from the Botanical Institute, Kunming, states: "Tiehtse-Maotan and Mayehtiehchich are identical with and should be regarded as the Chinese names for Professor Tsai". In the original shipments to the United States there was an unlabelled plant to which the name of "Professor Tsai" was then given in honour of the famous Chinese botanist of that name. Our 1964 shipment included this variety under its translated name "Reticulate Leaf Butterfly". It has flowered and appears identical with plants previously imported as 'Professor Tsai'."

11.	Shitzetou	Lion Head	'Lion Head'
12.	Tamarnao	Large Cornelian	'Cornelian'
13.	Changchatiechih	Chang's Camellia	'Chang's Temple'

It is convenient to study these three cultivars together, since they have been completely confused in general garden circulation. A very large number, if not all, of the plants circulated under these three names are identical and produce peony form flowers heavily variegated with white, and it was generally believed that they might all be 'Chang's Temple' (see Camellia Nomenclature 1966, S.C.C.S. and N.Z. Camellia Bulletin Vol. III, No. 3, p. 7).

It is now clear that 'Lion Head' is a solid red peony form camellia, and Dr. Yü (in "Yunnan Shan-Cha", Peking 1958) states that Tamarnao ('Cornelian') is a variegated form of 'Lion's Head'. In "The Garden Camellias of Yunnan", the manuscript of which is published in facsimile in "Camellian"

Fig. 31—*Camellia reticulata* 'Chang's Temple' in New Zealand

1964, ed. Griffin, F., the same author states that Tamarnao is the *only* bicoloured *reticulata.*

Changchatiechich, 'Chang's Temple', is not described in Dr. Yü's paper in the 1950 R.H.S. Conference Report, nor in "The Garden Camellias of Yunnan". It *is* described and illustrated in Yunnan Shan-cha, Peking 1958, and plants of this were included in our 1964 shipment. These have flowered. There are up to 20 petals in 4 or 5 rows, an open centre with some petaloids. The size is 14 cm. by 6 cm., the petals are deeply notched, some with multiple notchings. The colour is China Rose (H.C.C. 024-024/1). This is quite a different camellia from any we have seen before and it matches the 'Chang's Temple' description and illustration in Dr. Yü's 1958 publication. A flower was exhibited at the N.Z.C.S. National Show in 1966.

It is now clear that all the bicoloured camellias circulated under any of these three names are, in fact, 'Cornelian' and should be labelled as such. 'Chang's Temple' does not seem to have been included in the shipments to the U.S.A., or, if it was, did not survive. Propagation from the 1964 shipment has been successful. 'Lion Head' may be in circulation but most plants under this name are 'Cornelian'. Unfor-

tunately, the 'Lion Head' plants in our 1964 shipment did not survive.

Study of the early pictures and writing about this group makes it seem probable that this confusion occurred at the Chinese end and that only 'Cornelian' was exported at that time. The illustrations in "Camellias in Huntington Gardens," W. Hertrich, and certainly those in "The Yunnan Reticulatas" 1954, ed. D. L. Feathers, confirm this, while the coloured picture of 'Chang's Temple' in "Camellias in America", 2nd ed., Dr. H. H. Hume, actually depicts 'Crimson Robe'.

14.	Hsiaokueyeh	Small Osmanthus Leaf	'Osmanthus Leaf'
15.	Takieyeh	Large Osmanthus Leaf	'Takieyeh'
16.	Liuyehyinhung	Willow Leaf Pink	'Willow Wand'

This is another group of which the identities have become obscure and can conveniently be considered together. Plants imported from the United States on numerous occasions under each of these three names have, on maturity, been identical and are almost certainly all Liuyehyinhung ('Willow Wand'). The illustration of this cultivar (Fig. 9) in the R.H.S. Conference Report is quite typical.

Dr. Wu Chen-yi writes to us as follows: "Hsiaokueyeh is early distinguished from Takieyeh by its smaller and narrower leaves and also by its smaller flowers. Liuyehyinhung differs itself very apparently from the other two by its vigorous habit, its soft oblong leaves, bearing a recurred apex".

Our 1964 shipment contained Hsiaokueyeh, under the label "Small Osmanthus Leaf". It has flowered in accordance with Dr. Yü's description, the flower being much smaller, the petals fluted and arranged in three or four rows. The flowers, leaves and general appearance check with Dr. Yü's illustration (Fig. 11) in the Conference Report and in "The Garden Camellias of Yunnan". 'Willow Wand' is also in the shipment and appears to check with the plants previously imported under all three names. Having seen the two varieties there can be no confusion between them, but we are left with 'Takieyeh' still missing.

Study of illustrations and early literature published seems to make it clear that Small Osmanthus Leaf did survive in the early U.S. shipments and the confusion over this variety

must be attributed to the American Nurseries responsible for distribution. We have been unable to establish whether or not 'Takieyeh' has ever existed outside China as a clearly identifiable cultivar.

17. Talicha — Queen of Tali — 'Tali Queen'
18. Paochucha — Precious Pearl Jewelry — 'Noble Pearl'

These two cultivars are confused, the plants sold under both names are identical and are, in fact, 'Tali Queen'. Repeated importations from growers claiming to possess 'Noble Pearl' have all proved to be 'Tali Queen'. Dr. Wu Chen-yi agreed with this identification. Characteristics of 'Tali Queen' are deep and sometimes multiple notching of the petals, broad leaves of heavy texture and bright red colour.

'Noble Pearl' is smaller, deeper red, with entire petal margins, and is said to have leaves of "fine texture, with very distinctive veining, broad, similar to the 'Purple Gown' variety". Unfortunately, no plant of 'Noble Pearl' arrived in our 1964 shipment, even though the variety was listed as available. Study of illustrations and material published since 1950 confirms the contention that only 'Tali Queen' has been seen, and it is probable that 'Noble Pearl' has never left China or did not survive shipment.

19. Tsaotaohung — Early Crimson — —

This cultivar has not previously been available but was included in our 1964 shipment and has flowered in accordance with Dr. Yü's description and the illustration in his Yunnan Shan-cha, Peking 1958. It is said to flower very early in the season and it was the first *C. reticulata* to flower here last season. Dr. Yü gives the colour as crimson (H.C.C. 22/1), the size as 4 to 5 inches, the form semi-double, the flower having a raised centre and flat outer petals. Dr. Yü suggests that the semi-double camellia cultivated in Britain ('Captain Rawes') "belongs here". From the description and the flowers we have seen, this is not the case.

20 Mayehyinhung — Reticulate Leaf Spinel Pink — —

This is described and illustrated in all three of Dr. Yu's publications under review, and he says: "This variety is

closely related to the *Large Pink* ('Shot Silk') but differs in the narrower and prominently reticulated leaves and in the lighter, spinel pink, peony-form flowers. The flower is small, 9-10 cm., 3 to 4 rows of petals which are veined red on light spinel pink". A plant of this cultivar is in our 1964 shipment.

21. Hentienko — The Dwarf — —
Dwarf Rose

This variety is described and illustrated in all three of Dr. Yü's publications. He says of it: "This variety is one of the most beautiful of all pink coloured Yunnan camellias. It is characterised by its very fully double flowers, from light carmine to geranium pink, tinged white along the margins. Flowering season very late, March to April, perhaps closing the flowering season of all the camellias in Yunnan. Being rather a slow grower of dwarf habit, it is appropriately called Hentienko, meaning 'Jealous of the highness of the sky'. It is very rare and much valued in the local market". The flowers are said to be 9-11 cm. across, petals arranged in 7 or 8 whorls with 20-40 stamens in the centre.

Under its translated name, Dwarf Rose, this variety was offered as available for shipment in 1964. An unlabelled plant has since flowered and appears exactly to match the descriptions, colour and form of Hentienko. It has been safely propagated and, grafted onto seedling *reticulata* stocks, is growing freely.

22. — — Early Peony — —

Included in our 1964 shipment were two plants under the above label. We can find no reference anywhere in the literature to a camellia of this name or of a description which would fit the flowers. The colour is China Rose (H.C.C. O24/1), 12 cm. wide and 7-8 cm. high. The outer petals lie flat and the high centre has folded petals and petaloids, showing notched margins. Plants grafted from this are growing with great vigour and appear to be free from virus. This is a very beautiful camellia which will be a valuable acquisition to the range. No Chinese name is available.

In Dr. Yü's "Yunnan Shan-cha", 1958, the following additional varieties are listed and described:

23. Sungtzuko — Pine Shell — —

"Flowering period February to March, flowers and leaves similar to Sungzelin ('Pagoda'), but petals are smaller; leaves are oblong, bent slightly inwards". Not illustrated.

24. T'ung-Tsu-Mien Baby Face —

This is illustrated as a *white*, open, semi-double, but the description says "has the latest flowering period, March to April, white with deep red variegation. Leaves similar to 'Chrysanthemum Petal' variety, are deep green. Also called "Soft-stemmed white-red".

25. Hua-Yeh Pao-Chu Variegated Leaves Precious Pearl

"The flowers are larger than variety 18 ('Noble Pearl') and variegated with *blue*; bright and burnished; leaves strongly reticulated with yellow blotches, hence the name".

26. The names Hsueh, Snow Lion, Peimarno and Humgmarno occur in the literature and refer to degrees of white variegation present in flowers of Tamarnao ('Cornelian'). A name, Blue-Red Prune Osmanthus Leaf, has been mentioned in Chinese correspondence but no description or details are available.

SUMMARY OF THE DISCUSSION

1. An apparently healthy and strong growing example of 'Moutancha' has been obtained.
2. Mayehtiehchich is established as a Chinese synonym for 'Professor Tsai'.
3. The identity of Changchatiechih ('Chang's Temple') has been clarified and plants of the correct variety obtained. Tamarnao ('Cornelian') is established as the identity of the variegated cultivar which has been distributed under these names and as 'Lion Head'.
4. Hsiaokuyeh ('Osmanthus Leaf') has been obtained and its identity established. 'Takieyeh' remains in doubt and 'Willow Wand' is confirmed as the identity of the cultivar commonly circulated under all three of these names.
5. Talicha ('Tali Queen') is distinguished from Paochucha ('Noble Pearl'), the existence of the latter outside China remaining in doubt.

6. Subject to the confirmation of second and subsequent flowering, the following cultivars have been obtained from China and established:

Tsaotaohung	Early Crimson
Mayehyinhung	Reticulate Leaf Spinel Pink
Hentienko	The Dwarf, Dwarf Rose
Early Peony	—
Changchatiechich	Chang's Temple
Hsiaokueyeh	Osmanthus Leaf

CULTURE AND PROPAGATION

C. reticulata grows in the Yunnan Province of China at about latitude 25 degrees North and at a height of 6,000 feet to 9,000 feet. This high altitude provides a cool climate, even though the latitude is only just outside the tropics. The rainfall is said to be low (18-20 inches) with long dry periods and risk of radiation frosts at night.

We have grown *Camellia reticulata* under the relatively humid, mild weather conditions obtaining in Tirau, New Zealand, for up to 15 years. There is a mean annual rainfall of 50 inches and with occasional radiation frosts down to 12 degrees Fahrenheit. The latitude approximates to that of the Mediterranean and the light in both summer and winter can be very intense. During the winter months changes from mild, moist, growing weather, to brilliant clear days with sharp frosts at night, can occur within a few hours and this provides a severe test for camellias and other plants.

All our *reticulatas*, except small, newly imported ones, are grown in the ground, and all but five or six in the open. The culture of *C. reticulata* needs to take into account that these plants are small trees, rather than shrubs, and must be allowed to grow accordingly. They require room enough to develop and they need a great deal of light. Under shade they become very sparse and open and it seems that in order to flourish they need, and can take, more sun than do *japonicas*. This has been dramatically illustrated in our garden where plants of 'Willow Wand' and 'Crimson Robe' have grown through the roof of a lath house into full sun. In the shade below the roof the plants are open and poorly furnished. Above it they are dense, sturdy and flourishing with an excellent bud set. It has been noticed that, even in Australia, *reticulatas* under 60% or 70% light exclusion do not furnish well, and it is reported from California that dramatic

improvements occurred when plants were put into full sun. A plant suffering from large amounts of chlorosis on the leaves—i.e. heavily variegated as a result of virus infection—cannot take this amount of light, since leaf burn and defoliation will follow. In our experience these plants are doomed, anyway, and not worth persisting with.

The sizes reached by some *reticulatas* in 12-14 years under Tirau conditions may be of interest.

'Chrysanthemum Petal', a small tree well branched at the top, 12 feet.

'Shot Silk', even stronger growing but the same habit, 16 feet

'Butterfly Wings', more spreading and vigorous, 11 feet high and 16 feet wide.

'Crimson Robe', upright but furnished to the ground 14 feet high and 10 feet wide.

'Pagoda', a similar shape but more thickly furnished, 11 feet high and 10 feet wide.

Pruning *Camellia reticulata* is rarely necessary in well-grown plants, apart from the usual removal of crossing branches and those which lie on the ground. A badly shaped or spindly plant can be drastically pruned back to a bare framework or a short length of main stem. Two years ago, as a demonstration to a ladies' gardening circle visiting the garden, we reduced a 4 foot high plant of 'Crimson Robe' to a straight stick, removing all twigs, leaves and growth buds and leaving about 28 inches of straight stem above the grafting point. This was done in August at flowering time, just before growth commenced. In spite of the cries of shocked alarm from the ladies, the plant is now nicely furnished on 4 or 5 straight new leads.

There is no doubt that many *reticulata* plants fail to establish. Some do not grow away, others flourish for a short time only and some fail suddenly after maturity. Assuming that they have been given the basic camellia requirements of well drained, fertile and slightly acid soil, we are left with two probable causes of failure.

Grafting material has been in short supply and many scions have undoubtedly been taken from unthrifty and badly virus-infected plans. The indiscriminate use of virus-infected stocks has probably added to the *reticulatas* every known and unknown form of camellia virus, in addition to the strains they brought

with them from China. Good, healthy plants cannot be grown from inferior material and the first requirement is a strong scion.

The second cause of failure is the use of poor grafting stocks which cannot provide a strong and secure root system upon which the *reticulatas* may grow to maturity. The commercial use of seedling and other *japonica* stock which has been held for lengthy periods in small pots results in strangled root systems and subsequent failure. This, however, is merely a question of nursery practice and should not occur in plants produced by reputable firms.

The plants in our recent shipment from Kunming were grafted by inarching on what are apparently *C. japonica* 'Alba Plena' stock. This seems to be standard Chinese practice, but it is a clumsy and slow method of reproduction compared with cleft grafting.

Many *japonica* stocks fail to develop at the same rate as the *reticulata* which they support. Almost all of the *reticulatas*, which have been in our garden for 10 years or more, are now showing the "bottle neck" effect illustrated in Fig. 32. This plant is a 12-year-old example of 'Pagoda' and the grafting point is clearly visible in the picture. The circumference 1½ inches above the grafting point is 8 ins., and at the same distance below it only 5 inches. The effect of holding seedling stocks in small pots is also visible.

For some time we have been grafting *reticulatas* onto seedling *C. reticulata* stocks which are rejects in our breeding programme. These take very readily and often grow with quite astonishing vigour. Fig. 33 shows a 6 months old double graft made on a *reticulata* seedling which was 2 inches in diameter.

Difficult subjects, such as 'Purple Gown' and 'Moutancha', take very readily on *reticulata* stock and commercially feasible percentages of success can be obtained. Some work could be done on investigating the use of rooted cuttings of the wild form of *reticulata*, since this apparently roots freely and grows away satisfactorily. We have successfully rooted a small percentage of cuttings of 'Crimson Robe' but none have grown away afterwards. It is reported that the variety, 'Shot Silk', will both root and grow satisfactorily but we have no personal experience of this.

We record one rather curious observation on using *reticulata* stocks. Callus forms very freely at the point of union between scion and stock and eventually covers over the cut areas. With

g. 32—"Bottle neck" effect as the result of grafting *Camellia reticulata* on *C. japonica* stock

Fig. 33—Six months after grafting on seedling *Camellia reticulata* stock

japonica and *sasanqua* stock, callus usually forms around the cut edge of the stock itself, but we have never observed this to happen when using seedling *reticulata*.

Many people are now working on breeding programmes with *reticulatas* and some very fine results are being obtained here and in other countries. For us, the ancient camellias of China will always be invested with a charm and magic of their own.

ACKNOWLEDGMENTS

Thanks are due to very many people who have provided information, plant material and comment during the time we have been studying *C. reticulata* for the purpose of this paper. Among them are Dr. Wu Chen-yi and the staff of the Botanical Institute at Kunming, for providing plants, answering queries and studying material sent to them; Professor E. G. Waterhouse, for making available the Chinese publication "Yunnan Shan-cha" and providing a translation of part of it; Mr. Ralph Dean, for facilitating the handling of a camellia shipment through Hong Kong; Mr. T. Savige for material and comments; the owners of both Camellia Grove and Camellia Lodge Nurseries for allowing us to study their stock plants; Mr. H. M. Hammond for pro-

viding some overseas exchange and much encouragement; and many others who have kindly written and made information available.

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This paper is written in the first person plural, not because of illusions of grandeur involving the imperial "we", but because my wife and I have shared all the work and research in connection with these and all our other camellias. It is her indefatigable energy and interest which has made this paper possible.

A SURVEY OF THE FAVOURITE CAMELLIA VARIETIES IN THE STATES

By GEORGE DU BRUL

RECENTLY, Sir Giles Loder commented that there is a wide divergence of opinion in the States as to which varieties of camellia are most popular—judging by the reports of prize winners year to year in the the almost one hundred shows held here. This is true. There is a wide divergence, as he says, but there are certain varieties that do hold their popularity year after year. Certain new introductions will hold attention for a year, or two, be listed as prize winners at quite a few shows, and then quietly pass out of the picture. They do not hold up.

Because it was felt that camellia enthusiasts among R.H.S. members would like to have the opinions of an average group of members of the American Camellia Society, a poll has been taken of such a group. The results are given below.

In taking this poll, three questions were asked:

Which five older varieties do best for you out-of-doors without artificial protection?

Which five of the newer varieties do best for you out-of-doors without artificial protection?

Which of the latest introductions do you think will last? That is, hold their popularity?

These questions were sent to twenty members of the American Camellia Society living in an area from East Texas to Washington, D.C. In this area, even in the northern half of Florida, plants grown without protection will be subjected to freezes—not every year in all localities but often enough to make some wish that their plants had protection. (This will happen in Britain, too!). A.C.S. members living in California were not approached because their climate is more tropical.

These varieties received the most votes:

Most popular older varieties: 'Donckelari', 'Flame', 'Ville de Nantes', 'Herme' and all sports, 'Lady Clare'.

Most popular newer varieties: 'Guilio Nuccio', 'Drama Girl',

'Juanita Smith', 'Donation', 'Betty Sheffield' and all sports. ('Donation' is newer here than in England).

Comers: 'Tomorrow Park Hill', 'Clark Hubbs', 'Elegans Supreme', 'Mary Agnes Patin'.

Runners-up: 'Dr. Tinsley', 'White Empress', 'Debutante', 'Oniji', 'Adolphe Audusson Var'.

It might be that a poll of a larger number of A.C.S. members would bring the names of other varieties into the result. But the member of the R.H.S. who has space for just a small collection of camellia plants should do well with the first ten varieties listed above. These will give him a nice assortment of form and colour. Camellias, of course, bloom at a time of the year when there is practically nothing else in bloom—one reason for their popularity.

Those varieties listed as "Comers" are all beautiful, as are all camellia blooms, but it cannot be said quite yet that they will do well without some protection. However, where space does not permit a greenhouse, a plant, or small grouping of plants, can be inexpensively protected in "houses" made of plastic sheeting fastened to one inch by two inch strips, placed preferably against the south side of the house.

The writer particularly appreciates the time and trouble that correspondents went to in replying to this survey. Mr. Robert Mathews, Superintendent of the Norfolk (Virginia) Botanical Gardens, wrote in part: "We have in the Norfolk Botanical Gardens a collection of 750 varieties of camellias. We have picked the varieties that we think do best, although there are many others that have proven worthwhile. We have a complete collection of reticulatas, and although we have grown these under protection for many years, they are being grown in several gardens in Norfolk without protection very successfully. Regarding the species *granthamiana*, of one hundred plants, two are now about eight feet tall, and we have had exceptionally good blooming seasons, although frost seems to knock out some of the buds before they have a chance to bloom effectively."

Mrs. John Freeman, on the Board of Directors of the American Camellia Society for Florida, writes: 'Doris Freeman' is a camellia that loves cold. It is not new but does very well here.

Mr. Fred Johnson, also on the Board of Directors (Mississippi), writes: "A variety that does conspicuously well for me is 'Pink Champagne'. A very large bush of 'Mrs. Bertha Harms' has performed well. The others outside that I can vouch for are 'Paulette Goddard', 'Emily Wilson' and a well variegated 'Adolphe

Audusson', also the hybrid 'Donation'. I have a bush of 'Debutante' that has done real well, and most conspicuously a plant of 'Tick Tock' which performs beautifully". (Mr. Johnson lives in Jackson, Mississippi, where temperatures go below freezing several times each winter—sometimes 18-20° above.

From Washington, D.C., Col. L. E. Edwards wrote that all of his varieties do "quite well for me without protection, other than that given by trees and the shade of buildings".

Fig. 34—*Camellia* × *williamsii* 'Mildred Veitch', A.M. February 21, 1967. Raised and exhibited by Messrs. Robert Veitch and Son Ltd. (see p. 236)

Photo: J. E. Downward

THE ANCIENT CURSE OF THE RHODODENDRON

By DAVID G. LEACH

THE green cloak of vegetation which beneficently mantles the earth has some painful traps for the unwary: poison ivy, stinging nettles, poison oak, the devil's walking stick and others similarly spined or daggered. These are the obvious malefactors in the generally benign world of plants, and then there are a few deceptive weeds and flowers of innocent appearance which are dangerously toxic if parts of them are eaten. Children are warned to avoid the beckoning blue blossoms like helmets with beaked visors on the venomous monkshood, and to shun the black berries which glitter invitingly on the notorious nightshade. But the rhododendron, the dramatically beautiful springtime feature of suburban landscapes, without evil reputation, has the most lurid past of all.

Rhododendrons and azaleas, both in the same genus of plants, contain one of the most deadly of the world's natural poisons. Its grim history coils back more than 2,400 years. In the ancient world the course of western civilization was affected by its lethal impact. In modern times victims of rheumatism and arthritis suffered appallingly for nearly a century after a German experimenter published an erroneous report that an infusion made from rhododendron leaves would cure the diseases.

Ironically, primitive peoples knew the poisonous properties of the rhododendron. The pounded pulp of the leaves was thrown into a pool of water to paralyze fish so that they could be caught on the surface. But the first man in recorded pre-Christian history to be ensnared by the insidious rhododendron was the brilliant Xenophon, intimate of Socrates, author and military leader. His *Anabasis* describes the retreat from Babylon of 10,000 Greek soldiers of fortune in 401 B.C., following the slaughter of their officers by the treacherous Persians. Trapped deep inside Asia Minor, surrounded by the enemy, the desperate Greeks elected Xenophon to take command. Taking a supreme gamble, he led

them inland to the mountains of Kurdistan. In deep snows and bitter cold the starving soldiers fought their way through savage mountain tribes into Georgia and then Armenia.

Two days' march from Trebizond (Trabzon) on the Black Sea coast of Turkey, the army came near to disaster. In Xenophon's own words, ". . . there being great quantities of beehives in those villages, all the soldiers who ate of the honeycombs lost their senses, and were seized with vomiting and purging, none of them being able to stand on their legs. Those who ate but a little were like men very drunk, and those who ate much, like madmen, and some like dying persons. In this condition great numbers lay on the ground, as if there had been a defeat, and the sorrow was general. The next day, none of them died, but recovered their senses about the same hour they were seized; and the third and fourth day they got up as if they had taken a strong potion."

At no time in the retreat had the soldiers been so vulnerable. Had the harrassing Colchian enemy attacked, one of the epics of military history would have become an anticlimax of accident, an obscure textbook footnote, instead of the stirring account of bravery, endurance and ingenuity spurring a determined army of the lost through two thousand miles of hardship in hostile lands to final success and reunion with Greece.

Xenophon's anguish as he faced catastrophe with his soldiers unaccountably stricken after months of battle and privation was all because of a rhododendron. The honey had been made from the poisonous nectar of the yellow-flowered Pontic Azalea, *Rhododendron luteum*, which gilds the hillsides in springtime near Trebizond to this day, and brings harrowing illness and death to its peasants.

History is full of curious coincidences, and the Roman Republic was later to falter for a time because of the same rhododendron. In 67 B.C. Cicero had supported the transfer of army command from Lucullus to Pompey in perhaps the most skilful of his political speeches. And so Pompey, thirty-seven years old and the Alexander the Great of his day, embarked on a campaign to conquer Rome's ancient and inveterate enemy, the King of Pontus. His adversary was King Mithridates, one of the most formidable intellects and most dramatic personalities of the ancient world. Mithridates had mastered twenty-two languages. He was an art collector, a magician, a giant of a man, as famous for his strength, courage and skill with weapons as for his prodigious capacity for food and drink.

The campaign began auspiciously. Pompey's military genius steadily eroded the armed strength of Mithridates until the following year, when three of his armies camped near Trebizond, at almost exactly the same place where Xenophon's exhausted soldiers had stopped to forage for provisions three hundred and thirty-five years earlier. The drama was repeated but with an ending far different, described by Strabo in his *Geography*. After eating the poisonous honey the disabled troops were massacred by the Pontic army and it was to take Pompey three years to defeat Rome's wily enemy.

Almost certainly Mithridates knew of the toxic honey produced from the golden flowered Azaleas of the Armenian hills. By a coincidence still more curious, his personal physician was Krateuas, a Greek expert on plants and their medicinal uses, considered to be the first herbalist of record. His drawings are reproduced in the most famous of all manuscript herbals, the *Juliana Anicia Codex*. Perhaps Mithridates lured Pompey to the Armenian hills, knowing that the Roman soldiers would scour the countryside for food, and be certain to find the poisonous honey.

In any case, had Pompey conquered Mithridates quickly; had he not made the agreements with the Eastern monarchs, the Roman government would not have denied him the official recognition which he expected upon his return from the Middle East. Perhaps Pompey, without bitterness and resentment, would not then have formed the secret alliance with Caesar and Crassus which led to the fall of the Republic and the rule of the dictator-Emperors. But whatever the strategy of the Pontic King, however directly Pompey's tragic course was affected by his delayed campaign in the East, the stream of history was nonetheless changed by a rhododendron.

A hundred years later the renowned Roman naturalist, Pliny, was writing, "Another kind of honey there is in the same region of Pontus . . . which because it driveth folke into a rage and madnesse, they call in Greek *maenomenon*. Some attribute the occasion hereof to the flower of the rhododendron whereof the woods and forests there be full. The nation selleth no honey at all, because it is so venomous and deadly; notwithstanding, they do pay for tribute a huge masse of wax unto the Romans every year".

Dioscorides, a Greek physician in the service of Nero and the greatest pharmacologist of all antiquity, whose *De materia medica* was the dominant herbal used by physicians for more than 1,500

years, wrote a half century after the birth of Christ: "About Heraclea Pontica, in certain seasons of the year, the honey makes those mad who eat of it; and this certainly proceeds from the quality of the flowers from which it is distill'd. They sweat abundantly, but they are eas'd by giving them rue, salt-meats and metheglin, in proportion as they vomit. This honey is very acid and causes sneezing. It takes redness from the face if pounded with costus. Mixed with salt or aloes, it disperses the black spots that remain after bruises."

A millenium and a half passed. Through the hush of the dark ages and the brilliant clamour of the Renaissance few real advances were made in pharmacology. Following the invention of the printing press, the most useful guide for doctors that could be produced was still Dioscorides' *De materia medica*, issued in two editions in 1478, about 1,500 years after it was first written.

The earliest Renaissance reference to rhododendrons is in *Medendi Ratio* ("An Account of Healing"), by Paul Aeginetes, published in Latin in Basle in 1538. It is now in the library of the Palace of Rectors in Dubrovnik, Yugoslavia. "Concerning poisoned honey", he wrote, "which is produced in Heraclea, those who ate or drank the honey . . . suffered the same unpleasant after-effects as those who took aconite". He is proud to be able to offer an infallible antidote: "A very sound remedy exists in aqua mulsa, which they swallowed, an undiluted drink mixed with the leaves of rue". Elsewhere he warned, "The bark of the Rhododaphne tears asunder; this taken internally is fatal".

By 1581 the rhododendron itself was generally known to be dangerous, at least to herbalists. Maplet, in his *Diall of Destiny*, cautioned, "Rhododaphne which being taken inwardly, poysoneth".

In 1700 Joseph Pitton de Tournefort, the most eminent botanist in Europe before Linnaeus established the classification of flora, still in use today, spent three years in Greece and Asia Minor collecting plants at the direction of Louis XIV. M. Tournefort was professor of botany in the royal garden, a member of the Academy of Science, and the possessor of one of the most fertile minds on the Continent. It was he who persuaded the scientists of the eighteenth century that stones had life because, he said, "corals and other stony plants were of the same construction tho found in different countries".

As further evidence, he reported having seen "in some seashells very hard chalk and in others flint-stones of much larger size than

the hole of the shell could admit; he thence infer'd that those substances could not be receiv'd therein anyhow, but when they were liquid or only in their first speck of entity, and that afterwards they must have enlarg'd and harden'd in proportion as they came to maturity".

Having entered a cave on the island of Candia, M. Tournefort found further proof in the names of previous visitors carved upon the walls. The names had originally been cut with chisels but were, at the time of his visit, as if embossed in low relief, protruding from the stone. He was sure, therefore, that the stone had callused "in the same manner as it happens to trees whereon any letters have been cut".

In presenting his case before the Academy of Sciences, M. Tournefort produced stones which "had been broken . . . at the time of the rising of their sap; and nature herself had pieced them together again by a solder, which was nothing but a callus form'd by the nutritious juice of those stones, which after having rejoin'd and glu'd the pieces, had cover'd 'em over again for about the thickness of half a line".

"If", he concluded triumphantly, "we have not been able to find the seeds of stones, minerals or metals; that is no reason for denying their existence, since it is certain we have not yet discover'd seeds of mushrooms, truffles or mosses".

Eighteen years after his journey to the Near East his *Relations d'un Voyage du Levant* was published, a vivid recital of his observations and a diary of suspense relating to the perils of his journey. In it he weighed the writings of the ancient Greeks and Romans on rhododendrons and added an anecdote of his own: "I thought it (the Pontic Azalea) so very fine that I made up great nosegays of it to put in the Bassa's tent; but I was told by the first officer of the household that this flower caus'd vapours and dizziness. I thought he rally'd very pleasantly, for the Bassa complain'd of those distempers. The first officer gave me to understand that he was in earnest, and assur'd me he had lately been inform'd by the natives that this flower was prejudicial to the brain. Those good people, from a very ancient tradition, grounded perhaps upon several observations, maintain also that the honey which the bees make after sucking that flower stupifies those who eat of it and causes loathings".

More than two hundred years later the honey produced in the lands surrounding the Black Sea was still an annual scourge. Dr. G. Mosolevsky of Sukham in Transcaucasia, writing in 1929: "Cases

of poisoning are very numerous, particularly among the villagers in the mountains. Three to four hours after consuming honey suddenly slight vertigo comes on and instantly disappears. It is the first warning of approaching danger. Experienced people usually at once . . . purify the stomach by causing vomiting. If this is not done, after about half an hour a fresh paroxysm of vertigo follows—a much more violent one this time. The succeeding intervals grow shorter and shorter, the paroxysms more and more violent, till you feel that you are deprived of the ability to stand and must hasten to lie down. At the same time one becomes almost blind; the whole field of sight fills with the most intense whirls of bright golden-yellow colour. Some individuals speak of dark whirls".

"The utmost weakening or derangement of the sense or sight is the oustanding characteristic of this process. Considerable weakening of the heart's action can be observed. In the worst cases convulsions occur, sometimes very violent ones; and a long swoon, resulting—if not in death—in the utmost weakness for a long time. Fatal cases occur most frequently among children. As for medical assistance, it is—with our exceedingly impassable roads—merely a distant *pium desiderium*".

Twenty-three hundred years earlier Aristotle, with some justification, had imagined that honey made from the Pontic Azalea "depriv'd those of their senses who eat of it, and were in health before; and that, on the contrary, it cured those who were already mad".

In 1768, in St. Petersburg of Imperial Russia, John George Gmelin, a German professor of chemistry and natural sciences, who explored Siberia with Vitus Bering for ten years, published in Latin *Flora Sibirica*, which was to bring down upon the Europeans a curse lasting more than a century. He reported that a tea made from the leaves of the Siberian Snow Rose was used successfully by foresters in the East to alleviate rheumatic knee pains, and as a restorative after labouring at high altitudes. He was referring to *Rhododendron chrysanthum*, a dwarf species with white or yellow flowers which grows in the eastern reaches of Asiatic Russia. J. G. Gmelin's book was published posthumously but his notebooks had been inherited by his nephew, Samuel Gottlieb Gmelin, also a professor and botanist at St. Petersburg, who explored south-eastern Russia with another famous botanist-author, Peter Simon Pallas, from 1768 to 1773. The nephew passed on to the chief health officer of Stettin in

Germany, Dr. Alexander Bernard Koelpin, the information of medical interest which he had found in his uncle's papers.

On October 10th, 1776, Dr. Koelpin began treating fifteen of his arthritic patients with tea prepared from dried rhododendron leaves which he had received through Professor Pallas from Siberia. With German thoroughness, he kept a daily diary. His first patient drank two ounces each morning for the first twelve days with no effect. On the thirteenth day he was given four ounces without result. On the fourteenth day the amount was increased to eight ounces. Within two hours the sixty-eight-year-old patient was violently ill and in a short time he lost consciousness. His pulse was weak and slow; his heart skipped every fourth or fifth beat. Dr. Koelpin carefully noted that the body felt cold and clammy even though the room was overheated. He left instructions that he was to be notified of any change and then returned in late afternoon when no word was received. By that time the patient was normal except for a feeling of constriction in his chest.

The treatment was continued. On the fifteenth day the patient continued to complain of tightness in his chest and the following day he had severe diarrhoea. By the seventeenth day the chest pain was so severe that the wretched patient described it in terms of a wood-chopper flailing rhythmically with an axe beneath his breastbone. Koelpin noted that the pulse was weak and decided to reduce the daily morning tea to two ounces. Even so, the chest pain persisted.

For the next several days vomiting was so violent that Dr. Koelpin discontinued the medication, whether by necessity or out of consideration his diary does not note. After two days the patient was told to resume the morning tea at eight o'clock. By ten he was nauseated, the tightness in his chest was severe, breathing was painful and he went into convulsions as he was telling Dr. Koelpin of the pain in his arms and legs. A short time later he lost consciousness. The pulse was feeble. When he revived late in the afternoon the base of his palm was numb and remained so until the following day.

On October 27th, seventeen days after the treatment was started, the patient reported that his arthritic pain had disappeared and that he was comfortable except for the tightness in his chest. The morning tea was continued, but a few days later his pulse slowed alarmingly. He felt intoxicated, and by the end of November he was near unconsciousness again, with a halting, irregular

pulse and excruciating pain beneath his breastbone. During December the patient's breathing became so slow that he was near suffocation, and Dr. Koelpin prudently decided in early January, three months after it was begun, to stop the medication. The patient lived for nine months afterwards, his arthritis somewhat improved.

Fourteen other suffering rheumatics were given the rhododendron infusion with much the same hideous result, described in lurid, conscientious detail by the German doctor. Two of them died, but the physician thought that the tea was not responsible. Dr. Koelpin felt that the treatment in his eleventh case was particularly successful in relieving the pain of arthritis and so he published, in 1779, his treatise for the guidance of the medical profession, *Praktische Bemerkungen über den Gebrauch der Sibirischen Schneerose* ("The Use of the Siberian Snow Rose in Arthritis"). In it he recorded his observations and reassured other doctors that, rumours to the contrary, they need not fear that their patients' mental condition would be affected by the Snow Rose (Rhododendron) tea. He also warned them against impatience with weak, old or long confined patients who took much longer to respond favourably, and he commented that sometimes temperamental persons were not improved at all.

In the long and venomous history of the pretty but pernicious rhododendron its narcotic properties provided one note of comic relief. In 1768, Catherine the Great, a devoted student of human anatomy, employed a German botanist, Peter Simon Pallas, as a naturalist on a six-year expedition to explore the empire to the frontiers of China, and she subsequently underwrote the cost of publishing his book, *Flora Rossica*, in 1784. It was extraordinarily handsome for its time, bound in royal red morocco leather with Catherine's coat of arms, the imperial double eagle, emblazoned in gold on the cover. Graceful, sophisticated coloured drawings illustrated many of the plants described in Latin by Pallas, with Russian sub-titles.

G. W. Steller, yet another botanist and explorer in the German colony which formed the scientific community in Russia in the eighteenth century, had edited the later volumes of J. G. Gmelin's *Flora Sibirica* after his death. Pallas described, in *Flora Rossica*, Steller's experience with a pet deer which ate about ten leaves of *Rhododendron chrysanthum*. "After a few minutes the animal began to beat the ground, to dash its head and to stagger. In a short time it fell on its knees, trying in vain to rise again, nor was

it revived with milk but, overcome by a deep drunken sleep remained on the ground for several hours . . . and trembling from time to time in its sleep. However, after it awakened, it was as before—cheerful, nor did the rhododendron ever affect it again."

But Steller's servants on the expedition had seen the cheerful deer, too, and thereafter he had an exasperating time keeping them sober. They were "intoxicated very often because of the pleasure of the boiled down drink of leaves". Steller probably did not know that the Armenians had, for centuries, added small quantities of honey made from the Pontic Azalea to alcoholic drinks to intensify their effect.

Dr. Steller later described, in his *Beschreibung von dem Lande Kamtschatka* ("A Description of Kamtschatka", 1774) how the local wild deer on the Siberian peninsula after eating rhododendron leaves "became intoxicated, fell down and went to sleep. When the native people find an animal so affected they tie its legs together until the effect is over and then kill and eat it. But if they kill it while the animal is sleeping or mad, anyone who eats the meat will have the symptoms of madness."

The 1779 book by the German Dr. Alexander Koelpin recommending a tea made from the leaves of the poisonous Siberian Snow Rose (*Rhododendron chrysanthum*) for the treatment of arthritis had an almost hypnotic effect upon the doctors of Europe, eager as they were for any remedy that might aid their afflicted patients. Eerily, it somehow persuaded them to ignore the grisly side effects which were dutifully documented and diverted their attention instead to the reported cure, however tenuous the evidence of it.

The medical profession at the time had not too long before struggled free from an arcane morass originating in sorcery and superstition. Within the century witches had been as knowledgeable as doctors in plant therapy. All medicine was derived from vegetable sources. The properties of plants had been described in books by the herbalist-physicians as "medicinal and occult." The science was yet to come. The well intentioned Dr. Koelpin doubtless had a vision of epiphany: opening the gates to heaven for the suffering. But he opened the gates to hell instead.

No one knows how many thousands, or tens of thousands, of tormented arthritics were subjected to the appalling rhododendron tea treatment as a result of the distribution of Dr. Koelpin's book to physicians throughout the continent. Rhododendron leaves were shortly included in the Pharmacopeia at

Edinburgh. By 1793 Woodville remarked in his *Medical Botany* that they were "very generally employed in chronic rheumatism in various parts of Europe."

Certainly the prostrating therapy travelled quickly across the Atlantic, because Professor B. S. Barton in his *Collections*, a compendium of information on medically useful plants published in 1794, mentions " . . . the *Rhododendron chrysanthum*, which has lately acquired much reputation in the cure of chronic rheumatism." Jacob Bigelow, professor of Materia Medica at Harvard, published his *American Medical Botany* a few years later in which he refers to the familiar Rosebay Rhododendron of the North-east, *R. maximum*, as possessing astringent properties, and to prove his belief that it was not poisonous described how he "swallowed a green leaf of the middle size, so large that it required some resolution to masticate so unpalatable a morsel, but have found no ill-effect whatever to result from it."

The account of the determined, black garbed New England professor browsing soberly at his desk on a rhododendron leaf evokes an entertaining mental image. But the brave Dr. Bigelow was wrong. A single leaf of the American Rosebay would have produced no illness. As late as 1905 a British author, William Watson, was writing: "A decoction of *Rhododendron chrysanthum* . . . is now used in some European countries . . . in the treatment of rheumatism and other affections of the joints and muscles . . . and in the United States a decoction of the leaves of *R. maximum* is occasionally used for the same purpose." Dr. Koelpin's chamber of horrors had expanded into a corridor of suffering which extended for a hundred and fifteen years.

Professor Pallas, unhappily, furthered the legend of relief from arthritis by the drinking of rhododendron tea. In his beautiful book he wrote: ". . . the medicinal value of this rhododendron has become especially famous. I have concluded that its use is harmless, because the inhabitants of the woods of Tatarus, near the ridge of Sajanense, are accustomed to use the ripened leaves continually after the manner of tea and praise them for assisting in health. I have observed that a great many inhabitants of Siberia, having been cured from very serious gouty ailments—rheumatism, nay, even venereal diseases, by a boiled-down drink of the leaves—have readily returned to this excellent domestic remedy."

"I . . . when the opportunity was given, not only have proved its great usefulness, but also when an abundance of the *Rhodo-*

dendron chrysanthum leaves had been brought from eastern Siberia, gave the opportunity to my old friend Dr. Koelpin of confirming the values of this shrub by repeated experiments, nor did I stop until it might always be on hand in the future for the relief of sick people. It is now sold by public pharmacists everywhere the for the price of a ruble a pound."

"Dr. Koelpin has explained the use and effects of rhododendron in his own work. It confirmed to a very great extent what I previously reported; he explained that it is very beneficial for rheumatism and especially for chronic arthritis; that it also helps the pain of gout, even of the plague itself." Pallas overlooked Dr. Koelpin's report that the tea, held in the mouth, relieved toothache as well.

On August 15th, 1796, Athony Hove, a Polish born gardener en route to Bombay to obtain seeds of cotton for the West Indian colonies, at the direction of the Royal Botanic Gardens at Kew, wrote from Odessa a letter which is still in the Banks Correspondence at the famous botanic garden near London. In it he described the Pontic Azalea, *R. luteum*, notorious in antiquity, and continued, "The inhabitants use the leafs and buds as tea, especially after being fatigued with labour, they refresh themself with great and speedy surprise, it stupifyes them for an hour or so, and throws them in to a sleep, on awakening they resume their work without the least appearance of bad effects.

"In Chronik Rheumatik disorders they use it with greater success of which I was not only an eye witness but have been self cured of a violent Rheumatik pain in arms and thighs which I had some time contracted by sleeping on the swampy grounds, and could not get rid of it until I dranck of this decoction."

