R.H.S YEAR BOOKS 1956

DAFFODIL AND TULIP

Mr. F. A. Secrett, to whom this volume is dedicated, writes on the commercial development of daffodils in the last fifty years, and D. Blanchard and W. J. Dunlop describe their experiences in raising daffodils from seed. Guy Wilson describes the successes and failures of the 1955 season in his inimitable way and H. J. Randall writes pleasantly of the genus. Of importance is an authoritative paper by H. C. Woodville on the control of bulb fly damage. J. S. L. Gilmour and R. Younger describe jointly the National Species Collection of Tulips at Cambridge. F. Galsworthy writes, both as artist and as gardener, of daffodils growing in grass in his garden, while F. R. Waley comments on his fine collection of dwarf daffodils. Dr. Roger Bevan describes his spring tour in Spain and Portugal in quest of the wild species. J. S. B. Lea outlines his methods of growing daffodils for exhibition and Alec Gray discusses scent in daffodils. In addition to many other articles there are numerous photographs and the usual features including show reports, daffodil ballots and accounts of the daffodil seasons in Australia and New Zealand.

FRUIT

This new volume, dedicated to Professor Thomas P. Barker of the Long Ashton Research Station, contains authoritative articles on bud sports by A. Gavin Brown and on shaping and pruning systems for bush apples by A. P. Preston. An exhaustive and well illustrated account of the 'Blenheim Orange' apple by Dr. Robb-Smith describes all known variants and seedlings. This is likely to form the standard authority on this apple for years. J. H. Walker and Gwendoline A. Couch contribute a well-illustrated article on the pruning of fan-trained peach trees, while G. H. L. Dicker and A. H. M. Kirby of the East Malling Research Station recount their impressions of apple orchard practices in Canada. Miss Rowe Dutton reviews recent fruit literature and Sir Stephen Tallents writes amusingly of the Sir Isaac Newton Apple. L. F. Clift's article on fruit growing in the West Midlands is of interest and A. Taylor and M. G. Ridpath enumerate the problems of bird damage for the fruit grower. H. L. Jaquier, in an article entitled 'The Fruit Tree Episode', describes the making of a small fruit garden and S. A. Jesse describes the growing of grapes in his small greenhouse. In addition there are full accounts of Fruit Group discussions, the exhibit at the fruit show demonstrating the classification of apples, etc.

LILY

In this volume, dedicated to Miss Isabella Preston, Mrs. B. L. Anley pays tribute to the late Ellen K. Field, who was such a good cultivator of lilies. Constance Spry discusses lilies in decoration and Nigel Wykes has written about the cultivation of lilies in pots. Professor G. L. Slate has compiled a list of American lily hybrids, giving pertinent information as to parentage, the raiser and first publication of the name; this should be of great use to all lily raisers everywhere. C. A. Best describes Canadian lily hybrids and Dr. F. L. Skinner comments on the lilies of his raising in Manitoba in the 1954 season. 'Bellingham Hybrids' at Wisley are discussed by Francis Hanger, and there is a useful treatise on the root systems of lilies by L. Tuffery. Paul Furse's article on fritillarias, illustrated by his own paintings, is both comprehensive and authoritative and with the report of the Lily Group discussion of this genus makes the most important contribution to our knowledge of it which we have published for a number of years. E. B. Anderson writes about the lilies in his garden on the coast of Somerset. Oliver E. P. Wyatt's contribution on sites for lilies and Mr. F. J. Rose's on the showing of lilies are both authoritative. In addition to a symposium on my five favourite lilies by well-known lily enthusiasts there are discussions of the Lily Group, descriptions of award plants and short articles and notes of practical value.

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R.H.S. RHODODENDRON AND CAMELLIA YEAR BOOK 1956

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THE RHODODENDRON AND CAMELLIA

YEAR BOOK—1956

THE ROYAL HORTICULTURAL SOCIETY

LORD Digby's article on Minterne, his famous garden in Dorset, will be of interest to all rhododendron lovers and Dr. J. M. Cowan records some of the wonderful old plantings at Stonefield in Scotland. Camellia growers will be charmed by the description of the large collection in the garden of Quinta do Palheiro on the island of Madeira and by several other important articles on the genus. A symposium on 'My Favourite Rhododendrons' is a new feature. The revision of the Series of Rhododendron is continued with a complete reconsideration of the Lacteum Series.

COVER ILLUSTRATION

Camellia 'Donation'
from a painting by PAUL JONES

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Acknowledgements

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FOREWORD

RHODODENDRON enthusiasts will be interested in DR. COWAN'S account of the fine collection of early rhododendron importations to this country at Stonefield, one of the outstanding Scottish gardens, and, I hope, in my account of our garden at Minterne, where we have had the opportunity of raising a large number of species as well as many of our own hybrids in what has proved to be an ideal woodland setting. The article on the unique Kurume Punch Bowl at Windsor by MR. LANNING ROPER is not only descriptive but practical in its approach to the cultivation of this beautiful group of azaleas.

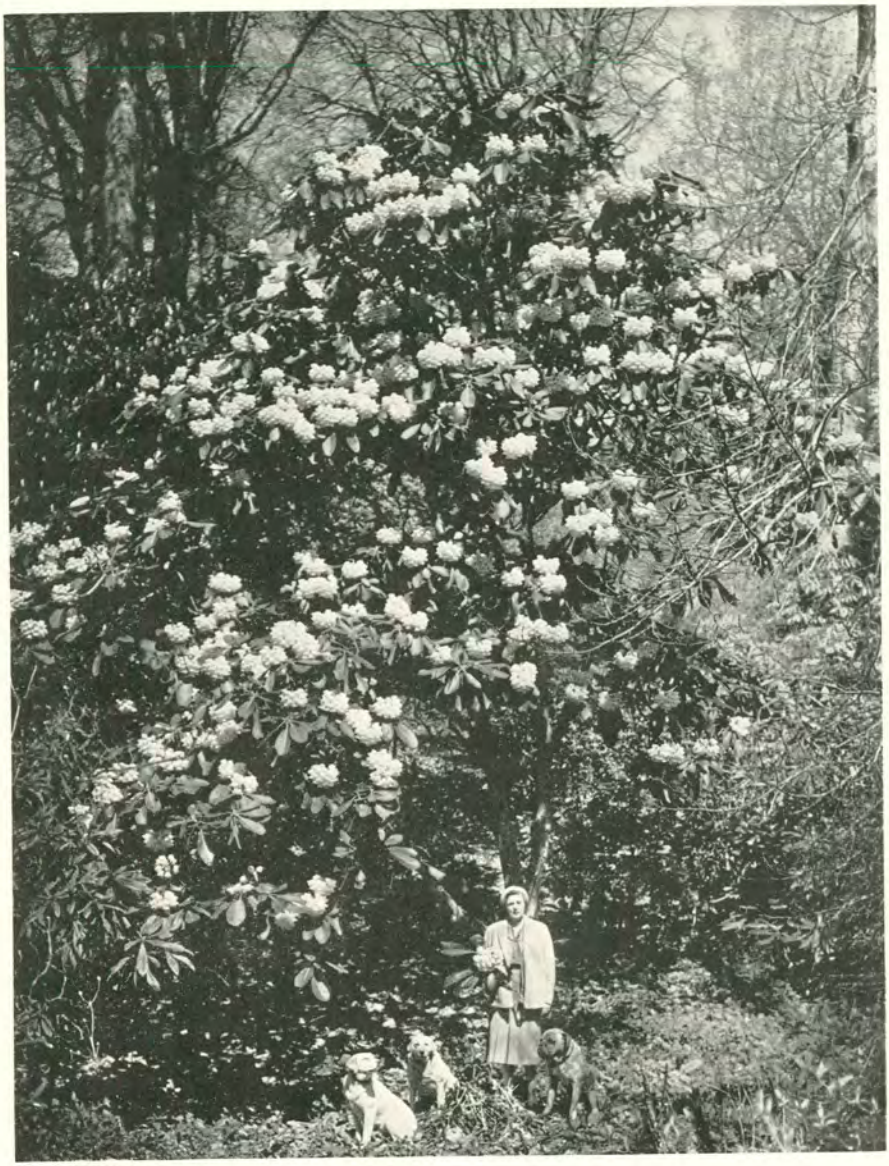
CAPT. KINGDON-WARD makes an impassioned plea for the retention of collectors' numbers in those gardens where rhododendrons have been raised from collected seed and in this I heartily concur.