"On drinking of it an English pint, I found myself quite restored in less than twenty-four hours, during the process I found myself in a kind of anxiety and great uneasiness, which lasted above an hour, and then it abated gradually, afterwards I fell asleep for two hours, on awacking I found myself in an abundant perspiration and quite recovered of the pain, much strengthened without the least symptom of headack."

"They likewise, use it in Syphylitic cases, with what success I had not so much opportunity as yet to determine, but as the disease is not very common amongst them, although they are frequently visited by the Russian Armys, I am led to credit their relation."

Two years later Hove sent a plant to Watson's Nursery in

Islington which shortly flowered in a greenhouse, and so, at last, the dangerous *R. luteum* was seen in bloom in the western world.

The use of the Pontic Azalea in the Ukraine and of the evergreen *R. chrysanthum* in eastern Siberia, 4,000 miles distant, to ease rheumatic pain seems an unlikely coincidence. But the buds and leaves of the Alpine Rose, *R. ferrugineum*, were gathered in the Alps and used in Italy for the same purpose. In Japan the older generation, even today, make a tea from *Rhododendron degronianum* which grows there, and dried leaves of *R. brachycarpum* have been commonly sold for centuries in Chinese drug shops for the treatment of circulatory disorders, a remarkable prescience in view of later developments. The rolled-up leaves of *R. brachycarpum* are also smoked for the relief of asthma. In China rhododendron leaves are used to adulterate conventional tea. Southward, snuff is made in India from the powdered leaves of *Rhododendron campanulatum*, which is common on the lower slopes of the Himalaya. Two other sorts are used as stimulants.

The world-wide use of rhododendrons for medicinal purposes and as an intoxicant goes back many thousands of years, but it was not fully explained until Dr. S. W. Hardikar of the Pharmacological Laboratory at the University of Edinburgh published, in 1921, an exhaustive study of rhododendron poisoning. He reported that the active agent causes "a narcotic action upon the higher centres of the brain." Whether intoxicant, pain killer or deadly poison depends upon the size of the dose.

Dr. Hardikar began his massive study because, he said, "Some time ago some sheep in the neighbourhood were reported to have shown symptoms of poisoning from eating rhododendron leaves . . ." In his published paper is a terse summary of the effect of injecting .28 milligrams of the rhododendron extract into a female rabbit in his laboratory. In twelve minutes respiration declined from thirty to six per minute. Twelve minutes later the animal was paralyzed. Convulsions occurred an hour and a half from the time of injection and the rabbit became comatose. It was found dead in the laboratory the following morning.

Domesticated animals have been scourged by rhododendrons from pre-historic times. Those who wrote of their direct effect upon man also reported on the indirect effect through the loss of livestock by poisoning.

An issue of *The Botanical Magazine* in 1799 quotes the same Professor Pallas who extolled a tea made from the Siberian rhododendron as a cure for arthritis: ". . . goats, kine and sheep

on eating its leaves have been poisoned thereby." In his description of the Pontic Azalea (*R. luteum*) Pallas had written: "The leaves, which smell pleasant and are bitter at first, when the pastures are not yet green, are often eaten by goats with an intoxicating effect: even the intoxicated cattle and sheep die thereupon." His contemporary colleague, G. S. Steller, across the continent at the Pacific limit of Asia, saw "a goat, which, by eating the plant, was seized in a few minutes with tremblings, sopor, etc." related Woodville in his *Medical Botany* of 1792. Forty-six years later John Lindley published in London his *Flora Medica* and included in the directions for medicinal use of the Siberian rhododendron a comment on the Pontic Azalea that "goats which browse on the leaves . . . suffer in consequence, and that . . . cattle and sheep perish."

In mid-century Sir Joseph Hooker led a plant hunting expedition to Sikkim which resulted in the publication in 1849 of *Rhododendrons of the Sikkim Himalaya*. He described one of his discoveries, the beautiful bell-flowered Cinnabar Rhododendron (*R. cinnabarinum*) as being "universally considered poisonous to cattle and goats." J. G. Millais produced a notable volume on rhododendrons in 1917 in which he commented ". . . the leaves of many species are poisonous to animals. *R. ferrugineum* causes losses in the Alps; sheep, goats and cattle are poisoned and sometimes killed by *R. ponticum*." He describes the near-fatal effect on a baker's horse which had nibbled two shoots of *R. ciliatum* "in a gentleman's drive." "In England", wrote Watson in 1905, "rhododendrons are not usually eaten by animals, not even by rabbits and hares, but when they have been eaten by accident their effect has been noxious."

Half a world away the sole species which is found in Afghanistan, *R. afghanicum*, is notoriously virulent. It has been a curse of shepherds for centuries. In 1965 an explorer in New Guinea, Michael Black, wrote of an orange-flowered rhododendron common in the Central Highlands: "It has a reputation throughout the country of being exceedingly poisonous to livestock, and I was told of three mules which had recently expired after eating small quantities of the foliage."

In the United States, Chesnut's *Preliminary Catalogue of Plants Poisonous to Stock* lists the common West Coast rhododendron, *R. macrophyllum*, as being injurious to sheep in Oregon, and the only western native Azalea, *R. occidentale*, is indicted by Professor Pommel of Iowa State College as being toxic to live-

stock in California. In the East, the famous Catawba rhododendron, *R. catawbiense*, of the North Carolina mountains, is equally guilty. So the toll of domestic animals by the deceptively beautiful rhododendron has been world-wide and all but unknown to millions of home owners who treasure them in their gardens.

But perhaps the strangest application of the rhododendron to animals was proposed by a Japanese nurseryman in the Royal Horticultural Society's *Lily Year-book for* 1964. He suggested that lilies would not be devoured if they were planted among rhododendrons, thus turning to advantage the usual aversion of animals to the shrub.

The discovery of the effect of digitalis upon the heart stimulated a great wave of scientific investigations into medicinal plants in the latter half of the nineteenth century. In 1882 Dr. von Eykman isolated the active principle in rhododendrons from a related Japanese plant and named it asebotoxin. Five years later Plugge found it in rhododendrons and gave it the name andromedotoxin. Finally, in 1899, Dr. Konstantin Archangelsky at the Laboratory for Experimental Pharmacology in Strassburg isolated andromedotoxin, along with rhododendrin and rhododendrol from the leaves of *R. chrysanthum*, the infamous Snow Rose of Dr. Koelpin's book. It was a classic investigation. Methods for the segregation of the compounds were given, their physical and chemical properties defined. Andromedotoxin was shown to produce in dogs paralysis, vomiting, dyspnoea, convulsions and, finally, death from respiratory failure. But most important of all, he observed the profound depression of blood pressure in a dog after being given small doses of andromedotoxin.

In a high voltage industrial society where hypertension has been a major medical problem, Dr. Archangelsky's challenging observations were inexplicably ignored. For nearly a quarter of a century no further investigations were carried out, and then a study was made by Dr. S. W. Hardikar at the Pharmacological Laboratory of the University of Edinburgh only to determine the action of the toxin which had poisoned livestock in Scotland. Dr. Hardikar was the first to isolate pure crystalline andromedotoxin. He described in detail how it depressed respiration, slowed the heart with an accompaning toxic action on it, paralyzed the skeletal muscles and caused vomiting. Again, the provocative reduction in blood pressure was noted in his published report.

In 1953 a group of investigators at Emory University School of Medicine, in co-operation with the National Heart Institute,

repeated the Hardikar experiments, this time largely on dogs. The results were much the same but the techniques used were more sophisticated and they were able to show that some of the effects were not caused in the manner suggested by Hardikar. The depression of blood pressure was studied intensively and the discovery was made that the fall in pressure was by no means due entirely to the slowing of the heart action. Thus, after a strange hiatus of sixty years, Dr. Archangelsky's observations of 1899 were at last on the threshold of contributing to mankind's welfare.

The door was now open and a brilliant group of researchers at the National Institutes of Health in Maryland entered it eagerly. Their first publication, *Andromedotoxin: A Potent Hypotensive Agent from Rhododendron Maximum*, described how a dose as small as one part in ten million of andromedotoxin lowered the blood pressure of dogs by as much as forty per cent. The next paper showed exactly the site of effect in the circulatory system and proved that the action was entirely reflex in nature. At the same time, the structure of the andromedotoxin molecule was partially determined.

Two groups of researchers at Nagoya University and Okayama University in Japan made a critical contribution when they provided, in 1961, a structural formula for acetylandromedol, as it is now called. And finally, in 1962, an American investigator completed the long search when he determined in detail the stereochemical structure of the acetylandromedol molecule.

So a final, paradoxical chapter is about to be added to conclude one of the strangest stories in the annals of medicine. At last, after twenty-four centuries of vicious affliction, the beautiful but baleful rhododendron can be converted from a bane to a blessing for mankind. With a model from nature of the acetylandromedol molecule, research chemists can now modify it for the relief of one of the world's most pernicious illnesses, high blood pressure.

But there is yet a footnote to this curious history. In 1949 a Turkish investigator discovered a method of detecting acetylandromedol in honey made from rhododendron nectar. Extracts of suspect honey are injected into mice and guinea pigs. Their response to the poison confirms, in modern terms, the observations of Pliny, the great naturalist of the Roman Empire. The research was done in Northern Turkey, near the shores of the Black Sea, at almost exactly the same place where the armies of Xenophon and Pompey had come to grief two thousand years and more ago.

ADDENDUM

Not all rhododendrons contain acetylandromedol, at least in their nectar, and, as a practical matter, the hazard to humans from any source but honey is infinitesimal. There are some authentic reports of bees being poisoned by rhododendrons, which I find puzzling, and I believe that toxic honey must be extremely rare in western Pennsylvania because I seldom see honey bees "working" the flowers of the evergreen species and hybrids despite the presence of an apiary nearby. Bumble bees visit the rhododendrons in such large numbers that the flowers are bruised by them, but the honey bees largely confine their attentions to fragrant deciduous Azaleas in my plantings. Almost no scented evergreen rhododendrons can be grown in the cold climate at Brookville. However, honey bees will consume the nectar of evergreen rhododendrons in a laboratory as they evidently do in nature in other climates. Some strains of honey bees are presumably immune to the toxic nectar, whereas others are not.

It is obviously prudent for growers of rhododendrons, and especially for those with sizeable plantings of *R. luteum* or other fragrant deciduous Azaleas to be wary of honey produced in nearby hives. In a report published in the *Journal of Pharmacy* and *Pharmacology* in 1959, researchers at the University of Glasgow and the West of Scotland College of Agriculture found that *R. thomsonii* and its hybrids secrete nectar which is especially and virulently poisonous. Their findings can be summarized as follows:

Highly Toxic	*Intermediate*	*Non-Toxic*
thomsonii	barbatum	fictolacteum
arboreum	sinogrande	sperabile
niveum	fulvum	neriiflorum
prattii	macabeanum	sperabiloides
		scyphocalyx
		haematodes
Red Admiral	Abbott	Dicharb
Fiery Cross		Redwing
Barclayi		May Day
Red Star		
J. G. Millais		
Ascot Brilliant		

The parentage does not necessarily indicate whether a hybrid will be toxic. 'Redwing', for example, derived from three poisonous species out of the four in its ancestry, is innocuous.

In western Pennsylvania animals generally avoid browsing on rhododendrons if there are alternate plant food sources available, but the literature cites many cases of poisoning of ruminants, and there can be little doubt that rhododendrons are a hazard to livestock.

THE EFFICIENT PRODUCTION OF DECIDUOUS AZALEAS FROM CUTTINGS

By DAVID G. LEACH

THE revival of interest in deciduous Azaleas during the last few years has been due directly to the introduction of the Exbury, Knap Hill and Slocock hybrids and, more recently the Ilam hybrids from New Zealand. All have much larger flowers, pleasingly flat in form and full in outline, which appear later in the season and in a far finer colour range than the coarse, short-lived "Mollis" hybrids which were abandoned by many gardeners fifteen or twenty years ago.

Continuing publicity in consumer publications has produced a demand for the new British Azaleas which, in turn, induced nurserymen to grow them from seed. One or two experimenters crossed various named clones until they hit upon specific combinations of parents which yielded seedlings of good average quality, but by and large plants from seeds of the English Azaleas grown by those without specialized expertise have been disappointingly inferior to the phenomenal beauty of the named hybrids.

The named clones are passing now from the connoisseurs' corner to the public marketplace. Their striking superiority is putting the seedlings at an increasing disadvantage, so many gardeners and professional growers are interested in propagating the finest cultivars from cuttings.

For many years there were two problems. The percentage of successful rooting was low, but an even more formidable difficulty was encountered in inducing the rooted cuttings to start into growth the following spring. Both problems have been solved effectively.

There are two consistently successful methods of producing well branched and budded deciduous Azaleas in two years from cuttings. The more efficient is winter propagation from plants

maintained in continuous vegetative growth under glass, and it yields by far the larger production.

Stock plants of any size are brought into a greenhouse with a minimum 60° night temperature in September, before there is any indication of autumn foliage change. They are placed under 75-watt internal reflector flood bulbs spaced three feet apart on centres, suspended thirty inches above the tips. The lights are switched on at dusk by a Tork model 919 (T) 1,000 watt timer, available in its British equivalent for about £3. 10s., which in actual use in my own installation seems able to handle up to twelve bulbs despite the theoretical initial overload. This switch also turns the lights off at dawn. It is followed in the electric supply line by an Aemco 1-minute timer, which can be purchased complete with a separate metal housing cabinet for a total of about £6. 3s. in the British version from vendors of timing devices for scientific and industrial applications. The buyer must specify that the timer be capable of switching on the lights in a range of five to fifteen seconds out of each minute for optimum results because deciduous Azaleas will not fully respond to the brief one-and-a-half second-per-minute flashes that produce satisfactory results with rhododendrons. Still, the saving in electricity over continuous overnight lighting is well worth the cost of this timer.

With a minimum night temperature of 60° and intermittent light from dusk to dawn the stock plants, whether large or small, will start into growth in six weeks or less. By late November the first crop of cuttings can be taken and rooted in a 50-50 sphagnum peat and coarse sand medium under a polyethylene tent, with fine syringing several times daily and added shading on bright, sunny days.

The cuttings are taken at a soft stage. It is a temptation to state that it is all but impossible to take them too soft, but certainly they should be limber, even succulent, without any of the firmness which is usually associated with the propagation of other woody plants. They need be no more than two-and-a-half or three inches long. Their leaves are reduced to three. The terminal bud is not removed nor are the cuttings wounded.

Propagators accustomed to using indolebutyric acid or other rooting compounds in outdoor mist propagation should remember that the biochemical activity of such hormones doubles with each 10° rise in temperature, so lower concentration must be used in the heated greenhouse. Even 1% IBA powder will often burn

Photo: David Leach

Fig. 35—Rooted cuttings of deciduous azaleas

the lower stems of such soft cuttings so that they subsequently rot. Since rooting is rapid and luxuriant in any case, the best course is to omit the use of rooting hormones altogether for winter greenhouse propagation of deciduous Azaleas. The stems of the immature cuttings are easily broken, so it is a great convenience to insert them in holes made with a template in the rooting medium. After insertion they are watered in, not tamped.

In about six weeks the stock plants will have sprouted from axillary buds and a second crop of cuttings can be taken from them to be rooted. In the meantime the first yield of cuttings will have rooted and, transplanted into flats with a porous, well aerated growing medium containing 50% sphagnum peat, will themselves promptly start into growth under the lights to furnish additional cuttings. The procedure is repeated over and over throughout the winter and spring at intervals of about six weeks, with the original stock plants and subsequent crops of rooted cuttings all furnishing additional cuttings which are each time rapidly increasing in number by geometrical progression. By the time frosts are over and the season arrives to transplant into lath shaded outdoor beds the propagator can have, from two or three

stock plants of very modest size, an astonishingly large number of young plants to set out.

Fertilizing of the rooted cuttings in the greenhouse begins about the first of March, with 21-7-7 or similar soluble formula containing ammonium nitrogen and the potassium as a sulphate so that it is suitable for ericaceous plants. It is continued at three-week intervals until the transplanting into outdoor beds. By that time the group of cuttings first rooted will themselves have furnished as many as three crops of cuttings for further rooting and the trimming will have resulted in fairly well-branched, sturdy plants which will progress rapidly to a height of at least twelve inches in their first growing season outdoors. The final crop of cuttings, taken perhaps in early May, will require, upon transplanting from the rooting medium, extra caution in hardening off before removal from the greenhouse and the watchful handling outdoors which is appropriate for plants so small. The original stock plants with which the programme began in September will be almost unbelievably branched, with sprouts having originated from almost every dormant bud down to the roots by late spring.

Deciduous Azaleas are exceptionally successful in maintaining continuous vegetative growth under lights in the greenhouse from fall until spring, and they withstand the removal of successive crops of cuttings far better than would be expected. At least two leaves should be left on each branch from the preceding flush of growth when the cuttings are taken, if it is at all possible.

The advantages of winter propagation are twofold: cuttings root more luxuriantly in a much shorter time, and clones, which are somewhat difficult to propagate in outdoor frames in late spring, respond readily in winter to light and heat in the greenhouse. For example, the Exbury hybrid 'Cecile', which is the finest pink, has been found by some propagators to be reluctant to root in spring. It presents no problems under glass in the winter. The second advantage of this method is the rapid increase from a limited stock, the production of plants being many times larger than is possible with propagation in outdoor frames.

After airing the greenhouse, to harden off the small plants, they go into lath-shaded outdoor beds with a spacing of twelve by twelve inches, and are mulched with wood chips, pine needles, oak leaves or almost any organic material, except cocoa bean hulls, which leave a potassium residue toxic to Azaleas. The soil, as with rhododendrons, should be loose, friable and rich in humus. A high level of fertility should come from a fertilizer

Photo: David Leach

Fig. 36—The Nearing Propagating Frame (see p. 120)

containing ammonium nitrogen, not nitrate nitrogen, and not more than one-seventh of the total nutrient units should be potassium, as a sulphate rather than as a chloride. Additional growth will be obtained in almost all soils by the addition of gypsum (calcium sulphate) at the rate of 2,000 pounds per acre and Epsom salts (magnesium sulphate) at one-tenth that rate. A pH of about 5.8 represents ideal acidity.

By autumn the Azaleas from the earlier cuttings crops will be at least a foot high and most of them will be well branched. The plants last rooted in the greenhouse will be much lighter, and most of them will tend to a single stem. All those, which are deficient in branching, are cut back sharply by a third to a half of their height.

A year later all of the larger plants will be heavily budded, and many of the smaller if a heavy application of triple superphosphate is made at the end of the first growing season in the outdoor beds. A level of about twenty-five pounds of *available* phosphoric acid during the second growing season produces about six times more flower buds than will otherwise be obtained. Since the element is slow to disperse and a very small percentage of the amount

applied remains in available form, the minimum fall application which will produce this level the following growing season in most soils is 500 pounds of actual phosphoric acid per acre. A soil test the next April will determine whether an additional application is needed to reach the amount of available phosphoric acid which produces the budding response. A spring fertilizing with a formula high in ammonium nitrogen and low in potassium as sulphate is desirable in either case at the start of the second growing season.

With the lath removed, a fertile soil and irrigation as needed, the Azaleas make rapid progress their second year in the beds. By autumn the sizes should range from heavy 18/21″ for those first propagated two years earlier, to 12/15″ for those rooted at the end of that propagating season. Almost all will be heavily budded.

The alternative method of propagating deciduous Azaleas is in outdoor frames under mist, or in cold frames with good light but no direct sun, such as the Nearing Propagating Frame (Fig. 36), which has an angled visor on its southern side.

The cuttings are taken at a season which will seem entirely too early for propagators accustomed to handling other woody plants. In most climates the end of May and the early part of June will be right, but in any case the stems of the spring growth must still be strigose. The bristly hairs, which are characteristic of new Azalea shoots, fall away from the stems, progressively from bottom to top, as the tissues mature with the advance of the growing season. If propagation is delayed until the cuttings are no longer hairy at the base, results will be poor. In my own experiments with cuttings, ranging from the succulent to the firm, I have found that those which are so soft that the bottoms of the stems later rot will still root out of the leaf axils, whereas those with the tissues the least bit too mature root slowly and sparsely or not at all. It is much better to err on the early side if there is any doubt. Many have failed at their first attempts to root deciduous Azaleas because they could not believe that cuttings should be taken so much less mature than is customary with other shrubs.

For spring propagation the cuttings can be from two-and-a-half to three inches long, and need not be wounded. The leaves are reduced to three, and at this season of propagation the terminal growth buds are removed. The axillary buds will start to emerge even in the propagating frame and these subsequently start into

growth much more readily than does the vegetative bud at the tip of the stem.

Hormones are more useful for spring propagation than for winter rooting in the greenhouse, but they must be used with caution. The cuttings which are a little too firm will root much more readily, but those which are excessively soft may be burned at the base. In that event they will still root from the leaf axils farther up the stems, so I think the advantage lies with the hormones. Yellow-flowered Azaleas seem appreciably more susceptible to injury by indolebutyric acid and the softer the cuttings the more their sensitivity is apparent. The concentration of rooting hormone should be reduced to half strength for the clones with yellow blossoms.

In tests with various hormones and methods of application this author's best results have come from soaking the stems of cuttings, in bundles of twenty-five held with a rubber band, in an aqueous solution of indolebutyric acid at a concentration of seventy-five parts per million for fifteen hours. A neighbourhood chemist can buy the crystalline acid and package it in capsules of 148 milligrams each. The contents of one capsule are dissolved in a tablespoonful of ethyl alcohol and this, added to two quarts of water, yields the desired concentration of seventy-five parts per million. A portion of the solution is set aside and the volume of water is doubled for cuttings of the yellow-flowered clones.

Propagators who are not intent on the highest possible rooting percentages and are willing to make some small sacrifice in this area for the speed and convenience of hormones in talc can use any of the well known proprietary powders containing 0.8% to 1% of indolebutyric acid.

Those accustomed to mist propagation will have their own formulae for the quick-draining rooting medium appropriate for outdoor frames. Others may prefer the shaded frame without mist where the best results are usually obtained with an underlying sponge of pure sphagnum peat which supplies by capillarity the constant moisure necessary for optimum results. Three bushels of shredded sphagnum peat moss form the bottom layer in a standard cold frame three feet by six feet. This stratum is levelled and then the rooting medium, consisting of two bushels of coarse sand mixed with two bushels of sphagnum peat moss, is placed on top of it. This layer is also levelled, but not tamped, to ensure even distribution of water, and a quarter-inch of pure sand as a top finish prevents the peat from floating over the leaves of the

cuttings when they are later watered. The whole is then saturated with a hose equipped with a rose to prevent displacement of the sand surface.

The cuttings are inserted into holes made with a template with a spacing of $2\frac{1}{2} \times 1\frac{1}{2}$ inches. The leaves should not overlap lest they rot.

Thereafter the cuttings are watered once a week whether or not they appear to need it. In a snug, tight frame they will probably not seem to require such frequent irrigation, but the water bubbling through the rose carries with it oxygen which greatly aids the rooting process. There must be provision, of course, for drainage from the bottom of the frame. The covering sash remains closed, regardless of condensation, except for the weekly watering. No attention whatever is otherwise required.

Many of the cuttings will be rooted in a month. Almost all will be luxuriantly rooted by the first of August. After hardening off they are then transplanted into a mixture of 40% sphagnum peat moss, 20% shredded leaf mould or humus-rich top soil, and 40% sand, twenty-four to a standard flat. The flats are then immediately placed in a deep cold frame equipped with the 75 watt interior reflector flood bulbs and the lighting controls described earlier. The night temperature must not be lower than 60°.

At this stage the axillary buds will be visibly developed. Initially, the best results are obtained by continuous overnight illumination. As soon as growth is evident, the control can be switched into the electric supply line so that the lights are on about five seconds out of each minute overnight. After the rooted cuttings have grown two or three inches the propagator can be confident that there will be no problem with spontaneous growth the following spring, and the night lighting can be discontinued.

Having stimulated activity in the cuttings so late in the season it is essential that they be protected over winter, with the minimum temperature a degree or so above freezing. The deep cold frames in which the cuttings make their initial growth are ideal for the purpose. They can be equipped with thermostat-controlled heating cables so that the flats need not be handled a second time in the autumn. It is a wise precaution to spray or dust with an all-purpose fungicide before closing the frames for the winter.

The following spring the small plants go into outdoor beds, as already described, and thereafter are treated in the same manner as Azaleas that have been propagated in winter in the

greenhouse. The advantages of spring propagation lie principally in the elimination of expensive heated greenhouse space and in the reduction of labour cost resulting from the minimum time and attention the cuttings require. When the small plants go into outdoor beds in the spring they are fully dormant; they seem more sturdy and the survival rate is usually somewhat higher.

As a final service nurserymen can urge their customers to give the new giant-flowered hybrids the generous planting treatment which will encourage the development of the largest possible root systems. The production of many blossoms of such huge size requires the absorption of a great deal of water and it must be continuous to maintain the blooms in good condition throughout the normal flowering period. Usually two growing seasons are required after transplanting before the roots are sufficiently developed for the plants to produce blossoms which are fully characteristic in their dimensions. Thereafter the duration of the flowers is directly related to the extent of the root system and the provision of moisture-giving peat moss at planting time.

Fig. 37—*Camellia japonica* 'Edelweiss', A.M. April 4, 1967. Exhibited by Sir Giles Loder, Bt. (see p. 235)

oto: J. E. Downward

NEW GUINEA RHODODENDRONS IN AUSTRALIA

By A. W. HEADLAM

OVER the last five or six years New Guinea rhododendrons have been attracting a considerable amount of attention both in Australia and overseas.

In 1961 the noted Dutch botanist, Dr. H. Sleumer, visited New Guinea to identify and catalogue rhododendrons and collect seed and plants, as a result of which many species are now being grown at Boskoop in the Netherlands, and through his generosity seed was made available to the Australian Rhododendron Society, as a result of which quite a number of these species are now being grown by members.

Following this, Michael Black flew to New Guinea and during his comparatively short stay collected a considerable number of plants which were air freighted back to his home in Westmorland, and his articles in the 1966 and 1967 Year Books and Australian Rhododendron Society's Journal have created further interest in these species.

The Australian Rhododendron Society is fortunate in having a good friend in the Reverend Canon Cruttwell, a missionary in New Guinea, who, in his widespread travels, has collected seed for the Society. He visited Melbourne some years ago and gave a number of interesting lectures, illustrated with colour slides, on the subject of New Guinea rhododendrons in their native habitat. Members have also received seed from other friends in New Guinea and they have shared them or, better still, raised them and grown on plants which they have distributed to those interested in growing these species.

All who have collected seed and plants in New Guinea have written on the difficulties they have encountered. Many specimens were collected in the kunai grass up to the edge of the forests, and at higher altitudes paths had to be cut through the dense jungle. It was only with the assistance of native carriers that some of these expeditions were possible. Certainly without

their help it would have been extremely difficult to have obtained specimens growing epiphytically in the crowns of trees many feet above the ground. Mosquitoes, flies, leeches and numerous insects plagued the collectors, but their enthusiasm was such that they went on undaunted despite these and the sometimes extremely difficult terrain which had to be negotiated, often plodding through thick mud and wading waist deep in streams. However, much of the preliminary travel is now done by helicopter, and bases at high altitudes and otherwise inaccessible spots can be reached in a matter of minutes where previously several days of arduous climbing and hacking a path through dense jungle was necessary.

Of the species flowered here, undoubtedly *R. christianae* has been the most prolific. It was grown from seed collected by Rev. Cruttwell at 2,000 feet in the Daga country of South East New Guinea, and was named after his mother. The seed was germinated and grown on by the Australian Rhododendron Society, and seedlings two to four inches high were distributed to members in May 1961. The first flowers appeared in February 1964, each truss having six florets, the tubes of which were deep yellow shading to a bright orange at the lobes.

This plant has carried one or two blooms almost continously since then, and in November 1966 flowered so prolifically that the foliage was almost hidden, the flowers remaining on the plant for about three weeks. The original seedling is now a compact shrub between two and three feet high with glossy ovate leaves. In its native habitat *R. christianae* grows on precipitous rock faces and cliff edges as well as on hillsides in full sun where it makes such a blaze of colour that it can be seen from quite considerable distances—here the main flowering is in June.

Some twelve plants of *R. laetum* have flowered to date, all having a deep pure yellow colour with a wax-like quality. Contrary to other yellow rhododendrons, the colour does not fade with age, but becomes suffused with rose, salmon or lavender, particularly on the margins of the lobes, and makes a very attractive truss carrying usually eight and occasionally up to eleven florets. The seed was collected in 1962 in swampy country near Anggi Gita Lake in the Arfak Mountains by Dr. Sleumer, at an altitude of 6,000 feet. It is quite common in this area, and has proved to be one of the easiest to grow. The seedlings once started make quite vigorous growth. The first flowers of this species were seen in early 1966 and some plants are now three feet high. It is

generally considered to be one of the most outstanding species that has flowered here (Pl. 5).

Rev. Cruttwell has spoken very highly of *R. inconspicuum* for the massed effect and show of colour, and some twenty plants of this species have flowered to date. However, results have been somewhat disappointing, the number of flowers being rather sparse—possibly time will rectify this as it becomes acclimatised and larger plants develop. The corolla, only half an inch in length, has been seen in various shades of pink. The name *inconspicuum* refers to the inch-long box-like foliage which is carried on an erect compact shrub. It is found in the Arfak Mountains and also on Goodenough Island.

Probably one of the most striking with the largest flowers to date has been *R. zoelleri*. This species is said to be closely related to *R. laetum*. However, the seedlings were not nearly so vigorous in growth, and possibly for this reason only two have flowered so far.

The funnel-shaped corolla of five and six per inflorescence had a lime-green throat, and the tube and the spatulate lobes which extended almost half way along the tubes were suffused with orange-red, making a most effective display against a background of glabrous green foliage (Pl. 5). The plants were grown from seed collected by Dr. Sleumer in 1962 in the Arfak Mountains in swampy soil at an altitude of 6,000 feet.

R. phaeopeplum was grown from seed collected at 4,000 feet by Dr. Sleumer on his last trip by helicopter to the Arfak Mountains in February 1962. The winged seed germinated quite readily on pure peat and the plants grew vigorously. They are now three feet high and flowered for the first time in January 1967. The six and eight florets per inflorescence were white with a pink tinge to the lobes, or pure white. The corollas had a heavy carnation-like perfume, especially noticeable during the evening.

It is considered a minor edition of *R. konori*, which is one of the finest and largest of the rhododendrons of New Guinea. Whilst *R. konori* has grown quite vigorously it has not yet flowered in Australia.

Among the smaller species, *R. gracilentum* has proved to be a very attractive shrub. The rather dense olive-green leaves, which are a lighter green below, provide a pleasing background for the somewhat small cylindrical corolla of the flowers which come singly or rarely in pairs and are dark pink in colour. In its native habitat in the Edie Creek area it grows terrestrially on open low vegetation and epiphytically in Nothofagus forest.

Photo: A. W. Headlam

Fig. 38—*Rhododendron phaeopeplum* flowering in Australia

One of the best plants here is growing in a piece of tree fern log lying on the ground in a glasshouse. It flowers quite prolifically in November and is rarely seen without an odd flower or two. It seems to be at its best when the roots penetrate the tree fern log and become established in the earth below.

It was grown by Mr. A. Teese from seed collected at Wau at an altitude of about 7,000 feet by Mrs. H. Johnstone.

R. arfakianum was grown from seed collected by Dr. Sleumer in the Nothofagus forest on Mt. Gwamongga in the Arfak mountains in January 1962 at an altitude of about 7,000 feet. Only one plant has flowered to date, which carried a truss of some seven tubular florets which were dark pink in colour and flowered in January. This plant was raised in a glasshouse in a mixture of peat moss and fern fibre. It usually grows as an epiphyte in its native habitat, and is fairly common in the Arfak mountains.

Seed of *R. aurigeranum* was collected by Mrs. Hilda Johnstone in her garden at Wau, and was grown on by the President of the Australian Rhododendron Society, Mr. Arnold Teese. To date seven plants have flowered, with funnel-shaped florets ranging from five to twelve per inflorescence, the colours varying from

pale yellow through orange to deep orange; one had flowers the colour of which approximated very closely to that of a 'King Alfred' daffodil. A plant of this species has also flowered under glass in the Melbourne Botanical Gardens, the colour in this instance being a deep orange-yellow—it carried eight florets. This species is popular in gardens at Wau and it is considered that it should be a very suitable variety for gardens in a mild climate. It is fairly common in the Bulolo Wau district and grows on grassy hillsides or amongst steep rocks, where its flowering season is from February to October.

Seed of *R. macgregoriae* was collected by Dr. Sleumer at about 4,000 feet on the Vogelkop peninsular in 1961. Plants in cultivation first flowered in 1965 with some fifteen orange-yellow corollas to form a firm truss of five inches in diameter. This species is fairly common over the whole of New Guinea; it grows generally terrestrially and makes a very brilliant display of colour which can be recognised from considerable distances.

Although not a New Guinea rhododendron, but of the Malaysian species indigenous to Java, Sumatra and Bali, *R. javanicum* is one which has flowered quite extensively and often at an early age, carrying usually eight and on occasions up to eleven florets per inflorescence. I flowered this species in March 1967, and although we were having temperatures of over 90° F., the flower stood up remarkably well, and lasted for two weeks—it received full sun until about midday. The truss carried eleven florets which were a deep yellow colour on opening and gradually increased in depth to orange with a reddish tinge inside the lobes (Pl. 5). After the flower was removed a number of shoots broke into new growth. Four of these, however, increased in size and eventually proved to be secondary flower buds, two with four and two with five florets, which carried the flowering period into May. This plant at the time of flowering was twenty-one months old.

During 1966 much of the credit for maintaining interest in the New Guinea species must be given to Mr. Brian Clancy of Bentleigh. Hardly a monthly meeting of the Society went by without him bringing along a plant to show progress of growth, and on a number of occasions plants with flowers were displayed. The culmination of his success for the year was a first prize and Certificate of Merit for his plant of *R. laetum* in flower at the Australian Rhododendron Society's annual show at Olinda.

He has now been growing New Guinea rhododendrons for some five years, during which time he has raised quite a number

Photos : A. W. Headlam

PLATE 5—Malesian Rhododendrons in Australia: (*top left*) *R. javanicum*; (see p. 128); (*top right*) *R. zoelleri* (see p. 126); (*centre*) *R. laetum* (see p. 125); (*bottom left*) *R. macgregoriae*; (see p. 129). *R. lochae* (see p. 129)

of species from seed and grown on many plants for the Society. Whilst normally, time from seed to flower is measured in years, he has, by means of growing in a glasshouse with maximum light conditions and further by extending the hours of daylight by the use of Gro-lux fluorescent lamps, been able to accelerate considerably the growth cycle, and in 12 to 15 months plants have attained the size which, under normal circumstances, would have taken probably three years or more. A further means of hastening the process of flowering has been to take cuttings, as soon as the seedling is large enough, strike them and grow them on under the conditions previously described. Invariably the plant raised from the cutting has flowered ahead of the original one grown from seed.

Mr. T. Lelliot of Boronia has also grown a considerable number of New Guinea rhododendrons from seed, and some hybridising between these and the Australian *R. lochae* has been successfully carried out. In early 1966 a two-year-old plant of both *R. macgregoriae* × *R. lochae* and *R. lochae* × *R. christianae* was donated to each member of the Australian Rhododendron Society, a considerable undertaking, and this generous gesture has given added impetus to the growing of these rhododendrons.

A plant of the *R. macgrogoriae* × *lochae* cross grown on by Mr. Clancy flowered in August 1967, and proved to be very floriferous. The florets in shape and habit closely resembled that of *R. lochae*, except that the colour was more in the orange tonings (Pl. 5).

It is hoped that when plants are well established they will prove to be a very successful hybrid.

I have plants of *R. konori*, *R. inconspicuum*, *R. laetum*, and *R. christianae*, and participated in the distribution of the above-mentioned hybrids. All were in containers in a mixture of fern fibre and peat moss, and were grown in a shade house, where they received quite a fair amount of sun. However, I was not entirely satisfied with their progress, and not having a glasshouse, decided to get them into the ground. They were planted in a raised bed with an easterly aspect which is well protected on the weather sides, and in the seven months in which they have been in occupation they have never looked back. The leaves have a healthy glow and all are making vigorous new growth. So far *R. christianae* and *R. inconspicuum* are the only ones to have flowered.

The planting mixture consists of leaf mould, peat moss and fern fibre 40%, sandy loam 25%, and the balance red pine buzzer

chips, all thoroughly mixed. This mixture, in a raised bed 8 to 10 inches deep, overlays a band of gravelly sand then clay. It was after reading that the roots of some of the species in New Guinea penetrated to a depth of up to two feet into the clay that I decided to provide a situation where, if they so desired, any adventitious roots could find their way through the planting medium into the clay below.

I have had extremely successful results with this mixture for growing on small rhododendrons and azaleas. The red pine chips (Californian Redwood) do not rot like other timber, but remain in the ground for a very long period and keep the texture open and friable, promoting a very free root run.

With our relatively mild climate in Melbourne, where winter temperatures rarely fall below 32° F., and the capacity of glasshouses is rapidly shrinking as plants increase in size, many growers will, of necessity, be moving their New Guinea species to some sheltered position in the garden, and by these means we hope, at least, some tolerance to our climate will develop. On the other end of the scale, these rhododendrons seem to revel in the heat. At the time of writing we had several days of temperatures around 105° F., and not one showed any sign of distress or burning in a situation where they were in full sun until well after midday.

Seed of most species germinates quite readily on pure peat, but it loses its viability quite rapidly and steps must be taken to see that the time between gathering of seed and planting is kept to a minimum. In most cases seed more than six-weeks-old shows a marked decrease in the percentage of germination.

Glasshouses generally do not require to be heated, they usually have one or two benches with bottom heat, and the warmth derived from this is usually sufficient to prevent winter temperatures from falling very much below 40° F.

It is hoped that the foregoing will at least give some idea of the results achieved in Australia in growing New Guinea rhododendrons. On some species only one flower has been seen, and others ranging from two to at the most twenty. Perhaps in a year or two, when the numbers of flowers can be counted in hundreds, we will be better able to assess the worth of these new colourful tropical rhododendrons.

Whilst the New Guinea species hybridise quite readily with the Australian *R. lochae*, so far there has been no definite breakthrough in crossing them with rhododendrons from the Asian

mainland. However, efforts are still being made, and as more and more New Guinea species are grown the chances of success may well improve. The brilliant colourings, particularly in the yellow, orange and orange-red would certainly open up new fields if success can be achieved.

RHODODENDRONS IN AN AUSTRALIAN GARDEN

By P. G. VALDER

ALTHOUGH much of Australia is unsuitable for the growth of rhododendrons, they can be grown well in the cooler, moister parts; for example, the mountains near Melbourne, where the country's greatest concentration of plants and enthusiasts is to be found.

Some 400 miles to the north-east of this area is our family home, "Nooroo", at Mount Wilson in the Blue Mountains of New South Wales, approximately 80 miles west of Sydney.

Mount Wilson rises to almost 3,500 feet above sea level and has an average annual rainfall of 50 inches. The summers are often hot and dry and, although there are regular frosts from May to September, the temperature rarely drops below freezing for more than a few hours.

The mountain consists of the remains of a basalt flow overlying sandstone and the composition of the natural flora is greatly influenced by soil type and moisture supply. The sandstone is largely covered with a dry eucalypt forest and a rainforest is present on the southerly slopes of the basalt, the more exposed regions supporting a moist eucalypt forest.

The dry eucalypt forest contains a great diversity of species,

many of which produce conspicuous flowers. The genera *Acacia*, *Baeckia*, *Banksia*, *Bauera*, *Boronia*, *Bossiaea*, *Comesperma*, *Dampiera*, *Dillwynia*, *Drosera*, *Epacris*, *Gompholobium*, *Goodenia*, *Grevillea*, *Hakea*, *Hardenbergia*, *Hibbertia*, *Isopogon*, *Kunzea*, *Lambertia*, *Leptospermum*, *Lobelia*, *Lomatia*, *Melaleuca*, *Patersonia*, *Pimelia*, *Platysace*, *Pomaderris*, *Prostanthera*, *Pultenaea*, *Sowerbaea*, *Stylidium*, *Styphelia*, *Telopea*, *Tetratheca*, *Thysanotis*, *Wahlenbergia*, *Xanthorrhoea*, *Xyris* and many others, including numerous terrestrial orchids, are represented.

The predominant trees in the rainforest are sassafras (*Doryphora sassafras*), which produces scented, cream flowers in early spring, and coachwood (*Ceratopetalum apetalum*), which has small, cream flowers, the sepals of which enlarge and become red as the fruits mature, although never making a display to equal that of the Christmas bush (*C. gummiferum*). Lianes, epiphytic orchids, the soft tree fern (*Dicksonia antarctica*) and other ferns are abundant.

The moist eucalypt forest is composed of monkey gum (*Eucalyptus cypellocarpa*) and Blaxland's stringybark (*E. blaxlandii*), both species which grow to over 100 feet, and has an understorey in which the rough tree fern (*Cyathea australis*) is conspicuous.

Mount Wilson was settled in the late eighteen seventies and early eighties and, unfortunately, the native trees were removed from much of the area. However, numerous tree ferns (*C. australis*) were left and give the gardens and paddocks a characteristic appearance.

The early settlers planted oaks, elms, beeches, chestnuts, horse chestnuts, walnuts, limes, laurels, ivy, lilacs, rhododendrons, azaleas, daffodils, bluebells and a variety of conifers and other plants. As a result the gardens have what is usually described as an "English" appearance, although the presence of members of the native flora and fauna gives them a characteristic quality.

The orange-blossom orchid (*Sarcochilus falcatus*) and the pencil orchid (*Dendrobium teretifolium*) have established themselves on the branches of introduced trees, fast-growing seedlings of the blackwood (*Acacia melanoxylon*) are a constant pest, and crops of nuts, acorns and berries attract flocks of parrots and other birds.

The older gardens at Mount Wilson show the influence of three main periods of plant introduction. In the first of these, from about 1880 to World War I, many interesting plants were established in addition to those already mentioned. Notable

amongst these are *Rhododendron ponticum*, a red form of *R. arboreum*, many of the older hybrid rhododendrons and evergreen azaleas, a single plant of *Magnolia campbellii* and various forms of *Camellia japonica*.

In the second period, between the wars, came *Cornus florida*, *Pieris japonica*, *Kalmia latifolia*, Japanese maples, wisterias, tree peonies, crab apples, cherries, lilies, *Rhododendron luteum*, Mollis, Ghent and Kurume azaleas, and rhododendron hybrids such as 'Unknown Warrior', 'Pink Pearl', 'Halopeanum', 'Alice', 'Fastuosum Flore Pleno', 'Fragrantissimum', 'Princess Alice' and 'Countess of Haddington'.