The symposium on favourite rhododendrons by outstanding gardeners in this country makes fascinating reading and will induce all lovers of the genus to do some critical thinking and to put hybrids and species on opposite sides of the scales. MRS. MILDRED BLANDY'S description of the camellia collection in her famous Madeira garden will make many a reader reach for a travel brochure and will stir up thoughts of discontent with our prolonged winters. MR. KNIGHT'S advice on the propagation of camellias, practical, concise and authoritative, will prove of real value to all raisers of camellias.

DR. LOXTON'S account of Camellia 'Fortune's Yellow' adds the final chapter to the long quest and to the copious literature on this provocative and elusive plant, and it is interesting to compare the photograph of his plant with the original plate in *Curtis's Botanical Magazine*.

The lovely coloured plate of Camellia 'Donation' from a drawing in water colour by PAUL JONES is of exceptional quality and will be treasured not only by lovers of camellias but by all those who appreciate a fine flower painting. MR. GEORGE JOHNSTONE, who grows this camellia so well at Trewithen, has written an interesting note which leaves no doubt as to his evaluation of this lovely hybrid.

DIGBY



Photo, W. E. Lake

THE HISTORY OF THE MINTERNE RHODODENDRON GARDEN

FIG. 1—*Rhododendron falconeri* planted in 1893, with LADY DIGBY and her dogs

(See p. 10)

Photo, J. W. Kitchenham

THE HISTORY OF THE MINTERNE RHODODENDRON GARDEN

FIG. 2—*Rhododendron falconeri* with R. 'Lady Digby' (*facetum* × *strigillosum*) at the base, flowering in the spring of 1955 (See p. 11)

Photo, Amateur Gardening

FIG. 3—A charming path showing the large trees with rhododendrons flourishing in their heavy shade (See p. 11)

FIG. 4—Trees, both deciduous and evergreen, with palms, from LADY ELEANOR'S bridge

Photo, Amateur Gardening

THE HISTORY OF THE MINTERNE RHODODENDRON GARDEN

By Col. THE LORD DIGBY, D.S.O., M.C., T.D.

THE name "Minterne" is derived from "Mycerne" or "Manor of Cerne", a village a mile or so distant, where a Benedictine Abbey was founded in A.D. 987 beneath the famous figure of a giant cut in the side of the chalk down. At the dissolution of all religious houses about 1550, the property of Cerne Abbey, including Minterne, was handed over by the Crown to the Wardens and Scholars of Winchester College. Since that date, Minterne was leased for several generations to the Churchill family. Incidentally, the first SIR WINSTON CHURCHILL lived for many years at Minterne, and GENERAL CHARLES CHURCHILL, the brother of the celebrated DUKE OF MARLBOROUGH, resided at Minterne from 1688 to 1714 and did much to improve the house and grounds. His widow and family lived there till 1768, when ADMIRAL THE HONOURABLE ROBERT DIGBY bought the house and contents, including many fine Brussels tapestries, some with the Churchill arms woven on them.

ADMIRAL DIGBY, a younger brother of the then LORD DIGBY, at nearby Sherborne Castle, commenced to lay out during the next fifty years a landscape effect that has lasted till the present day. Although the famous "CAPABILITY" BROWN was known to have done much landscape work for the Digby family at Sherborne, there is no evidence that he ever visited Minterne, but it seems more than likely that his landscape ideas, which were becoming so popular at that time, may have influenced the Admiral in this direction. He planted trees for woodland effect on the bare downland, built bridges, and made a series of lakes and ponds of various sizes with numerous cascades.

Entries in the Minterne Diary of 1768, such as "Place very bare, trees not thriving", and a few years later, "Went to view my plantations, mostly dying except the Beech", are incredible to anyone visiting Minterne as it is now, less than two hundred years later, where magnificent cedars, the biggest with a girth of 25 feet, and other fine trees can be seen that compare favourably with the

best grown anywhere in the British Isles. It would appear that the chalk downs were bare and windswept, and until the beeches got established and gave both wind protection and humus, the existence of other trees was precarious.

After the setting of trees was established, there followed the era of laurel, holly, aucuba, box and the *ponticum* rhododendron. In the early part of the last century ADMIRAL SIR HENRY DIGBY, NELSON'S youngest naval captain at the Battle of Trafalgar, and nephew of ADMIRAL ROBERT DIGBY, did much to continue the Minterne plantations and landscape gardening. His son and grandson, the 9th and 10th LORDS DIGBY, were able to benefit by the magnificent tree setting that they inherited at Minterne and to start the rhododendron and shrub collection which thrives so well in the greensand of the Minterne Valley.

In the 1890's bamboos were introduced to give extra wind shelter for the big-leafed *Rhododendron falconeri* and the early Himalayan introductions such as *R. thomsonii*, *campylocarpum*, *arboreum*, *strigillosum* and *barbatum*, all of which do extremely well in the greensand.

The present century came in with the Victorian gardening craze of formal bedding still at its height. Minterne, however, by then was luckily well in advance of the times with its firmly established shrub garden, which made an ideal setting for the wonderful discoveries of the many new types of rhododendrons which were to pour in from the numerous Chinese explorations. Minterne benefited greatly from the work of these collectors. WILSON, FARRER, FORREST, ROCK, KINGDON-WARD, and the Chinese collector, PROFESSOR HU, have all produced rhododendrons that have grown into noteworthy plants at Minterne.

The present owner was lucky to inherit this garden in his early twenties and so has had almost forty years to see the seeds brought from China gradually growing into potential forest trees. KINGDON-WARD'S collection of *R. macabeanum* (1927–28 expedition) would seem at the present time to be destined to be the outstanding large-leaved tree rhododendron of the future. It is hardier and more wind resistant than *R. sinogrande* and in its best yellow form it is a very wonderful plant. The finest specimen of *R. macabeanum* at Minterne is now 15 feet high and 12 feet across. This, of course, does not compare with the big Himalayan *R. falconeri*, a tree over 30 feet high (see Fig. 1), which was planted in its present position in 1893. This is the only rhododendron at Minterne that has been consistently mulched. All its flower heads are taken off immediately

after flowering each year and counted. The record number of flower heads was in 1948, when 1,375 were counted on the ground. This year (see Fig. 2) the count was only 550.

One of the first things that seems to strike a visitor coming to Minterne for the first time is the fact that these magnificent rhododendrons, contrary to most ideas, grow and flower so well under cover of the enormous beech trees that abound in the garden. The explanation appears to be that although the beech is a robber of both soil and light, he does no harm at Minterne owing to the overhead cover being high, while the volume of humus generated by the leaf fall seems to offset the goodness taken out of the ground by the tree (Fig. 3).

It is idle to pretend that all the rhododendrons grown from seed from China have survived; the hard winters to which we have to submit in this uncertain climate of ours have taken their toll. Thirty-two degrees of frost have been registered twice during the past thirty years, but actually most of the frost damage is caused by either early or late frosts rather than by severe winters. Diseases are practically unknown. Bud blast, though affecting one or two plants such as 'Doncaster', 'Fastuosum flore-pleno' and some of the *caucasicum* hybrids, is easily kept in check by picking off affected buds and the only serious losses have been from honey fungus (*Armillaria mellea*) where old tree-stumps have been left in the ground. It is curious that where plants have died as a result of honey fungus and a magnolia has been planted, the magnolia has always survived. Of course, this may apply to the greensand soil and not necessarily to other soils. From bitter experience, however, it is strongly recommended that all tree-stumps wherever possible should be eliminated, as honey fungus is the worst enemy the rhododendron has to face, except, of course, a long spell of drought.

The average rainfall at Minterne over the past thirty years is 40 inches; the highest 55 inches in 1946, and the lowest 28 inches in 1933. This high rainfall, together with wind shelter, is the greatest asset to a successful rhododendron garden, although it seems to hasten the disintegration of decaying tree-stumps, which in turn is likely to increase the menace of honey fungus.

The description of the actual rhododendron plants at Minterne is by no means an easy task as the collection of over 350 species, and at least twice as many hybrids, would, if taken individually, merely bewilder the reader. It will be many years before final judgment can be made on many of the seedlings brought from

China that are now growing so naturally on the slopes of the Minterne Valley garden. Pride of place has been given to the large-leaf varieties because the *R. falconeri* was already so well established. *R. sinogrande, macabeanum, mollyanum, basilicum, fictolacteum, arizelum, coriaceum, fulvoides, rex, fulvum,* and *mallotum* take priority among the rhododendron species for this reason, and they have been planted for foliage effect as well as for floral grandeur.