Then, since the end of World War II, modern hybrid rhododendrons, *williamsii* camellias, Asiatic magnolias and many other plants have been established.

The garden at "Nooroo" has passed through the last two of these periods during my father's ownership of the property, our interest in gardening having expanded greatly during the last twenty years.

Concerning rhododendrons, the greatest influence, as might be expected, has come from the British literature, although its emphasis on cold hardiness and later flowering render much of it inappropriate for a climate in which the winters are comparatively mild and the summers comparatively long, hot and dry. Early flowering and heat and drought tolerance are the characteristics most desirable for our conditions.

In this regard Millais' "Rhododendrons", Stevenson's "The Species of Rhododendron", Arnold Forster's "Shrubs for the Milder Counties", and the R.H.S. Journal, Yearbooks and Handbooks, have given many useful leads.

Our enthusiasm was further boosted in 1951 by a visit to the gardens of Mr. and Mrs. R. D. Brock and Mr. and Mrs. T. Raine at Kurrajong Heights, not twenty miles away. These gardens had been planted many years before with rhododendrons and other plants obtained from Europe by their previous owners. Here we saw in bloom *fortunei*, *griffithianum*, white, pink, and red forms of *arboreum*, 'Cornubia', 'Gill's Triumph', forms of Loderi, and others, for many of which no names were known but which showed the influence of *arboreum*, *griffithianum* and *thomsonii*.

As a consequence of all this, a series of small importations of plants was begun and seeds were received from Wisley, the Edinburgh Botanic Garden and numerous individuals who so kindly responded to requests.

In 1955 and 1956, while studying in England, I was able to attend the R.H.S. shows and to see some of the gardens of which I had read. Unfortunately I did not manage to get to Exbury, from which many excellent rhododendrons suited to our conditions have come, but visits were made to Windsor Great Park, Wisley, Leonardslee, Wakehurst Place, Borde Hill, Caerhays, Trewithen, Bodnant, Logan, Lochinch and Brodick, and were a great pleasure and source of ideas.

As a result of these experiences there have been further importations during the last ten years and a large number of rhododendrons and other plants have been tried. Of the plants other than rhododendrons, the *williamsii* camellias have shown themselves to be particularly well suited to our climate. The magnolias have been slow, but in 1964 *M. sargentiana robusta* produced its first two flowers and caused considerable excitement.

The rhododendrons, fortunately, have been quick to flower and, although we have not been able to test anything like the number of species and cultivars introduced to Victoria, the comments which follow are based on our experience with those we have chosen to grow.

The flowering season usually begins in June with 'Christmas Cheer' and 'Nobleanum' which, like several other very early kinds, flower sporadically throughout the winter and early spring. In July and August come 'Mrs. Henry Shilson', 'Bric-à-Brac' and 'Valpinense', their time of flowering varying according to the season. These early varieties are often spoiled by frosts and by honey-eating birds which cling to the flowers while feeding on the nectar. Since, however, the flowers rarely all open at once, they usually make a display at some time during the late winter.

From late August on, come *fargesii*, *mucronulatum*, 'Marion' and 'Red Admiral'. What is presumably a hybrid seedling of *fargesii* has proved much less sensitive to drought than the species itself and is larger in all its parts. 'Red Admiral' has so far been much easier to keep in good health than 'Cornubia' and is quite as spectacular. 'Shilsonii' has not yet flowered, but it will be interesting to compare it when it does.

By early September 'Cilpinense' is usually in full bloom and is one of the most successful early kinds. Also flowering at this time is 'Ivery's Scarlet' which, although it does not produce flowers as impressive as those of 'Cornubia' or 'Red Admiral', is easy to grow and blooms over a long period. Opening with it there are

usually *cubittii*, *leucaspis*, *lutescens*, and *macabeanum*. From a batch of *lutescens* seed came a form, perhaps a hybrid, with large salmon-pink flowers. This promises to be a useful addition to the range of early flowering rhododendrons.

The plants of *cubittii* were raised from seed sent by the Edinburgh Botanic Garden and show considerable variation in flower size, scent and other characteristics. So long as its buds do not prove to be as frost tender as those of the similar *veitchianum*, *cubittii* may well turn out to be one of the best of the Maddenii subseries Ciliicalyx for our conditions. The flowers of most species in this subseries are thin-petalled and, as a result, those of the later flowering ones are often short-lived.

The same cannot be said of *macabeanum*, the flowers of which are remarkably long-lasting. It is the only large-leaved species to thrive and bloom regularly so far, though no doubt the others would do much better given more water and complete protection from the sun.

In mid-September many of those mentioned above are still in bloom and *desquamatum*, *racemosum*, *reticulatum*, *schlippenbachii*, 'Avalanche', 'Carex', 'Elegans', 'Elizabeth', 'Ernest Gill', 'Seta' and 'White Glory' begin. The early-flowering hybrids of Loderi promise to be of considerable value, 'Avalanche' (× *calophytum*) and 'White Glory' (× *irroratum*) flowering at a particularly useful time. The white form of 'Avalanche', with its striking carmine spot at the base of the corolla, is preferred to the pink 'Alpine Glow', which rapidly fades to a rather cold pinkish-white. 'White Glory' is quite as good in its own way and lasts longer in bloom. 'Cretonne' (× Barclayi), 'Eurydice' (× *arboreum album*) and 'Seagull' (× *sutchuenense*) are growing well but have not yet flowered, nor have the *calophytum* hybrids 'Calomina', 'Calstocker' and 'Jocelyne'. 'Carex' (*fargesii* × *irroratum*) blooms regularly but does not compare with 'White Glory' which opens at about the same time.

'Elizabeth' has always been a great success. A plant was imported shortly after the war but, before it had time to settle down and bloom, was stolen from the garden. However, following a remarkable piece of amateur detective work, it was found in a garden some 30 miles away and retrieved with a minimum of unpleasantness. It is now about three feet high and five across and is a mass of bloom every spring. Strangely enough there are few other *griersonianum* hybrids which are good garden plants in our climate, mainly, I suppose, because they flower late. 'Mata-

dor' flowers at about the same time as 'Elizabeth' but, in the form we have at least, the colour lacks lustre and the flowers tend to be partly obscured by the leaves.

It is about this time that *thomsonii* blooms. It has never looked really healthy and obviously is not well suited to our conditions, nor are the other species of its series which we have tried, nearly all of them standing up poorly to our hot dry summers. An exception, as might have been predicted from experience in Britain, is *souliei*. From a batch of seedlings a selection has been made which is exceptionally floriferous and has flowers which appear to be as good as those of any of the named forms.

The flowers of the form of *thomsonii* which we have are extraordinarily long-lasting but have a dull bloom and need the light behind them to be effective. Although I have not seen the best forms, I suspect that this is a characteristic of the species, since it has been transmitted to a certain extent to many of its hybrids. While this is true of Barclayi, it is much less pronounced than in the species and this hybrid can be very effective. The dull bloom is not present at all in 'Red Admiral' and 'Ernest Gill' but can be seen in Cornish Cross, Luscombei and 'Richard Gill' when the flowers first open.

The latter half of September brings the flowers of 'Chrysomanicum', the best of the smaller yellow hybrids we have tried. It is more effective than the paler Eldorado, Parisienne and Remo and holds its flowers up better than the somewhat similarly coloured 'Saffron Queen'.

By the end of the month 'Cilpinense' has been replaced by Multiflorum (*ciliatum* × *virgatum*), which does better than the closely related 'Racil' (*ciliatum* × *racemosum*), since the latter is almost defoliated annually by a rust (*Chrysomyxa ledi* var. *rhododendri*). Fortunately it is the only variety which is markedly affected in our garden, although the leaves of 'Letty Edwards' are sometimes slightly disfigured.

Early in October *pemakoense*, *griffithianum*, *russatum*, Augfast, 'Arthur J. Ivens', 'Bibiani', 'Cowslip', 'Volcano' and some of the evergreen azaleas commence, to be followed by *arboreum album*, *augustinii*, *kaempferi*, *veitchianum*, *williamsianum*, *yedoense*, 'Auguste van Geert', 'Blue Diamond', 'Broughtonii', 'Carita', 'C.B. van Nes', Cornish Cross, 'Dr. Stocker', 'Eleanore', 'Exbury Naomi', 'Gill's Crimson', 'Gladys Rose', 'Halopeanum' (usually called 'White Pearl' here), 'Idealist', 'J. G. Millais', 'Joseph Whitworth', Loderi varieties, Luscombei, 'Max Sye', 'Moonstone',

'Penjerrick', 'Richard Gill', 'Susan', 'Unique', 'Unknown Warrior' and the Kurume azaleas.

R. augustinii is, of course, outstanding in the Triflorum series, which contains many beautiful plants. At Mount Wilson, however, their flowers are short-lived and unless, like *lutescens*, early-blooming or, like *augustinii*, of unique colour, they might well be omitted from small gardens where choice of varieties is limited.

I was very pleased when Mr. Davidian reduced *timeteum* to synonymy with *oreotrephes*, since I have grown both from seed and found them to vary over the same range. Likewise I was pleased about *chasmanthum* and *augustinii* and *pseudoyanthinum* and *concinnum*. I had hoped the same could be done for *yunnanense* and *davidsonianum*, but perhaps our forms are of hybrid origin.

Of the hybrids of *augustinii*, the following have proved their worth: Augfast for its very compact habit and early flowering, 'Eleanore' for its large mauve flowers which fade almost to pale blue if the weather is warm, 'Blue Diamond' for its rich blue and profusion of flower, and 'Electra' for prolonging the display in this colour for a week or two after these and *augustinii* are over. 'Electra' would make a very good group with a white *yunnanense* and a dark form of *concinnum* var. *pseudoyanthinum*, since these flower together with us. We have yet, however, to place them together.

Although we have only grown two forms, 'Naomi' has not lived up to our expectations. 'Exbury Naomi' blooms early and is beautiful when first open but rapidly fades to a washy mauve-white. 'Stella Maris' comes a couple of weeks later, has larger flowers, and is a much better colour. The trusses, however, soon become very loose and the general effect is rather floppy. Perhaps better under our conditions is another *fortunei* hybrid, 'Faggetter's Favourite', which produces similar pink and cream flowers in compact, upright inflorescences. Luscombei is another *fortunei* hybrid which does well, the flowers having inherited the long-lasting qualities of its other parent, *thomsonii*. 'Richard Gill' seems to be almost identical and would be indistinguishable were it not that the corollas have only five lobes.

A particular favourite of mine is 'Yvonne Opaline' which, like 'Naomi', has 'Aurora' as one parent. The perfectly-spaced corollas mostly have five lobes, which I find more attractive than six or seven, and have an ethereal quality which places them in a class with 'Penjerrick' and Cornish Cross. The success of 'Yvonne

Opaline' prompted the importation of 'Yvonne Pride', the flowering of which has yet to come.

The garden is usually at its most colourful in the latter half of October, with numerous other rhododendrons and evergreen and deciduous azaleas adding to the display. Worthy of mention, in addition to those already listed, are *aberconwayi*, *bullatum*, an excellent compact form, *ciliatum*, *johnstoneanum*, *luteum*, *vaseyi*, *yakusimanum*, 'Countess of Haddington', 'Coronation Day', 'Crest', 'David', 'Earl of Athlone', 'Lady Alice Fitzwilliam', 'Lady Berry' 'Laura Aberconway', 'Loder's White', 'Mrs. A. M. Williams', 'Princess Alice', Royal Flush (both pink and cream), 'The Hon. Jean Marie de Montague' and 'Touchstone'.

Several plants of *aberconwayi*, with flowers ranging from unmarked to heavily spotted, were raised from R.H.S. seed, as were a number of plants of *yakusimanum*. These range from those with small, dark-green leaves, rusty indumentum and bell-shaped corollas, which fade from pink to pure white, to those with larger, pale-green leaves, grey indumentum and larger, wide-open corollas, pale pink with yellow spotting, So far *degronianum*, *hyperythrum*, *makinoi*, *metternichii* and others of the Ponticum subseries Caucasicum have not bloomed, but indications are that they are as tolerant of our summers as *yakusimanum* is.

It might well be claimed that *yakusimanum* has attracted more attention than any other rhododendron in the last twenty years were it not for the arrival of 'Crest'. The size, colour, lasting quality and carriage of its flowers sets it apart from all other yellow rhododendrons I have seen and, like most pale-yellow flowers, it is particularly beautiful in the evening. To judge by the fuss made about yellow rhododendrons one could easily assume a garden full of egg-yolk yellow blooms to be the goal of most rhododendron enthusiasts, in spite of the fact that strong yellow suits the spring garden much less than pale. So we can be thankful that most of the so-called yellow rhododendrons are little more than cream and that even 'Crest' is no more than a clear, soft lemon.

Of the others the Slocock hybrids are probably the best garden plants, the comparatively early flowering 'Unique' having done particularly well, although they are all good. The Koster hybrids are coarser plants. 'Zuiderzee' is the first to bloom, a clear greenish-cream, and is followed by 'Mrs. Betty Robertson', an awful colour when it first opens but good as it fades. 'Adriaan Koster' is good too, but rather late for our climate.

'Carita', 'Gladys Rose' and 'Letty Edwards' are all attractive. The first two, in the forms we have, are almost indistinguishable. 'Goldfort' is quite different and in colour is close to 'Zuiderzee', fading almost to white. 'China' is similar in colour but has an untidy truss with flowers which face downwards. 'Idealist' resembles 'Carita' and 'Gladys Rose' but close inspection shows it to have much shallower corollas, a characteristic inherited from *wardii*. 'Lady Bessborough' is later, somewhat unthrifty and generally poorer than any of the above under our conditions. Of its seedlings with *wardii*, 'Crest', as well as having superior flowers, is earlier and more vigorous and floriferous than 'Hawk' and 'Jervis Bay'. 'Inamorata' has yet to flower but will probably do so later than we would wish. 'Logan Damaris' and 'Marcia' have not yet bloomed, but being earlier and of good colour, they may prove useful additions. We are also anxiously awaiting the flowering of 'Lionel's Triumph', which impressed me very much some ten years ago at an R.H.S. show.

An interesting plant in this colour range is the apricot form of Royal Flush, the flowers of which rapidly fade to a soft straw yellow. This is useful in flowering earlier than the pink form we have. It is earlier too than the similar 'Lady Chamberlain' and 'Lady Berry'. Although more than six feet tall, 'Lady Chamberlain' has flowered only sparingly so far, whereas 'Lady Berry', at about three feet, has produced many and larger blooms.

'Coronation Day' and 'Touchstone' are two aggressive beauties which cannot fail to attract attention. The latter is the earlier of the two and very similar to the *arboreum*×*griffithianum* hybrids such as 'Gill's Triumph', though more adaptable as a garden plant.

'Alice', 'Betty Wormald', 'Fragrantissimum', 'Mother of Pearl', 'Mrs. A. T. de la Mare', 'Mrs. Charles E. Pearson', 'Mrs. Furnivall', 'Mrs. Philip Martineau', 'Pink Pearl', 'Purple Splendour' and many others follow in early November. 'Fragrantissimum' has always been a great success at this time and the bushes, some of which are now over ten feet high, cover themselves with bloom every year. It has proved a better garden plant than 'Lady Alice Fitzwilliam', which has a floppy habit and displays its flowers poorly.

Shortly after these, *dalhousiae* produces a striking display of its large greenish-cream flowers. Other species of the Maddenii subseries Megacalyx do well, too, though their flowers are short-lived, particularly if, like *nuttallii*, they flower late under our con-

ditions. The hybrid 'Victorianum' has grown well for many years but has become very straggly and its flowers are inferior to those of its parents. This is not true of 'Tyermannii' which does well in a neighbouring garden, where also there is a fine form of *lindleyi* which, flowering early, may well be the best of this type for our climate.

Species of the subseries Maddenii have not been a success. The plants grow well but the flowers come late and often fail to open properly in the heat.

Not only is our climate unsuitable for the very late varieties but, as others have often observed, one becomes a little tired of rhododendrons late in the season. So far *kyawi* and *elliottii* have grown poorly and, although it grows well, the flowers of *griersonianum* rapidly become scorched unless it is given complete shade. 'Tally Ho' and 'Fusilier' sometimes give a good display in late November, but only in exceptional years. 'May Day', flowering a little earlier, is often good. 'Romany Chal' is too late altogether and its flowers are usually quickly spoilt. The same applies to *discolor*, the flowers of which, like those of all the subseries Fortunei we have tried, rapidly become blemished. Its hybrids, 'Albatross', 'Angelo', 'Bonito' and 'Polar Bear' are similarly affected, although 'Angelo' in particular produces a magnificent head of flowers, as does 'Sir Frederick Moore' which, having more weather-resistant flowers and being a little earlier, promises to be the best of the *discolor* hybrids we have tried. We would not be without 'Margaret Dunn', however, since its apricot flowers are very striking and would go well with those of 'Purple Splendour' were we to place them together. Also in the orange-apricot range, 'Fabia' has done well, but there is a slight muddy tinge to the colour.

The general conclusion which can be drawn from our experience is that, on the whole, the Arboreum, Fortunei, Maddenii and Ponticum series have proved the hardiest, enduring drought and heat surprisingly well, and the Thomsonii series has proved intolerant of these conditions. Also, beautiful though many of the newer hybrids are, they do not endure drought, heat and neglect as well as most of the old hardy hybrids. Most of the latter, however, flower late. Our problem, in fact, is similar to that in central Japan, as outlined by Mr. Wada in the 1966 Year Book. We need varieties which are early-flowering and have some measure of heat and drought tolerance. If they can be bred with indumented leaves as well, so much the better, since this would

oto: P. G. Valder

Fig. 39—Rhododendrons at Nooroo among tree ferns: (*top, left*) 'Loder's White'; (*top, centre*) 'Beauty of Littleworth'; (*top, right*) 'Alice'; (*centre, right*) 'Fragrantissimum'; (*bottom, left*) *R. dalhousiae*

render them immune to lace bug (*Stephanitis tyrioides*), which is the principal pest of rhododendrons in New South Wales.

Fortunately, while many of the newer hybrids are poorly adapted to our climate, the early-flowering kinds from Bodnant, Exbury and Leonardslee, as well as some of the older early hybrids from Cornwall, are proving, as we expected, to be amongst the best plants in the garden and are being used as parents in the raising of hybrid seedlings.

In addition to this a small collection of Malaysian species has been assembled. For many years we have grown *lochae* raised from seeds collected in Queensland, and it flowers for many weeks in late summer, autumn and winter. Next we were given a plant labelled *triumphans** which produces inflorescences of 12 or more waxy vermilion flowers in early spring. Then came *macgregoriae* which has heads of small apricot flowers in winter. Since then, thanks to the kindness of many people, seeds and cuttings have been received of *javanicum* and a number of species from New Guinea. The former has already flowered, producing a head of 14 orange flowers, and many of the latter are growing well.

All these plants are kept in an unheated greenhouse, since it is thought that many would be injured by frost. No doubt those from altitudes where frosts are known to occur will prove to be hardy out of doors, as will species of *Vaccinium*, *Gaultheria* and *Dimorphanthera* collected at 11,000 feet and above on Mount Wilhelm. The frost-tender species, on the other hand, may well prove satisfactory in climates such as that of Sydney, where the majority of rhododendrons cannot be grown really well.

**Editor's Note.* *R. triumphans* is mentioned by Dr. Sleumer as belonging to the Sect. Vireya and coming from Indo-China.

RHODODENDRON 'MUCRONATUM'

By K. WADA

IN my opinion, no plant has misled and bewildered both botanists and breeders as has *R.* 'Mucronatum'. I have read that it was described by G. Don, in 1843 as a species, who had not seen a single growing plant in the wild, and presume the confusion which exists at present started at that time. A Japanese botanist, T. Nakai, wrote in his book, "Trees and Shrubs Indigenous in Japan Proper", published in 1922, that its native habitat was not known as yet but the assumption that it hails from the central part of China is plausible. Professor H. Hara wrote in the R.H.S. Rhododendron Year Book, 1948, that it is still thought by some to be a native of central China and to have been imported into Japan by priests along with many other cultivated plants. He emphasised that it is not a white form of the plant known as *R. mucronatum* var. *ripense*.

When I consider that this azalea has been grown for about 300 years in Japan, I wonder why there does not seem to have been a botanist who tried to check its origin or heredity.

Many ambitious or keen horticulturists have tried in the past to get hybrid azaleas of different shades of salmon by crossing 'Mucronatum' (white coloured) with *R. kaempferi* (salmon orange coloured) or with *R. scabrum* (scarlet or scarlet crimson coloured), without knowing that the dominant genes of 'Mucronatum' are purple. They never managed to get colours free from a purple tone, deeper or lighter, in such hybrids. You will easily appreciate this if you review all the Hirado Azalea Hybrids derived from 'Mucronatum' because none of them has colours free from purplish shades, even in second generation hybrids. In a word, 'Mucronatum' is a purple or purplish-coloured azalea masked with a white. Nobody should agree to accept this azalea as a species when such genetical characters have been revealed.

When I observe carefully the year round a plant each of 'Mucronatum' and 'Ripense' planted side by side under the same conditions, they are so similar to each other that no one could find any difference between the two plants botanically and horticul-

turally except for the colour of the flowers. The flowers of 'Mucronatum' are pure white, whereas those of 'Ripense' are lilac-tinged and narrower in the lobes. Though H. Hara claims it is not a white form of 'Ripense', I am of the opinion that it is a white form of 'Ripense' and that no hybridization has taken place and that 'Mucronatum' is not a natural hybrid from 'Ripense'.

When I was young (from about 1927 to 1947) I was acquainted with a retired chemist whose hobby was gardening. His garden was completely isolated from neighbours by vegetable fields and the tall stone walls encircling it, which were lined by tall conifers planted both as wind breaks and for garden ornament. He had in his garden several specimen plants of 'Mucronatum' and one large bush of *R. kaempferi* 'Semperflorens' (a perpetual flowering clone of *kaempferi*) but no other azaleas. His soil was moist and well covered with green moss, due to the tall walls and trees; the garden contained many self-sown seedling azaleas under the bushes of 'Mucronatum'. He once asked me why the seedlings from this white azalea 'Mucronatum' invariably gave purple seedlings. As I frequently called at his home, I could confirm this myself. I explained: "I assume these white azaleas 'Mucronatum' are a white sport of some purple azalea and the seedlings revert to the original the purple colour being a dominant genetical character". But as the result of my recent experiments and observations, I have come to the conclusion that my explanation at that time was not correct. It seems that 'Mucronatum' does not set seed when self-pollinated and that it is self-incompatible. If this is true, all of the seedlings in the chemist's garden should have resulted from 'Mucronatum' cross-pollinated by the *kaempferi* flowering nearby.

It is almost certain by checking the calyx and other botanical characters that the purple azalea which is common in our Japanese gardens, botanically named by T. Nakai *R. mucronatum* var *purpureum*, is a hybrid between 'Mucronatum' and *kaempferi*. T. Nakai declares in his book that this azalea is supposed to be the species from which 'Mucronatum' is derived, but it is unknown in the wild. As the confusion started with 'Mucronatum' so the origin of many azaleas derived from it could not be solved correctly. For instance, H. Hara describes in his article in the R.H.S. Rhododendron Year Book, 1948, a very popular azalea in Japan called 'Oomurasaki' Makino which he considers is possibly a hybrid between *R. scabrum* and 'Riukiu Azaleas' and made about 250 years ago. When checking the botanical charac-

Photo : J. E. Downward

PLATE 6—*Camellia reticulata* 'Noble Pearl' F.C.C. February 7, 1967. Exhibited the Crown Estate Commissioners, Windsor Great Park, Berks. (see p. 235)

ters of 'Oomurasaki' carefully it will be found to be a hybrid between 'Mucronatum' and *scabrum*, this *scabrum* being the form which has a calyx with pointed lobes which open widely and are about ½ inch long, and not the form with obtuse calyx-lobes as mentioned by H. Hara. The famous azalea called 'Noordtianum' Wilson is a white branch sport of 'Kamoko' (Komatsu) Hara which in turn is a sport from 'Oomurasaki' or a hybrid of the same parentage. These azaleas 'Oomurasaki', 'Kanoko' and 'Noordtianum' have proved hardier than *scabrum*, but are more tender than 'Mucronatum' as has been shown by growing them in different climates.

In the recently published magnificent book, "The Rothschild Rhododendrons", azalea 'Pippa' is given as having been obtained by crossing *R. kaempferi* with 'Mucronatum'. Its colour description reads thus: "It stands out from among the pinks and reds in having large amethyst flowers". Can you imagine that the breeder tried to cross a salmon *kaempferi* with a white 'Mucronatum' to obtain amethyst flowers?

Captain Collingwood Ingram complains in his article which appeared in the R.H.S. Rhododendron Year Book, 1967, that "the result obtained by crossing the same brick-red form of *simsii* with the well-known white-flowered azalea, formerly known as *ledifolium* but now called 'Mucronatum' was, to say the least, surprising. Having mated a white-blossomed plant with a red-blossomed one, I naturally did not expect their progeny would all have flowers of a purplish colour, but that is exactly what has happened".

I crossed a very early flowering form of *kaempferi* with 'Mucronatum' and found all the resulting seedlings had purplish coloured flowers. Of course I was not surprised at this phenomenon, as I knew already at that time 'Mucronatum' is a purple azalea masked with white. I then self-pollinated a very early flowering purple clone and raised seedlings from its seeds. The major part of the seedlings looked very similar and had purple flowers as if they were an earlier flowering 'Mucronatum' but purple. But some were a salmon-pink with a purplish overcast. Only two or three plants among the several hundred seedlings were pure white, blooming earlier than 'Mucronatum'. From this experiment I conclude that 'Mucronatum' has genes of a white but that the purple genes are too dominant.

When the light lilac-coloured 'Ripense' is crossed with a salmon *kaempferi* the progeny turns out to be of different

shades of purple, some being as dark as in 'Oomurasaki'. When the light mauvish coloured *R. linearifolium* var. *macrosepalum* is crossed with a salmon *kaempferi* the seedlings invariably have flowers of different shades of purple, some with a salmon tinge and others as dark as 'Oomurasaki'. When a salmon *kaempferi* is crossed with a white clone of a Kurume azalea or "Azalea indica" (Belgian Azalea) no purples result from it and the seedlings show different shades of salmon or red without a purplish tinge.

From the remarks above you will perceive that 'Mucronatum' behaves quite differently from a white Kurume azalea or "Azalea indica" (Belgian Azalea). If you had accepted that the white colour of 'Mucronatum' was derived from a purple, you could have found through this and other botanical characters that the parentages of old Japanese azaleas of garden origin are not so complicated after all.

PESTS OF RHODODENDRON

By K. M. HARRIS
(Entomologist, R. H. S. Garden, Wisley)

THE rhododendrons and azaleas grown in Britain are on the whole remarkably free from any really serious pests, and it is therefore possible to discuss pest problems with some equanimity. This relative freedom of the genus *Rhododendron* from pests is probably largely due to the exotic origin of all our cultivated and wild species, though it must also be partly accounted for by their generally robust constitution.

The introduction of exotic rhododendrons into the British environment has exposed them to a range of pest species indigenous to the British Isles and, in addition, has enabled certain exotic pest species to become established in this country. Notable examples of the first category are the weevils and caterpillars that feed on the foliage. They are general feeders with a wide host range of native British plants which has latterly been extended to include rhododendrons. Few of the species concerned are limited to any one host and these pests are therefore not dependent on

rhododendrons for their survival. The second category includes pests such as the white-flies, the rhododendron leaf-hopper and the rhododendron bug. These are pests that have evolved on rhododendrons in their countries of origin and have subsequently been imported into and become established in this country. They are specialised to such an extent that they are virtually dependent on rhododendrons and cannot exist on alternative hosts. Of the two categories the latter has most often given cause for concern in the past and may well do so again in the future. An outbreak of a new pest is often startling and its initial spread may be rapid and damaging. A good example is provided by the rhododendron leaf-hopper. This insect was accidentally introduced into Britain about 1930, and its subsequent establishment and dispersal has been associated with bud blast disease, a condition that has been troublesome in south-east England in recent years. This and other examples are included in the following detailed account of the more important groups of pests.

(A.) INDIGENOUS PESTS

Caterpillars

Some twenty different species of caterpillar have been recorded from rhododendrons and azaleas in the United Kingdom. These are mostly the larvae of moths of the families Geometridae, Tortricidae and Tineidae and include such well-known species as the March moth (*Alsophila aescularia*), the winter moth (*Operophtera brumata*), the fruit tree tortrix (*Archips oporana*), rose tortrix (*Cacoecia rosana*) and the oak leaf-roller (*Tortrix viridana*) and various tineids, of which the azalea leaf miner (*Gracillaria azaleella*) is sometimes present on azaleas under glass. This last species is an exception to the general rule in that it is not indigenous and was probably introduced in the early part of this century.

Most caterpillar damage results from gross feeding on leaf tissues. It is usually the younger leaves that are eaten and the caterpillars often feed within the bud or in the crown of young leaves, so that the symptoms may not become apparent until the new leaves are fully expanded. The eggs of most species are laid directly on the plants, but this may not be the case with some species which arrive on rhododendron in the larval stage, having moved off the trees, such as oak, which provide the canopy layer in woodland plantings.

Control of caterpillars is seldom justified and may often be

limited by the physical difficulty of achieving adequate spray cover. Where necessary, the application of a persistent insecticide to the new growth should give protection, and for this purpose DDT is still effective, though it may eventually be replaced by more selective and less persistent insecticides.

Weevils

At least four different species of weevil have been recorded on rhododendrons in the United Kingdom. Of these the vine weevil (*Otiorrhynchus sulcatus*), the clay-coloured weevil (*O. singularis*) and the nut leaf weevil (*Strophosomus melanogrammus*) are most frequently encountered. All three species lack functional wings and are therefore unable to fly. They are mainly nocturnal feeders and are therefore seldom seen on plants, even in areas where they are abundant.

Adult weevils feed on leaf tissues and produce symptoms which are fairly characteristic. The vine weevil, for example, tends to sit on the edge of the leaf and eat inwards from the margin (Fig. 40), while the clay-coloured weevil tends to eat out areas between the leaf veins and may also girdle leaf petioles, causing them to snap. The appearance of such symptoms would indicate

Fig. 40—Rhododendron leaves damaged by vine weevil

Photo: Shell Photographic Unit

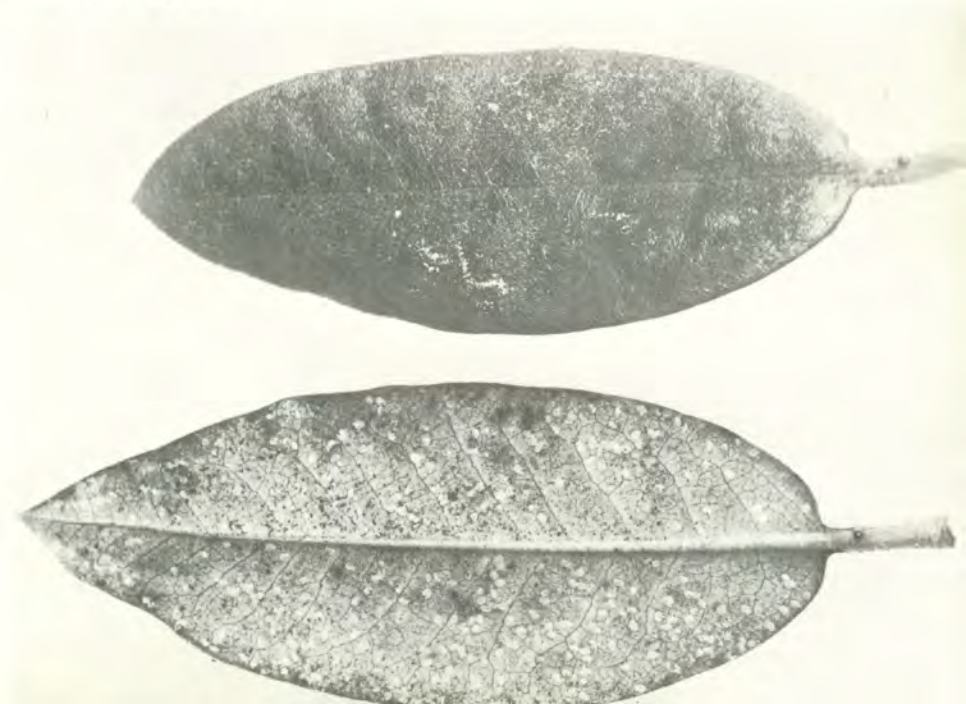
weevil rather than caterpillar damage, but there is some overlap in the range of symptoms produced by these two groups of pests and it is not always possible to identify the cause of damage on leaf symptoms alone.

The life-cycle of *O. sulcatus* is typical of the group. Adult weevils appear from April onwards and feed on the leaves during the night, retiring to the shelter of leaf litter at the base of the plant during the day. Eggs are laid in the soil and the larvae, which are present from July until the following February, feed on plant roots. In February they pupate and a new generation of adults emerges in April. In North America it is considered that damage by weevil larvae to the roots of rhododendrons is of far greater importance than leaf damage and may cripple or kill plants. The same may well be true in the United Kingdom, though there appears to be no information available on this topic.

As with caterpillars, control is based on the use of persistent insecticides, such as DDT and, as weevil infestations are usually local, the regular use of a DDT spray should soon reduce the population. Some relief may also be obtained by raking out the plant debris that accumulates under bushes and provides resting and egg-laying sites for them.

Fig. 41—Rhododendron leaves with sooty mould on upper surface and white fly on lower surface

Photo: Shell Photographic Unit



(B.) IMPORTED PESTS

WHITE-FLIES

Two species of white-fly attack the genus *Rhododendron* in Britain. *Dialeurodes chittendeni* is the rhododendron white-fly and the other species, *Pealius azaleae* (= *Aleyrodes azaleae*) is the azalea white-fly. Both species feed in the larval stage on the under sides of leaves and produce similar symptoms on the plant. They are sap feeders and exude large quantities of honeydew which encourages the growth of sooty moulds (Fig. 41). The effect on the plant is to weaken it by loss of sap and also by a general fouling of the foliage, which interferes with the processes of photosynthesis and transpiration. As the leaves normally persist for three years, a single season's infestation may have a long term effect on the plant's development and on its ornamental value. It is often stated that the white-fly causes a light mottling of the upper surface of the leaf similar to that caused by the rhododendron bug. Severe infestations of the white-fly on rhododendrons at Wisley have failed to produce this symptom and it seems likely that there has been some confusion in the past between the symptoms of rhododendron bug and white-fly.

Dialeurodes chittendeni is related to certain Indo-Malaysian species of white-fly and is possibly of Himalayan origin. It was first noted at Chiddingfold in 1926 and later appeared in the Ascot area. The initial outbreak was so bad that Mr. Chittenden, for whom the species was named, felt obliged to issue a warning through the press and trade papers, but its subsequent development as a pest of cultivated rhododendrons has not justified this early alarm. It is certainly potentially destructive but has not become widely established, though a record of it occurring in Cheshire in 1955 suggests that it may yet extend its range beyond its limited colonisation of south-east England.

Adults of the rhododendron white-fly appear, often in vast numbers, in June and July and lay eggs. Larvae hatch from these and soon settle on the undersides of the leaves, where they feed until they pupate in the following year (Fig. 41). Any smooth-leaved rhododendron may be attacked but *Rhododendron catawbiense*, *R. caucasicum* and *R. ponticum* are particularly susceptible. The hybrids 'Cleopatra', 'C. S. Sargent', 'Cynthia', 'Dairy Maid', 'Doncaster', 'Goldsworth Yellow', 'Handsworth White', 'Jacksoni', 'John Waterer', 'Mrs. E. C. Stirling', 'Mrs. R. S. Holford', 'Mrs. W. Agnew', 'Pink Pearl', 'Purple Splendour' and 'Sigismund Rucker' have all been recorded as favoured hosts.

The azalea white-fly, *Pealius azaleae*, is also an introduced species. It was first recorded at Edinburgh in 1931 on azaleas imported from Europe and is now widely distributed, being on record from Edinburgh, Bodnant, Midhurst and Ringwood, as well as Wisley, where a continuous infestation has been present for the past thirty years. This species resembles the rhododendron white-fly in appearance but differs slightly in its biology. It is, of course, confined to azaleas and its main host is *R.* 'Mucronatum'.

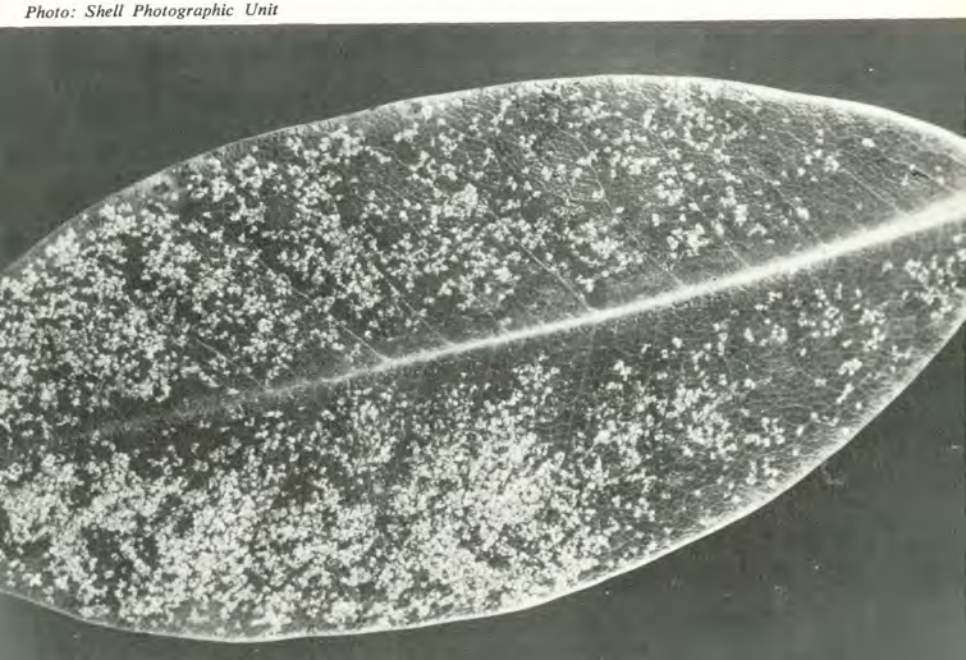
There has been little experimental work on the control of white-flies on rhododendrons in the United Kingdom in recent years. The standard recommendation is to spray the undersides of the leaves with DDT, gamma-BHC or malathion, preferably in the summer months when the adults are active.

Rhododendron bug

The rhododendron bug (*Stephanitis rhododendri*) is a lace-bug of the family Tingidae and is the only member of this group classed as a pest in the United Kingdom. The species seems to be a native of North America and was introduced to Europe before the beginning of the century. It was first noted at Kingston-on-Thames in 1901 and has since been recorded on some two hundred occasions from localities as widely separated as Exeter, Swansea, Leicester, Norwich and Surbiton. As the adult insect

Fig. 42—Damage to leaf caused by rhododendron bug

Photo: Shell Photographic Unit



is a poor flier, it is believed that this rapid distribution over a wide area was mostly by the movement of infested nursery stocks, and it seems likely that all areas favouring establishment of the pest have now been colonised.

Adult rhododendron bugs are easily recognised from their unusual appearance. They mature towards the end of June and from mid-July onwards lay eggs in long rows or clusters embedded in the undersides of the new leaves. Egg laying continues well into autumn, but all adults die out before the winter. The first young bugs hatch in mid-May and from then on they feed in bands of ten to fifty, occasionally moving to new feeding sites, but seldom leaving the leaf on which they hatched. They feed by repeatedly probing the leaf tissues with long stylets and heavy infestations cause a characteristic mottling on the upper leaf surface (Fig. 42) and a rust-coloured or chocolate spotting of the underside often referred to as 'rust'.

The pest is particularly troublesome on *Rhododendron catawbiense*, *R. caucasicum* and *R.* 'Fastuosum Flore Pleno'. Other species may be immune and it has been suggested that this immunity, which is evident in *R. ponticum*, may be partly due to the absence of cuticular pegs on the lower epidermis, as these pegs, which occur in most susceptible varieties, may give the bug a better purchase on the leaf surface.

Photo: Shell Photographic Unit Fig. 43—Bud blast on rhododendron

Two or three applications of a DDT, BHC or malathion spray at three week intervals from mid-June may give good control and severe infestations may also be limited by pruning out affected branches in May and destroying them. Recent work in America indicates that soil applications of systemic insecticides give good control, but this technique has yet to be proved effective in the United Kingdom.

Rhododendron leaf-hopper and bud blast

The rhododendron leaf-hopper (*Graphocephala coccinea*) is perhaps the most serious pest of British rhododendrons, though its effect is not a direct one. It is mainly responsible for the condition known as 'bud blast', as the lesions made in bud scales by the female leaf-hopper when egg laying allow infection by the fungus *Pycnostysanus azaleae* (=*Sporocybe azaleae*). Infection of flower buds by this fungus first produces brown necrotic areas at the base of the bud and eventually kills it. Dead buds remain on the bushes and are characteristically covered by the whisker-like black sporulating bodies (Fig. 43).

Bud blast first caused concern in southern England when it appeared in the rhododendron growing areas around Ascot and Bagshot in the late 1940's. It was soon noted that the distribution and severity of bud blast was closely connected with the distribution and abundance of the rhododendron leaf-hopper, and subsequent research work, mainly at Silwood Park, has confirmed this association. The exact mechanism of infection has not been established, but the fungus probably gains entry to the buds either as air-borne spores germinating on the wounds made in the bud scales by the leaf-hopper ovipositor or possibly by injection on the ovipositor during egg laying.

The leaf-hopper is yet another pest species of foreign origin. It was first recorded at Chobham in 1933, and for some years seemed innocuous, though Fox Wilson had noted in 1937 that 'the invasion of secondary agents (bacterial and fungal organisms) through the feeding lesions of this insect may well prove to be more serious than the effects of the feeding of the insect itself'—a forecast which, though now proved wrong in detail, was remarkably accurate in principle. The species is indigenous to North America and, since its first occurrence, has become widely established in England and possibly in Wales.

Young leaf-hoppers are relatively inconspicuous and are present on the current year's growth from May onwards. The adults.

which are bright green with two striking red lateral stripes appear in July and eggs are laid by the females from August to October. The eggs are inserted into shallow slits made by the female's ovipositor in the bud scales and they remain in the bud scales until the following year when the next generation of nymphs hatches out. It is during this period that bud blast infections develop, the symptoms usually appearing between October and December in south-east England.

The leaf-hopper is highly selective in its choice of hosts, which mainly accounts for the uneven distribution of bud blast even within limited areas. Baillie and Jepson, who studied this aspect, noted that few, if any, eggs were laid on *R. falconeri*, *R. fictolacteum*, *R. croceum*, *R. wardii*, etc., whereas large numbers were laid on *R.* 'Earl of Athlone', *R. neriiflorum* subsp. *phaedropum*, *R.* 'Doncaster', *R.* 'Bagshot Ruby', *R. ponticum*, etc., in the same locality. They also noted that the leaf-hoppers laid more eggs on buds of medium size than on larger or smaller buds and also tended to lay more eggs on sticky buds. Further research on these aspects could help hybridisers recognise those characters that confer resistance or immunity to bud blast, which might at least limit the production of particularly susceptible hybrids.

Chemical means of controlling bud blast exist and may be directed either at the leaf-hopper or at the fungus, or possibly at both. Spraying with DDT two or three times during August and September may reduce the local leaf-hopper population to such an extent that flower buds remain free of the fungus and bud infections may also be reduced by using fungicides, of which Bordeaux mixture may give good results. There is obvious scope for the further refinement of these methods and for further elucidation of the interaction between the insect and the fungus.

Discussion

This brief survey of the pests of British rhododendrons summarises, in general terms, the present state of knowledge. There has, however, been little call for research on the pests of the genus in recent years and much of the information on life-cycles, host preferences, distribution and general ecology was in fact collected before 1939. The post-war tendency has been to solve most pest problems by the ad hoc application of insecticides, and it is only now, some twenty years later, that biological considerations are once more playing an important part.

Fortunately, earlier entomologists discovered a great deal, but there are many outstanding questions yet to be answered.

Some that readily come to mind are: What is the exact mode of infection of flower buds by bud blast?

Are the rhododendron and azalea white-flies ever the cause of leaf mottling?

What is the present distribution pattern of the rhododendron bug and what ecological factors limit its increase?

Do weevil larvae damage roots to the same extent in the U.K. as they do in North America?

Is it likely that further pests (e.g. rhododendron borers and midges) may be introduced in the future?

Will the technique of granular applications of systemic insecticides be as effective under British conditions as it is in America?

Which birds and small mammals attack flowers to feed on nectar and which hybrids are particularly susceptible?

All who grow rhododendrons and azaleas are in a position to contribute towards at least some of the answers, as detailed and critical observation over a wide area depends on the co-operation of a widely dispersed band of observers. Until now, south-east England has received most attention and the pests of this area are therefore relatively well known. It would be most interesting to learn what the situation is in Scotland, Ireland, Wales and other areas of England.

GROWING RHODODENDRONS IN BIRMINGHAM

By P. SIVITER SMITH

IT is not very easy growing rhododendrons inside a big town. It is true we live on the favoured south-west side of it, but we are only 1½ miles from Birmingham's centre and our soot deposits per year are no less than 129 tons per square mile. We have a cold climate, very windy, and—compared to say Hampshire—our growing season must be at least six weeks shorter, possibly more. The soil varies locally but is naturally acid, enhanced by the acid deposits from the local atmosphere. Our Spring always seems vicious, bitterly cold and dry, and we lose far more plants in the Spring than in the Winter. This is a tiny town garden of around ⅓ acre, made 9 years ago.

Because of the smokey atmosphere we cannot grow dwarf rhododendrons at all—they die off quite rapidly and we have been forced to relegate a small collection into a greenhouse, where they flourish, being protected from the contaminated rain and, to some extent, the air and soot. This is not our failure in cultivation, as other growers around have the same failure with the dwarfs. Apart from this, we have fair success, our cold climate being the major factor. Yet in spite of this we grow a fair number of "C" plants without much trouble.

R. macabeanum is growing nicely and freely, but the leaf-size is not comparable with southern-grown plants; on a plant now 6 ft. tall we have leaves about 15″ long, but it seems quite happy. Our other big-leaved plant is R. 'Polar Bear', now about 8 ft. high and about to flower quite heavily this year (1967), and for the first time; it has leaves about 15″ long.

We do well with R. Lady Chamberlain 'Gleam', which covers itself in a 6 ft. circle with flowers now that we feed her heavily. The birds attack and damage the unopened buds of this plant but not any of the others—except that the tits, of course, attack the open flowers of the early spring-flowering sorts. We have found that heavy feeding of all rhododendrons is absolutely

essential not only to get them to flower freely but to keep them even in good health. We have a very hungry light-textured sand with no goodness or food left in it. We add plenty of peat to it as an annual top-dressing.

We thought we had an exciting novelty with a pure white-flowered *R.* "exquisitum" (now *R. oreotrephes*), but in this, its fourth year of flowering, they have turned to their normal mauve shade and our hopes are gone. It is more or less deciduous in this climate, as is *R. yunnanense* and *R. cinnabarinum* var. *aestivale*. We do well with *R. griersonianum* and have our own seedlings of this about to flower and R. 'Tally Ho' also seems happy, although its leaves were burnt a little in its first winter after planting. I have been puzzled because these "late" flowering sorts are always out much earlier with us than the July quoted in the books. I now realise this is the plants' reactions to our very short growing season here. If they flowered in July they would never get their new growth extended and ripened before the start of the winter, so very wisely they flower early in June instead, even sometimes at the end of May.

Last year we had our first flowers on *R. strigillosum* and these were quite magnificent, very long and wide bells, and it looks as though we have a really excellent form here. We grow it with R. 'Bo-Peep' and *Narcissus cyclamineus* hybrid 'March Sunshine'; they all flower together and the whole colour scheme is quite delightful. Another sumptuous flower is that of R. Iviza 'Pekin', of which we have a 6 ft. bush that is flowering nicely—a flower with a real Chinese flavour indeed.

We have the K.W. hardy form of *R. hookeri* but cannot get this to flower yet. It is about 6 ft. high, in perfect health, with fine leaves and lovely lavender-dusted stems, but so far not a flower. Our *R. neriiflorum* tries to make up for this and is absolutely laden each year with hundreds of blooms—a joyous sight after the drear of our long winter. Very satisfying, too, is a 5 ft. bush of the hardy L. & S. form of *R. wardii*, now starting to flower well. We found the ordinary *R. wardii* far too tender here, even against a south-facing wall. Another plant too tender, except against a south wall here, is *R. augustinii*—in its bluest form at any rate—but with such a wall behind it flowered well, but then last year our 6 ft. plant died suddenly while in new growth. We examined the corpse very carefully, but there was no reason we could find for its collapse, which took place very suddenly indeed.

We have two big plants of Reuthe's hybrid R. 'Sonata' which we all love—it is a strange colour scheme, one you either hate or like enormously. Another favourite is the true *R. yakusimanum* (F.C.C.) with the tightly rolled leaves, and this does very well for us; the change in colour of the strongly rosey buds to the pure white truss is most dramatic and unexpected. From R.H.S. seed marked "yakusimanum" we have raised one very lovely (hybrid) plant that is white with the faintest cool flush of lavender —it is one of the "coolest" flowers I have ever seen out of doors.

The white hybrid *R. ponticum* called "Tondelayo" (syn. of 'Multimaculatum') is one of the loveliest flowers of all, so long as it is placed for very close viewing; it is quite gorgeous two feet away but its distant appearance is unremarkable. I read it is shy to flower, but ours responds to heavy feeding and flowers very freely indeed. Another old variety, R. 'Blue Peter', is a perfect colour foil with *Clematis montana rubens*, as here, at any rate, they flower at the same time; close together they look beautiful. Another lovely pair is R. 'Purple Splendour' with Azalea 'Harvest Moon', surely the most satisfying of all the Azaleas of the Exbury type.

To my surprise, we do not seem to do very well with *R. souliei*; it seems to get knocked about by the cold and never seems to have come to terms with our garden and climate. Of three plants of *R. williamsianum* I obtained, two were apparently non-flowering clones and have been discarded, whilst the third is starting to flower a bit for us—it finds the cold here a bit of a strain. *R. camtschaticum* grows apace but will not flower. This species always gets the new growth burnt and distorted by our vicious cold winds at the time of the "Blackthorn Winter" each year (plum blossom time). We get great pleasure from the rosey-pink flowers of *R. glaucophyllum* var. *tubiforme*, which grows alongside *Paeonia cambessedesii*, and the colours match exactly, giving a lovely contrast of form when they flower together, as they always do.

One of our spectacular Spring colour splashes is given by R. 'Humming Bird' (F.C.C.), which we have put out in fullest exposure to strong wind and sun, on top of a dry bank; it revels in this position, whereas it looks as though it would be quite unable to withstand such severe conditions. R. 'Townhill Redcap' copes with the same situation also. We are disappointed with the German hybrid R. 'Spring Day', supposed to be a dwarf "cast-iron hybrid", but two we have are not performing well at all.

A couple of years ago nearly all our rhododendrons of all sorts were going very chlorotic and the normal doses of iron, magnesium and manganese had only very limited effect. We had been feeding with fish manure, and I think this must be rather limey. I stopped using this and used plenty of dried cow manure instead and the trouble has disappeared. Being so cool in climate we are spared pests like the Rhododendron Bug, and there have been no signs of Bud Blast so far. One is entitled to some compensations to make up for the cold and the soot!

The azaleas, of course, do fairly well, too. *R. schlippenbachii* is not damaged, as we seldom get late frosts here, but this and other single-flowered plants, *R. albrechtii*, *R. reticulatum*, etc., drop their flowers very quickly, never lasting longer than a week. This is presumably due to lack of strength in the soil. It is definitely not hot enough here for the late azaleas, *R. prunifolium*, *R. amagianum*, *R. weyrichii*. They need heat and moist soil, and we have neither. As a result, they hardly bear any flowers, and the flower colour is so poor and washed out that I have discarded them. The smokey atmosphere reduces by about half the strength of what little sun we get here (exposure meters confirm this), so we plant our rhododendrons in much more sun than is normally recommended. For "half-shade" we plant here in quarter-shade and for quarter-shade we would plant in full sun. I dead-head every plant as soon as the flowers fall.

We grow a lot more rhododendrons than those mentioned above, and much pleasure they give, especially the amusing ones that roll their leaves in the frost—we find 'Polar Bear' is quite an accurate thermometer! These notes may help those in favoured climates and soils to appreciate their good fortune and may encourage others in towns to try out some of the species and hybrids that may seem to demand ideal conditions.

RHODODENDRONS FROM SEED COLLECTED BY MR. FRANK DOLESHY

IN the autumn of 1965, Mr. and Mrs. Frank Doleshy, of Seattle, Washington, U.S.A., carried out a botanical expedition in Japan, including the island of Yakusima.

A detailed account of their trip is printed in the Quarterly Bulletin of the American Rhododendron Society for January and April, 1966, and this makes fascinating reading.

A generous supply of the seeds they collected, superbly packed and labelled, was received at Wisley from Mr. Doleshy early in January, 1966, and field notes were included in a letter to Wisley dated December 22nd, 1965.

Particulars of the seeds of rhododendrons were sent to twenty-three rhododendron specialists in the U.K. with the result that their requests to participate in the share-out were met in so far as seeds were available. A representative collection was retained at Wisley and handed to Mr. A. Turner, the Glasshouse Superintendent, to sow. The photograph (Fig. 44) shows the resultant plants on August 3rd, 1967.

The seeds were sown on January 25th, 1966, on compressed sphagnum peat in 3½ inch pots, the seeds were not covered. The pots were placed in a mist propagating unit under intermittent mist, the bottom heat of the unit was 70° F., and the air temperature 55-60° F. The seeds germinated in about 3-4 weeks from the date of sowing and at the earliest stage of growth a fine powdering of white Bedfordshire sand was carefully shaken through a fine sieve among the tiny seedlings.

Pricking off commenced on June 7th, 1966, in a compost made up of 2 parts of sphagnum peat, 1 part loam and 1 part sand. The seedlings were spaced 1½ inches apart in shallow pans or where they were plentiful into two inch deep seed boxes. The containers were placed in a shaded cool glasshouse. As the seedlings made sufficient growth some were transferred to individual three inch pots in the autumn and the remainder in February, 1967, the soil mixture being 2 parts loam, 2 parts peat and 1 part sand.

R. P. Scase

—Rhododendrons raised at Wisley from seed collected by Mr. Frank Doleshy in Japan

The young plants were returned to the cool glasshouse and transferred as they grew to cold frames (which were protected from frost) in the spring and early summer, and the lights removed as growth hardened.

The stock at Wisley on August 11th, 1967, consists of:

No. 3	Rhododendron	makinoi	14 plants
No. 4	,,	,,	6 ,,
No. 5	,,	metternichii	32 ,,
No. 8	,,	kiusianum	83 ,,
No. 9	,,	yakusimanum	1 ,,
No. 10	,,	,,	92 ,,
No. 12	,,	degronianum	68 ,,
No. 13	,,	brachycarpum	89 ,,
No. 14	,,	japonicum	19 ,,

The numbers given in the left hand column are Mr. Doleshy's field numbers. No. 8, *Rhododendron kiusianum*, is clearly seen in the foreground of the photograph. The plants will spend the winter of 1967/68 in the cold frame and be transferred to a nursery bed in the spring of 1968.

Wisley F. P. KNIGHT

M

CAMELLIA RETICULATA FROM SEED

By F. S. TUCKFIELD
(Berwick, Victoria, Australia)

HAVING been reported to the editor for "unusual success with growing reticulata camellias from seed to flowering stage within a very short time", he has requested that I relate my experiences on the subject.

The fruits of endeavour in this field have been both rewarding and exciting but, apart from some persistence on my part, credit should go to those who in the past have written freely of their experiments and experiences, for it has been in the application of their findings that any success has been obtained.

Before describing the practical side of seedling production it would be interesting to go over some of the reticulata background as we know it.

During the current renaissance of camellia popularity, at least until the advent of the Yunnan group, only two varieties were recognized, viz: 'Captain Rawes', a semi double, and 'Robert Fortune', a formal double. They were a wonderful pair, satisfying in their diversity of form and richness of colour: and because they could be propagated only by grafting, never appeared in over supply. They were the classics, they were of royal blood, so to speak, and quite secure on their respective thrones because neither was capable of producing offspring to jeopardise their position. At least that is how it appeared until what was a virtual explosion in the camellia world. During 1948 news came of the existence in the Yunnan Province of China of a group of unknown *reticulata* varieties.

Five of these were shipped to Walter Hazelwood at Epping, Australia, and twenty went to Dr. Lammerts and the late Ralph Peer, of California. Dr. Lammerts, in a later shipment, received two more, which were raised by Professor Tsai and which were named 'Buddha' and 'Confucius'. According to Ralph Peer's article in the Northern California Camellia Bulletin, Vol. 8, No. 1, Oct., 1954, one of the 20 he received was also raised by Professor Tsai, so that gave three to Professor Tsai's credit. Peer,

in his article, stated that Dr. Yu, of the Yunnan Botanical Institute, had assured him that all of the other 19 varieties had been in existence since A.D. 900

Along with these cultivars came the Wild Form referred to by Sealy as *reticulata* forma *simplex*. Robert Sealy, "A Revision of the Genus Camellia."

With assistance from Ralph Peer, Walter Hazelwood and Alex Jessep, then Director of our Royal Botanic Gardens, I was able to add to my 'Captain Rawes' and 'Robert Fortune' the following:

First Group: 'Butterfly Wings', 'Purple Gown'
'Chang's Temple' *s.f., 'Shot Silk' *s.
'Crimson Robe' *s.f., 'Tali Queen' *s.
'Lion Head' *s., 'Willow Wand'
'Noble Pearl' *s.

Second Group: 'Buddha' *s., 'Professor Tsai'
'Confucius' *s.f.
Plus Wild Form (*r.* forma *simplex*)

* (Those marked with an "s" have produced seed.
Those marked with an "s.f." have produced seedlings which have flowered).

The first flowering of these cultivars, with their generous size and vibrant colours, suggested that within their ancestral sap lines there must lie the factors to produce still further wonders. Therefore, a decision was made to raise seedlings by crossing Group one with Group two. Pollen from the number one Group was applied on number two, and vice versa. As no great care was taken, a number of the seedlings could have been self-pollinated, particularly as I do a great deal to encourage the presence of bees. In many instances the bees could have been well ahead of the camel hair brush.

Hopes that something worthwhile could result from the haphazard plan have been vindicated, and when the season just about to commence (July, 1967) is completed there should be a few which will have had three years growing and flowering in the open and be worthy of naming.

It has been interesting to note that about 50% show both foliar and floral characteristics of the Wild Form, about half the remainder, some similarity to the Wild Form foliage, and of the balance several show the influence of a large leaf, smooth on the top side and entirely lacking the large blister appearance of the

Wild Form. It has neither the characteristics of *C. japonica* nor of any other species with which I am familiar, and what interests me most is that this leaf appearance is not apparent among the Yunnan cultivars.

Colour of the blooms generally take on the red of the Wild Form, whilst among the remainder are colours from the pale Orchid pink of 'Confucius' to China Rose (H.C.P. 024/2), to crimson of varying degree, and in two instances the deep purplish red of 'Purple Gown' plus white markings.

Form has been mostly single and semi-double, as from a total of about 100 only one double has resulted. With the semi-doubles there appears to be a dominant factor in as much that the centre petals show the "rabbit ear" shape so characteristic of 'Crimson Robe'.

SEED GERMINATION

Seed is placed in a moist mixture of peat moss and coarse sand in broad mouthed jars with the lid secured and as near as possible kept at a temperature of 60°F., or more.

I find that germination does not follow a regular pattern. Bearing in mind that freshness is desirable, it is noticeable that the husk can vary tremendously, and where it is obviously thick a crack is filed to permit moisture penetration. Probably as a result of seasonal variation, most of the seed harvested this year had exceedingly thin covers, in many cases they were already cracked, resulting in rapid germination. The period required for this can vary from 3 weeks to 3 months.

To hasten flowering I have followed the findings of James Bonner and Walter E. Lammerts. They showed that by firstly extending the hours of exposure to light and secondly by feeding the plants with foliar sprays, camellia flowering could be induced in approximately 1 year 4 months instead of the 4 to 8 years required when growing under normal conditions.

From the time the seedlings produce leaves they are subject to artificial light after sundown for about 4 hours. Thus in a 24 hour day they receive approximately 16 to 18 hours of combined artificial and day light. 100 watt incandescent lights are supplemented by fluorescent tubes above the benches. I do not think the degree of light is vital. Something equal to a good reading light seems to do the job. By spraying the foliage every 10-14 days with one of the commercial foliar sprays now readily available, growth and bud formation is remarkably rapid. In order

F. S. Tuckfield

—A young grafted plant of Camellia reticulata

Fig. 46—A young bushy grafted plant of Camellia reticulata

to avoid freakish blooms I like to remove the plants from the glass-house and artificial light, just as soon as the flower buds are well formed (roughly one quarter of an inch in diameter).

As often happens when something special is sought, the baby plant will appear puny and almost pleads for assistance. This was the case with the progeny of 'Lion Head', and to give the sole survivor some help the baby was planted close to the trunk of a robust *sasanqua* seedling. By slitting the bark of the *sasanqua* and slightly shaving the trunk of the baby plant, an excellent approach graft was obtained. Figure 45 shows the youngster now well grafted onto the stock, the latter having been severed above the area of union. I prune the terminal growing shoot after the first few leaves are formed. At this stage the tip is small and tender and to avoid damage I place the flat side of a pencil against it and with a razor blade make a clean cut straight across. This rarely fails to induce four or five branches. Whilst this does not appear to aid early flowering, it does provide a bushy plant (Fig. 46) by comparison with a single stemmed lanky whip.

Blooms from the bushy plant will reflect more correctly its flowering potential, whereas the whip, which will produce one

unnaturally large flower only on the top of the plant, will, in consequence, give a wrong impression of its prospective performance.

I emphasize these points because it is so easy with all the anxiety to learn how seedlings are going to perform to produce a freak result which, although interesting, can lead to disappointment and finally to much waste of time and effort.

Considering the variation of flower colour and form, as well as plant habits of those listed above, it should be possible to obtain improvement in a number of ways. Probably the most characteristic weakness of the group is a tendency to legginess and sparsity of foliage. Although these weaknesses have been overcome in my seedling number 99, it produces flowers of a China rose colour and not the crimson of 'Crimson Robe'. 'Crimson Robe' is wonderfully generous with its rich colour and size of bloom, but only by continuous tipping and pruning will it form a bushy plant. Its foliage is restricted to 3 or 4 leaves between lengthy internodes. 'Purple Gown', although its colour is almost unique, appears to be the despair of nurserymen because of its stubborn objection to grafting. 'Butterfly Wings' could hold its flowers much longer than it does. Regarding colour we can look for a considerably wider range, and judging by my limited experience it is there, for two seedlings have flowered, showing pure white markings. To allow ones thoughts to ramble, perhaps we could develop a variety with flowers equal to the late-flowering 'Captain Rawes' but which would flower during the camellia season and not with the arrival of spring roses. In terms of form we have nothing among the reticulatas to suggest the form of a paeony.

This does appear feasible when one considers such forms among the japonicas. To sum up, I suggest that by breeding within the various Yunnan reticulatas it is possible to produce a still wider but distinctive range of reticulata cultivars.

GRAFTING CAMELLIAS IN AMERICA

By GEOFFREY R. WAKEFIELD
(Rip Van Winkle Gardens, Louisiana)

SINCE arriving in this country, it has never ceased to amaze me, the way in which camellias are used in the gardens. In the soft and occasional English sun, we consider them as woodland plants which must be given at least broken shade. Here, beneath the harsh Louisiana sun, they are used as specimens on completely unshaded lawns where they give excellent blooms. Admittedly, the growth rate is much lower than in England and the leaves do not achieve that deep, rich green we are used to.

Propagation is yet another aspect of culture in which we are at variance. At home, cuttings are the number one method and grafting is usually somewhat along the lines described in my article of a year ago. Grafting is the main method used in the U.S. and scions are worked on to established understocks of up to ten years old (usually *C. sasanqua* seedlings) with a trunk thickness of from one to two inches. In a large garden such as this, we buy a large batch of seedlings in one gallon cans or liners from the open nursery. These are transplanted into our own prepared nursery beds and grown on for a year before use.

Scion material, clean, young growths of the previous season, may be gathered some weeks before use and stored away in the vegetable compartment of the refrigerator, providing they are first sealed into polythene bags. However, as long as dormant growths can be found, I much prefer to use freshly cut scions.

Grafting is now carried out much later than at one time. Mid to late March, which probably compares, growth wise, to late April or early May in England, is still a good time.

The understock is cut off to within a few inches of the ground, using a fine tooth saw, giving a slight slant to the cut to shed excess moisture. You may cut as low as you can work, or as high as 8 or 9 inches, though for appearances sake, and by reason of subsequent sucker trouble, I prefer to work as low as possible.

The stock is now split down with a special tool, resembling somewhat, a small butcher's cleaver. The split is made diagonally across the line of the slant of the top cut, down as low as is

Fig. 47—
Inserting camellia scions into stock

necessary to open the split wide enough to work the scions in comfortably. From this it can be seen how important it is to select the right place to saw off the head of the stock, so that the cut and the split can be made into clean, healthy bark.

A screwdriver is now inserted into the split, into the heart wood, to hold the crack open without damage to the cambium layer.

The scions are prepared in exactly the same way as I described in my last article, making a 'spade' end taper with a leaf node at the upper end of the cut. Insert the sharpened scion into the crack in the stock, working the cambiums of both neatly together and ease the screwdriver off slightly to just hold the scion. I usually place two scions into each stock, one on either side. Once the second scion is in place, the screwdriver may be carefully eased out. If the stock is very heavy and stiff, and it is considered it will exert too much closing pressure on the scions, we jam a small peg of wood into the crack to take off some of the pressure till union is assured. This part of the operation is shown in Figure 47.

An equal part mixture of D.D.T. dust to deter insects, Captan to repel fungoid attacks, and Chlorodane dust against fire ants,

o: *G. Wakefield*

48—Grafted camellia, labelled and mulched peat moss, about to be covered by glass jar

Fig. 49—Earthing up glass jar

is dusted round the base of the stock. The stump, scion, the ground round, is now watered with a solution of Captan in water further to prevent fungus.

This year next we painted the stump and cracks with a 'tree paint', but results show that although we got good returns, where a part of the crack had been missed, far better callusing was apparent.

Next we place a generous mulch of peat moss which has been well moistened with an insecticide and Captan in water solution. This is to help seal the protective jar over the scions and to maintain a positive high humidity within the jar. In Figure 48 this has just been completed and the label attached.

One gallon glass jars are prepared by cutting the flat bottom off, leaving most of the jar intact. This is done by tying a string (binder twine) round the base of the jar. Petrol is now poured lightly onto the string and ignited. After just a few seconds the jar, with its burning string, is plunged into cold water and the base will crack away quite cleanly.

The bottomless jar is now placed over the scion, firming it down into the peat, making sure it is not pushed down so far as to touch the scions (Figs. 48 & 49).

Lastly, soil is moulded up round the outside of the jar for about half its height. This provides some shade, keeps the interior cool and moist. We usually provide a rough tent of a square of sacking supported by four bits of cane as an additional shelter.

Scions may be inspected in about a month and those growing away have the jar loosened slightly and additionally each day, till after about ten days to a fortnight the jar is completely removed. We found this 'weaning' quite necessary in this climate to prevent shock of immediate exposure.

Scions grafted in this way may reach more than three feet and be fine, bushy plants in a year, according to variety. I find many of the *williamsii* hybrids particularly vigorous.

This is not such a commercially efficient method of grafting. Firstly, one has to grow on understocks to a large size. Secondly, the actual operation is rather slower than that I described last year. I worked up to something over a hundred a day, and this was considered by the local growers as "pretty good". Given an exactly even batch of stocks and scions, clean bark throughout and a good helper, I could, no doubt, get much higher returns.

In its favour, it is a fairly reliable method of reproduction, and grafting may be done over a very long period, providing the scion material is dormant. One very soon has a fine, bushy plant. Blooms of show quality are assured the second year.

FLOWERING DATES OF CAMELLIAS UNDER GLASS

By G. GORER

I HAVE a greenhouse 20 feet × 20 feet heated by electric fans to a thermostat setting of 37°; it is without staging and the shrubs are planted directly in the ground. The principal inhabitants of this greenhouse are meant to be some of the Kunming reticulata camellias, but I could only purchase small plants, and in the 1966-67 season only 3 out of the 7 flowered. The flowerless ones were 'Butterfly Wings', 'Shot Silk', 'William Hertrich' (which replaces 'Buddha', which I have lost twice) and *C. granthamiana*. While waiting for these *C. reticulata* to make big plants, and on the east and west borders of the house where the eaves come low, I have growing some 24 *C. japonica* and *C. japonica* hybrids. As room is wanted, most of these will be moved out in to the garden. The cultivars which I have selected for protection are mostly those with thin petals or large flowers which do not do reliably well out of doors.

In previous years I had noticed that there was a very marked difference in the time at which the different cultivars came into flower (throughout this note my criterion of 'coming into flower' is one fully developed bloom) and so I thought it might be interesting to document this span of over three months and made a note for each plant of the date of first full flower. This established a point which I have not seen noted before: given similar conditions, the flowering time of any cultivar is identical for all its plants. In the greenhouse I had two 4-year-old cuttings of *C. heterophylla* 'Barbara Hillier' and also a large stock-plant and a 3-year-old cutting of *C. japonica* 'Gauntletti'; in both cases the two plants opened their first flower simultaneously. Even more surprising, a plant of *C. reticulata* 'Captain Rawes' in the greenhouse and a rather older plant of the same cultivar on an external south wall opened their first flowers on the same day. Once I had noted this point, I found it was equally true of the cultivars of *C. japonica* or *C.* × *williamsii*, of which I have more than one outdoors.

The first camellia flower, this and every year, was carried by *C. japonica* 'Yoibijin' and appeared on December 14th, 1966. I find this cultivar outstandingly useful as a source of cut flower. Since I have had it indoors I have always been able to cut a bowl for Christmas, when flowers are really scarce. The only other cultivar to flower in December was a plant which had been sold to me as *C. japonica* 'Fred Sander'; it was not true to name, had a small single flower like a badly grown *C. japonica* 'Jupiter' and has been thrown out of the greenhouse.

January 2nd: *C. heterophylla* 'Barbara Hillier'.

January 12th: *C. japonica* 'Charlotte Rothschild'.

January 17th: An unnamed hybrid between *C. japonica* 'Hatsu-Zakura' and *C. reticulata* 'Captain Rawes' (This flowered for the first time and seems like a rather more open *C. heterophylla* 'Barbara Hillier').

January 27th: *C. japonica* 'Dr. Tinsley'.

January 28th: *C. japonica* 'Gauntletti'.

January 30th: *C. japonica* 'Virgin's Blush'.

February 1st: *C. japonica* 'Faith'.

February 3rd: *C. japonica* 'Debutante', 'Mathotiana Supreme', 'Augusto L. Gouveia Pinto'.

February 7th: *C. japonica* 'Silver Anniversary'.

February 11th: *C. japonica* 'Mrs. D. W. Davis'.

February 15th: *C. japonica* 'Mathotiana'.

February 18th: *C.* 'Leonard Messel'.

February 23rd: *C. japonica* 'Frosty Morn'.

February 28th: *C. japonica* 'Souvenir de Bahuaud Litou' and *C. reticulata* 'Robert Fortune'.

March 6th: *C. japonica* 'Guilio Nuccio' and *C. japonica* 'R. L. Wheeler' *forma* (This variant resembles a large *C. japonica* 'Hana Fuki').

March 10th: *C. reticulata* 'Paochucha', *C. japonica* 'Drama Girl', *C. japonica* 'Yours Truly'.

March 15th: *C. japonica* 'Paulette Goddard' and *C. japonica* 'R. L. Wheeler'.

March 19th: *C. reticulata* 'Captain Rawes'.

THE RHODODENDRON SHOW
MAY 2 and 3, 1967

By ALAN HARDY and JAMES PLATT

THE spectacle in the New Hall was as brilliant as ever at the Rhododendron Show, in spite of the weather. Cold winds and frost during the weeks before the Show were far from helpful and 1967 could not be called a vintage year, particularly for species. Some of the best trusses of tender species, such as the blood red *R. delavayi*, came from gardens on the west coast of Scotland, indicating that the frost which damaged many flowers in the South and West as far as Cornwall had not caused havoc there.

TRADE EXHIBITS

Trade exhibits were greatly responsible for the brilliance of the show and gold medals were awarded to the groups of Messrs. W. C. Slocock, who for the fourth year running won the Rothschild Challenge Cup, to the Knap Hill Nursery, and to Messrs. Waterers. Messrs. Slocock had fine plants of the clear yellow *R.* 'Honey' and of another promising yellow which is the result of crossing *R.* 'Letty Edwards' and *R.* 'China'. Such hybrids mingled with many of the old blotched varieties, such as *R.* 'Sappho'—a fine big bush—and *R.* 'Mrs. G. W. Leak'. Of species they included that lovely form of *R. oreotrephes*, which used to be known as *R.* "exquisitum", and the brilliant red form of *R. calostrotum*. Their exhibit was very satisfying. The Knap Hill Nursery was showing well-flowered bushes of the old hardy hybrids interplanted, rather more thickly than usual, with the Knap Hill strain of deciduous azaleas, among which we noted the fine orange 'Gibraltar', the pink of 'Homebush' and 'Marion Merriman', its yellow enhanced by a darker blotch. Messrs. Waterer had a wide exhibit under the clock filled with fine plants of real quality, but they omitted to make use of height and the exhibit lost the effect it might have made. The older hybrids and more recent products of the hybridizer, such as *R.* 'Gladys Rose'

and *R.* 'White Swan', were beautifully set off by a large group of the double mauve-blue *R.* 'Fastuosum Flore Pleno'. Towards the front they had placed a number of American raised evergreen azaleas, of which we particularly noted the clear bright red of 'Stewartsoniana' and the pink of 'Dayspring'. Among their Knap Hill azaleas we liked the white pink-flushed 'Silver Slipper' and the nasturtium red 'Radiant Knight'.

Messrs. Hillier had an attractive exhibit in which colours were pleasantly blended and good use made of foliage plants. Their Loderis were predominant but well associated with the yellows of *R.* 'Chaste' and *R.* 'Crest' and, as a brighter note, the cerise of *R.* 'Winsome'. The Hydon Nurseries were showing a fine big *R.* 'China' which associated well with the blue of *R.* 'Susan' and the dwarfer growing 'Pink Pebble' with its clear pink bells. We were pleased to see on this exhibit those two charming but not very spectacular Americans, *R. carolinianum* and *R. minus*. Messrs. Reuthe can always be relied on to show us uncommon or tender plants. On this occasion they had fine *R. sinonuttallii* and *R.* 'Tyermannii'. We also admired their *R.* 'Loderi Julie', quite the best yellow-tinted Loderi to be seen, and their large red *R.* 'Bandoola'.

COMPETITIVE CLASSES

As we have said, 1967 was a non-vintage year for rhododendrons. In writing this report we have purposely omitted some classes and entries because the standard caused by weather conditions was sometimes such that we considered we could contribute no useful or constructive comments. In spite of this, Class 1, for eight species, had five entries, many of which were outstanding. Mr. S. F. Christie, of Blackhills, Morayshire, took the first prize, which carries with it the Lionel de Rothschild Cup. We particularly liked his very tight and compact truss of *R. fictolacteum* and his *R. habrotrichum* with unusually big foliage. Lord Aberconway and the National Trust, Bodnant, also had some admirable trusses. Their *R. arboreum* subsp. *campbelliae* was notable with its rather fringed deep pink flowers in a compact truss and conspicuous russet indumentum. They had a nice large *R. fortunei* and a *R. vernicosum* with good open flowers. The Crown Estate Commissioners, The Great Park, Windsor, showed a very pretty *R. aberconwayi*, no doubt the A.M. form, and *R. rex* of a good pink and with very brown indumentum to the under-leaves. Their *R. argyrophyllum* var. *nankingense* 'Chinese

Silver' was most attractive with its rose pink flowers shaded with deeper flushes on the lobes. It received the A.M. in 1957. Mr. E. de Rothschild, from Exbury, had a notable truss of *R. laxiflorum*, apple blossom in colour and a desirable member of the Irroratum Series, and a pure white *R. arboreum* subsp. *cinnamomeum*.

In Class 2, for three species, Wing Cdr. F. L. Ingall, of Castle Douglas, Dumfriesshire, had a *R. sphaeroblastum* which was very good indeed with its compact truss. This white flowered member of the Taliense Series is becoming one of the best of the Series now that it has reached the flowering state in more and more gardens. We noted a rather open-flowered form of *R. fictolacteum* from Sir Ilay Campbell of Succoth, Bt. It was pleasantly blotched and speckled purple on a white ground. The truss of *R. glischrum*, shown in this class by Messrs. G. Reuthe, stood out with its mauve pink flowers. The best truss in Class 3, for three species, was Messrs. G. Reuthe's *R. campylocarpum*, which was a nice clear yellow. Class 4, for one species, showed wide variance with *R. falconeri* and *R. fictolacteum* very much to the fore. The former species has produced smaller trusses than usual this year, that is in the south and west. The first prize and the McLaren Challenge Cup, however, was won by a strong mauve-pink *R. rex*, from Windsor, with serrated, almost frilly, margins. From Brodick Castle and the National Trust for Scotland came a lovely blood red *R. delavayi*. There was also an unplaced truss of *R. lindleyi* in this class, from Brodick, with eleven bells, and a primrose yellow *R. sidereum* from the Countess of Rosse and the National Trust, Nymans. Class 5, for a spray of one species, was an excellent one, with many interesting plants. Exbury took the first prize with a mauve-pink *R. rex* with large bells; Lord Aberconway's vase of *R. augustinii* was second, and a really fine spray of *R. araiophyllum*, white with a deep red blotch, from Lady Rosse, was third. This was a hotly contested class, and a vase of *R. johnstoneanum*, also from Lady Rosse, and a lovely one of *R. wiltonii*, from Exbury, were unplaced.

In Class 6, for *R. arboreum* or its sub-species, Lady Rosse's *R. arboreum* var. *roseum*, of an outstanding shade of pink, was first. The sub-species *campbelliae*, from Bodnant, and *cinnamomeum*, from Exbury, were, respectively, second and third. Sir Ilay Campbell's *R. delavayi* was first in Class 7, for any species of the Series other than *R. arboreum* or its sub-species. Another truss, again from the north-west, was third, and came from

Brodick. A pretty pink *R. argyrophyllum*, from Sir Ralph Clarke, of Borde Hill, was second. A substantial truss of *R. crinigerum* var. *euadenium* took the first prize in Class 8, for any species of the Barbatum Series, for Sir Giles Loder of Leonardslee, beating Lady Rosse's lovely blotched *R. crinigerum* (2nd) and a bell-shaped, pink striped *R. habrotrichum* (3rd), also from Nymans. *R. exasperatum*, from Exbury, was unplaced. It is a foliage plant (both young and old) par excellence, and though the specific epithet should be correctly translated as rough, it can exasperate in its lack of flowers year after year. There were seven entries in Class 9, for the Boothii Series. *R. tephropeplum*, from Nymans and Bodnant, the latter with rich pink very tubular flowers, took the first and third prizes, while the only yellow entry, *R. xanthostephanum*, from Brodick, was second. Class 10, for *campanulatum*, had few entries, and the unplaced entry from Exbury appeared to be 'Knap Hill', the best and bluest form. Sir Ralph Clarke's *R. xanthocodon*, of a softer yellow than one usually sees, took the first prize out of five entries in Class 11 for Cinnabarinum Series.

There were 13 entries in Class 12 for *R. falconeri*. The entry of Mr. F. Nicholls, of Ford Manor, Lingfield, took the first prize, the truss being very large and well built and almost yellow in colour. The Hon. Edward Boscawen, who has taken on the garden at The High Beeches, Handcross, was second, with quite a good truss. Of the eight entries in Class 13, the first prize went to Mr. S. F. Christie's *R. fictolacteum* with a truss typical of the species but with unusually glaucous leaves. The other entries, composed of various *R. fictolacteum* and *R. rex*, were not exceptional, and one is led to suppose that the species of this Series and the Grande Series, though flowering freely in 1967, were not at their finest, due, no doubt, to the weather. However, in Class 14, for any other than the above species of the Falconeri Series, a good truss of *R. arizelum*, with well-shaped waxy flowers merging from white to pink, won the first prize for Lady Rosse. An interesting truss was that of *R. galactinum* from Mr. E. H. M. and Mr. P. A. Cox, of Glendoick, Perthshire. This species is not often seen and, though less spectacular, is well worth growing in cold gardens.

There were fourteen entries in Class 14, for any species of the Fortunei Series other than *R. fortunei*. Lady Rosse had a good *R. orbiculare*. The second prize went to Mr. S. F. Christie's *R. vernicosum*, with an elegant open truss of saucer-shaped flowers,

which were a deeper pink than usual. Exbury's *R. orbiculare*, which was third, was also a good deep pink. Class 18, for the Grande Series, gave us a nicely shaped truss of *R. sidereum* from Sir Ralph Clarke. The leaves of this specimen were somewhat smaller than usual for this species. Messrs. G. Reuthe's palest blush *R. hardingii* was first in the next Class for the Irroratum Series. Like a number of members of this series it is distinguished for its delicate colouring, although the brilliant red *R. venator*, from Borde Hill, was second. *R. aberconwayi*, from Bodnant, always a pleasing plant, was third. There were twelve entries in Class 20 for the Lacteum Series, but on the whole they were disappointing. *R. lacteum*, from Nymans, took the first prize, but it was not up to its usual standard. Class 21, for the Megacalyx Sub-series, produced one of, or perhaps the highlight of the Show. This was a superb truss of *R. nuttallii* with eight bells, from Windsor. A pale blush *R. taggianum*, from Brodick, was second, quite exquisite but overshadowed by the magnificent *R. nuttallii*, as was Sir Ilay Campbell's lovely *R. lindleyi*, which was third. Class 22 is for any species of the Maddenii Series other than one of the Megacalyx Sub-series. All eight entries were of a very high order. The first two prizes went to *R. carneum* and the yellow throated *R. parryae*, from Windsor, and the third to Sir Giles Loder's *R. johnstoneanum* 'Double Diamond' with a flower which might well be taken for that of a modern double freesia or to old generations that of a gardenia.

A good truss of *R. haematodes* won the first prize for Lord Aberconway in the next Class for the Haematodes Sub-series. In the following one, for the Neriiflorum Sub-series, *R. euchaites* won all three prizes, with a particularly well-built truss from Brodick first, Sir Ilay Campbell and Mr. E. de Rothschild being second and third. Class 25 is for the Sanguineum or Forrestii Sub-series, and *R. haemaleum* took first and second prizes. A truss of blackest red, from Brodick, was first, with one of an average colour, from Borde Hill, second. The third prize went to a deep cherry red *R. aperantum*. The next Class is for the Ponticum Series, which is distinguished at this time of the year for its foliage as well as interesting flowers. All three prizes went to *R. metternichii*, with an outstanding deep rose-coloured truss from the Hydon Nurseries first. The Taliense Series, for which Class 27 caters, also contains species with interesting or attractive foliage. On this occasion the first prize went to Major A. E. Hardy's truss of *R. sphaeroblastum* from Sandling Park, Kent,

the leaves being beautifully rusty-tomentose beneath. One should not belittle the flowering qualities of the species of this series. Not only are many of the trusses beautifully round and compact, but the individual flowers are charming. Such was Major Hardy's truss of white flowers. Another such truss was that of *R. roxieanum* var. *oreonastes*, a dwarf alpine form with narrower leaves than the type (Fig. 15). It won the second prize for Mr. Christie, with an unusually good rose-pink *R. balfourianum* from Wing Cdr. Ingall third. This latter species can be very shy flowering, but it is well worth growing as a foliage plant.

In Class 29 a spray of *R. campylocarpum* is required. Sir Giles Loder was first with a good one of pretty, clear yellow flowers, with that from Lady Rosse a good second. The third prize went to one of var. *elatum*, which usually has orange-vermilion buds, from Messrs. G. Reuthe. In the next Class, for any species of the Campylocarpum Sub-series other than *R. campylocarpum* itself, Major Hardy was first with *R. myiagrum*. The flowers were a lovely soft cream with a cherry-red blotch. The second prize went to Mr. Edward Boscawen's attractive greenish-yellow *R. caloxanthum*, with a neat *R. telopeum*, from Mr. E. de Rothschild, third. A creamy-white *R. setiferum*, heavily spotted crimson inside, from Exbury, was first in the next Class, which was for a species of the Selense Sub-series. It formed a considerable contrast with Sir Ralph Clarke's *R. dasycladum*, the winner of the second prize, which had funnel-shaped purple flowers. Bodnant's spray of *R. williamsii* in Class 31 for that species was easily first. Class 32, for any species of the Soulei Sub-series, was won by a very white *R. souliei*, from Mr. F. L. Hill, of Mortimer, Berks. Two average *R. wardii* from Sir Ralph Clarke and the Messrs. Cox were second and third. The first, second and third prizes in the next Class, for a species of the Thomsonii Sub-series, were won by *R. thomsonii*, from Mr. Christie, Lord Aberconway and Wing Cdr. Ingall, respectively. All three trusses were typical of the species.