There are many fine young growth variations among the newer introductions. The bronze young growth of *R. exasperatum, lutescens, williamsianum, stewartianum, eclecteum* and *fictolacteum*; the blue effect of the young growth of *thomsonii, concatenans* and *cinnabarinum*; the scarlet of *R. araiophyllum,* alas a tender plant!; the white or silver effect of *fulvoides, coriaceum* and *uvarifolium*; the intense green of *aeruginosum* and *viridescens*; and the red bracts which hang on to the opening young growth of so many of the Fortunei and Thomsonii Series.

These colour variations in foliage all lead to great possibilities in the grouping of rhododendrons in the future, as the species become better known. This aspect of rhododendron planting, now firmly started at Minterne, leads the rhododendron enthusiast not only to enjoy the flowering season but also to attempt to continue the beauty of leaf effect in various ways for further months. It is fair to say that, with the exception of a frost period, a rhododendron can be found in flower at Minterne on any day throughout the year. I doubt if there is any other genus of plants that can boast such a phenomenon?

With so many new introductions in recent years, some of which may well take fifty years or more to reach maturity, it is by no means easy to determine which varieties should be retained and which should be scrapped. The subject of selection for hybridization is, indeed, a difficult problem and no doubt many mistakes have been made here as elsewhere. Arthur Smith, who has been in charge of the wild shrub garden at Minterne for almost thirty years, with very little labour under his control, rarely more than one man, has worked hard to carry out the hybridization programme that we jointly planned. We used *R. facetum* from Reginald Farrer's collecting as a parent because he described it in his field notes as "the finest Scarlet Crimson Rhododendron that I have ever seen". This, mated with the best form of *strigillosum* gave R. 'Lady Digby', which is likely to prove an outstanding rhododendron for the milder parts of the British Isles.

The earliest rhododendron to flower is a pink form of 'Nobleanum' which was brought by the late LORD DIGBY from Inverewe in Ross-shire in 1912 when the place was rented from the late OSGOOD MACKENZIE. It is interesting to have this link with a famous Scottish rhododendron garden, only recently acquired by the National Trust for Scotland, and which is under the expert supervision of DR. J. M. COWAN. This rhododendron is frequently out in November and almost invariably produces enough flowers for a bowl on Christmas Day.

The pink form of *moupinense* usually manages to dodge the February frost, and *stewartianum*, *praevernum* and *calophytum* follow soon after. There is a Minterne hybrid named 'Early Stir' (*irroratum* × *strigillosum*) which gives a good display of red flowers in February and March and is rated high for an early rhododendron, though the intense red of the buds is apt to fade when fully developed.

There is no doubt that much value is obtained from the winter-flowering rhododendrons which flower spasmodically from November till May. There are many plants of a form of R. 'Christmas Cheer', imported annually from Holland in the early part of the century for forcing in pots for the house. These were subsequently planted out and now produce a succession of pink buds and smallish white flowers right through the winter whenever any mild spell of weather eventuates. The pink buds come out well in water and can be picked in large numbers when a frost is imminent.

R. mollyanum, which was first listed as a form of *sinogrande* when brought from China under the number K.W. 6261, is now recognized as a separate species and named after the DUCHESS OF MONTROSE. It is a particularly pleasing rhododendron both with its pink flower and its unusual and striking leaf. The best plant at Minterne is now 15 feet high and 11 feet across.

R. fictolacteum 'Cherry Tip' is a very beautiful rhododendron, especially when the young flower buds first open. It received an A.M. when shown in 1953 (see photograph in the 1954 *Rhododendron Year Book*).

R. litiense is a lovely yellow with an open cup-shaped flower. This plant, now 10 feet high at Minterne, received an F.C.C. when shown at Chelsea in 1953.

Both *R. thomsonii* and *R. campylocarpum* do exceptionally well. The tallest plants are 20 feet and 16 feet respectively. *R. euchaites* has reached 14 feet and *R. beanianum* 9 feet. The various heights of plants are merely given as a rough guide to other rhododendron

gardeners and are not quoted as anything unusual, though some possibly may be.

No natural seedlings are considered worth collecting and such a practice should be discouraged elsewhere. There is, however, one exception to the above rule at Minterne and that is in the case of the rhododendron hybrid 'Polar Bear'. This very fine rhododendron (*R. auriculatum* × *R. diaprepes*) does not usually flower till August, so the chance of cross pollination is comparatively remote. All the natural seedlings of 'Polar Bear' that have flowered at Minterne appear to show no variation from the parent, both as regards flower and scent. The original plant, now 27 feet high, given me from Tower Court in 1928, scents a large part of the garden and is a most pleasing reminder of the late J. B. STEVENSON, who not only introduced this rhododendron but did so much for the genus.