With Class 34 we came to the deciduous azaleas, starting with *R. schlippenbachii*. Sir Giles Loder's outstandingly beautiful 'Prince Charming' was first, and the forms from Lord Aberconway and Mr. Edward Boscawen, which were second and third, were very attractive. Seedlings of this species may vary but one hardly ever sees a poor one and it will stand the winter of New Jersey and flourish under tree ferns in Australia. The *R. albrechtii*, from Bodnant, in the next Class, for any other deciduous species of the Azalea series, which was first, is in its own way as lovely as

'Prince Charming'. A vase of the very pretty *R. vaseyi*, from Nymans, was second, and when this species is good it is very good indeed. The third prize went to a form of the white flowered species, *R. quinquefolium* 'Five Arrows', which are the badge of the house of Rothschild and naturally came from Exbury. It received the F.C.C. on April 18th, 1967, when at the peak of its beauty. Another *R. quinquefolium*, from Sir Giles Loder, was Highly Commended, and *R. reticulatum*, from Bodnant, with rose-purple flowers, which need careful placing, was Commended.

Class 36, for a spray each of three deciduous species of the Azalea Series, is apt to cause a repetition of the two preceding classes. Lord Aberconway was first and included a pure white *R. vaseyi* with green blotches, which was indeed attractive. Sir Giles took the second prize and included pleasing *R. reticulatum* and typical *R. vaseyi*. There was a good *R. reticulatum* in the entry from Exbury, which was third. The Classes for deciduous azaleas were some of the best in the Show and competition was keen.

Class 37, for the Anthopogon Series, produced a pleasing *R. trichostomum* (1st), from Mr. E. H. M. Cox, a contrasting pink in the var. *radinum* (2nd), from Mr. E. de Rothschild, and a nice white *R. primulaeflorum* (3rd) from Lord Aberconway. There was an amusing contrast in the next Class for the Edgeworthii Series. Sir Giles Loder was first with a pure white *R. edgeworthii*, the beauty of whose flowers was greatly enhanced by the red calyces. The foliage of another *R. edgeworthii*, from Nymans, which was second, was noticeably grey. These two were positive giants compared to Major Hardy's curious little *R. pendulum*, with its small, flat, white and yellow-blotched flowers on awned pedicels. The grey leaves were thickly tomentose below. This epiphytic shrublet was collected in the Sikkim Himalaya by J. D. Hooker and described by him in 1849. It also spreads into Bhutan and Tibet.

The Class for the Glaucophyllum Series, No. 40, was an outstanding one and very representative of the family. *R. glaucophyllum*, with a very large flower indeed, took the first prize for Sir Giles Loder. An attractive form of it, from Bodnant, was second, with yet another form, from Borde Hill, Commended. The third prize went to *R. tsangpoense*, with pretty light purple flowers, from Nymans. With the exception of *R. micromeres* and *R. genestierianum*, which is much of an oddity, all the species of this Series are very free flowering and charming garden plants.

The Class for the Lapponicum Series (No. 42) was also a good one this year. A striking rich purple *R. russatum* took the first prize for Sir Giles Loder. The Hydon Nurseries were second with *R. microleucum*, which is quite one of the most attractive white-flowered dwarf species. It was due to Mr. E. H. M. Cox, who won the third prize with it, that we were able to see *R. setosum*, a species which seldom appears in the Show. A typical Lapponicum, it had, however, flowers of an uncommon shade of purple-violet (80B in the new R.H.S. Colour Chart), a shade rather remote from the bright red-purple of Tab. 8523 of *Curtis's Botanical Magazine* in which it was figured in 1913. It grows at high altitudes in the Eastern Himalaya and Tibet. A nice spray of *R. impeditum*, from Bodnant, was Highly Commended. Other dwarf rhododendrons were provided for in Classes 43 to 47. The more interesting plants were to be seen in that for the Saluenense Series, where Sir Ralph Clarke's very purple small-flowered *R. calostrotum* was judged first, as opposed to Messrs. Waterer's "red" form of this pleasant species. The Class for the Trichocladum Series was disappointing, though we were able to see a spray of the uncommon *R. cowanianum* entered by Mr. E. H. M. Cox. It is no beauty compared with the rest of the Series.

Class 48, for *R. augustinii*, was an attractive one, with considerable variation in the shades of blue. The first prize went to Exbury's rich blue form with its very noticeable eye, while the second prize went to a very pale blue one from Messrs. G. Reuthe. Quite the darkest form, one from Borde Hill, was third. To some of us, Sir Giles Loder's light blue form, which was unplaced, was as attractive as any alternative form. Other members of the Triflorum Series were provided for in Classes 49 to 53. The first prize for *R. oreotrephes* went to a very compact, almost round truss from Exbury, which outshone those from Nymans and Leonardslee. The Lea Rhododendron Gardens entered a very large-flowered form, which appeared to be the plant once known as "*exquisitum*", and it was Commended, suitably we thought. Messrs. Waterers took the first prize in Class 50 with a desirable golden yellow form of *R. ambiguum*. The same species entered by Sir Ralph Clarke and Wing Cdr. Ingall were the more usual greenish-yellow. Lord Aberconway's *R. yunnanense* was first in Class 51. It was pinkish with a red eye and a pretty flower. Messrs. G. Reuthe took the second prize with an odd form which was white edged mauve with a red-black eye. Lord Aberconway's *R. davidsonianum* was first in Class 52. It is a lovely pink and

much appreciated wherever it is grown. A rather mauve form from Lady Rosse was second, while *R. concinnum*, a rich crimson-lake with a tinge of blue, took the third prize for Sir Giles Loder.

HYBRIDS

Hybrids, on the whole, seemed to have fared better than so many of the species in 1967, and there were many fine trusses scattered throughout the classes. Exbury was, for the second year running, the winner of Class 61, for eight hybrids, out of five entries. They had a very fine truss of 'Matador', a very nice one of 'Crest' and one of 'Endymion', a fine rich red which does not appear to have been shown before. It is an offspring of *R. hookeri*, by 'Lord Milner', which is presumably a hardy hybrid no longer grown. The second prize went to Bodnant, who included one of their strong reds in a truss of 'Siren', one of 'Coreta', which was a deep cherry and a change from the prevailing scarlets, and one of a clear pink R. Luscombei × Loderi. Mr. G. L. Pilkington was third with some lovely trusses from Grayswood Hill, among which we noted a lightly speckled 'Lamellen', which was slightly scented, and a ruffled 'Claire Millais' of palest pink with a deeper reverse. There was an excellent entry of 15 in Class 62 for three hybrids. Miss E. Godman had three very nice trusses from South Lodge, 'Red Glow', 'Coronation Day' and *irroratum* × Loderi, which won the first prize. Messrs. Slocock were second with one of the best trusses of 'Britannia' we have seen for some time, and their truss of 'Faggeter's Favourite' was lovely. Mr. L. S. Fortescue, from Buckland Monachorum, was third, and we remarked on the quality of his trusses, particularly that of 'Laura Aberconway'. Among trusses which were unplaced there was a notable one of the clear yellow 'Memorial Kate Bagg', from Mr. R. Strauss, a nice 'Richard Gill' and an unusual orange-coloured hybrid from Messrs. G. Reuthe.

In Class 63, for three hybrids, the first prize went to Mrs. E. M. L. Paton, who included the curious 'Moerheim Jubilee', one of Herr D. Hobbie's scarlet dwarf hybrids. A good truss of an excellent pink Penjerrick was among those which took the second prize for the Lea Rhododendron Gardens of Matlock, Derbyshire. In Class 64, Mr. E. de Rothschild, who was first, had a lovely spray of the blue 'Electra'. It was interesting to see in Lady Adam Gordon's entry, from Seale, Surrey, one or two of the Mangles hybrids, such as 'Agnes Mangles' and 'Mrs. Frank Mangles'.

The first prize in Class 65 carries with it the Loder Challenge Cup. On this occasion the cup went to 'Anne Rosse', a hybrid of *R. macabeanum* and *R. sinogrande*, sent by the Countess of Rosse and the National Trust from Nymans. It has very fine foliage and the truss might be described as an improved *R. sinogrande*. The whole class was filled with high class trusses. Sir Giles Loder, who was second, showed 'Guardsman', and the Hon. Edward Boscawen, who was third, a hybrid of *R. hodgsonii*, which was a great improvement on this species and lovely in every respect. The fourth prize went to Mrs. Paton's truss of 'Mrs. G. W. Leak', and it was interesting to see this sturdy, old but lovely hybrid gain a prize over Windsor's 'Naomi' × 'Crest', which was Highly Commended. This latter was an impressive yellow, and one wondered if it will perhaps be an improvement on 'Crest', which, lovely as it is, will not flourish for everyone. The standard of all five entries in Class 66, for 6 hybrids raised by the exhibitor, was very high. Mr. E. de Rothschild was first. It is noteworthy in such entries as this that the colour blending from Exbury is always beautifully balanced as well as being composed of high quality trusses, well deserving the Crosfield Challenge Cup. Mr. de Rothschild included a notable one of 'Glamour', whose slightly biscuity yellow corolla is shaded rose-pink at the tip with a strong flush of maroon at the base of the throat. This attractive combination of colours is not surprising when one realises that the parentage is 'Aurora' × 'Crest'. The second prize went to Lord Aberconway, and we found his bright red 'Gretia' outstanding, with its slightly frilled corolla lobes and beautiful red calyx. Messrs. Slocock were third, and we liked their 'New Moon', a lovely white flushed yellow, and their delicate pink 'Faggetter's Favourite', The fourth prize went to Sir Giles Loder, whose best truss was one of 'Loderi Princess Marina', closely followed by one of *R. decorum* × *R. griffithianum*, delicate in colour and scent.

Only three hybrids raised in the exhibitor's garden are called for in Class 67, but sprays are demanded. There was a fine one of 'Matador' in Exbury's entry, which was first. Among a number of unnamed seedlings in this Class, Sir Giles Loder's greeny-yellow one (*R. decorum* × *R. campylocarpum*) showed promise. There are always interesting trusses in Class 68, for six hardy hybrids. Out of six entries, Messrs. Slocock were first, 'The Master', no doubt, weighing the scales in their favour. Miss Godman, who was second, had a beautiful truss of 'Susan', whose particular

shade of violet-blue is so effective. The Lea Rhododendron Gardens had a good truss of 'Unique' and one each of 'Carita Inchmery' and 'Idealist', showing that these two latter are hardy in Derbyshire. They won the third prize, an achievement, when one considers that they come from the cold centre of England.

Bodnant won the first prize in Class 69, for an *arboreum* hybrid with an outstandingly fine truss of 'Colonel Rogers', quite an old hybrid, made at a time when most people would not have thought of crossing *R. falconeri* with *R. niveum*. Miss Godman's hybrid, *R. zeylanicum* × No. 2, had handsome, glossy foliage, which alone made it a worthy plant. Loderis may have flowered freely in 1967, but all too frequently they suffered from blowsiness. It was, therefore, a relief to see Sir Giles Loder's fine 'Loderi Princess Marina' in Class 70, which took first prize. Some other entries were too immature. 'Cornish Cross' took first and second prizes in Class 71 for Mr. Cripps, and Lord Aberconway, with a nice pink 'Hiraethlyn', also from Bodnant, third. Mr. Cripps' 'Cornish Cross' was a very deep red. In Class 72, for a *griffithianum* hybrid, Mr. Cripps was again first with a light pink 'Goldsworth Pink', the second prize going to Mr. L. S. Fortescue's *R. griffithianum* × 'Crest', from Buckland Monachorum, Devon. The colour of this latter was pleasing, showing the 'Crest' influence, while the characteristics were those of *R. griffithianum*. Sir Giles Loder was third with 'Sunkist', whose white is pleasingly suffused pink, the other parent being 'Loderi Pink Diamond'. 'Penjerrick' and 'Mrs. Randall Davidson' were not at their best for the Show and the entries were few. Sir Giles Loder had a good 'Rose du Barri' in Class 74 and Major Hardy a pleasing 'Calfort'. We also noted 'China', from Exbury, rather a lax truss but with more yellow and less pink than usual to the flower. In the next Class, for a hybrid with Campylocarpum or Souliei Sub-series blood, Mr. E. de Rothschild's very fresh-looking 'Crest' was first, followed by 'Idealist' from Mr. de Rothschild and Major Hardy respectively, both trusses being very nice strong yellows.

The red hybrids arrived with Class 76. Mr. Cripps was first in this Class, for hybrids with Neriiflorum Series blood, with a dusky red 'David'. We also noted Sir Giles Loder's brilliant red 'W.F.H.' and *R. haematodes* × Matador from Bodnant. Sir Giles took the first and second prizes for hybrids with *R. thomsonii* blood with a fine high truss of 'Red Glow' and with one of which the other parent is 'Glory of Leonardslee', though the *R. thomsonii* blood seemed to dominate. In the next Class, No. 78,

for a hybrid of the Thomsonii Sub-series other than *R. thomsonii*, 'Queen of Hearts' was to the fore. Appropriately, as it is Exbury raised, the first prize went to a truss from Mr. de Rothschild, one of the most attractive red hybrids in which, when seen out of doors, the rich red is so well set off by the matt green of the foliage. Mr. G. L. Pilkington was second with a truss from Grayswood of a dusky red with a nice black blotch. In the next Class, for a hybrid of *R. griersonianum*, a fine truss of 'Laura Aberconway', from Bodnant, was first. An interesting truss in this Class was that of 'Day Dream', from Exbury, in which the flower was unusual in being blood red. There were fewer entries than usual in this class. There was a wide variety of colours in Class 81, for a hybrid of the Cinnabarinum Series. Lord Aberconway's orange-red 'Conroy' was a fine winner. There was an excellent red 'Lady Rosebery' from Sir Giles Loder, a pure white 'Peace' from Bodnant and a mauve tinted 'Oreocinn' from Messrs. G. Reuthe.

The lovely 'White Wings' was a worthy first for Sir Giles Loder in the next Class, which provides for hybrids of the Maddenii or Edgeworthii Series. 'Saffron Queen', with smaller but pure bright yellow flowers, took the second prize for Sir Giles, with Major Hardy's slightly scented *R. formosum* hybrid third. A good spray of a good blue 'Augfast', from Bodnant, was the only entry in Class 83 for a hybrid between members of the Triflorum and Lapponicum Series. In the next Class, for any hybrid of the Triflorum Series with any other Series, including the Triflorums, 'Electra', always an interesting plant, was first for Sir Giles Loder, followed in the second place by Major Hardy's 'Alison Johnstone', with trusses of delicate amber flushed pink. This latter hybrid needs careful placing in the garden, as it can be killed so easily by strong colours. Judging from the entries in Class 85, for a hybrid of *R. repens* or *R. aperantum*, 1967 was a vintage year for 'Elizabeth', trusses of it winning the first prize for Lord Aberconway and third prize for Sir Giles Loder. Its only rivals were two of Herr Hobbie's hybrids, 'Moerheim Pink' and 'Moerheim Jubilee', shown by Mrs. Paton. There was a wide variance of size and form in Class 87, with Exbury's large, sumptuous 'Fortune' in the first place, the medium sized truss of 'Golden Horn' in the second place from the same garden, followed by the miniature flowers of 'Fittra', from the Lea Rhododendron Gardens and Major Hardy.

There were some amusing contrasts in age in Class 88. The

first prize went to Sir Giles Loder's *R. galactinum* × *R.* Loderi, which is, in fact, an improved *R. galactinum*, while the second prize went to Mr. Cripps' 'Duchess of Portland'. This is one of the oldest hybrids still to be cultivated and received the A.M. in 1903. Mr. and Mrs. G. A. Judson, of Orpington, Kent, entered an interesting cross in this Class, *R. oreotrephes* × *R.* 'Lady Chamberlain'. Sir Giles Loder's 'H. Whitner' was first in Class 89. This is an imposing pink. We also noted Mr. Cripps' 'Saturn', cerise shading to pink with a white throat, and his vermilion-red 'Betty Stewart'. Messrs. Reuthe's 'Ightham Yellow' was first in Class 90. This is one of the best yellows of Arthur Smith grex, *R. wardii* giving the colour and *R. decorum*, the other parent, the larger flower. Mr. R. H. Lynch, of West Byfleet, took the first prize in Class 91 for a hybrid shown by an exhibitor who did not win a first prize at the Rhododendron Show in 1962 or any subsequent year, with 'Eileen', a good hardy hybrid of a soft mauve-pink with a pronounced greeny-yellow blotch running almost all the way up the petal.

In the Miscellaneous Section there were, as usual, some excellent free-flowering evergreen and Kurume azaleas. Mr. E. de Rothschild's 'Nimrod' in Class 100 was very fine, while Sir Giles Loder relied on the exceedingly free-flowering 'Hinodegiri'. Sir Giles was first in the next class of three varieties with a particularly good spray of 'Orange Beauty'. We also noted an attractive pale coral pink, Wilson's 80, in the entry of Mr. E. de Rothschild. Messrs. Reuthe were first in Class 102 for a dwarf rhododendron, with a large, well-flowered bush of *R. glaucophyllum*, followed closely by a nice compact bush of a blue *R. fastigiatum* from Messrs. Waterer. In Class 100, for a larger rhododendron, Messrs. Slocock were first with a beautiful specimen of 'May Day', a plant now so well known that it needs no description. Messrs. Waterer were second with a compact bushy plant of *R. yakusimanum* × *R.* 'Doncaster'. It certainly retained the *R. yakusimanum* characteristics, with big flowers of an average pink. There were some really fine leaves in Class 105, for two leaves each of six rhododendrons, attractively arranged, with contrast in size, shape and colour of indumentum. Major Magor's entry was first, notable for silvery *R. mollyanum*, while Mr. de Rothschild was second. The final class, for a species or hybrid grown under glass, produced yet another wonderful truss of *R. nuttallii*, from Windsor, in the first place, with an almost equally perfect one of 'William Wright Smith' second and also from Windsor.

On the dais there was a number of hybrids which received the A.M. Chief among them was a lovely yellow, the result of crossing *R.* 'Idealist' and *R.* 'Crest', raised and exhibited by the Crown Estate Commissioners. It seemed to be an improvement on what are already two fine hybrids. H.M. The Queen has graciously given her consent that this hybrid should bear the name 'Queen Elizabeth II'. Captain Collingwood Ingram's deep blood-red 'Oporto', which received a P.C. in 1966, received the same award as did *R.* 'Bounty', a pure white clone of *R.* Calfort grex with a red blotch. It was also raised and exhibited by Captain Ingram.

THE RHODODENDRON COMPETITION MARCH 14 to 15, 1967

By PATRICK M. SYNGE

IN spite of gales, the early spring weather was kind to rhododendrons in most areas. A heavy set of flower bud combined with an unusually early season to give us a brilliant display at this Competition, and the larger-leaved species were seen in greater profusion than for some years. Curiously, however, in spite of the wet summer last year the foliage was smaller than usual. The outstanding exhibit was undoubtedly a magnificent deep reddish purple truss of *R. magnificum* from the National Trust for Scotland, Brodick Castle, Isle of Arran. A very tall truss, it was of a deeper, richer colour (close to 67C in the new R.H.S. Colour Chart) than any we had seen previously of this species. Other exhibits which were unusually early were two beautiful sprays of the deciduous *R. quinquefolium* and *R. pentaphyllum* from Bodnant, the former white, the latter pink. Both are excellent plants for autumn colour also, but in flower in spring they have a grace and delicacy seen only in a few other species.

A silver-gilt medal was awarded to Messrs. W. G. Slocock for a very interesting and effective group of rhododendrons of both species and hybrids staged under the clock. The big scarlet red 'Cornubia' was prominent, while in the centre was a big vase of 'Cilpinense' backed by tall plants of a good form of *R. fulvum*, showing well the thick, rusty indumentum under the leaves. The early-flowering species were well represented by *leucaspis* and *lutescens*. 'Quaver' (*leucaspis* × *sulfureum*) seemed to me one of the most attractive smaller hybrids to be seen for some time, the creamy white of *leucaspis* being tinged with a faint yellow from *sulfureum*, which contrasted well with the black anthers. Another most promising dwarf was 'Chink', raised at Windsor from *keiskei* × *trichocladum*. With less space available in many of our gardens there is surely a great future in the demand for these smaller-growing hybrids. Another plant which interested me in this exhibit was 'Armantine', a plant of the hardy hybrid type

with rather strong purplish-pink, large and compact heads of flower, rather unusual in a March-flowering hybrid. It was also shown as a specimen plant in Class 23 and obviously flowered very freely.

There were other beautiful rhododendrons and a few forced azaleas also in the mixed tree and shrub groups of Messrs. Hillier and Messrs. L. R. Russell, while in the Tree and Shrub Competition there were some magnificent vases of rhododendrons. I noticed particularly a nice yellow truss of *macabeanum* from Windsor and an enormous branch of a good pink form of *fulvum* from Mr. E. de Rothschild, of Exbury, arranged like a gigantic fan to show both sides of the leaves. This is indeed a dual purpose plant, good in its flower and superlative in its foliage when the wind rustles upwards the warm-rusty underneath of the leaves.

SPECIES CLASSES

Class 1 requires four species, one truss of each, and was won by the Crown Estate Commissioners, Windsor Great Park, with a deep yellow *macabeanum*, a very fine deep pink *calophytum*, an interesting *mollyanum* and a compact scarlet *barbatum*. The second prize went to Mr. de Rothschild, and the third to Lord Aberconway and the National Trust, both of whom included *macabeanum* and *calophytum*, that from Bodnant being noticeable as a good yellow form. *R. irroratum* 'Polka Dot', from Exbury, was almost aggressively striking in its heavily spotted flower with deep purplish-red spots on a pale pink background, and one always noted it whenever it appeared in the Show. The rosy pink form of *arboreum*, from Bodnant, was also a very nice one. The good yellow form of *macabeanum*, from Nymans, and the National Trust, was first in Class 2 for a single spray of a species, and was noticeable also for its fine foliage, perhaps the best in the Show for this species. What a superb plant it is. The *irroratum* 'Polka Dot' from Exbury and a good *fulvum* from Windsor were second and third, respectively. Class 3, for a truss of a species, was also won by *macabeanum*, this time a fine clear yellow from Windsor. Sir Giles Loder's deep pink *arboreum* was second and Mr. Geoffrey Gorer's deep pink form of *sutchuenense* var. *geraldii* was third, always an effective plant for early flowers. It was notable that it pushed a *magnificum* from Brodick into fourth place.

Classes 4 and 5 are for *arboreum* and members of the Arboreum

Series, respectively, and included some very nice flowers. In Class 4 the colour ranged from pale blush-pink to deep blood-red, and the prizes were given in an ascending degree of depth of colour, a very nice pale pink from Bodnant being first, a pale crimson one from Sir Giles Loder, of Leonardslee, second, and a deep blood red form from Mr. de Rothschild, of Exbury, third, but probably the flowers were judged as much on condition and fullness of truss rather than on colour.

Class 5 was won by a very good truss of a deep pink *lanigerum* from Nymans, which was both compact and tall. It is surprising what a number of beautiful forms of this species we have seen at recent shows. Those formerly included under the name *silvaticum* are now entered under *lanigerum*. Mr. de Rothschild's *zeylanicum* was second, a fine deep pinkish-crimson form, and Major Magor, from N. Cornwall, was third with *floribundum*. *R. barbatum*, in Class 6, always gives us a vivid splash of colour, although the trusses are neat and compact rather than being very large. The winner from Exbury was a beautiful specimen. The large-leaved Falconeri Series in Class 7 hardly lived up to its foliage possibilities, but the winner, a good truss of *basilicum*, just off-white with a large, deep purplish crimson blotch, from Windsor, was a fine exhibit. The second and third prizes went to rather small but well-coloured trusses of *arizelum* from Major Magor and Windsor, respectively. Class 8, for the Fortunei Series, had a large entry of 15. Mr. R. Strauss's fine pink *calophytum* was first, an unusually fine specimen. Second was a pink form of *sutchuenense*, frilled slightly at the edge. It was shown by Nymans. Third was the rarer *erubescens* from Sir Giles Loder. This is a species which we do not often see. Although not very large, the truss was a good pink. Another interesting exhibit in this class was a very deep coloured *arizelum* with a rusty underneath to the leaves but with rather small foliage to come from the West of Scotland.

The Brodick *magnificum* in Class 9 we have already mentioned. It was one that held all eyes. The yellow *macabeanum* from Bodnant and the good pink *mollyanum*, also from Brodick, were second and third, respectively. In the class for Neriiflorum Series the deep blood red *pocophorum* from Nymans was a striking first and the flowers were well set off by the thick indumentum below the leaves which justifies the name "fleece-bearing". A fine specimen of *meddianum* var. *atrokermesinum* from Nymans won first prize in the Thomsonii class. It is just a little bit fuller in the truss and brighter in colour than the type species.

Class 12, for a spray from quite a large range of Series, produced thirteen entries, and the winner was *glaucophyllum* var. *luteiflorum* from Brodick. It is a very good yellow and certainly a desirable plant and one which should be hardy in most gardens. Also notable in this class were the yellow *sulfureum* from Bodnant and a big truss of *racemosum* R. 5977 from Windsor.

In Class 13, for species not previously covered, Lord Aberconway's lovely white *quinquefolium* took first place. At the mid-April Show it received a well merited F.C.C. In the Competition it was balanced well by the pink-flowered *pentaphyllum*, also from Bodnant, and a plant which is as valuable in the autumn as *quinquefolium*. Who shall say whether they prefer the Latin to the Greek or vice-versa. Most of us will want both. Also notable in this class was the *eritimum* from Nymans, which won second place.

HYBRIDS

Classes 14–16 are for any hybrids, irrespective of parentage and raiser. In Class 14, for a truss of four hybrids, Mr. de Rothschild's 'Choremia' (*arboreum* × *haematodes*) stood out by the brilliance of its scarlet-red in a large compact truss and contrasted with his other flowers, which were the pink large-flowered 'Robin Hood', the creamy 'Elsae' and the white 'Our Kate', which from the parentage of *calophytum* × *macabeanum* should be a good plant, though some may contend that it is not as good as the best forms of either of its parents. The Crown Estate Commissioners, Windsor, were second, and showed the deep pink 'Lady Linlithgow', a plant which is very conspicuous in the early spring, although too rarely seen. They also had 'Nausicaa', 'Choremia', and 'Portia' × *barbatum*. Bodnant was third and showed a pretty pink hybrid of *calophytum* × *thomsonii*, inclining more towards the first parent, scarlet *arboreum* × *barbatum*, paler *arboreum* × *griffithianum* and 'Beatrice', deep red from 'Choremia' × *meddianum*. Class 15 was for a spray, and Sir Giles Loder's 'Seagull' was magnificent, five large trusses of pure white. Second was Bodnant with 'Cilpinense', still perhaps one of the best early-flowering hybrids yet raised, and third Sir Giles Loder with 'Pink Glory'.

Among the other classes we noted Exbury's 'Our Kate', first in Class 16. In this truss the blotch at the base was divided into three. 'Muriel' (*falconeri* × *grande*), with creamy flowers, from Sir George Jessel, of Goudhurst, in the same class, had a nice

rusty indumentum below the leaves. Mr. de Rothschild's 'Red Admiral' in Class 17, for a hybrid of which one parent comes from the Arboreum or Fortunei Series, was a very brilliant scarlet and is undoubtedly one of the best of the early reds. Windsor's 'Nausicaa', with bright pink flowers, and Sir Giles Loder's 'Cornubia', were also worth noting. Class 18 was won by 'Lady Linlithgow' from Windsor by virtue of her parent *thomsonii*, although her other parent *sutchuenense* had not raised her into the prize list of the previous class. Major Magor's 'Daphne's Selected', the prize winner of Class 19 for an elepidote hybrid, was a brilliant deep scarlet-red. 'Quaver' was well shown from Exbury and won Class 20. Also interesting in this class was a plant described as PJM hybrid, raised in America and shown from Windsor, probably with *R. carolinianum* as one parent; also the pale creamy-yellow 'Chrypinense' from Bodnant.

Classes 21 and 22, for tender rhododendrons, either species or hybrids grown under glass, always produce some very lovely flowers. First in Class 21 was Windsor, with the white form of *cubittii* called 'Ashcombe', a nice truss with five flowers slightly flushed pink towards the base. Second was a fine white *ciliicalyx* from the Hydon Nurseries, a flower of lovely form, while third was Mr. Geoffrey Gorer's *edgeworthii* × *leucaspis*, a very promising cross, which might be hardy in some of the more protected gardens.

Class 22, for exhibitors who did not show in the previous class, was won by Mr. Michael Saunders with a nice truss of *cubittii*, although it was smaller than 'Ashcombe'. It was the only exhibit. Class 23, for plants, also had only one, 'Armantine', from Messrs. W. G. Slocock, which was well worth its first prize.

One other exhibit which should be mentioned was the superb white flower of *Magnolia campbellii* from a seedling raised at Caerhays. I have never seen a finer. Some of the other coloured seedlings were also very good and showed considerable variation in size and colour, but this one was outstanding and a most beautiful flower.

In one of the display cases on the dais was an interesting exhibit of large coloured photographs of New Guinea rhododendrons growing in Melbourne and sent from Australia by Mr. A. W. Headlam. The large prints had been hand coloured by Mrs. Headlam and showed the variation in colour which may be obtained in some of these species. Mr. Headlam has written an account of these plants in his article on pages 124-31.

RHODODENDRON NOTES

Rhododendron Flowering Season at Exbury, 1967

WITH only a very few late rhododendrons still to come out, I think we can safely say that the 1967 season has been, without doubt, one of the most profuse flowering seasons that we have ever known at Exbury, and from what I am told this is also true of many other rhododendron gardens. In March, Exbury was absolutely full of colour—apart from the early flowering rhododendrons we had many of the April flowers in bloom, and even in some instances the early May flowers were showing colour. What a season it promised to be: buds on practically every plant. Normally, the large-leafed rhododendrons are somewhat shy to flower with us, but not this year—a large, plump bud on every growth with many just showing colour and others fully out. Were we to see them all out together? No, alas: seven degrees of frost descended on the garden and, to make matters worse, this was immediately after a storm of rain. All these flowers and plump buds perished: within twenty-four hours it looked as if a flame-thrower had been over the entire garden.

The despondency was acute for some days, but nature had made ample provision to give us not only our fair quota of flower for April and May, but even more than normal in spite of the tremendous loss resulting from the soft but still unopened buds being affected by the frost. It is also true to say that the quality of bloom was above average. Only last week my head gardener, Fred Wynniatt, remarked that had we not had the frost, the task of picking off the dead flowers would have been gigantic.

There are many fine rhododendrons still in flower as I write this note (11th July), but without doubt the best is *Rhododendron diaprepes* 'Gargantua', A.M. The plant to which I am referring had grown fairly slowly and is now only fifteen feet in height with an equal spread, but this, I think, is due to the fact that it was planted in an overcrowded position for many years and has only recently been transplanted to its present more suitable habitat. This rhododendron has been given an H.3 rating for hardiness: at Exbury it never turns the proverbial hair in any weather con-

Fig. 50—*Rhododendron iaprepes* 'Gargantua' at Exbury

Photo: E. L. de Rothschild

dition. This clone, belonging to the Fortunei series, originally came to Exbury before the war as a gift to my father from the late J. B. Stevenson, of Tower Court, Ascot. It is truly magnificent.

Some other late flowering hybrids are detailed below*

'AVOCET' (*discolor* × *fortunei*). A tall, very frost-hardy shrub, growing to a great size, with handsome foliage and scented flowers of mother-of-pearl colourings carried in large trusses.

'BUSTARD' (*auriculatum* × 'Penjerrick'). A tall plant well furnished with the long auricled leaves of the *auriculatum* parent and carrying a generous load of good, compact trusses of large, pure white flowers.

'EXBURIENSE' (*sanguineum* ssp. *didymum* × *kyawii*). A shrub of loose spreading habit, with decorative and very dark green leaves, rather hairy, and waxy, bell-like flowers in very dark red.

'FANCY FREE' (Lowinsky hybrid × *eriogynum*). A compact shrub of moderate proportions, bearing brightly hued flowers that are pink, blended with salmon and speckled darker within.

'INAMORATA' (*wardii* × *discolor*). Of robust habit, this most handsome rhododendron combines the characteristics of both parents, including their stalwart bearing. *R. discolor* appears in

* *Editor's Note*—The descriptions of the rhododendrons have been taken from the recently published book, "The Rothschild Rhododendrons", which deals with the work the late Lionel de Rothschild did on rhododendrons during his lifetime.

the rosette arrangement of the leaves and *wardii* in the wide-mouthed bowls, which are of soft yellow with a small, spotted crimson flush in the throat and carried on purple foot-stalks. Altogether a handsome plant, richly attired.

'LEONORE' (*auriculatum* × *kyawii*). This rhododendron grows into a huge plant of good habit, but is not hardy. Its slightly hairy leaves are a bright green, arranged in rosettes, coated beneath with a brownish down, and its tall, loose trusses are composed of about a dozen large flowers in red flushed with carmine.

'MARATHON' ('Pauline' × *elliottii*). A somewhat tender shrub of moderate height and spreading habit, bearing bright red flowers in a truss of normal size.

EDMUND L. DE ROTHSCHILD.

Exbury
11th July, 1967

TWO EXCEPTIONAL MADDENII RHODODENDRONS AT GIGHA

I flowered two plants this 1967 season, both of which, I think, were first class. They were both gifts some 10 years ago from Mr. Jim Russell, of Sunningdale Nurseries.

R. crassum, K.W. 20839, from Mr. Kingdon-Ward's last expedition. This plant flowered all over for the first time this year. It lost its leader in the bad 1962/63 winter, but is now a shapely bush of some 7 feet by 7 feet. The trusses are very flat and open

Photo:
Sir James Horlick, Bt.

Fig. 51—*Rhododendron crassum* K.W. 20839 on Gigha

and run from 8 to 11 blooms, 10 to 11 inches across with individual blooms 5 inches in length and 5 inches across, white with a light yellow throat and scented. A very striking plant, and it would be most interesting to hear the experiences of other growers. In full bloom June 26th.

R. sino-nuttallii × *lindleyi*. An upright growing shrub some 7 to 8 feet high. In full flower for the first time this year. At its best, end of May, early June. Magnificent trusses of 6 to 7 blooms, white with orange throat, 4 inches in length and 4½ inches across, scented. A really beautiful rhododendron.

R. yakusimanum

This wonderful little plant, some 3 feet 9 inches across by 1 foot 9 inches high, was covered with bloom this year; when deadheading we counted 154 trusses averaging 14 blooms to a truss. What a magnificent rhododendron this is, and I fully agree with Mr. Street's opinion of it; it is beautiful, tough and flowers very young. I very much doubt any of its hybrids being as good let alone better.

SIR JAMES HORLICK, BT.

Isle of Gigha,
Argyll

A CURIOUS MOUND-FORMING RHODODENDRON

Among my dwarf rhododendrons there is one belonging to the Lapponicum Series which has a very peculiar and distinctive

Photo: Captain Collingwood Ingram

Fig. 52—*Rhododendron impeditum*

habit of growth. Though now more than a quarter of a century old, it is still only eleven inches high and not more than sixteen across its broadest diameter. In that time it has formed a compact hemispherical mound, its foliage being so tightly congested that there is nowhere a single gap into which one could insert a finger without using force (Fig. 52).

The plant came to me labelled *Rhododendron impeditum*. Though it bears very little resemblance to the Sunningdale Nurseries variety of that name (Rock 59263) which received an A.M. in 1944, it may perhaps be an aberrant variety of that species. But I am not sure; nor, for that matter, am I sure of the names of a dozen other Lapponicum rhododendrons raised from wild collected seed, which have been in my garden for so many years that their original numbered labels have, of course, long since been lost!

Over and over again I have tried and failed to identify them by consulting the "Key" to the Lapponicum Series in "The Species Rhododendron." Not once have I succeeded in obtaining a definitive name for any of them. I have invariably come up against several possible alternatives and have ended by being none the wiser—unless it be that I have become increasingly aware of how badly the Lapponicum Series is in need of taxonomic revision.

I hazard a guess that when a competent botanist—a botanist experienced not only in herbarium material but also in the living plant—takes the trouble to revise the nomenclature of that series, he will find at least a third of the fifty-odd presumed species listed in the 1967 Handbook are redundant and synonymous.

Sir James Horlick, in his garden on the island of Gigha, grows a large number of dwarf rhododendrons, among which are many that have also formed a compact intricately-branched mound.

COLLINGWOOD INGRAM

Rhododendron microleucum

Should *R. microleucum* be considered a good species or merely an albino form of one of the small purple-flowered Lapponicum rhododendrons from the mountains of western China?

The authors of the article describing the plant in the Botanical Magazine (n.s. 171a) admit that in the size of its flowers and in the size and shape of its leaves it may be regarded as identical with *R. orthocladum*, but say it can be readily distinguished from that species "by a number of minor characters". The question is,

are those "minor characters"—namely a discrepancy in the relative lengths of their stamens and style and a difference in the density of the scales on the under surface of their leaves—of sufficient importance to warrant the bestowal of specific rank on a single white-flowered seedling which has turned up among a lot of other seedlings of the same collecting bearing blooms of the usual purplish blue colour? Personally, having compared the type specimens of the two plants in the Kew Herbarium, I should have thought not.

In my collection I have albinos of three other rhododendrons belonging to the Lapponicum Series—*R. chryseum*, *R. russatum* and *R. flavidum*—all of which, like *R. microleucum*, have "minor characters" which could, if closely examined, give them just as much right (or should we say just as little right?) to be regarded as good species as that chance white-flowered seedling which appeared in the Exbury gardens thirty-five years ago.

Benenden, Kent COLLINGWOOD INGRAM

SOME RHODODENDRONS AT GLENARN

R. argipeplum. L. & S. 1936, Bhutan & South East Tibet in the 1963 handbook, our number is 1304. Chiefly rewarding for its upright habit, slim, and tall and looking like an aristocrat in its own way. Slim, yes, and upright, and with the well-bred bark reminiscent of a good old Barbatum; plum-coloured. By the colour of the bark it is more like Barbatum (the series to which it belongs) than the colour of the bark of the Thomsonii tribe. It flowers early in the year and the flowers are the tiresome colour which is not just the real red. They have a touch of the wrong red and are relatively small. But the new foliage (apart from the attractive upright form and the trunk and branch colouring) is truly unique. Copper, plum colour, and the new flush is typical in all the plants here, in that you get the new leaf whorls, usually in threes (and if a fourth comes it will usually be shorter), and for the period of new growth we rate it one of the best from that aspect. It is intensely hairy and it loathes any exposure to wind. The new, and even the old, leaves can be blown to blazes in high winds. And one other peculiarity: the formation of the leaves is such as to obscure the new season's growth whether it may be a potential flower bud, or a growth bud. The few leaves knit themselves so tightly together that one cannot detect new flower

buds for next season, or merely new growth buds. Even under frost conditions, when leaves usually droop, this one keeps a tight hold on next year's programme, and does not let its leaves droop much and curl up into cigarette paper proportions, like many other leaf-curlers, under frost. The plants are now from 10 to 13 feet high. *R. argipeplum* is a sure frost barometer if one gets more than a few degrees of frost overnight and can look dismal.

R. viscidifolium. An intriguing affair. It came to us under a number L.S. & T. 3750 in 1939 as seed and has already been written up and classified by H. H. Davidian, B.Sc., in the Rhododendron and Camellia Year Book 1967, Q.V. p. 104. Since the start it has been a subject for argument among the pundits. Tentatively it was dubbed *pallidiflorum*, perhaps sub-sp. Thomsonii, and then we noticed that the new leaves, as they unfold, are as sticky as a badly licked postage stamp (by that I mean that if you get your stamp on the wrong thumb or finger you can't get it over to the other one, and put the stamp on the envelope which you intend to send by post). The under leaf of the new growth is just as sticky as that description. The plants in question have also the other odd and unusual habit among rhododendron species that they moult last year's foliage in an unusual manner by turning last year's leaves to a bright copper-scarlet colour, and then dropping those leaves at just about the same time as flower buds open, of the same colour or near it. People who come here frequently mistake the colour of the flower with the same effect from the dropping (I used the word moulting) leaves. For the rest, it is a smallish growing affair and is not likely to exceed 6 feet in height. But it will need more latitude to give it beam room. The plant is somewhat akin to a typical *Thomsonii* but in every part it is much more slim and restrained. It has not got the typical *Thomsonii* bark but the twigs are very slender, and so are the pedicels of the leaves and, of course, the flowers (only 3 to 4 per truss), and the colouring of the spent leaves before the new growth starts are justification of its ranking of a species on its own. Probably more akin to *Thomsonii* than any other series.

R. rollissonii We have differed from the opinion of our good friend Davidian, of the R.B.G., Edinburgh, who slumped it with *R. zeylanicum*. Mr. Davidian now writes that *R. rollissonii* was described in 1843 from a cultivated plant of unknown origin; that in 1930 in "The Species of Rhododendron" Tagg relegated it to synonymy under *R. zeylanicum* and that some cultivated

plants which were known as *R. rollissonii* are identical with *R. zeylanicum*. Our plants, which came from the R.B.G., Edinburgh, in 1937, as seed, are therefore, in all probability, a hybrid with *R. zeylanicum* as the Mother plant, although *R. rollissonii* was classified as a species at that time in the Year Book. The true *R. zeylanicum* (Ceylon) is a sulker with us. We brought back seed of the indigenous plant in 1933 and the few survivors still look like the typical Newara Eliya Ceylon plants. The true *R. zeylanicum* is very slow to get going even in our area of much rain and little sunshine (not unlike Newara Eliya), but *R. rollissonii* grows like the ungodly. It flowers in the month of June, and the colour is not such a good red as the typical *zeylanicum*. We think it is quite distinct from the true *zeylanicum* which takes ages to get off the ground, but the daughter plant *rollissonii* gets ahead quickly with growth and flowering. And the daughter is vigorous, grows apace and, depending on the Father, must most certainly take after him in vigorous growth, relatively early flowering, and a different colour of lipstick, compared with Mother, the true *R. zeylanicum*. One could surmise that the Father in this case probably belongs to the Arboreum Series.

R. meddianum var. atrokermesinum. Four plants flowered here for the first time in 1967, early, in the month of April. All are identical. And all have a characteristic in common. Very large trusses, almost double the size of *meddianum*. A splendid colour of red without any hint of blue. And then again we note that all 4 plants grow apace with each other, and do the same thing at the same time, even though they don't all grow near each other and are somewhat widely spaced apart by distance. They tend to grow like standards. They don't keep their growth down to the ground, but go on upwards, leaving a slimmish trunk, with unattractive bark, and making laterals upwards. We think that they were under a K.W. number, but all four plants are identical. The other peculiarity is that, after flowering, they all go through the same process, and at the same time, turning last year's leaves to bright copper-crimson colours, and then shedding all those leaves within a few weeks, while at the same time the new growth has brought-up next year's foliage and flower buds. The plants, in consequence, will tend to look a bit gawky, because they lose every leaf of the previous year's output before they refoliage on the current year's effort. But the colour of the flower and the size of the truss are magnificent, if the frost allows.

R. chlorops. We have it here, and it is an interesting dud. Chlorine coloured, unimpressive flowers, neither white nor yellow nor green. Just the colour of chlorine, which is a dreadful gas. Our plant is upright in habit with undistinguished leaves and trunk. Perhaps 15 ft. high. It has flowered here since 1953. A collectors' peace, perhaps, but not one which we put up on the mantel-piece.

Rhu, Dunbartonshire A. C. GIBSON

RHODODENDRONS AND HONEY FUNGUS

I have just removed one *Magnolia wilsonii*, one Azalea and nine rhododendrons that have died from Honey Fungus. All of them appeared to be healthy until quite recently. In this small garden I estimate this pest is responsible for the loss of between thirty and fifty shrubs and trees in a year, most of them rhododendrons. Usually a plant collapses within a week of showing unhealthy symptoms and sometimes it dies bough by bough over a period of a year or more. There seems to be no remedy in a closely planted shrub garden, short of destroying the plants themselves.

There is probably no part of Tremeer Garden, except possibly the lawn, that is free from Honey Fungus, and so far as one can judge the scourge may attack what appears to be a perfectly strong and healthy plant, but I do not recollect any plant showing signs of an attack until it has been in its position for five or six years. No loss has occurred in a nursery.

I lost a 40 ft. cedar from Honey Fungus and replanted in the area within a few months, taking no further precaution than to try to remove the whole of the roots of the tree. That was ten or twelve years ago, and there has been no loss in that area up to date, which seems to indicate that the movement of the soil is a preventative, and that the black bootlaces running through the soil are killed when they are severed from the dying root, provided they have not already found another host. But in the case of a prunus which died of Honey Fungus it was a different story. The attempt to follow all its far-reaching roots was not successful, and perhaps plants in the vicinity had already been attacked, with the result that several rhododendrons were also lost.

The bootlaces do not appear to run through the soil at a greater depth than about ten inches and this may be the reason

why the shallow rooting rhododendrons are so vulnerable to attack, whereas the camellias seem seldom to be affected. I have lost only one camellia that I believe was killed by Honey Fungus, so now I plant camellias wherever the soil is known to be particularly heavily infested.

Can any cure be found for this scourge that will not entail removal or destruction of the established shrubs and trees in the garden? I understand that gardens with very high acidity in soil are not troubled with Honey Fungus, which is suggestive of a line of investigation.

E. G. W. HARRISON

Tremeer, St. Tudy,
Cornwall

THE BEHAVIOUR OF LAPPONICUMS

After an exceptionally mild three months at the start of the season, we suffered, as did many others throughout the country, severe frosts on March 31st and April 1st, 7 degrees on the 31st, 9 degrees on the 1st. It was obvious that everything in flower was a brown mass and others like *tephropeplum* and *keiskei* were frozen in the unopened flower bud. Those were only to be expected.

What was interesting was the behaviour of plants of the Lapponicum series and their hybrids that were showing colour. They are all growing under the same conditions, in almost full sun, facing south. For instance, in the case of two of the Horlick hybrids of 'Blue Tit' × *russatum*, 'Songbird' and 'Songster', both clonal. 'Songbird' was just touched while 'Songster' was completely frosted. The star turn of complete survival was *microleucum* which was half out and not a pip was damaged. The same applied to the dwarfer form of *russatum* and *intricatum*, but they were not quite so far advanced. Two which were partly frosted in the flower were 'Augfast' (*augustinii*×*fastigiatum*) and, oddly enough, *nigropunctatum*, oddly because it comes from Szechuan at an altitude of 14-15,000 feet. Others that showed no signs of frost damage were *paludosum*, *impeditum*, *hippophaeoides*, *lysolepis*, *fimbriatum*, *stictophyllum* and *orthocladum*. Incidentally, of all the muddy, poor, 'rose-purples' *fimbriatum* is the dullest and ugliest.

E. H. M. COX

Glendoick, Perth

Fig. 53—*Rhododendron* Vaccinioides Series *Photo: Peter Cox*

Rhododendron Vaccinioides Series, a Possible New Species

This species was collected in fruit by Peter Hutchison and Peter and Patricia Cox in the Subansiri Division of the North East Frontier Agency, India, near the Apa Tani Valley, in April, 1965. A collected plant flowered for the first time, at Glendoick, Perth, in late July, 1967. It was found at an elevation of 5,400 feet in warm, temperate forest, epiphytic on the trunks of large trees growing in a boggy area. Unlike most rhododendrons, the whole plant had a pendulous habit. The total length of the largest specimen we saw was only 2 feet.

The leaves are thick and leathery, up to 4 cm. long and 2 cm. wide. They end abruptly in a hard, sharp point and are scaly below, the scales being twice their own diameter apart. Their petioles are 1-2 mm. long. The flowers are in a terminal inflorescence, in twos or threes in the collected dried specimen, but in fives on the truss in cultivation. The pedicels are 1½-2 cm. long. The calyx is variable, 0-2 mm. long and scaly outside. The corolla,

a waxy pure white, is 2½ cm. wide with the tube 5 mm. long. It is scaly outside with red scales. The white stamens are 9-10 with the anthers at first pale yellow but becoming brown-red on maturity. The ovary is glandular with the green style the same length as the stamens, the stigma being red. The capsule, having opened at the top, dehisces right back. The seeds have long tails at each end.

This seems to be a very distinctive species and leads one to ask if it is not a new species.

The pure white waxy flowers, although small, were very attractive, set off by the browny-red anthers and red stigma. The plant itself seems very slow growing and, owing to its peculiar habit in the wild, is unlikely to make a compact specimen. Coming from only 5,400 feet, it is unlikely to prove hardy anywhere in Britain.

Sandyhall, PETER COX
Glendoick, Perth

JUVENILE LEAVES IN RHODODENDRONS

Having grown a great variety of rhododendron species from seed, I am often struck by the variation which is to be found in juvenile foliage. Many species seedlings just resemble a miniature example of an older plant, but several are completely different in every respect and it is easy to be fooled into thinking that the labels have become mixed or the species has not come true to type. They can differ in shape, colour, presence or lack of indumentum, hairiness and texture.

Most species alter their leaf shape on becoming adult. Many start much wider for their size than when they mature. An extreme example of this is a species of the Ciliicalyx Sub-series which we found on our recent expedition to North-East India. Juvenile plants were found with hairy leaves, often growing epiphytically on rotten logs and low on tree trunks. Later, six foot adults were located growing at the edge of a bog, with leaves of a different shape with practically no hairs. Yet these have certainly turned out to be the same species. Collected plants in the broadly obovate shaped hairy stage have now reached the narrowly elliptic almost hairless adultness. Likewise, seedlings from the adult plants have at first the hairy broadly obovate leaves.

All species with indumentum take some time to develop the full adult leaf stage. Some may produce a good spongy one late

in the first season while others take as long as four or five years before the mature leaf appears. *R. macabeanum* takes a considerable time, and a part of the leaf may have indumentum while the rest remains glabrous, giving a curious effect of indecision.

One form of *R. campanulatum* has juvenile leaves where the underside is a deep crimson, which sometimes goes through a green stage before forming indumentum. So there are crimson, green and white leaf undersides all on the one plant. *R. hodgsonii* has a leaf which gets wider as it matures. Many of its leaves start narrowly elliptic and finish in the adult stage oblong elliptic. The undersurface begins a brownish-crimson and gradually turns green some time before developing its indumentum and its metallic sheen above. On the other hand, *R. arizelum* gains its thick felt at a very early age, even in the first year.

Most members of the Ponticum Series get their indumentum young, but a certain form of *R. metternichii* goes through a shiny dull pink and fawn stage before getting its true indumentum. *R. fulvum* can produce a queer diseased looking effect with a glabrous mid-rib with a gradually thickening indumentum towards the edge of the leaf.

Various species ending with glabrous adult leaves start with a deep crimson underside. I have seen examples of this in *R. vernicosum*, *R. fargesii* and *R. neriiflorum*. The second or third season leaves are a normal colour. A certain form of *R. neriiflorum* possibly a hybrid, retains the crimson underside throughout its life. The hairy *R. barbatum* also starts crimson, but it has bristles from a very early age.

Several species and hybrids have their young leaves reddish-purple on the upper surface, later turning a normal green, but some also have this in the juvenile foliage, such as *R. cinnabarinum* and *R. oreotrephes*, and these leaves may retain their colour. *R. cinnabarinum* var. *roylei* has a glaucous bloom on the upper surface of the first true leaves, although the leaf does get narrower for its size on maturity.

The rare *R. hemsleyanum*, with the deeply auricled base to the leaf, does not produce the auricle until the leaves reach almost full size.

Another interesting fact is that many deciduous azaleas retain their leaves over the first winter, especially if they remain indoors.

To sum up, do not despair if your seedlings look different from their parent, that is if your seed comes from a reliable source.

On the other hand, it may take several years before you realise that they are just a load of mixed rubbish that the bees have got at.

Glendoick, Perth PETER COX

Rhododendron degronianum IN KENT

Rhododendron degronianum is included in the sub-series *Caucasicum* of the *Ponticum* Series and is a native of Japan. It has been confused with and grown in gardens under the name of *R. metternichii*, another Japanese species from which it differs in having a 5-partite corolla, that of *R. metternichii* being 7-partite.

I have had my plant since 1949, and it is now some 4 feet high and 5 feet through. It is very hardy, though the flowers are liable to damage by frosts, as with so many other *Rhododendron* species which bloom in early April. Following the wet summer and autumn of 1966, it has produced more flowers than ever before, as has been the case with many other species flowering at this time of the year. The flowers are of a lovely shade of pink with deeper pink lines down the middle of the petals. The leaves, some 6 inches long and 1½ inches wide, are not unattractive with rusty indumentum below. It thrives in a moderately open spot, with some nearby holly trees on the south aspect which give slight shade from hot sun in summer.

Canterbury, Kent H. STEWART WACHER

Photo: H. S. Wacher

Fig. 54—*Rhododendron degronianum*

Breeding a Late Flowering Rhododendron

The complications of rhododendron breeding are highly interesting and the procedure needs a good deal of thought if the target is to be achieved.

I wanted to produce a rhododendron with large, orange-red flowers opening in late July.

The colour parent chosen was *R. griersonianum*; size and shape of flower was to be provided by *R. discolor* and lateness of opening by *R. auriculatum*. Of the numerous seedlings, the one which most avoided the defects of the thin habit of *R griersonianum*, the easily browned fugacious flower of *R. discolor*, and the gawky habit and poor constitution of *R. auriculatum*, was named R. 'Flameheart', with a big late pink flower with a red eye. The next stage was to self pollinate this to get an F2 generation in which all the factors re-grouped. The F2 seedlings have at last flowered and about half a dozen plants have combined the most desirable factors. The best of these seem to leave little to be desired.

Michael Haworth-Booth

Roundhurst, Haslemere

CAMELLIA NOTES

Capillary Irrigation for Camellias

In January this year our new greenhouses were ready for receiving the new crop of *Camellia japonica* varieties and a few others. All the crops in these houses are watered by capillary irrigation, resulting in the plants making more healthy growth and foliage of a better colour. The water supply is derived from a 5,000 gallon tank maintained by rain water from the roof of the greenhouses. We had to find some means of shading other than the normal distempering of the glass outside, as this would have hardened the water. The shading is provided by butter muslin stretched across the houses on wires and which has proved very efficacious.

Our camellias are all grown from cuttings which, when rooted, are planted out in a greenhouse in January. They are then trans-

planted the following January in the same greenhouse to wide spacing, and the following January—by which time they have a good ball of fibrous root—are potted into 5 in. plastic pots. They are at this time 15/18 in. high, according to variety, although some varieties more robust than others may reach 2 ft. These taller plants are slightly pruned at the time of potting. They are then stood on sand about 1½ in. deep with a water seal at base of pea-shingle sprayed twice with bitumen. The sand is permanently moistened by capillary action from feeder cups along a main supply line by an entirely new principle, evolved by Mr. Chilcott and marketed by the Wembley Irrigation Company Limited. The flow of water is carefully controlled by a system of feeder valves which, when regulated, provide just the right amount of water for the plants. Most of our crops are now in plastic pots which we find gives a much more steady and regular supply of moisture to the soil in the pots. Growth of the plants is quite remarkable, as is the colour of the foliage, rich dark green. It may be thought that the growth is soft and lacking in sturdiness, but this is certainly not the case. It is, of course, necessary when the plants are freshly potted for them to be thoroughly watered by can or hose to induce the capillary action of moisture from the sand below. Once this is done the plants require no further watering whatsoever.

The temperature maintained, which is derived from oil fired boiler thermostatically controlled, was 50/55° fahrenheit when first started in January. The ventilation provided is by automatic ventilators covering one-sixth of the greenhouse roof surface, which, with the modest shading provided by the butter muslin, gives, in my opinion, the best possible conditions for camellias, and I might say the many other plants we are growing in these houses. Whilst I think the steady maintenance of water supply, which at no time becomes too much when the regulators have been adjusted, accounts for a deal of our success with these plants, perhaps more important may be the soft water used, as we did find serious disadvantages before, when we were using hard mains water. Whilst we are dependent on the normal rainfall, over the seven months that this system has been in operation only once did our soft water supply run out, and then only for 14 days. Of course, a very hot, prolonged summer might result in greater deficiency, but if we instal another 5,000 gallon tank, I feel sure this will be overcome, as the amount of water required is not nearly as much as that used when watering by the old

methods. The provision against the deficiency of soft water is made by the supply lines of the feeder cups being also connected to the mains supply, the operation being to turn off one tap and turn on the other.

J. L. RUSSELL

Richmond Nurseries,
Windlesham, Surrey

SOME CAMELLIA NOTES

I have lately taken a new appraisal on camellias, and think choice should give preference to those varieties that are the most hardy, the most free flowering, and especially those that flower over the longest periods, and I will mention some that I have noticed this season.

A large plant of *Camellia* 'Apollo' trained against the North wall of my house, which started to flower on the 5th February, did not finish until mid-June.

The buds of 'Leonard Messel' (*reticulata* × *williamsii* 'Mary Christian'), raised at Nymans, were showing colour on 3rd March and went on flowering until the end of May.

On 3rd May we recorded 16°F. of frost and all open flowers could be picked as if made of porcelain, but subsequent flowers opened and appeared undamaged.

Camellia 'Leonard Messel' to my mind, is one of the finest camellias ever raised, with a splendid vigorous upright habit, fine foliage and bearing, large, semi-double pink flowers that stand up and look at you. It is a 'must' for every garden.

'Guilio Nuccio', 'R. L. Wheeler', 'Inspiration' and the Williamsii types, not quite so long in flower, all share some of these characteristics. A plant of 'C. M. Hovey', some 2 ft. high, planted out of a pot in woodland conditions this Spring was still in flower the third week in June. 'Coquetti', on the other hand, beautiful though it is, was in and out of flower in a month.

Whites and Blush varieties, although some of the most popular of camellias, seldom give of their best under British weather conditions and can be most disappointing. The following varieties, however, I have found to be among the best for giving a really good show despite adverse weather conditions: 'Virgin's Blush', a white formal double, tinted pink, is one of the hardiest, whilst 'Marguerite Gouillon', a paeony form, light pink with darker pink markings, can also be relied upon to produce an excellent display.

'Donation', a semi-double orchid pink is now very well known and is so free flowering that when one crop of flowers is spoilt another crop will soon again cover the plant, and it will flower in this way for many weeks. It has, however, a reputation of being a slow starter. Two similar varieties, 'Brian' (raised by David Feathers in U.S.A.) and 'Margaret Waterhouse' (raised by Prof. Waterhouse in Australia), though not quite so good in flower as 'Donation', are much faster and more upright growers and rapidly attain a good flowering size.

People who continually suffer from early Spring frosts would find that the Autumn flowering *sasanqua* 'Showa-no-Sakae' is really worth growing. It is a lovely double pink and is an excellent grower and can be trained on a wall if necessary.

Many other varieties, especially amongst the more recent of American introductions, have to be watched and tested, but time is needed for them to grow to any size in outside conditions.

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

G. H. PINCKNEY

CAMELLIA 'EMPEROR'

In Verschaffelt's "Nouvelle Iconographie des Camellias", Tome III (1850), Pl. 1, a plant is described and illustrated which was probably the first camellia hybrid raised in the Western World. It is named 'Emperor', and Verschaffelt's description of it reads as follows:

"A beautiful and unusual variety, the petals being very large, crowded, twisted, waved, irregularly grouped, of a deep scarlet (it is rose in the plate), becoming almost white at the margins".

This camellia, which has been available in the trade for several years already, is due to Mr. Davies, a horticulturist near Liverpool, who claims he obtained it by using the pollen of a *reticulata* on a certain *C.* 'Colulii'.

The individual plants we inspected at Mr. Davies's were two to three metres high and literally covered in flowers; its subsequent flowering in our greenhouses has established it as a stable variety, with a fine form and a freedom of flowering out of the usual".

The only form of *C. reticulata* available at that date was "semi plena", now known as 'Captain Rawes', while the *C. japonica*

cultivar may have been a misprint for 'Colvilii' raised by Chandler in England in 1831, as 'Colulii' is not on record. Verschaffelt's plate depicts a plant with broad *japonica*-like foliage, but the form of the flower resembles that of an almost fully double *C. reticulata*. Davies' cultivar 'Emperor' is listed in "Camellia Nomenclature" of the Californian Camellia Society, also one named 'Imperator' which originated in France but as late as 1908. The long held fallacy that the pollen of *C. reticulata* 'Captain Rawes' was completely sterile has now been exploded by both practical plant breeders and geneticists. In New Zealand, B. W. Doak has raised a series of hybrids between *C. saluenensis* and *C. reticulata* 'Captain Rawes', while research into the long disputed parentage of *C.* 'Salutation' carried out by A. E. Longley and E. C. Tourje at the instance of the American Camellia Research Advisory Committee and reported in detail in the 1960 edition of the American Camellia Year Book "leaves no doubt that it is a hybrid of *C. saluenensis* × *C. reticulata* 'Captain Rawes'."

According to the Liverpool City archivist there are references to a nursery firm of Davies having been in business at Wavertree, near Liverpool. Gore's "Directory of Liverpool" for the period 1818-1829 lists a John Davies, nursery and seedsman, of Wavertree. For the years 1832-1843 the Directory lists a Thomas Davies, nursery and seedsman, of Wavertree. From 1845 the Directory describes the firm as Thomas Davies and Co., nursery and seedsman, of various addresses in Wavertree Road and Picton Road, Wavertree. The last entry for Thomas Davies and Co. in the Directory of 1923 gives the firm's address as 250 Picton Road, Wavertree.

I wonder if any reader of these notes can throw any light on this missing plant. It would appear to have been propagated successfully and grown by Alexandre Verschaffelt in his Ghent camellia nursery. Alexandre died in April 1850, the year that this particular volume was published, and the family business was carried on by his son Ambroise, who continued publishing annual editions, each with some forty-eight coloured plates of new camellias, up to 1860.

The Nurseries,
Truro, Cornwall

NEIL G. TRESEDER

EARLY CAMELLIA COMPETITION FOR CAMELLIAS GROWN UNDER GLASS OR IN THE OPEN

MARCH 14th and 15th, 1967

By JAMES PLATT

THE advantages of including camellias grown under glass in this Competition are considerable. Visitors to the Show are able to see sumptuous flowers, not only of the Kunming reticulatas but also of some of the more recent seedlings of *Camellia japonica* raised in America. There are now several fine cool greenhouses in which camellias predominate and their owners cut their flowers generously for the Competition. This was indeed fortunate; the winter had been a mild one and many plants were in flower early in the year, but just before the Competition there were here and there throughout the country hail, snow and heavy rain storms which must have affected camellias growing out of doors.

Trade exhibitors supported the Competition well. Haskins Nursery had an exhibit entirely of camellias. We noted good flowers of *C. williamsii* 'Citation', the pink and red striped *C. japonica* 'Comte de Gomer' and 'Brian', one of David Feathers' hybrids raised in the U.S.A. between *C. saluenensis* and *C. reticulata* 'Captain Rawes'. Messrs. Hillier had some fine 'Salutation' and *C.* × *williamsii* 'Elizabeth Rothschild' with its pretty rose-pink semi-double flowers, in their exhibit of trees and shrubs. Messrs. L. R. Russell had groups of camellias among the trees and shrubs in their exhibit, with particularly fine flowers of *C. japonica* 'Mercury', *C.* 'Elegans' and the rich red 'Paolina Guichardini'. The Crown Estate Commissioners exhibited 'Exaltation' which received a Certificate of Preliminary Commendation as a flowering plant for the cool greenhouse. This promising hybrid, raised at Windsor between *C.* × *williamsii* and *C. japonica* 'Gauntletti', had pale pink loosely double flowers. In the Ornamental Plant Competition Mr. E. de Rothschild had a fine vase of the single wild form of *C. reticulata* with flowers of a pure

rich pink with no hint of blue. Mrs. R. Y. Paton, of Virginia Water, had entered a vase-full of *C. japonica* 'Adolphe Audusson' with splendid large flowers.

Classes 1 to 4 are for single-flowered cultivars of *C. japonica* and Class 1 is for a single white. More often than not *C. japonica* 'Rogetsu' takes the first prize, but this year, in spite of Mr. R. Strauss' large flowers from Ardingly, a charming small but quite perfect *C. japonica* 'Haku-Tsuru' from the Crown Estate Commissioners, The Great Park, Windsor, was first. In Class 2, for a flower of any colour other than white, the Duke of Devonshire's *C. japonica* 'Jupiter' was first with a flawless flower from Chatsworth. The second prize went to *C. japonica* 'Sylva', a lovely flower of an intense shade of red, entered by the Hydon Nurseries of Godalming. Class 3 is for any single-flowered cultivar and produced two oddities, Mr. E. de Rothschild's 'Ten'nin-Matsushima', in which the pink flowers were veined a dark pink, and Sir Giles Loder's example of "Higo". This latter had for the most part pink petals, but one or two were red or had a few red markings, while the yellow stamens and creamy petalodes were standing out independently from the base with the stigma quite distinct in the centre. Class 4 is for three single-flowered cultivars. The Crown Estate Commissioners were first. One noticed how their 'Haku-Tsuru' had leaves with very dentate margins. Mr. de Rothschild, who took second prize, had the red 'Shiro-Osaraku', another example of "Higo". 'Frances McLanahan' in the Duke of Devonshire's entry, which took the third prize, is described as a light pink sport of 'Lady Vansittart', but in this case was pure white.

It was when we came to Class 5 that the really large flowers appeared. Sir Giles Loder took all the prizes in this Class for a semi-double white cultivar. His 'Haku-Rakuten', a pure white, was first, and it was pleasant to be able to compare it with 'Edelweiss', which is of a more creamy shade, and the looser 'Gauntletti'. All these flowers were some 5 inches across. The next class for semi-doubles had yet larger flowers with a very perfect 'Mrs. D. W. Davis' (1st) from Windsor and a splendid 'Guilio Nuccio' (2nd) from Sir Giles, who also had a 'Guest of Honor' quite 6 inches across but with a slight blemish, and a fine 'Drama Girl' from Mrs. M. E. Bainbridge, of Sale, Cheshire. In some contrast to these giants was an exquisite little 'Magnoliaeflora' from Windsor, which was third. In the next class for variegated cultivars, Sir Giles Loder's 'Spring Sonnet', blush pink striped and flecked carmine, was first; Mr. H. G. Ayling, of Stanmore,

was second with 'Wheel of Fortune', white striped red; and Sir Giles third with 'Adolphe Audusson Special' which was predominantly white, but with some red markings. It must be confessed that there was little difference to be seen between 'Spring Sonnet' and 'Geisha Girl' which the Hydon Nursery had entered in this class. Sir Giles took both the first and second prizes in Class 8 for any three semi-double cultivars. He had a very fine 'Lucy Hester', a rich silvery pink and some 6½ inches across, the lovely 'Melody Lane' with red stripes on a blush-pink background, and an 'Adolphe Audusson Special' which was half red, half white. Mr. R. Strauss was third, having a very fine 'Mrs. D. W. Davis', the white and rose marbled 'Nagasaki' and a very pretty pink in 'Disneyland'.

There were yet more fine flowers in Classes 9 to 12 for anemone and paeony-formed cultivars. Sir Giles took the first and second prizes in Class 9 for a white cultivar with 'Evelina', which becomes cream towards the centre, and the ivory-white 'The Pilgrim'. Mr. H. G. Ayling was third with a good flower of 'Yuki-Botan'. In the next Class for a coloured cultivar Sir Giles was first with a large 'Mathotiana Supreme', a loosely double sport of a cultivar which is usually described as rose-formed and sports freely. He also took the third prize with the rose pink 'Mattie O'Reilly'. Mr. Ayling was second with the handsome deep red 'Red Rogue'. In Class 11, for a variegated cultivar, Mr. R. Strauss was first with a really lovely 'R. L. Wheeler Var.' quite 6½ inches across, but the only variegation was to be seen in the central petalodes. Sir Giles' flower of the same cultivar showed far more variegation and his 'Carter's Sunburst' (second and third, respectively) was an attractive pink with darker stripes. For the second year running Sir Giles won both the first and second prizes in Class 12 for any three cultivars. He had a really splendid 'Hawaii' which, with its fimbriated margins, looked rather like a very large pink carnation but not flat like a Malmaison carnation. Other fine flowers of his were 'R. L. Wheeler', 'C. M. Wilson' and, at the other end of the scale in size and more full in appearance with mixed petals and petalodes, the rose pink 'Ballet Dancer'.

With Classes 13 to 16 we came to the formal double or rose-formed cultivars. Miss C. A. M. Marsh, of S.E.19, had a perfect 'Imbricata Alba' with which she took first prize in Class 13, though Mr. Ayling's 'Mathotiana Alba' (2nd) and the Duke of Devonshire's 'Alba Plena' (3rd) were very close to it. In Class 14, for a self coloured cultivar, there was a lovely rich pink 'Matho-

tiana Rosea' from Windsor which won the first prize, with the rose-red 'Princess Murat' from the same garden second. 'Augusto L. Gouveia Pinto' from Windsor, with pleasing white margins to its pink petals and in perfect condition, was first in Class 15 for a variegated cultivar. It measured quite 5 inches across. Sir Giles Loder's 'Betty Sheffield Supreme', a combination of white and red, made a notable second. Windsor's 'Princess Murat' was first in Class 16 for any cultivar. Another sport of 'Mathotiana', the soft pink 'Souvenir de Bahuaud Litou', won the third prize for Sir Giles.

Were a bookmaker to have reviewed the many successes of Sir Giles and Lady Loder in previous classes, it is doubtful if he would have given decent odds on their entries in Classes 17 and 18. They romped home in both classes, No. 17 being for any six mixed types of cultivars of *C. japonica*, in which they took first and second places, and No. 18, for any three cultivars, in which they were first, second and third. Among their very fine flowers in Class 7 was a 'Drama Girl' which measured 7 inches across. Their 'Adolphe Audusson Special' certainly deserved the addition of the adjective. Their blush pink 'Gail Evans' was attractive and 'Mathotiana Supreme' sumptuous. They were not without competition. Mr. R. Strauss, who was third, had two American-raised cultivars which we had not seen in the Competition before: 'Touchdown', a deep rose pink, and 'Wildfire', a semi-double of a brilliant, almost orange-red. He also had the attractive pink 'King's Ransom'. The Duke of Devonshire was fourth, and it was pleasant to see his 'Tricolor', an old favourite and reliable in its variegation, which often goes under the name of "Sieboldii", and his fine 'Jupiter'. Sir Giles and Lady Loder used much of the material we had seen before in Class 18, but we noted their 'Betty Sheffield Blush', one of 'Betty Sheffield's' seven sports, and their light pink and white striped 'Pauline Winchester'. The Duke of Devonshire, whose entry was Highly Commended, included the pretty pale pink and white striped 'Madame de Strekaloff'.

Class 19 is for the single wild form of *C. reticulata*. The first prize went to a lovely soft pink from Windsor. Lord Aberconway and the National Trust, Bodnant Gardens, were second with a flower which was of a richer pink while Sir Giles Loder was third with a rich rose form. The next class was for the semi-double *C. reticulata* 'Captain Rawes'. The Hydon Nursery was first with a fine large flower of a particularly luminous shade of carmine rose, just beating the Duke of Devonshire's flower which

we have seen and admired in many past competitions. Sir Giles was third with a flower lighter in colour. Class 21, for any other form of *C. reticulata*, produced some splendid Kunming reticulatas. 'Osmanthus Leaf', from the Crown Estate Commissioners, was placed first and is attractive with its soft rose pink flowers. Sir Giles' 'Crimson Robe', with a deep turkey red flower, was second, while Mr. Strauss' 'Purple Gown', wine red in colour, was third. 'Lion Head' from Windsor was Highly Commended. It is interesting to see these Kunming reticulatas, some of which seem to have settled down well in cultivation in cool greenhouses. Class 22 is for a spray of *C. saluenensis*, with a rose madder form from Exbury placed first. Sir Giles was second with an exquisite blush-pink form, the third prize going to a form with much more blue to its rose from Windsor. Major E. W. M. Magor, of Lamellen, Cornwall, had a good vase of *C. cuspidata* in Class 23 for a species other than *C. reticulata* and *C. saluenensis*. This is an attractive shrub with small, white flowers and bronze young growth, provided one is not thinking in terms of large-flowered cultivars of *C. japonica*. The only other entry was *C. maliflora*, with flowers like little double pink roses, from Windsor. This charming though somewhat tender species was introduced to cultivation in this country in 1819 by Captain Rawes who, no doubt, obtained it from a Chinese garden. In Class 24, for any three species, Sir Giles was again successful with *C. reticulata* 'Crimson Robe', his blush pink *C. saluenensis* and a white flowered 'Vernalis'. This latter plant is of unknown origin, possibly not a separate species, but the name is retained in the U.S.A. in connection with a number of cultivars from Japan.

Classes 25 to 30 were for hybrids, starting with single-flowered cultivars of *C.* × *williamsii*. Lord Aberconway took the first prize with a fine spray of 'J. C. Williams'. 'Golden Spangles', from Windsor, was second. The flowers are a good pink and the leaves have a golden variegation.

In Class 26, for any cultivar other than a single-flowered one of × *williamsii*, the Duke of Devonshire was first with a splendid spray of 'Donation', which also took the second prize for the Crown Estate Commissioners and the third prize for Sir Ralph Clarke, of Borde Hill.

Class 27 is for any single-flowered hybrid of which one parent is *C. reticulata*, and the rose-pink 'Inamorata' from Windsor took the first, with another flower of it from Sir Giles Loder second. Sir Giles also took the third prize with 'Barbara Hillier', which

was admitted to this class for the purpose of the Competition.

In the next class, for any hybrid of *C. reticulata* other than a single-flowered hybrid, Sir Giles' 'Leonard Messel' was justifiably first, but 'Tali Queen', from Exbury, which was placed second, was most attractive with its richer coloured flowers. In the next class, for a spray of any hybrid not specified before, the charming 'Cornish Snow', from Bodnant, was first, with 'Bonnie Marie', from Sir Giles, in second place. Both hybrids have *C. cuspidata* blood, but it is not very apparent in the large, semi-double, pink flowers of 'Bonnie Marie'.

Class 30, for one spray each of any three hybrids, had some fine entries. That from Bodnant took the first prize with 'J. C. Williams', 'Donation' and the delicate pink 'Salutation'. Sir Giles, who took the second prize, also included this hybrid, with 'Leonard Messel' and 'Cornish Snow'. The Duke of Devonshire was third with his fine *C. reticulata* 'Captain Rawes', 'Donation' and 'Hiraethlyn' which has funnel-shaped light pink flowers.

The final Class was for a camellia plant in bloom and was won by Mr. J. J. Moore, of Norbury, S.W.16, with *C. japonica* 'Eugene Lize' with nicely variegated pink and white flowers.

AN EXHIBIT OF CAMELLIAS FROM LEONARDSLEE

APRIL 4 and 5, 1967

By JAMES PLATT

AT the Show, held on April 4 and 5, 1967, Sir Giles and Lady Loder staged a decorative and most interesting exhibit of camellias in the form of a pyramid, with single flowers inserted in a mossy background, culminating in fine sprays of *C. reticulata* 'Confucius', *C. reticulata* 'Captain Rawes', *C.* 'Salutation' and *Camellia japonica* 'Mathotiana Supreme', 'Tomorrow', 'R. L. Wheeler' and the coral pink 'Nancy Bird'. There were some 93 cultivars and hybrids in the exhibit, many of them acquired by Sir Giles and Lady Loder in Portugal and the U.S.A.

The advantages of growing camellias in a cool greenhouse have been pointed out frequently in recent years. This exhibit, with its splendid large flowers from 5 to 6½ inches across and in perfect condition, emphasised these advantages, one of which is, in the experience of Sir Giles and Lady Loder, that quite young plants flower freely, almost with abandon, under glass, whereas they may take some years to do so when planted out in the open. This seems much the case with recently raised American seedlings or sports which also produce far larger flowers under glass. Two camellias from Leonardslee received the Award of Merit at this Show as flowering plants for the cold greenhouse: *C. japonica* 'Edelweiss' (Fig. 37) and *C. japonica* 'Guest of Honor' (Pl. 4), which is referred to below. In Lady Loder's opinion, *C.* 'Mathotiana Supreme', a sport of 'Mathotiana', is a good dual purpose plant, also flowering well in the open.

A pleasant aspect of this exhibit was the number of American cultivars which were making their first appearance in the Hall. In fact the flower of *C. japonica* 'Lady in Red' was probably the first that had opened in this country. It was a large semi-double, quite 6 inches across, of a red made particularly rich by the waxen sheen on its petals. Another red, but of a more fiery shade, was 'Vulcan', very large and paeony-formed. 'Sol de Oro' was also red but more rose in shade and attractive with its single row of petals and central petalodes of the same colour, among which a few yellow stamens were showing. 'Guest of Honor' was an impressive semi-double rose-red, quite 6½ inches across. Two other cultivars of *C. japonica* with rich pink flowers were 'Lucy Hester' and 'Lady Macon'. Both are very large semi-doubles, the former rather flat with conspicuous yellow stamens, the latter, some 6½ inches across, with somewhat spoon-shaped petals and a central boss of pink petalodes of the same pink. 'Tick Tock', cherry red in this form, though a cultivar of *C. japonica*, had much of the appearance of a double *C. reticulata*. Another cultivar of *C. japonica* 'Ada Pieper' was similar in form but of a coral pink. There was a number of very attractive semi-doubles in shades of shell pink, particularly so 'Virginia Robinson', 'Gladys Wannamaker' and 'Gail Evans', the two latter having pink petalodes. 'Pink Clouds', of loose paeony form, was white, delicately flushed pink and quite lovely. Of white flowered cultivars, 'Shiro Chan' was both attractive and interesting, as it is a sport of 'C. M. Wilson', as is 'Hawaii', which, however, has fimbriated petals and might well be taken for a large pink carna-

tion. In contrast to these large and splendid flowers was a tight little double called 'Little Birt', which might also be taken for a carnation, but it is smaller with its rather upright petals striped pink and red.

There was one absentee in this impressive collection, *C. reticulata* 'Robert Fortune', the last flower of which had only just fallen at Leonardslee. It is interesting to recall that the late Ralph Peer made a special flight by air to see this plant in flower at Leonardslee, hardly believing that this cultivar, perhaps introduced in the 1850s, had survived in cultivation. Now, with increasing familiarity with the Kunming reticulatas, we are slmoat convinced that 'Robert Fortune' and the Kunming 'Pagoda' are one and the same.

THE LATE CAMELLIA COMPETITION APRIL 18 and 19, 1967

By JAMES PLATT

THERE were 359 entries in the Late Camellia Competition, for plants grown in the open only, held in conjunction with the Show on April 18th and 19th. This was a creditable achievement, as the weather during the weeks before had been excessively tiresome. Throughout the South there had been early flowers in profusion, and early growth, both of which received a horrid check in the form of a sharp and sudden air frost which in turn was followed by strong north-east winds. Just before the Show there was a number of days of high midday temperatures and cool evenings. The combination of these conditions no doubt accounted for the somewhat poor quality of many of the camellias available for this Competition. Perhaps we had become hypercritical after seeing so many lovely camellias cut from cool greenhouses within recent months. There was a number of new competitors whose entries were most welcome.

Classes 1–8 are for single cultivars of *Camellia japonica*. These, to many the most appealing of *Camellia japonica's* many varieties, are susceptible to frost and adverse weather conditions. It was all

the more pleasing to see a perfect 'Alba Simplex' from Mr. E. de Rothschild, of Exbury, in Class 1, a really good 'Jupiter' from Mr. R. F. Winter, of Virginia Water, in Class 2, and a satisfying 'Kimberley' from Exbury, all three winning first prizes. There were more good reds in Class 4, with Exbury's 'Red Cardinal' first; a pleasant seedling rather the colour of 'Jupiter' but with pronounced yellow stamens, from Mrs. G. Preston, of Slaugham Park, Handcross, second; and the dusky 'Lanarth' from the Crown Estate Commissioners, Great Park, Windsor, third. Mrs. G. Preston, who took the first prize in Class 7 with 'Apple Blossom', also took the first prize in Class 6 with 'Gertrude Preston' which, with its larger flower and rather deeper yet delicate pink, appealed to us very much. A lovely little 'Snow Goose' from Sir Giles Loder was second, the third prize going to Mr. R. F. Winter's 'Lady de Saumarez' with well defined bright stripes, Exbury's 'Hatsu-Zakura', a rich pink, was one of the best flowers in Class 8.

Semi-double cultivars are among the more frost resistant and there were good flowers in Classes 9 to 20. In Class 9, for 'Adolphe Audusson', Mr. R. H. Lynch, of West Byfleet, was first with a perfect rather compact flower, while the second place went to a larger and looser flower entered by Mrs. M. E. Turner, of Grays, Essex. This is the first time that Mr. Lynch and Mrs. Turner have had entries in the Competition. We hope that this success will encourage others who, like Mrs. Turner, have only a half dozen or so plants from which to cut their entries. 'Donkelarii' was well shown by Exbury in Class 10. From Windsor there were satisfying 'Gloire de Nantes' and 'Latifolia' in Classes 11 and 12. In Class 13, for 'Lady Clare', Mr. E. de Rothschild, whose flower had been cut, no doubt, from the celebrated 'Lady Clare' walk at Exbury, was first. The Hon. Edward Boscawen, of the High Beeches, Handross, Sussex, took the second prize, this being the first time, we believe, he had entries in the Competition, There was a perfect 'Magnoliaeflora', from Exbury, in Class 14 for that cultivar. Class 15, for 'Nagasaki', showed clearly, as was also shown in other classes, how environment and soil can affect the colour of well-established cultivars. An excellent big flower from Exbury was first. Mr. E. Boscawen was second with a smaller flower, while a flower from Windsor, which was third, was of a lighter shade. Mr. R. H. Lynch had a good seedling in Class 16 for any semi-double red cultivar, with rather a fuller flower than that of 'Apollo' from Exbury which was place first. In Class 17,

for any semi-double cultivar not specified in previous classes, there were two excellent flowers of 'Gauntletti' from Windsor and Exbury, perhaps a little surprising, as this cultivar is not very weather resistant. A flower in Class 18 of 'Berenice Boddy' from Sir Giles Loder resembled 'Magnoliaeflora', but it was more substantial and of a richer but none the less delicate pink. We noticed a good flower in Class 19 of 'Lady Vansittart' which had a distinctive central red stripe to each petal and took the first prize for Mrs. Paton. Another pleasing flower in this Class was that of the variegated 'Monte Carlo' in two shades of rose pink. There were good flowers in Class 20 for any three semi-double cultivars, with an admirable 'Alba Grandiflora' from Exbury, a beautiful rounded 'Lotus' from Leonardslee and a 'Mercury' from Windsor.

Classes 21 to 29 are for anemone- and paeony-formed cultivars of *C. japonica*. Mrs. Paton took the first prize in Class 21 with an almost perfect 'Elegans' of a dense shade of rose pink. Sir Giles Loder had a lovely little flower of the white and cream-shaded 'Nobilissima' in Class 22 for this cultivar. In Class 23 for 'Preston Rose', there was an excellent flower from Exbury. In Class 24 for a red cultivar, there was a fine flower of 'Altheaflora', from Leonardslee, which was first, and a nice flower of the lighter red 'Childsii', from Exbury, which took the second prize. 'Monsieur Paugam', a large rounded white flower, won the first prize for Windsor in Class 25. In Class 26, where the cultivar must be neither white nor red, the rose pink 'Tomorrow' was showing its good qualities and took the first prize. There were three attractive flowers in Class 27 for a cultivar not provided for in previous classes. Mrs. Preston was first with an unknown pink flower striped red; Sir Giles was second with the white-margined light rose-pink 'Herme'; and Mr. E. de Rothschild third with 'Platypetala', whose delicate pink was dotted and striped a darker pink. In the next Class, for any three cultivars, Exbury's 'Debutante', a strawberry ice-cream pink, was conspicuous, which with a good 'Dobrei' and a rich rose dome-shaped 'Lady Mary Cromartie' took the first prize.

In Class 29, for 'Contessa Lavinia Maggi', the flowers showed considerable variation. Windsor's flower, which was first, was well marked on a deep pink ground; that from Sir Giles was red and white in effect, while Mrs. E. M. Turner's flower was marked more irregularly. This Class brought us to the Sub-section for rose-formed or formal double cultivars of *C. japonica*, which also included classes 30 to 42. The classes for the three different forms

of 'Mathotiana', 31 to 33, gave us some evenly proportioned flowers, with a good rusty red from Sir Giles, 'Mathotiana Rosea' from Mr. R. F. Winter, and 'Mathotiana Alba', in excellent condition, from Exbury, Leonardslee and Windsor. Its light pink sport 'Souvenir de Bahaud Litou' was also well shown by Windsor, Exbury and Mrs. Paton. Class 37, for 'Coquetti', again had some fine flowers. Sir Giles was first with a glowing red flower, Windsor second and Mr. P. J. Urlwin-Smith, of Sunninghill, Ascot, third. 'Anna Bruneau', from Leonardslee, a well-shaped and glowing rich rose sport of 'Mathotiana Alba', was first in Class 38 for any cultivar not specified in previous classes. Mrs. M. E. McDonald, of Thames Ditton, Surrey, was second with a nice 'Margherita Coleoni', and Sir Giles third with 'Purple Empress', a member of the 'Mathotiana' tribe with a decided purple cast. In Class 39, for any white cultivar not specified before, apart from Sir Giles' 'Alba Plena' we were shown a very neat white unknown from Windsor, with another nameless double from Mr. Michael Saunders, of Sunningdale, Berkshire, both of them attractive. Pink cultivars qualified for Class 40. The bright rose 'Marianna Gaete' took first prize for Windsor, with the lighter coloured 'Otome' from Exbury second. Mrs. Preston's 'Bella Romana', a nicely striped pale pink, was third. There were more good pinks in Class 41, particularly so the Hydon Nurseries' 'General Paton' which was first and 'Rubens' rose striped white from Mr. H. G. Ayling, of Stanmore, which was third. Exbury had excellent 'C. M. Hovey', 'Mathotiana Alba' and 'Hana-Tachibana' of a good rose with which they won Class 42. Windsor was second, and we noted their 'Coquetti', which was very good. Sir Giles' entry, which was third, included a neatly striped 'Lallarook'.

Classes 43 and 44 were for mixed types of *Camellia japonica*. Exbury was first in Class 43 for six cultivars, and we picked out their 'Hatsu-Zakura', which was excellent, and their fine flowers of 'Nagasaki'. The second prize went to Sir Giles. Perhaps his best flower was that of 'Paolina Guichardini'. Mr. R. Strauss, who took third prize, included in his entry the distinctive rose-red violet-shaded 'D. Herzilia de Freitas Magalhaes' and a neat 'Tricolor'. Class 44, for one cultivar, is limited to exhibitors who have not won a first prize at an R.H.S. Camellia Competition since 1962. Mr. R. H. Lynch was first with a good red paeony-formed seedling, and Mrs. M. E. Turner second with 'Contessa Lavinia Maggi'.

Sub-section F (Class 45 to 54), which followed, was for miscellaneous camellias. The best flowers were to be found in the classes for *C. saluenensis*, *C.* × *williamsii* and other hybrids. Mr. E. de Rothschild took the first prize in Class 47 for *C. saluenensis* with a vivid magenta-pink form which contrasted with Leonardslee's and Windsor's lighter pinks. In Class 48, for a single cultivar of *C.* × *williamsii*, Windsor was first with the attractive pale pink 'Charles Michael', Exbury and Leonardslee being second and third, respectively, with 'J. C. Williams'. The next Class was for *C.* × *williamsii* 'Donation' and Mr. R. Strauss was first with a very good flower. Windsor's flower of 'Citation', a soft shell pink, was first in Class 51, which was for any cultivar of *C.* × *williamsii* other than a single cultivar or 'Donation'. Mr. Urlwin-Smith won the first prize in Class 53 for any hybrid not specified in previous classes with a good flower of 'Inspiration'. Windsor and Sir Giles were second and third, respectively, with *C.* 'J. C. Williams' × 'Inchmery', which is of an attractive though curious shade of coral-rose. In Class 54, for any four other than cultivars of *C. japonica*, the most interesting entries were Mr. de Rothschild's *C. saluenensis*, which was an unusual colour, perhaps best described as magenta-blue, and Windsor's delicate pink loosely double 'Exaltation'.

In Class 55, for a bloom each for any twelve camellias, Sir Giles was first. His 'R. L. Wheeler' was quite up to form, and he had a very large *C. reticulata* 'Captain Rawes' and a 'Coquetti' of excellent texture. The entry from Exbury, which took the second prize, included the carmine-rose 'L'Avvenire', 'Red Cardinal' and 'Childsii', which is considered by some to be the same plant as 'Altheaflora'.

Section II is for sprays. Sir Giles Loder was first in Classes 62 to 65, including a pleasant 'Alba Simplex', 'Lady Clare' and a neatly variegated 'Bella Romana'. Mrs. G. Preston entered a good single red seedling in Class 62. It was somewhat like 'Jupiter' but rather more pink. In Class 66, a spray each of any cultivar of *C. japonica*, Mrs. Preston, who was first, had a pleasing flower of 'Apple Blossom'. 'Stella Polaris', the entry from Windsor, caught the eye with its bright pink and white, contrasting with their flower of the dark red 'Kouron Jura'. Sir Giles had a splendid *C. reticulata* 'Captain Rawes' in Class 68, taking a first prize, and a pretty mauve pink *saluenensis* in Class 70. His 'Francis Hanger' in Class 72, for any single × *williamsii*, a pleasing white, had longer, narrower and more glossy leaves

than are generally seen in these hybrids. In Class 73, for × *williamsii* 'Donation', a fine flower from Windsor was first, and in Class 76, for any other hybrid of or descendant from *C. saluenensis*, there was a good 'Exaltation' from the same garden, though Sir Giles was first with 'J. C. Williams' × 'Inchmery'. In Class 77, for a spray each of any three, Sir Giles was first. He had a particularly good spray of 'Adolphe Audusson'. The second prize went to Windsor and their × *williamsii* 'Charles Michael', a delicate blush pink, was particularly attractive. In Class 78, for six sprays, there was only one entrant and that was Sir Giles. He had a beautiful 'Altheaeflora' and *C. saluenensis* of a rich magenta. The final Class is for an arrangement of camellias, and the first prize went to Mrs. M. E. McDonald, who used *C. japonica* 'Margherita Coleoni' alone effectively, while Mr. H. G. Ayling, who was second, had various reds and pinks blended pleasantly.

TRURO SHOW, APRIL 26 and 27, 1967

By ANN MAGOR

AFTER what had been a remarkably mild winter, with camellias in some gardens in full flower as early as January, the frost of April 1st was indeed a setback, resulting in reduced entries, notably in the Camellia and Magnolia classes.

The exhibit from Tresco Abbey, Scilly Isles, was a marvellous spectacle, which was deservedly awarded a gold medal. Many uncommon plants were shown, amongst which *Protea latifolia* really caught one's eye, as did *Scilla peruviana*, greatly resembling an Agapanthus, *Coleonema pulchra*, a very attractive plant with delicate leaves and little pink flowers, *Leucadendron salignum*, and the very attractive *Erica glandulosa*.

Two trade stands were awarded gold medals. Treseders' Nurseries, of Truro, showed a wide variety of plants, including *Eucalyptus* × *nicholii*, which has very attractive foliage, and *Prostanthera sieberi*. Veitch & Son Ltd., of Exeter, included on their stand *Grevillea sulphurea*, *Magnolia denudata*, and the very handsome, dark *Clematis* 'Ernest Markham'.

Caerhays Castle once again put up an excellent exhibit, with a number of really nice plants, including *Symplocos dryophylla*, which has dark red juvenile foliage, *Photinia glomerata*, and large sprays of *Michelia doltsopa* which dominated the centre of the stand. *Magnolia nitida*, *Rhododendrons keysii* and *hanceanum* were in profusion. Outstanding in this exhibit was a single truss of a rhododendron, thought to be *falconeri* × *sinogrande*, a very clear orange in colour. with the compactness of *falconeri*, but larger in size. This truss was awarded the Abbiss Memorial Trophy for the most outstanding plant in the show. This stand was also awarded a gold medal.

RHODODENDRON CLASSES

Class 1, for 6 species, was won by Mrs. Johnstone, of Trewithen, with *sinogrande*, *arizelum*, *eximium*, *delavayi*, *aberconwayi* and *argyrophyllum*; the exhibit also won the Mrs. Charles Williams Challenge Cup. Mrs. Copeland and the National Trust, from Trelissick, who were second, showed an attractive pale pink *hodgsonii*, *campanulatum*, and *campylocarpum*.

Colonel Coode, of Polcarne, won Class 2 for 3 species with a white *arboreum*, *falconeri*, and a really magnificent *griffithianum*. Class 3, for a species of the Falconeri or Grande series, was won by the National Trust, from Lanhydrock, showing *sinogrande*. In the following Class, for any species other than the Falconeri or Grande series, Trelissick won with *arboreum*; Lady Falmouth, showing a perfect *niveum*, was third. Class 5, for any species of the Arboreum series, was won by Trelissick with *arboreum*. Mrs. Copeland also won Class 6, for any species of the Thomsonii series, showing a very fine *thomsonii*. Sir Edward Bolitho, of Trengwainton, showing a lovely form of *taronense*, with large bells, won Class 7, for any species of the Maddenii or Edgeworthii series.

In Class 8, for a spray of any species in the Falconeri or Grande series, Mrs. P. M. Holman's *falconeri* won, with *eximium* from Trengwainton and Lamellen in second and third places. Major Magor showed a fine spray of *morii* to win Class 9, for any species of a series other than Falconeri or Grande; Colonel Colville's *williamsianum* was second.

In Class 10, for any species of the Triflorum series, Trelissick showed a lovely spray of *davidsonianum* to win this class from Mr. N. T. Holman, showing a nice form of *augustinii*. Chyverton, showing *tephropeplum*, won Class 11 from Lamellen's *mollico-*

mum, which I thought very attractive. Class 12, for any deciduous species of the Azalea series, was deservedly won by Mr. N. T. Holman, of Chyverton, showing his lovely form of *schlippenbachii*, with *tosaense*, from Trewithen, second. Trewithen won the next class for three deciduous azaleas, showing *quinquefolium*, *reticulatum*, and *weyrichii*.

The Hybrid Rhododendron classes were well supported, with Lanhydrock winning the class for six trusses with 'Laura Aberconway', Loderi, 'Unknown Warrior', 'C. B. Van Nes', 'Letty Edwards', and 'Slocock's Unique'. Trelissick were second, with an exhibit which included 'Dot', 'Fortune's Triumph', and 'Naomi Early Dawn'. Class 15, for three hybrids, was won by Trelissick, with an exhibit which included 'Maid of Kent'; Mr. Holman was second, with 'Loderi Venus' and his good form of 'Letty Edwards'.

Class 16, for one truss of any hybrid, was won by a magnificent 'Loderi King George'; Mrs. Johnstone's *hodgsoni* × *falconeri* was second. In the following class, for a hybrid raised in the garden of the exhibitor, Trengwainton's dark red 'Morvah' won from Lamellen's 'Clio'. Major Magor's 'Oreocinn' won the class for a spray of any hybrid of which one parent is a species of the Triflorum series, winning from Colonel Colville's 'Augfast'. Class 24, for one spray of a hybrid, was won by Lamellen's very attractive deep pink 'Thomdeton', with Trelissick's 'St. Probus' a close second. The class for a species or hybrid of the Maddenii or Edgeworthii series was won by Mrs. P. M. Holman with a lovely truss of 'Lady Alice'; 'Fragrantissimum', shown by Mrs. Charles Williams, was second.

Camellia Classes

Class 1, for three varieties of *C. japonica*, one bloom of each, was won by Colonel Colville, of Penheale, showing perfect specimens of 'Devonia', 'Sylva', and an unnamed variety. Col. Colville was also successful in Class 2, for a single bloom of *C. japonica*, showing 'Devonia'. Mrs. Johnstone won Class 3, for three varieties of semi-doubles, with 'Gauntletti', 'Drama Girl', and 'Auburn White'. Class 4, for one bloom of a semi-double, was won by Trelissick with 'Grandiflora Alba'. Lady Falmouth won Class 5, for three blooms of anemone or paeony forms, with nice specimens of 'Preston Rose', 'Canon Boscawen', and 'Elegans.' Class 6, for one bloom of the same type as the preceding class, was won by Trewithen's 'R. L. Wheeler'. Mrs. Johnstone

also won Class 7, for three blooms of rose and formal double varieties, with very fine blooms of 'Mathotiana Rosea', 'Mathotiana Alba', and 'Alba Plena'. Trewithen was also successful in Class 9, for six varieties of *C. japonica*, showing 'Drama Girl', 'Mrs. W. D. Davies', 'Giant White', 'The Czar', 'Mattie O'Reilly', and 'Auburn White'.

Lady Falmouth won Class 12, for three blooms of double or semi-double varieties of *C. reticulata*, showing three lovely unnamed varieties. In the following class, for one bloom of the same type as the preceding, Chyverton's magnificent 'Captain Rawes' deservedly won.

Class 14, for one bloom of three single varieties of *C.* × *williamsii*, was won by Col. Colville, who also won the following class for one bloom of a single variety, showing 'J. C. Williams', 'Mary Jobson', shown by Mrs. Kitson, was second. Lady Falmouth won the class for one bloom of 'Donation', in a class of nine entries, with Lanhydrock second. Class 21, for six different species or varieties, was won by Trelissick, with *C. japonica* 'Adolphe Audusson', 'Grandiflora Alba', 'Nagasaki', 'General Lamorciere', 'Blackburniana', and *C. reticulata*. This exhibit was awarded the Camellia Cup. Lady Falmouth, showing 'Nagasaki', won Class 22, for a spray of *C. japonica*; Colonel Coode, with 'Donckelarii' was placed second.

Plants shown in other classes worth particular mention were *Acacia verticillata*, a very attractive *Staphylea*, and a very eye catching *Embothrium coccineum*. Some interesting conifers were also exhibited, including *Athrotaxis selaginoides*, *Cunninghamia lanceolata*, and *Torreya californica*.

RHODODENDRON GROUP VISIT TO WAKEHURST PLACE AND HEASELANDS

By DAVID PYCRAFT and JAMES PLATT

ON Friday, 12th May 1967, some 90 members of the Rhododendron Group paid a visit to the gardens at Wakehurst Place, by kind invitation of Sir George Taylor, V.M.H., and at Heaselands, by kind invitation of Mr. and Mrs. E. G. Kleinwort. Except for a few light showers in the morning the day was a fine one and the Sussex countryside was as attractive as one could wish.

WAKEHURST PLACE

Sir Giles Loder, Bt., Chairman of the Rhododendron Committee, on introducing members to Mr. R. L. Shaw, N.D.H., the Curator, Mr. A. D. Schilling, Assistant Curator (Officer in Charge, Wakehurst), Mr. D. W. H. Townsend and Mr. E. A. M. Ormerod, expressed the regrets of Sir George Taylor, who was unable to be present. Mr. Shaw explained to members that the garden at Wakehurst was going through a period of transition, necessitated by the change from a private garden to one now owned, through the generosity of the late Sir Henry Price, Bt., by the National Trust and administered by the Director of the Royal Botanic Gardens, Kew. This, he explained, entailed the widening of paths, the felling or branching of trees, the propagation and renewal of certain plants, as well as, for instance, resiting some plantations of young large-leafed rhododendrons. A visit to Wakehurst, with its 460 acres of garden and superb wooded valley, is of absorbing interest at any time, but particularly so when Mr. Shaw, who, at one moment was identifying and discussing rhododendron species, was at the next relating the exciting possibilities of development. Wakehurst has an existing background of magnificent trees, many of them exotic, and the presence of huge, old trees of *Magnolia campbellii*, *Davidia involucrata*, *Acer* species and *Nothofagus*, such as *N. betuloides*, adds to the excitement of development even if this must be over a period of years.

Rhododendron species and hybrids are most numerous at Wakehurst. We can but mention a few. First, there was the rare *R. nankotaisanense*, formerly listed as not being in cultivation, placed in the Barbatum Series and considered near to *R. morii*. This attractive species, with its delicate white flowers and crimson blotch, is being distributed from Wakehurst. Nearby was a waterfall of crimson formed by a *R. arboreum* of tree-like proportions. Further down the garden *R. roxieanum*, much admired for its narrow-lanceolate foliage, showed that it is also attractive in flower with its compact trusses of white, set off in this case by the yellow of *R. wardii*. Another uncommon species we saw, but not in flower, was *R. hypoglaucum* of the Arboreum Series. There were distractions on all sides. We could not resist seeing the old plant of *Olearia lacunosa*, the original plant of *Pieris formosa* var. *forrestii* 'Wakehurst', a huge plant of *Stewartia sinensis* with bark as beautiful as any birch, or *Acer griseum*, *Lathrea clandestina*, a parasite growing in quantity on the roots of an *Acer* species and even on a rhododendron, and once back near the house *Telopea truncata* with its buds showing crimson. And so a most enjoyable and interesting visit ended with members full of gratitude to Sir George Taylor, Mr. Shaw and his assistants.

HEASELANDS

The garden at Heaselands is a new one created by Mr. and Mrs. Kleinwort chiefly since the last war. Fortunately, groups of trees and shrubs planted just before the war have grown away well, so the garden has a refreshing combination of the mature and the young. Plantings, be they of rhododendrons, azalea, roses or shrubs, are on a generous scale and provide fine masses of colour. Both sides of the valley below the house are planted with pleasant informality. Cultivation and maintenance are of the highest standard. Unfortunately, Heaselands was plagued by severe air frost in the spring of 1967. Hardly a single truss of a rhododendron was left undamaged and what should have proved a peak period was, in fact, a sad one.

However, Mr. and Mrs. Kleinwort and their head gardener, Mr. T. Cowan, showed members round in lovely sunshine, and we were able to realize what an attractive and charming garden this is. Rhododendrons and azaleas, both species and hybrids, have been planted generously. If it was sad to see ruined *R. wardii*, Loderi, *griersonianum* hybrids such as 'May Day' and *R. orbiculare*, we were able to admire 'Day Dream' on the further

side of the valley, and near the house a perfect round plant of *R. yakusimanum*, each growth of which was set with a large, pink-tinged bud. The rock-garden opposite the house was brilliant with evergreen azaleas and masses of *Lithospermum diffusum* 'Grace Ward'. Several plants of *Ceanothus impressus* were much admired, particularly a large open bush of it with the foliage hidden by the quantity of its dark, rich blue flowers.

Mr. and Mrs. Kleinwort had invited members to tea, so fully refreshed and still in bright sunshine, members were able to thank their kind hosts and express their appreciation of the garden so full of delights.

RHODODENDRONS AND CAMELLIAS WHICH HAVE RECEIVED AWARDS IN 1967

Rhododendron lanigerum 'Chapelwood' F.C.C. February 21, 1967. This cultivar was described in the Rhododendron and Camellia Year Book, 1962, **16,** p. 133. Raised and shown by The Crown Estate Commissioners, Windsor Great Park, Berks. (Fig. 23).

Rhododendron 'Palestrina' (kaempferi Hybrid). F.C.C. May 22, 1967, as a hardy flowering plant. **A.M.** 1964. Flowers widely funnel-campanulate are borne abundantly, two and three together, on short growths and carried on rather thick, green, hair-covered pedicels up to 7 mm. long. Corolla 2 inches across and 1½ inches long. Five jointed petals, deeply divided. Colour close to R.H.S. Colour Chart White Group 155D. Upper throat flecked with green. Stamens, ten in number, exserted from corolla, anthers light brown. Stigma exserted hairy at base. Calyx a continuation of pedicel—five joined lobes, green, deeply divided and covered and fringed with long pale hairs. Leaves deciduous, elliptic, 1⅝ inches long and ½ inch across with central vein prominent on reverse and covered with long, fine hairs. Upper surface of leaf blade fringed and lightly covered with long, pale, flattened hairs. Petiole 5 mm. long also lightly covered with pale, flattened hairs. Raised by Vuyk van Nes and exhibited by Mrs. R. Y. Paton, Gorse Hill Manor, Virginia Water, Surrey (Fig. 24).

Rhododendron quinquefolium 'Five Arrows'. F.C.C. April 18, 1967, as a hardy flowering plant (votes 9 for, 0 against). *R. quinquefolium* **A.M.** 1931 when exhibited by Dowager Countess Cawdor, Haslemere). A deciduous species from Central Japan, flowers opening as leaves expand. Flowers funnel-shaped, in trusses of 1 to 3 flowers, are pendulous. Corolla 5 joined petals 1 inch long and $1\frac{1}{2}$ to $1\frac{3}{4}$ inches in diameter (tube $\frac{3}{5}$ inch long). R.H.S. Colour Chart White Group 155B. Throat spotted and flecked with green. Stamens 10, irregular. Pedicel $\frac{7}{10}$ inch long, hairy. Calyx green, deeply lobed, pointed, tipped long hairs. Leaves elliptic, in fours and fives, $1\frac{1}{2}$ inches long and $\frac{4}{5}$ inch across; hairy along central vein on both upper and lower surface. Petiole rudimentary. Collector unknown, exhibited by Edmund de Rothschild, Inchmery House, Exbury, near Southampton, Hants. (Fig. 16).

Rhododendron 'Bounty' (Calfort grex—calophytum × fortunei). A.M. May 2, 1967, as a hardy flowering plant (votes 11 for, 3 against). (*R.* '*Calfort*' received an **A.M.** in 1932). Flowers open funnel-shaped, held in loose domed trusses of 15 to 17 flowers per truss. Trusses 7 inches across and 6 inches high. Corolla 7 joined petals, 3 inches across and $2\frac{1}{2}$ inches long. Style of equal length. Stamens 14/16 in number, variable in length. Anthers pale brown. Corolla R.H.S. Colour Chart White Group 155B, upper throat blotched Red-Purple Group 61A with a few deeper markings of Red-Purple Group 59A. Outer corolla flushed at base and along veins with Red-Purple Group 70B. Calyx 1 mm. long, rudimentary red edged with light basal covering of fine white hairs. Pedicel $1\frac{1}{2}$ inches long, Pedicel and edges of calyx flushed Red Group 51A. Leaves narrowly elliptic, up to $10\frac{1}{2}$ inches long and $2\frac{1}{5}$ inches across, free from indumentum. Petioles $1\frac{3}{5}$ inches long, glabrous. Raised and exhibited by Captain Collingwood Ingram, F.L.S., V.M.H., "The Grange", Benenden, Cranbrook, Kent.

Rhododendron 'Carolyn Hardy' ('Mrs. Lindsay Smith' × wardii) A.M. May 22, 1967, as a hardy flowering plant. Flowers open funnel-shaped, carried in loose flowered trusses up to $6\frac{1}{2}$ inches in diameter. Corolla, five joined petals, $3\frac{1}{2}$ inches across and 2 inches long, R.H.S. Colour Chart Yellow Group 150D. Stamens ten, brown anthered, stigma covered towards base with glandular hairs. Stamens and stigma included within corolla. Calyx five green irregular joined lobes up to 5 mm. long. Pedicel $1\frac{1}{2}$ inches long. Calyx and pedicel lightly covered with short, glandular

hairs. Leaves oblong, 4½ inches long and 2½ inches across, free from indumentum. Petioles 1 inch in length. Raised and exhibited by Captain Collingwood Ingram (Fig. 26).

Rhododendron 'Dayan' ('Lady Chamberlain' × concatenans). A.M. May 22, 1967, as a hardy flowering plant. 'Golden Orfe' (Comely grex). **A.M.** 1964 (Harrison). Trusses eight or nine flowered, loosely pendent. Flowers 2 inches across and 2¼ inches long, widely funnel-campanulate. Corolla R.H.S. Colour Chart Greyed Orange 168D at lip deepening to 169B at base. Waxy in appearance with a glaucous bloom, comprised of five joined petals deeply divided. Calyx green, rudimentary 1-2 mm. long. Pedicel ⅝ inch long, Calyx and pedicel lightly scaly-glandular. Stamens ten, brown anthered, style hairy, both included within corolla. Leaves faintly aromatic, elliptic 3½ inches long and 1 3/10 inches across, under surface showing purplish mottling and lightly scaly-glandular. Petiole ⅜ inch long, lightly scaly-glandular. Raised and exhibited by Edmund de Rothschild, Esq.

Rhododendron 'Eric Stockton' ('Fabia High Beeches' × 'Tally Ho'). A.M. June 13, 1967, as a hardy flowering plant. Flowers widely funnel campanulate, five to nine flowers per truss. Trusses up to 8 inches across, loosely pendulous. Corolla slighty waxy in appearance, five joined petals, 2½ inches long and 3⅕ inches across, style yellowish, stamens ten, black anthered, style and stamens both included within corolla. Nectaries large. Corolla R.H.S. Colour Chart Red Group 39B with darker veining, shading to Red Group 47C at lip. Inner surface of corolla densely and finely spotted with orange brown markings which fade towards lip, calyx reflexed, five joined lobes, up to 6 mm. in length, lightly covered with pale brown woolly indumentum, green/flushed red. Petioles 1⅕ inch long, lightly covered with woolly indumentum. Leaves narrowly oblong, 2⅕ inches across and 6⅗ inches long. Reverse covered loose brown woolly indumentum. Pedicel 1 inch long. Raised by Col. G. H. Loder, exhibited by the Hon. H. E. Boscawen, The High Beeches, Handcross, Sussex.

Rhododendron 'George Johnstone' (R. concatenans × R. 'Full House'—Trewithen Orange grex). A.M. April 18, 1967, as a hardy flowering plant (votes 10 for, 0 against). Flowers campanulate, waxy in appearance, are carried in loosely pendulous 4 inches in diameter trusses of from 7 to 9 flowers per truss. Corolla 1¾ inches in diameter and 1¾ inches long. R.H.S. Colour Chart Orange Group 25B at base shading to Greyed/Orange Group 167B and slightly flushed with Grey/Purple Group 185C. 10 stamens,

variable in length, are orange anthered. Style slightly protruding. Calyx very rudimentary. Pedicel ½ inch long, lightly covered with scaly indumentum. Leaves elliptic, aromatic, 2¼ inches long and 1 3/10 inches across. Petiole ⅜ inch long. Undersurface of leaves, petioles, calyx and pedicels lightly covered with scaly brown indumentum. Raised by George Johnstone, Esq., exhibited by Captain Collingwood Ingram (Fig. 28).

Rhododendron 'Halton' (R. lacteum × R. 'Naomi'—Lionel's Triumph grex). A.M. April 18, 1967, as a hardy flowering plant (votes 10 for, 0 against). The flowers, openly funnel-shaped, are held well in a firm, uniform and domed truss 6 inches in diameter and 6 inches high. Each truss contains from 13 to 16 slightly fragrant flowers. Corolla 3 inches across and 2½ inches along, style of equal length; the 10 stamens variable in length are brown anthered. Corolla R.H.S. Colour Chart Yellow-Green Group 150D. Calyx extremely rudimentary. Leaves elliptic, 6 inches long and 2¾ inches across, are free from indumentum. Raised by Lionel de Rothschild, Esq., exhibited by Edmund de Rothschild, Esq.

Rhododendron lepidotum 'Reuthe's Purple'. A.M. May 22, 1967, as a hardy flowering plant. Flowers one to three, rotate-campanulate, five joined petals are 1⅕ inches across and ½ inch long. Colour of corolla Purple-Violet Group 80A with darker markings on three upper joined petals. Ten stamens very slightly exserted, style of equal length. Anthers, filament, stigma and style coloured and variously shaded purple-grey. Calyx five joined irregular lobes, 4-5 mm. long, green at base, purple-grey along perimeter and fringed with fine hairs. Corolla densely scaly glandular on the outside. Calyx similarly covered. Pedicels ⅘ inches long, slightly scaly. Leaf scales persistent. Leaves aromatic, ⅘ inch long and ⅖ across, elliptic, densely scaly—glandular on under surface, lightly covered on upper surface. Petiole 5 mm. long, flattened, lightly scaly, glandular and fringed with a few long, wiry hairs. Collector unknown. Exhibited by Messrs. G. Reuthe Ltd., Foxhill Nurseries, Keston, Kent.

Rhododendron 'Oporto' (haemaleum × thomsonii). A.M. May 2, 1967, as a hardy flowering plant (votes 10 for, 2 against). Flowers campanulate, pendulous in loose trusses of 5 to 7 flowers. Corolla 5 joined petals 2 inches in diameter and 1 9/10 inches long, style included within corolla. 10 stamens variable in length, anthers dark brown included within corolla. Corolla waxy in appearance, R.H.S. Colour Chart Red Group 53A. Nectaries large. Calyx 5 joined lobes, irregular, easily detached, up to 6 mm. in length,

paler than corolla due to less pigmentation in tissues. Pedicel 1⅝ inches long, lightly and variably covered with fine white hairs. Leaves narrowly obovate 1 3/10 inches across by 2⅘ inches long, free from indumentum. Petioles ½ inch long. Raised and exhibited by Captain Collingwood Ingram.

Rhododendron 'Pedlinge' ('Loders White' × decorum). A.M. June 13, 1967. Flowers widely funnel campanulate, truss full, ten to twelve flowered, 6 inches across. Corolla seven lobed R.H.S. Colour Chart White Group 155B deepening to 155A at base, with greenish yellow flush in upper throat. The buds have a pink flush which is lost as the flower develops. Stamens fourteen to sixteen, brown anthered. Stigma green. Stamens and style both included within corolla. Calyx green. Seven lobes joined at base, variable in length up to 7 mm. glabrous. Pedicel 1⅘ inches long, glabrous. Leaves 2 9/10 inches across and 7½ inches long, narrowly elliptic to elliptic, glabrous. Pedicel 1 3/10 inches long, glabrous. Raised and exhibited by Major A. E. Hardy, Sandling Park, Hythe, Kent.

Rhododendron 'Perry Wood', a seedling of R. prattii. A.M. April 18, 1967, as hardy flowering plant (votes 7 for, 3 against). Flowers oblique campanulate. Truss 16 to 18 flowered and 5½ to 6 inches in diameter. Corolla 2 inches in diameter and 2 inches long. R.H.S. Colour Chart White Group 155C. Upper throat carries a strong flush at base of R.H.S. Colour Chart Red/Purple Group 59B. 10 stamens variable in length, black anthered. Style very slightly protruding. Calyx yellowish in appearance, 5 lobed, deeply divided, variable in length or up to 13 mm. long, round tipped, faintly flushed red, edged with fine hairs and lightly powdered with yellow/brown indumentum. Pedicel ¾ inch long, lightly covered indumentum. Leaves narrowly elliptic, 8 inches long and 3¼ inches across, undersurface plastered light brown indumentum. Petiole 1½ inches long. Collector unknown. Exhibited by Major A. E. Hardy (Fig. 27).

Rhododenron 'Queen Elizabeth II' ('Idealist'×'Crest'), shown as hybrid '137/53/1'. A.M. May 2, 1967, as a hardy flowering plant (votes 12 for, 1 against). Flowers open funnel-shaped, 10 to 12 per truss. Trusses 7 inches across. Corolla 7 joined petals, 4½ inches across 1¼ inches long, style acutely angled, exserted from corolla, lightly covered with red glandular hairs. Stamens 14, irregular, brown anthers included with corolla. Corolla R.H.S. Colour Chart Green-Yellow Group 1D. Calyx green rudimentary, 7 lobed, edged and lightly covered with small red glandular hairs.

Bud scales persistent, petiole 1¾ inches long, slightly flecked red. Leaves lanceolate to narrowly ovate, 5½ inches long and 2¼ inches across. Free from indumentum. Pedicel 1¾ inches long, glabrous. Raised and exhibited by Crown Estate Commissioners (Fig. 6).

Rhododendron 'Red Lacquer' ('Phoebus' × forrestii var. repens). A.M. March 14, 1967, as hardy flowering plant (votes 8 for, 4 against). Showing an extremely prostrate form of growth, the glossy bright red flowers on the exhibited specimen were carried well in clusters of five. Leaves elliptic in shape, 2 inches long and $\frac{3}{10}$ inches broad, were free from indumentum, the under surfaces a pale green with a complex network of darker veins. Petioles 10-12 mm. long, yellowish green, were flushed bronze on the upper surfaces. Flowers campanulate, $1\frac{7}{10}$ inches long and 1⅕ inches across. Colour: R.H.S. Colour Chart Red Group 45B with three noticeably darker veins running from base to tip of each joined petal. Stamens regular 1 inch long, stigma 1⅗ inches long. Five calyx segments joined at base, rudimentary, variable 3-6 mm. long. Pedicel and calyx lightly covered with short white hairs. Both coloured paler shades of Red Group 45. Bud scales variably persistent. Raised at R.H.S. Garden, Wisley; exhibited by Captain Collingwood Ingram (Fig. 21).

Rhododendron 'Seven Stars' ('Loderi Sir Joseph Hooker' × yakusimanum). A.M. May 2, 1967, as a hardy flowering plant (votes 12 for, 1 against). Flowers openly funnel-shaped, slightly pendant. Trusses loose 12-14 flowered, 5 inches across. Corolla 5 joined petals, 2 inches across and 1¾ inches long, style included with the corolla. Flowers in bud are coloured R.H.S. Colour Chart Red-Purple Group 66C with darker veins of Red-Purple Group 66B opening to White Group 155D with some veinal colouring and flushing of Red-Purple Group 66D. Stamens 10 to 12, variable in length, anthers pale brown, included within the corolla. Calyx 5 on joined lobes, irregular, red, scaly at base. Leaves oblanceolate to narrowly obovate, $1\frac{7}{10}$ inches across and 4¼ inches long. Reverse lightly covered with pale brown powdery indumentum. Pedicel ⅖ inches long, glabrous. Raised and exhibited by Crown Estate Commissioners.

Rhododendron 'Folies Bergere' (R. bullatum × R. Parisienne). P.C. April 18, 1967. A flowering plant for the cold greenhouse (votes 10 for, 0 against). Raised and exhibited by Sir Giles Loder, Bt., Leonardslee, Horsham, Sussex.

Rhododendron 'Gipsy' Moth (discolor × 'Lodauric Iceberg'). P.C. July 18, 1967. A hardy flowering shrub (votes 14 for, 0

against). Raised and exhibited by Mr. A. F. George, Hydon Nurseries, Godalming, Surrey (Fig. 25).

Rhododendron 'P. J. Mezzitt'. P.C. March 14, 1967 (votes unanimous). A hardy flowering plant. Raised by Weston Nursery, U.S.A., and exhibited by Crown Estate Commissioners.

Rhododendron 'Tasco' (griersonianum × catacosmum). P.C. May 2, 1967 (votes 13 for, 1 against). Raised and exhibited by Edmund de Rothschild, Esq.

Camellia reticulata 'Noble Pearl' ('Pao-chucha'). F.C.C. February 7, 1967, as a flowering shrub for the cool greenhouse. Described in Rhododendron and Camellia Year Book, **18**, 1964, p. 134. Exhibited by Crown Estate Commissioners.

Camellia reticulata 'Shot Silk' ('Tayinhung'). F.C.C. February 21, 1967, as a flowering plant for the cool greenhouse (votes 8 for, 1 against). One of the Kunming reticulatas raised in China, the flowers are numerous and held well on sturdy upright stems. Flowers—R.H.S. Colour Chart Red Purple Group 57C—are 6 inches across, semi-double and are comprised of thirteen undulating-edged petals with a central cluster of large fused petaloids and stamens. Exhibited by Crown Estate Commissioners (Fig. 12).

Camellia japonica 'Altheaflora Gigantea'. A.M. February 21, 1967, as a hardy flowering plant. Votes unanimous. Flowers 3½ inches to 3¾ inches across, semi-double. Petals held tightly in five to six whorls. Centre open with tight central cluster of shorter petaloids showing less pigmentation. The colour of the flowers is a rich and uniform satiny red—R.H.S. Colour Chart Red Group 50A. Leaves on the specimen shown were large, dark green and variably serrated, leaf tips varying from acute to acuminate. Raiser not known. Exhibited by Mrs. S. Williams, "Scorrier House", Scorrier, Redruth, Cornwall (Fig. 29).

Camellia japonica 'Edelweiss'. A.M. April 4, 1967, as a flowering plant for the cold greenhouse (votes 6 for, 2 against). Flowers semi-double 4½ inches across with central cluster of stamens variably interspersed with petaloids. Colour of flowers white: R.H.S. Colour Chart White Group 155D when fully opened, but at early stage of opening, appear to be suffused a faint creamy yellow, close to R.H.S. Colour Chart White 155A. The plant is stated to be very floriferous and the specimen shown carried a large number of well-developed blooms. Raised in the United States of America. Exhibited by Sir Giles Loder, Bt., Leonardslee, Horsham, Sussex (Fig. 37).

Camellia japonica 'Guest of Honor'. A.M. April 4, 1967, as a

flowering plant for the cold greenhouse (votes 7 for, 0 against). Flowers large semi-double, up to 6 inches across, carried well on sturdy stems. Dense central cluster of stamens with a few petaloids mainly along the perimeter of the stamen cluster. Colour of flowers: R.H.S. Colour Chart Red Group 55A with slightly darker veining. Raised in the United States of America. Exhibited by Sir Giles Loder, Bt. (Pl. 4).

Camellia reticulata 'Osmanthus Leaf' ('Hsiaokueiyeh'). A.M. February 7, 1967, as a flowering shrub for the cool greenhouse (votes unanimous). Flowers 4¼-4½ inches across, semi-double. Two rows of petals—twenty-two to twenty-four—slightly frilled, centre group of stamens interspersed with well-developed petaloids. Colour of flowers—R.H.S. Colour Chart Red/Purple Group 66D (close to Magenta H.C.C. 27). Raiser not known. Exhibited by Crown Estate Commissioners.

Camellia × williamsii 'Mildred Veitch'. A.M. February 21, 1967, as a hardy flowering plant (votes unanimous). This hybrid, raised in 1948, is stated by the exhibitor to make a compact, bushy plant with flowers freely produced, even on small plants. Flowers semi-double—R.H.S. Colour Chart Red Group 55C—are composed of fifteen to seventeen petals in two whorls with numerous small petaloids in a loose inner whorl and a central display of stamens. Central petaloids have streaked pigmentation. Leaves narrow, dark green and glossy with very fine serration. Flowers 3 inches across. Raised and exhibited by Messrs. Robert Veitch and Son Ltd., The Nurseries, Alphington, Exeter (Fig. 34).

Camellia 'Exaltation' (C. × williamsii × C. japonica 'Gauntletti') P.C. March 14, 1967 (votes unanimous). A flowering plant for the cold greenhouse. Raised and exhibited by Crown Estate Commissioners (Fig. 9).

Camellia japonica 'Ballet Dancer'. P.C. February 21, 1967. A plant for the cold greenhouse (votes unanimous). Raised by Short, U.S.A., and exhibited by Sir Giles Loder, Bt.

Camellia japonica 'Campsa Alba'. P.C. February 7, 1967. A hardy flowering shrub (votes unanimous). Exhibited by Major-General E. G. W. W. Harrison, Tremeer, St. Tudy, Cornwall.

Camellia japonica 'Dainty Maiden'. P.C. February 7, 1967. A plant for the cold greenhouse (votes unanimous). Raised by Waterhouse, Australia, and exhibited by Sir Giles Loder, Bt.

Camellia japonica 'Haku-Tsuru' ('White Crane'). P.C. February 7, 1967. A hardy flowering shrub (votes unanimous). Raised by Chugai, Japan, and exhibited by Crown Estate Commissioners.

AWARDS TO RHODODENDRONS AFTER TRIAL AT WISLEY

Rhododendrons

ON the recommendation of the Rhododendron and Camellia Committee, the Council has made the following awards to rhododendrons, after trial at Wisley.

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

Hardy Hybrid Rhododendrons

Rhododendron (*fortunei* × 'Lady Grey Egerton') **'Lavender Girl'.** (Raised, introduced (1950) and sent by Messrs. Walter C. Slocock Ltd., Goldsworth Nurseries, Woking, Surrey). **F.C.C.** May 31, 1967. Plant 13 feet high, 16 feet spread, vigorous, slightly spreading habit, very free-flowering; leaves 6½ inches long, 2¼ to 2½ inches wide, dark dull green. Flower truss 6 inches diameter, 4 inches deep, dome-shaped, compact, eighteen flowers per truss; corolla 2½ inches diameter, 2 inches long, fully expanded, funnel-shaped, some margins incurved, R.H.S. Colour Chart, Red-Purple Group 68D at margins, fading to a colour near Red-Purple Group 65D at centre, spotting on upper petal yellowish-brown. Flowering from May 15, 1967 (A.M. 1950). (206).

Rhododendron ('Snow Queen' × 'Cornish Loderi') **'Nimbus'.** (Raised (1935), introduced (1952) and sent by Messrs. Knap Hill Nursery Ltd., Woking, Surrey). **F.C.C.** May 31, 1967. Described R.H.S. Proceedings, vol. 90, p. 150. Flowering from May 23, 1967 (A.M. 1965). (101).

Rhododendron ('Goldsworth Orange' × *griersonianum*) (Tortoise-shell grex) **'Champagne'.** (Raised, introduced and sent by Messrs. Walter C. Slocock Ltd.). **A.M.** May 31, 1967. Described R.H.S. Proceedings, vol. 88, p. 52. Flowering from May 23, 1967 (H.C. 1962). (55).

Rhododendron ('Blue Tit' × *impeditum*) **'Sapphire'.** (Raised (1931) and introduced by Messrs. Knap Hill Nursery Ltd., plant supplied for the trial from the Royal Horticultural Society's Garden, Wisley, Ripley, Woking, Surrey). **A.M.** April 26, 1967.

Plant 21 inches high, 28 inches spread, vigorous, upright fairly compact habit, very free-flowering; leaves ½ to ¾ inch long, ¼ to ½ inch wide, dark, glossy green. Flower truss 2 inches diameter, 1½ inches deep, globular-shaped, compact, four to five flowers per truss; corolla 1¼ inches diameter, ¾ inch long, fully expanded funnel-shaped, margins entire and very slightly waved, R.H.S. Colour Chart, Violet Group 85B tinged Violet Group 85A with shading of Violet-Blue Group 91B on some florets, colour fading slightly on older florets. Flowering from April 7, 1967. (109).

Evergreen Azaleas

Rhododendron (parentage not supplied on entry form) **'Splendens'.** (Sent by Messrs. Knap Hill Nursery Ltd.). **A.M.** May 31, 1967. Plant 3 feet high, 8 feet spread, vigorous, spreading habit, very free-flowering; leaves 1 1/10 inches long, 1 inch wide, medium dark glossy green. Flower truss 3 inches diameter, 2 inches deep, four flowers per truss; corolla 1⅗ inches diameter, 1 inch long, fully expanded funnel-shaped, margins entire, a colour near R.H.S. Colour Chart, Red-Purple Group 62A. Flowering from May 17, 1967 (H.C. 1957). (3).

Rhododendron (*mucronatum* × 'Shinnyo-no-tsuki') **'Martha Hitchcock'.** (Raised at the Glenn Dale Station, Maryland, U.S.A., introduced 1948; sent by Messrs. Knap Hill Nursery Ltd. and Messrs. John Waterer, Sons & Crisp Ltd., The Nurseries, Jenkins Hill, Bagshot, Surrey). **H.C.** May 31, 1967. Plant 1½ feet high, 2 feet spread, fairly vigorous, upright habit, very free-flowering; leaves 2¾ inches long, 1¼ inches wide, dark dull green. Flower truss 4 inches diameter, 2½ inches deep, fairly compact, three to five flowers per truss; corolla 2½ inches diameter, 2 inches long, fully expanded funnel-shaped, margins slightly waved, R.H.S. Colour Chart, Red-Purple Group 72C with spotting on all or part of three upper petals reddish-brown. It should be noted that these colours were matched with flowers taken from young plants of this entry. Flowering from May 28, 1967. (83 and 107).

Rhododendron (parentage stated on entry form to be unknown) **'Peter'.** (Raised by Mr. C. E. Brown, introduced and sent by Messrs. D. Stewart & Son Ltd., Ferndown Nurseries, Broomhill, Wimborne, Dorset). **H.C.** May 31, 1967. Plant 1½ feet high, 3½ feet spread, vigorous, slightly spreading habit, very free-flowering; leaves 1 1/10 inches long, ⅖ inch wide, medium dark glossy green. Flower truss 2½ to 2¾ inches diameter, 1¼ inches deep, two to three flowers per truss; corolla 1¾ inches diameter,

1¼ inches long, funnel-shaped, margins waved, R.H.S. Colour Chart, a colour near Red Group 52C changing to Red Group 52B at centre, spotting on all or some of three upper petals darker reddish-brown. Flowering from May 25, 1967. (56).

Deciduous Azaleas

Rhododendron (parentage stated on entry form to be unknown) **'Sun Chariot'.** (Raised by the late Mr. Lionel de Rothschild, introduced and sent by Messrs. John Waterer, Sons & Crisp Ltd.). **F.C.C.** May 31, 1967. Described R.H.S., Proceedings vol. 89, pp. 54-55. Flowering from May 25, 1967 (A.M. 1963). (152).

Rhododendron (parentage unknown) **'Cherwell'.** (Raised at the Royal Horticultural Society's Garden; not yet generally introduced). **A.M.** May 31, 1967. Plant 4 feet high, 5 feet spread, vigorous, slightly spreading habit, free-flowering; leaves 3¾ inches long, 1¾ inches wide, light, glossy green. Flower truss 6 inches diameter, 3½ inches deep, dome-shaped, compact, fourteen to fifteen flowers per truss; corolla 2½ inches diameter, 2 inches long, funnel-shaped, margins frilled and waved, R.H.S. Colour Chart, Yellow-Orange Group 13B fading to Yellow-Orange Group 13C at margins, heavy spotting on upper petal yellowish-orange. Flowering from May 20, 1967. (44).

Rhododendron (parentage unknown) **'Derwent'.** (Raised at the Royal Horticultural Society's Garden; not yet generally introduced). **A.M.** May 31, 1967. Described R.H.S. Proceedings, vol. 91, pp. 134. Flowering from May 19, 1967 (H.C. 1966). (49).

Rhododendron (stated on entry form to be of mixed parentage) **'Eisenhower'.** (Raised by the late Mr. Lionel de Rothschild, introduced and sent by Messrs. John Waterer, Sons & Crisp Ltd.). **H.C.** May 31, 1967. Plant 5¾ feet high, 7½ feet spread, fairly vigorous, slightly spreading habit, very free-flowering; leaves 3¼ to 3½ inches long, 1 $\frac{3}{10}$ inches wide, medium glossy green, heavily tinged red and reddish orange. Flower truss 5½ inches diameter, 2½ to 2¾ inches deep, flattened dome-shaped, open and loose, nine to ten flowers per truss; corolla 2 inches diameter, 2 inches long, fully expanded funnel-shaped, margins slightly waved, R.H.S. Colour Chart, an intense colour near Orange-Red Group 33A with orange blotch. Flowering from May 23, 1967. (82).

Rhododendron ('Standishii' × late Ghent hybrid 'Queen of England') **'Mrs. Harry White'.** (Raised by Mr. Harry White, introduced and sent by Messrs. Sunningdale Nurseries, Windlesham, Surrey). **H.C.** May 31, 1967. Plant 4¾ feet high, 8 feet

spread, vigorous, spreading habit, free-flowering; leaves 2¼ to 2½ inches long, 1¼ inches wide, dark glossy green, lightly tinged purplish-red. Flower truss 3 inches diameter, 2 inches deep. flattened dome-shaped, compact, fifteen flowers per truss; corolla 2 inches diameter, 1½ inches long, funnel-shaped, margins slightly waved, ground white overlaid a colour near R.H.S. Colour Chart, Red-Purple Group 62A, large blotch of Yellow-Orange Group 21A. Flowering from May 25, 1967. (18).

ADDITIONS TO THE INTERNATIONAL RHODODENDRON REGISTER, 1966–67

a Alda Lea — cl. 'Eric Schame' × 'Professor Walter' seedling; (Walter A. Myers, Waukeen Azalea Gardens, Ripon, California, U.S.A.); plant compact, 12-14 in. tall, evergreen; fls. 2-3 per cluster, 2½ in. across, double, with as many as five colours from red centre with blotch to pink and white edge.

a Anna Pavlova — cl. (Knap Hill); parentage unknown; (raised by Dr. E. J. Kraus, introduced by Beneschoen Gardens, Myrtle Creek, Oregon, U.S.A.); plant 3½ ft. tall by 3½ ft. across in eight years, open spreading; lvs. 3 in. long, 1½ in. broad; fls. up to 9 in loose ball-shaped truss, white, double-ruffled, to 2½ in. across, fragrant; mid-season.

a Blue Angel — cl. 'Perle de Saffalore' seedling × a light purple seedling; (Walter A. Myers, Waukeen Azalea Gardens, Ripon, California, U.S.A.); evergreen compact plant to 18 in. high; lvs. 1½ in. long × ¾ in. broad; fls. light purplish blue (Nickerson 7·5 PB 8/4).

Carolyn Hardy — cl. 'Mrs. Lindsay Smith' × *wardii*; (Captain Collingwood Ingram, The Grange, Benenden, Cranbrook, Kent, England); lvs. oblong, 4½ in. long, 2½ in. across; fls. in loose truss, open funnel-shaped, 3½ in. across, 2 in. long, R.H.S. Colour Chart Yellow Group 150D; calyx lobes up to 5 mm. long, with pedicels lightly covered with short glandular hairs. A.M. (R.H.S.) 1967.

Columbia Sunset — cl. *griersonianum* × 'Azor'; (George L. Baker, Astoria, Oregon, U.S.A.); plant 5 ft. high, 4 ft. across in ten years; lvs. to 5½ in. long × 1½ in. wide, with light fawn indumentum below; fls. up to 14 per truss, funnel-campanulate, crinkled, up to 4 in. across × 2½ in. long, deep intense pink with deep red centre, red in bud.

a Copper Queen — cl. 'Chime' seedling × 'Chico'; (Walter A. Myers, Waukeen Azalea Gardens, Ripon, California, U.S.A.); evergreen; lvs. 1½ in. long × ½ in. broad; fls. single to semi-double, bright copper colour, 2½-3 in. across.

Dayan — cl. 'Lady Chamberlain' × *concatenans* (Edmund de Rothschild, Exbury, Southampton, Hants., England); fls. orange yellow. A.M. (R.H.S.) 1967.

Diana Colville — cl. hybrid of *R. yunnanense*; (Col. N. R. Colville, Penheale Manor, Launceston, Cornwall, England); lvs. 3½ in. long × 1½ in. across, narrowly obovate, light brown scaly indumentum below; fls. terminal and in axillary clusters forming a loose dome-shaped composite truss, 1 in. long, 2 in. diameter, widely funnel-shaped, Rose Purple (H.C.C. 533/2) throat spotted rich brown close to Garnet Brown (00918/3), spots shading to paler brown and greenish yellow; calyx rudimentary. P.C. (R.H.S.) 1966.

Dorothy Lee — cl. 'Jean Marie de Montague' × *haemaleum*; (C. S. Seabrook, Tacoma, Washington, U.S.A.); plant small, very open, thin stemmed; lvs. 2½ in. long × ¾ in. broad; fls. 10-12 in loose flat truss, tubular-campanulate, nearly 2 in. across, Oxblood Red H.C.C. 00823; flowering early in May.

a Dusty Pink — cl. *simsii* (hardy form × 'Daimio'; (M. Haworth-Booth, Farall Nurseries, Roundhurst, near Haslemere, Surrey, England); evergreen and hardy; fls. soft clear Bengal Rose, wide open, circular, very free; on trial at Wisley.

Earl Moore — cl. 'Earl of Athlone' × 'Jean Marie de Montague'; (C. S. Seabrook, Tacoma, Washington, U.S.A.); plant large with long thin branches; lvs. large, glossy; fls. in a tight truss of 12-15, large, funnel-shaped, Cherry (H.C.C. 722/3).

Egbert van Alstyne — cl. 'May Day' (dwarf form) × *haematodes*; (C. S. Seabrook, Tacoma, Washington, U.S.A.); plant compact and shapely; lvs. yellowish-green; fls. in open truss, a little larger than those of *haematodes*, campanulate, Orient Red (H.C.C. 819).

Elfin Hill — cl. 'Jock' × *haematodes*; (Vernon Wyatt, Union, Washington, U.S.A.); plant 10 in. high × 10 in. across in ten years; lvs. oval to ovate, 1¾ in. long × 1 in. broad; fls. funnel-campanulate, to 1½ in. long × 1¾ in. wide, H.C.C. 024/1; flowering in late April.

Ernest R. Ball — cl. 'Britannia' × 'Jasper' (Exbury form); (C. S. Seabrook, Tacoma, Washington, U.S.A.); plant of open habit; lvs. similar to those of 'Britannia'; fls. up to 14 per tight truss, flat funnel-shaped, to 3¼ in. across, Salmon (H.C.C. 412/3) with a few darker stripes that do not fade; mid-season flowering.

Ethel Dupar — cl. Parentage unknown; (raised and introduced by Wm. Whitney, named by Ethel L. Dupar); plant to 5 ft. high and 7 ft. wide in ten years, compact mound shaped; lvs 6 in. long, 2 in. wide; fls. 8 in loose truss,

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pink in bud opening cream yellow with a pink blush at edge of petals, 7-lobed, funnel-campanulate, to 3½ in. across; calyx fleshy, to ½ in. long; late mid-season.

a Ezra J. Kraus — cl. (Exbury deciduous azalea); 'Cecile' × 'Strawberry Ice'; (raised and introduced by Beneschoen Gardens, Myrtle Creek, Oregon, U.S.A.); plant to 4 ft. high and 4 ft. across in six years; lvs. 4 in. × 2 in.; fls. up to 11 per truss, flat with wavy margins to petals, to 3½ in. across, fragrant, Dawn Pink (H.C.C. 523/2), buds Chinese Coral (H.C.C. 614/2); mid-season.

a Final Blush — cl. *simsii* (hardy form) × 'Daimio'; (M. Haworth-Booth, Farall Nurseries, Roundhurst, near Haslemere, Surrey, England); evergreen, late flowering, extra hardy; fls. 2 in. across, frilled, deep Bengal Rose with deeper flare on upper lobe; on trial at Wisley.

a Fire Chief — cl. 'Helen Close' × 'Purple Splendor'; (W. L. Guttormsen, Canby, Oregon, U.S.A.); evergreen plant, compact, up to 18 in. high; lvs. 1¼ in. long × ¾ in. wide; fls. 2-4 per cluster, single, up to 3 in. diameter, strong purplish-red (Nickerson 10 RP 3/12); mid-May blooming.

a Five Arrows — cl. seedling of *R. quinquefolium*; (Edmund de Rothschild, Exbury, Southampton, Hampshire, England); lvs. elliptic, in fours and fives, 1½ in. long, 4/5 in. broad; fls. in trusses of 1-3, funnel-shaped, pendulous, 1 in. long, 1½-1¾ in. broad, R.H.S. Colour Chart White Group 155B, throat spotted and flecked with green, stamens 10; calyx green, deeply lobed. F.C.C. (R.H.S.) 1967.

a Frolic — cl. 'Helen Close' × 'Campfire'; (W. L. Guttormsen, Canby, Oregon, U.S.A.); evergreen compact upright plant; lvs. 1¼ in. long × ¾ in. broad; fls. 1-2 per cluster, up to 3 in. wide, hose-in-hose, strong purplish-red (Nickerson 7·5 RP 5/12); blooming early May.

George Johnstone — cl. *concatenans* × 'Full House'; (Captain Collingwood Ingram, The Grange, Benenden, Cranbrook, Kent, England); lvs. elliptic, 2¼ in. long, 1¼ in. broad, aromatic, brown scaly indumentum on lower surface as well as on petioles, pedicels and calyx; fls. 7-9 in loose truss, campanulate, waxy, 1¾ in. diameter and 1¾ in. long, R.H.S. Colour Chart Orange Group 25B, at base shading to Greyed Orange Group 167B, and slightly flushed with Greyed Purple Group 185C; calyx rudimentary. A.M. (R.H.S.) 1967.

George M. Cohan — cl. 'May Day' × 'Jasper' (Exbury form); (C.S. Seabrook, Tacoma, Washington, U.S.A.); plant of open habit; fls. in open truss, campanulate, to 3 in. across, Azalea Pink (H.C.C. 618), Carrot Red (H.C.C. 612) at the base, and variable yellowish pink inside; calyx large and petal-like; blooms early June.

a Geronomo — cl. 'Helen Close' × 'Purple Splendor'; (W. L. Guttormsen, Canby, Oregon, U.S.A.); evergreen compact

plant up to 3 ft. tall; lvs. 1½ in. long × ¾ in. broad; fls. 2-3 per cluster, up to 2¼ in. diameter, hose-in-hose, strong reddish purple (Nickerson 2·5 PP 5/10); blooming mid-May.

Gipsy Moth — cl. *discolor* × 'Lodauric Iceberg'; (A. F. George, Hydon Nurseries Ltd., Hydon Heath, Godalming, Surrey, England); fls. in large truss, widely funnel-shaped, buds R.H.S. Colour Chart Red-Purple 63B, opening and fading to Red-Purple 65D with striping of 65B inside, outside deeply marked Red-Purple 64D, scented. P.C. (R.H.S.) 1967.

Glen Cloy — cl. seedling of *glaucophyllum* var. *luteiflorum*; (National Trust for Scotland, Brodick Castle Gardens, Isle of Arran, Scotland); small shrub up to 4 ft.; lvs. 2¼ in. long, 1¼ in. broad, elliptic to narrowly ovate, white below, aromatic; fls. 7-11 per truss, 7 in. long and broad, openly campanulate, Dresden Yellow (H.C.C. 64/2); calyx 5-lobed, pale green, faintly powdery. F.C.C. (R.H.S.) 1966.

Halton — cl. *lacteum* ♀ × 'Naomi'; (Edmund de Rothschild, Exbury, Southampton, Hampshire, England; raised by Lionel de Rothschild); lvs. elliptic, 6 in. long × 2¾ in. broad, free from indumentum; fls. 13-16 in firm dome-shaped truss 6 in. high and 6 in. diameter, 3 in. across and 2½ in. long, open funnel-shaped, R.H.S. Colour Chart Yellow-Green Group 150D; calyx rudimentary. A.M. (R.H.S.) 1967.

Harold Amateis — cl. *maximum* × *strigillosum*; (raised by Edmond Amateis; introduced by Warren and Susan Baldsiefen, Bellvale, New York, U.S.A.); plant 3 ft. tall, 4 ft. wide at fourteen years; lvs. to 6 in. long × 1½ in. wide, heavy rugose, slight fawn indumentum below; fls. up to 20 in a truss 5 in. across and 4 in. high, bell-shaped, 5-lobed, up to 2¼ in. across, cardinal red, deep maroon throat, darker spot at centre.

Harry von Tilzer — cl. 'May Day' (dwarf form) × *haematodes*; (C. S. Seabrook, Tacoma, Washington, U.S.A.); plant small, compact; lvs. small with heavy indumentum below; fls. in loose truss, a little larger than *haematodes*, campanulate, Blood Red (H.C.C. 820).

Harwell — cl. (Knap Hill); believed to be 'Sylphides' × 'Pompadour'; (Knap Hill Nursery Ltd., Woking, Surrey, England); fls. large in well-built trusses, rich pink.

Honiton — cl. 'Jalisco Eclipse' × 'Album Elegans'; (Knap Hill Nursery Ltd., Woking, Surrey, England); plant a strong open grower; fls. cream, flushed pink, reddish eye; calyx reflexed; late May flowering.

Jan — cl. 'Helen Close' × 'Purple Splendor'; (W. L. Guttormsen, Canby, Oregon, U.S.A.); evergreen compact plant up to 2 ft. high; lvs. 1½ in. long × ¾ in. wide; fls. 2-4 per cluster, up to 2½ in. diameter, hose-in-hose, strong reddish-purple (Nickerson 2·5 RP 5/10); blooming second half of May.

Jaune — cl. form of *brachyanthum*; (Captain Collingwood Ingram, The Grange, Benenden, Cranbrook, Kent, England); lvs. 1½ in. long and ½ in. broad, narrowly elliptic, scaly indumentum on both surfaces, aromatic; fls. in trusses of 3 or 4, campanulate, Primrose Yellow (H.C.C. 601/2) on pedicels 1⅛ in. long; calyx 5-lobed, green, slightly reflexed. A.M. (R.H.S.) 1966.

a Jock Brydon — cl. *mollie* × *occidentale*; (raised by Dr. Clauson, introduced by Beneschoen Gardens, Myrtle Creek, Oregon, U.S.A.); deciduous plant 7 ft. × 7 ft. in seven years, upright, dense; lvs. 3½ in. long, 1½ in. broad; fls. 12-16 in tight ball-shaped truss, tubular, waved and ruffled at margins, to 2¾ in. across, fragrant, white suffused pink, centre petal speckled Spanish orange; late flowering.

a John F. Kennedy — cl. (Exbury deciduous); 'Corringe' × 'Knighthood'; (raised and introduced by Beneschoen Gardens, Myrtle Creek, Oregon, U.S.A.); deciduous plant 5 ft. high × 3½ ft. across in six years, upright, dense; lvs. 3 in. long, 1½ in. broad; fls. 9 in ball-shaped truss, tubular, ruffled, to 3 in. across, fragrant, Signal Red (H.C.C. 719/1); mid-season.

July Fragrance — cl. 'Isabella' ♀ × *diaprepes*; (Hillier & Sons, Winchester, England); lvs. oblanceolate to oblong-oblanceolate, truncate or rounded at base, 16-26 cm. long, 3·5-7 cm. broad, with attractive bronze flush when young; fls. 8-10 per truss, widely funnel-shaped, 8 cm. long, 11 cm. across, 7-lobed, lobes broad ovate, rounded, 3 × 4 cm., crenate-undulate, rather frilled, white with crimson (H.C.C. 22) stain at base of throat showing as a pale rose glow on the outside; stamens 15; calyx a narrow rim, with occasional lobes 1-2 mm. long; strongly fragrant.

a Karl Hoschna — cl. 'Bow Bells' × 'Jasper' (Exbury form); (C. S. Seabrook, Tacoma, Washington, U.S.A.); plant of medium height and shapely habit; lvs. small, glossy; fls. in loose truss, up to 2 in. across, funnel-shaped, Barium Yellow (H.C.C. 503/3).

a Karl Korn — cl. 'Basilisk' × 'Ginger'; (Robert G. Korn, Renton, Washington, U.S.A.); deciduous plant up to 4 ft. high × 4 ft. across in ten years; lvs. 4 in. long × 2 in. wide; fls. up to 15 in compact truss, up to 4 in. diameter, good texture, butterscotch yellow throughout with a minute trace of orange; mid-May flowering.

a Katie — cl. 'Helen Close' × 'Purple Splendor'; (W. L. Guttormsen, Canby, Oregon, U.S.A.); compact evergreen plant up to 18 in. high; lvs. 2½ in. long × 1 in. wide; fls. 2-4 in a cluster, up to 2½ in. diameter, hose-in-hose, strong purplish-red (Nickerson 2·5 RP 5/10); mid-May blooming.

a Katisha — cl. 'Kirishima' × 'Malvatica'; (raised by J. B. Stevenson, Tower Court, Ascot, England; introduced by Hydon Nurseries Ltd., Hydon Heath, Godalming, Surrey, England); evergreen and free flowering of

compact close habit; fls. lilac pink with deeper spotting and white stamens.

Kildonan — cl. Seedling of *magnificum* (K.W. 9200); (National Trust for Scotland, Brodick Castle Gardens, Isle of Arran, Scotland); lvs. up to 18 in. long and 8 in. broad, oblong to oblong-obovate, covered below with thin pale indumentum; fls. up to 30 in compact dome-shaped truss, tubular-campanulate, 2¾ in. long × 2⅛ in. broad, Fuchsine Pink (H.C.C. 627/3) shading at tip to Fuchsine Pink (H.C.C. 627/1). F.C.C. (R.H.S.) 1966.

Kinloss — cl. possibly a hybrid or seedling of *smirnowii*; (Knap Hill Nursery Ltd., Woking, Surrey, England); fls. a striking shade of cerise-pink; flowering mid-May.

a Lindean — cl. 'Helen Close' × 'Purple Splendor'; (W. L. Guttormsen, Canby, Oregon, U.S.A.); evergreen compact plant up to 18 in. high; lvs. 2 in. long × ¾ in. broad; fls. 2-3 in a cluster, up to 2½ in. diameter, hose-in-hose, strong purplish-red (Nickerson 2·5 RP 5/10); blooming early May.

Little Glendoe — cl. *delavayi* ♂ × *forrestii* var. *repens*; (raised by L. E. Jury, New Plymouth, New Zealand, introduced by Miss E. G. Johnstone, "Little Glendoe", 43 Tolearne Avenue, Maori Hill, Dunedin, New Zealand); dwarf rounded compact bush, 28″ high, 38″ across at 14 years; lvs. 2¾–3″ long by 1¼–1⅝″ broad, no indumentum; fls. 7–9 per truss, campanulate, 2½″ wide, 1½″ deep, Cardinal Red (H.C.C. 822); very early flowering, starting in mid-June in Dunedin, more than a month before 'Cornubia' or *barbatum*, and flowers tolerating 14°F. of frost without damage.

a Lunar Sea — cl. 'Helen Close' × 'Purple Splendor'; (W. L. Guttormsen, Canby, Oregon, U.S.A.); evergreen compact plant to 2 ft. high; lvs. 2½ in. long × 1¼ in. broad, bullate on new growth; fls. 2 per cluster, to 3 in. across, hose-in-hose, light purple (Nickerson 7·5 P 6/8); flowering first half of May.

Marham — cl. late red unnamed hybrid × 'Mary Waterer'; (Knap Hill Nursery Ltd., Woking, Surrey); strong growing, free flowering plant of good foliage; fls. rich pink, with deep red eye and speckled blotch.

Mark Twain — cl. 'Jean Marie de Montague' × 'Indiana'; (C. S. Seabrook, Tacoma, Washington, U.S.A.); plant large and of open habit; lvs. large; fls. in tight truss, 8 in. across and 6 in. high, campanulate, up to 3 in. diameter, Currant Red (H.C.C. 821 to 821/3); blooms third week in May.

Martha Wright — cl. *burmanicum* × 'Fragrantissimum'; (raised and introduced by Mr. and Mrs. Maurice H. Sumner, San Francisco, California, U.S.A.); plant 5 ft. tall, 4 ft. across; lvs. 3 in. long, 1½ in. broad, veins impressed above; fls. up to 4 in flat truss, tubular-campanulate, to 3½ in. across, fragrant, creamy white with yellow

centre. Blue Ribbon at the Californian Chapter Show in 1963 and in 1964 for the best rhododendron hybridised in California.

Mary Briggs — cl. *haematodes* × 'Elizabeth'; (Vernon Wyatt, Union, Washington, U.S.A.); plant dwarf, compact, 8 in. high by 16 in. across in ten years; lvs. elliptic-lanceolate, 3 in. long by 1 in. broad; fls. 8-10 in compact truss, Blood Red (H.C.C. 820), funnel-campanulate, 2 in. long, 2 in. across; flowering in early May.

May Jeffery — cl. Parentage not known; (Knap Hill Nursery Ltd., Woking, Surrey, England); fls. deep cerise-pink, upper petal heavily maroon-spotted, other petals lightly spotted; late May or early June flowering.

Midsummer Snow — cl. 'Isabella' ♀ × *diaprepes*; (Hillier & Sons, Winchester, England); lvs. oblanceolate to oblong-oblanceolate, shortly truncate or rounded at base, 12-18 cm. long, 4·5-6 cm. broad, bright green when young; petioles bright yellowish green; fls. 8-10 per truss, widely funnel-shaped, 8 cm. long, 12 cm. across, 7-lobed, lobes broad ovate with slightly frilled margin, white with faint green tinge in throat; stamens 16; calyx an irregular rim to 2 mm. broad with occasional lobe to 5 mm. long.

a Montezuma — cl. 'Helen Close' × 'Purple Splendor'; (W. L. Guttormsen, Canby, Oregon, U.S.A.); evergreen compact plant to 3 ft. tall; lvs. 1¾ in. long × 1 in. wide; fls. 2-3 per cluster, to 3 in. diameter, hose-in-hose, strong reddish-purple (Nickerson 10 P 5/10) with white centre 1½ in. across; flowering end of May.

a Moon Maiden — cl. *simsii* (hardy form) × *mucronatum*; (M. Haworth-Booth, Farall Nurseries, Roundhurst, near Haslemere, Surrey, England;) compact bushy shrub; fl. buds usually resistant to frost; fls. nearly 4 in. across, white with occasional purple streak and yellowish flush on top petal; selected for trial at Wisley.

Oleanda — cl. *griersonianum* × 'Doncaster'; (M. Haworth-Booth, Farall Nurseries, Roundhurst, near Haslemere, Surrey, England); fls. 8-10 per compact truss, 3 in. diameter, Carmine (H.C.C. 21/1); flowering mid-June.

Oporto — cl. *thomsonii* × *haemaleum*; (Captain Collingwood Ingram, The Grange, Benenden, Cranbrook, Kent, England); lvs. 4 in. long, 1¾ in. broad, narrowly ovate, free from indumentum; fls. 5-8 per truss, openly campanulate, 2 in. long, 2½ in. across, between Cardinal Red (H.C.C. 822) and Oxblood (H.C.C. 00823); calyx 6-8 mm. long, saucer-shaped, 5-lobed. A.M. (R.H.S.) 1967.

a Orwell — cl. Parentage unknown: (R.H.S. Garden, Wisley, Ripley, Woking, Surrey, England); deciduous plant 5 ft. high, 5 ft. spread, vigorous, compact, upright habit, very free flowering; lvs. 3$\frac{3}{16}$ in. long, 1½ in. wide, medium to dark glossy green slightly tinged brown; fl. truss 4 in. diameter, 4 in. deep, globular, compact,

11-flowered; corolla 2½ in. diameter, 2 in. long, funnel-shaped, Geranium Lake (H.C.C. 20/2) overlaid Rose Opal (H.C.C. 022/1) on two upper and outer petals; flowering from May 24, 1962. H.C. (Wisley Trials) under name 'Arun', 1962.

Ouro Prieto — cl. 'Francis Hanger' selfed; (Lester E. Brandt, Route 5, Box 542, Tacoma, Washington 98423, U.S.A.); plant 4 ft. tall; fls. up to 9 in lax truss, outward facing, 4½ in. diameter, 2 in. long, 7-lobed, Chrome Yellow (H.C.C. 605). (The name is the Portuguese for 'pure gold').

Paricutin — cl. 'Britannia' × 'Tallyho' (F.C.C. form); (Lester E. Brandt, Route 5, Box 542, Tacoma, Washington 98423, U.S.A.); plant 7 ft. tall; fls. 22-23 in tall, well-filled truss, 3¾ in. diameter, 3 in. long, Cardinal Red (H.C.C. 822/2). Best new rhododendron hybrid, Seattle, Washington, 1963. (The name denotes a New Mexican volcanic cone).

Pedlinge — cl. 'Loder's White' × *decorum* (Wilson 1782); (Major A. E. Hardy, Sandling Park, Hythe, Kent, England); lvs. 7½ in. long, 3 in. broad, narrowly elliptic to elliptic, glabrous; fls. 10-12 per truss, widely funnel-campanulate, 7-lobed, 6½ in. across, R.H.S. Colour Chart White Group 155B deepening to 155A at base, with greenish yellow flush in throat; calyx 7-lobed, joined at base, lobes up to 7 mm. long. A.M. (R.H.S.) 1967.

Perry Wood — cl. Seedling of *prattii* (Wilson 3958); (Major A. E. Hardy, Sandling Park, Hythe, Kent, England); lvs. narrowly elliptic, 8 in. long, 3¼ in. across, lower surface plastered with light brown indumentum; fls. 16-18 per truss, oblique campanulate, 2 in. long and 2 in. diameter, R.H.S. Colour Chart White Group 155C, upper part of throat with strong flush at base of Red-Purple Group 59B; calyx 5-lobed, lobes up to 15 mm. long. A.M. (R.H.S.) 1967.

Phillippa Howells — cl. 'Lady Primrose' ♀ × *griersonianum* ♂; (A. Howells, Dickens Lane, Olinda, Victoria, Australia); fls. Crimson (H.C.C. 22/1) in bud opening to Orient Pink (H.C.C. 416/3) with Egyptian Yellow (H.C.C. 407/3).

a Pinkabelle — cl. *simsii* × 'Daimio'; (M. Haworth-Booth, Farall Nurseries, Roundhurst, near Haslemere, Surrey, England); evergreen, extra hardy, late flowering; fls. Bengal Rose, vivid, 2½ in. across, opening early June; on trial at Wisley.

Pink Chiffon — cl. A seedling of the Fortunei series, said to have been raised from seeds collected by Dr. Joseph Rock; (Ruth M. Hansen, 3514 N. Russet Street, Portland, Oregon 97217, U.S.A.); lvs. oblong-elliptic, 7½ in. long, 2½ in. wide; fls. first produced in 1963, 6-12 in tall truss; corolla funnel-campanulate, 3 in. long, 4½-5 in. across, Tyrian Rose (H.C.C. 24/3) around edge, lighter inside with reddish-orange markings deep in throat, 7-lobed, fragrant; bud colour H.C.C. 24/2; blooms second week in May.

a Princess Ida — cl. 'Kirishima' × 'Malvatica'; (raised by J. B. Stevenson, Tower Court, Ascot, England, and introduced by Mrs. Harrison, Tremeer, St. Tudy, Cornwall, England); evergreen, free flowering, rose-mauve with crimson stamens.

Queen Elizabeth II — cl. 'Idealist' × 'Crest'; (Crown Estate Commissioners, Crown Estate Office, The Great Park, Windsor, Berks., England); lvs. lanceolate to narrowly ovate, 5½ in. long, 2½ in. broad, free from indumentum; fls. 10-12 per truss, openly funnel-shaped, 7 petalled, 4½ in. across, 1¾ in. long, R.H.S. Colour Chart Green-Yellow Group 1D; calyx green, rudimentary, 7-lobed, edged and lightly covered with small red glandular hairs. A.M. (R.H.S.) 1967.

Red Lacquer — cl. 'Phoebus' × *forrestii* var. *repens*; (Captain Collingwood Ingram, The Grange, Benenden, Cranbrook, Kent, England); prostrate plant; lvs. elliptic, 2 in. long, nearly 1 in. broad, pale green below; fls. in clusters of up to 5, campanulate, 1½-1¾ in. long, 1⅛ in. across, R.H.S. Colour Chart Red Group 45B; calyx segments 3-6 mm. long, coloured paler shades of Red Group 45. A.M. (R.H.S.) 1967.

Reuthe's Purple — cl. seedling of *lepidotum*; (G. Reuthe Ltd., Foxhill Nurseries, Keston, Kent, England); lvs. ⅝ in. long, ⅜ in. across, elliptic, aromatic, densely scaly-glandular on under surface, lightly covered on upper surface; fls. in clusters of 1-3, rotate-campanulate, 1½ in. across, ½ in. long, R.H.S. Colour Chart Purple-Violet Group 80A with darker markings on 3 upper joined petals; calyx lobes 4-5 mm. long. A.M. (R.H.S.) 1967.

a Riponia — cl. 'Violacea' seedling × 'Topper'; (Walter A. Myers, Waukeen Azalea Gardens, Ripon, California, U.S.A.); evergreen plant up to 18 in. high; lvs. 1 in. long × ½ in. broad; fls. double, with frilled petals, orchid or light purple.

Robert Louis Stevenson — cl. 'May Day' × 'Jester'; (C. S. Seabrook, Tacoma, Washington, U.S.A.); plant small to medium of open habit; lvs. small, dark green, glossy; fls. small in loose truss, funnel-campanulate, Blood Red (H.C.C. 820); blooms early June.

a Royal Robe — cl. 'Helen Close' × 'Purple Splendor'; (W. L. Guttormsen, Canby, Oregon, U.S.A.); evergreen compact plant to 2½ ft.; lvs. 2 in. long × ¾ in. wide; fls. 2-4 per cluster, to 2½ in. across, hose-in-hose, with heavy ruffles, strong reddish-purple (Nickerson 2·5 RP 4/10); flowering second half of May.

a Sleigh Bells — cl. 'Helen Close' × 'Madrigal'; (W. L. Guttormsen, Canby, Oregon, U.S.A.); evergreen compact plant to 18 in. high; lvs. 1½ in. long × ¾ in. wide; fls. 2-4 per cluster, to 2½ in. across, single, white with chartreuse blotch; flowering second half of May.

Smyrna — cl. 'Purple Splendour' × 'Constant Nymph'; (Knap Hill Nursery Ltd., Woking, Surrey); fls. large, lavender, without blotch.

Snow Bells — cl. 'Loder's White' × *williamsianum*; (Ben Lancaster, Camas, Washington, U.S.A.); plant 18 in. tall × 24 in. wide in twelve years; lvs. oval, cordate, 2 in. long, 1½ in. broad; fls. in a 5-7 flowered truss, 5-petalled, pure white, open campanulate; flowering in mid-April.

Starcross — cl. *discolor* × 'Lodauric Iceberg'; (A. F. George, Hydon Nurseries Ltd., Hydon Heath, Godalming, Surrey, England); fls. in large compact truss, pale blush pink, with slight bronze throat, buds R.H.S. Colour Chart Red 56A, opening and fading through Red 56B/C to D, tube Orange 27C on outside, scented.

a Sundance — cl. 'Helen Close × 'Purple Splendor'; (W. L. Guttormsen, Canby, Oregon, U.S.A.); evergreen compact plant up to 18 in. tall; lvs. 1½ in. long × ¾ in. wide; fls. 2-3 per cluster, to 2 in. diameter, hose-in-hose, strong purplish-red (Nickerson 7·5 RP 5/12); flowering mid-May.

Taiping — cl. seedling of the Triflorum series raised by James Barto; (Ruth M. Hansen, 3514 N. Russet Street, Portland, Oregon 97217, U.S.A.); lvs. lanceolate, 2 in. long, ¾ in. wide, lower surface densely covered with scales; fls. 9-11 in a racemose truss, tubular-campanulate, 5-lobed, 1 in. long, 1¼ in. wide, stamens exerted, Persian Rose (H.C.C. 638/2), shading to lighter on inside, yellow markings on three upper petals; blooms early May.

a Tat — cl. 'Helen Close' × 'Glamour'; (W. L. Guttormsen, Canby, Oregon, U.S.A.); evergreen compact plant to 2 ft. high; lvs. 2 in. long × 1 in. wide; fls. 1-2 per cluster, to 3 in. across, double, moderate purplish-pink (Nickerson 2·5 RP 7/8); flowering mid-May.

Tell Taylor — cl. 'Jean Marie de Montague' × 'Carita'; (C. S. Seabrook, Tacoma, Washington, U.S.A.); plant large and of open habit; lvs. very large and glossy; fls. in fairly tight truss, funnel-shaped, up to 3½ in. across, Crimson (H.C.C. 22/1 to 22/3).

Thomas Church — cl. *forrestii* var. *repens* (*chamaethauma*) × 'Moonstone'; (Lester E. Brandt, Route 5, Box 542, Tacoma, Washington 98423, U.S.A.); plant 3 ft. × 3 ft.; lvs. 2 in. long, 1 in. broad; fls. 5 per truss, 2 in. long, 2 in. wide, Orpiment Orange (H.C.C. 10/3), darker in bud and at tips of petals.

a Thomas Jefferson — cl. (Exbury deciduous); 'Kathleen' × 'Firefly'; (raised and introduced by Beneschoen Gardens, Myrtle Creek, Oregon, U.S.A.); plant 3½ ft. × 3½ ft. in six years, open, spreading; lvs. 4½ in. long, 2 in. broad; fls. 10 per ball-shaped truss, flat, ruffled, to 4 in. across, 6 petals, fragrant, Chinese Coral (H.C.C. 614/1); mid-season.

a Titipu — cl. 'Kirishima' ♀ × 'Malvatica'; (raised by J. B. Stevenson, Tower Court, Ascot, England, introduced by Hydon Nurseries Ltd., Hydon Heath, Godalming, Surrey, England); evergreen and free flowering; fls. deep purple.

Tod B. Galloway — cl. 'Fusilier' × 'Jasper' (Exbury form); (C. S. Seabrook, Tacoma, Washington, U.S.A.); plant rather flat spreading; fls. 8-12 per loose, flat truss, funnel-campanulate, varying light pink and yellow shades, Orange (H.C.C. 10/3) to Azalea Pink (H.C.C. 618/3); calyx showy; blooms early June.

Veesprite — cl. *impeditum* × *racemosum*; (R. R. Forster, Horticultural Research Institute of Ontario, Vineland Station, Ontario, Canada); plant 18 in. wide × 10 in. high compact; lvs. oblong-elliptical, ¾ in. long, ½ in. wide; fls. in terminal clusters of 3-5, funnel-shaped, ¾ in. across, Persian Rose (H.C.C. 628/2); flowering in mid-May.

Veldtstar — cl. *discolor* × 'Lodauric Iceberg'; (A. F. George, Hydon Nurseries Ltd., Hydon Heath, Godalming, Surrey, England); fls. in large compact truss, funnel-shaped, buds R.H.S. Colour Chart Red-Purple 58B, opening paler with markings of 58C, fading when completely open through Red-Purple 62B/C/D slight red throat and some spotting.

Yaku Cream — cl. 'Lackamas Cream' (*R. chlorops*) × *yakusimanum* F.C.C. form; (Ben Lancaster, Camas, Washington, U.S.A.); plant a mounded bush, 18 in. tall × 24 in. wide in eight years; lvs. elliptic, 4 in. long × 1¼ in. broad; fls. 12 to truss, bell-shaped, 5 or 6 petalled, to 2 in. wide and 1½ in. broad, mimosa yellow turning to primrose yellow; flowering in mid-May.

Yaku Splendor — cl. 'Rose Splendor' × *yakusimanum* F.C.C. form; (Ben Lancaster, Camas, Washington, U.S.A.); plant globe-shaped, 18 in. diameter in eight years; lvs. to 5 in. long × 1½ in. wide, slightly obovate, recurved, with a tan indumentum below; fls. up to 18 per truss, bell-shaped, 5-petalled, to 2¾ in. wide × 2 in. deep, Phlox Pink (H.C.C. 631/1) on outside, paler inside; flowering mid-May.

Zelia Plumecocq — cl. 'Rosy Morn' (A.M. form) × 'Crest' (F.C.C. form); (Edmund de Rothschild, Exbury, Southampton, Hampshire, England); fls. open saucer-like, yellow tinted with pink.

BOOK REVIEW

"The Rothschild Rhododendrons". By C. E. Lucas Phillips and Peter N. Barber. 228 pp. Illus. 1967 (Cassell). £10. 10s.

Large books on rhododendrons have been scarce in recent years, but the recent publication of the lavish Rothschild Rhododendrons fully compensates one for the long time of waiting.

The theme running through the book is the account of Lionel de Rothschild's great enthusiasm for this genus—and his work in building up Exbury Gardens, and the hybrids he made there, of which, alas, he lived too short a time to see many reach flowering maturity!

Written in an engrossing manner, the book should appeal to all rhododendron lovers whether beginners or experts. The former could not help extending their knowledge by the background history of Lionel's work in hybridizing; the description of the plants and the cultural hints from one of the major rhododendron gardens. Nor must the delightful series of line drawings by Gillian Kenny, demonstrating the various floral forms and names thereof, be overlooked. For an expert, the full Exbury register of hybrids, totalling nearly 500, with their full descriptions, flower, foliage and hardiness ratings, comprise a rhododendron stud book that is almost unique, and over which hours can be spent, even if only to see if the various ratings agree with one's experience.

I have left mentioning until last the main feature of the book—the fine collection of 67 full-page colour plates, which are, in my opinion, the most accurate flower colour renderings I have seen published to date. These more than any description bring home to one the magnificence of many of Lionel's hybrids, and alone make the book a worthy acquisition to any library. They are taken from colour transparencies by Harry Smith.

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(*) denotes Award made after Trial.
(a) denotes Azalea.

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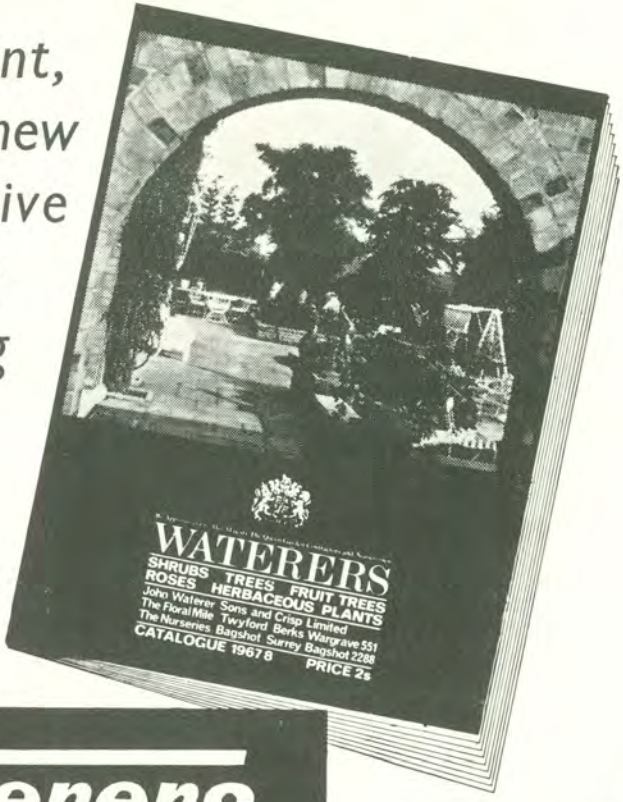

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