The Minterne hybrid, 'Polar Bear' × *facetum*, has just begun to flower (August 1955) and is a very lovely and striking pink and it may well be up to F.C.C. standard when fully grown.

Other Minterne hybrids of note are 'Jacquetta' (*facetum* × *griersonianum*), 'Sheila Moore' A.M. (*decorum* × *elliottii*) and its variety 'Cerisette' A.M., 'Minterne Cinkeys' F.C.C. (*cinnabarinum* × *keysii*), 'Arthur Smith' (*decorum* × *wardii*) and 'Blue Sky' (*augustinii* × *desquamatum*).

Of the older hybrids planted for mass effect, 'Cynthia', 'Bodartianum', 'Queen Wilhelmina' and 'Pink Pearl' are undoubtedly those that have given the greatest dividend. 'Pink Pearl' was planted in large numbers in the heavy shade of the big trees, and, as it retains its colour far better at Minterne than elsewhere, it is a remarkably fine sight in June.

Of the smaller rhododendron hybrids, 'Blue Tit' has proved itself invaluable for massing in windy and sunny aspects where larger-leaved rhododendrons suffer.

The autumn colour in the Minterne garden has been mainly obtained by plantings of many varieties of Japanese maples, the tallest, *Acer palmatum*, already being over 35 feet.

A very good form of *Cercidiphyllum sinensis* and a *Stewartia pseudo-camellia*, brought from Japan in 1923, have both produced the winning vase in different years at the R.H.S. Autumn Colour Competition in London. *Parrotia persica*, *Euonymus alatus* and the yellow autumn foliage of many plants of *Davidia involucrata*, the pocket handkerchief tree, make a fine setting for the garden at a time when the rhododendrons are at their least attractive stage.

Japanese cherries and two large flowering plants of *Magnolia campbellii*, planted by the late LORD and LADY DIGBY, are distinct features in the garden.

The only attempt to control the weeds is by ground cover, obtained by a large assortment of ferns and by a blue-flowered borage from Asia Minor called *Trachystemon orientale*, which spreads so rapidly in the moist greensand soil that one might very well hesitate to recommend it to other gardeners; but at Minterne it has defeated other weeds, kept the sun off the roots of the rhododendrons in their early stages and produced a tremendous mulch each autumn. The leaves, when fully mature, measure 12 inches by 10 inches; the blue flower, coming out in March before the leaves, also has its value.

Perhaps some reference to Minterne House may be appropriate; the present house, built fifty years ago, is probably one of the best examples of Edwardian architecture and it replaced the former smaller house on the same site, that had to be pulled down owing to wood rot in 1903. Unfortunately, this house, built with the lovely Ham Hill stone which has given so much beauty to the many Elizabethan manor houses in the neighbourhood, is too big, with its sixty-seven rooms, mostly very large, for present-day needs.

The Churchill tapestries and the very large pictures of the Battle of Trafalgar are the only things of great interest in the house, which is not open to the public. The garden, however, is open as advertised for the National Garden Scheme, usually in April, May and June, when the greatest number of rhododendrons are at their best.

In conclusion, it is fair to say that the shrub garden at Minterne in Dorset is a fine example of a garden adapted to present-day conditions. Here a wide range of trees and shrubs, selected over the last century for their fine flowers as well as for their decorative foliage, thrive in a natural setting and offer colour and interest throughout the year. Yet, in spite of the size of the shrub garden and the great variety of plants, it can be well maintained by a minimum of labour.

STONEFIELD—Argyll

By J. MACQUEEN COWAN, C.B.E.

IT is now many years since I first visited the garden of Stonefield in Western Argyll. It lies, well-sheltered and magnificently situated, on the shores of Loch Fyne, about a mile above the little township of Tarbert at the northern end of the Mull of Kintyre, and on the main road to Campbeltown. The garden is thus easily reached by car, or (with less convenience) by bus from Glasgow, from which it is 96 miles distant by road. Otherwise the journey may be made by steamer, as the daily service from Gourock to Ardrishaig calls at Tarbert on the outward and inward journeys, and there is a choice of hotels at which to stay over-night.

All during the war, duty took me along the Tarbert road at least once every month, and I seldom passed the gates of Stonefield without stopping to look in. The house was then unoccupied, so that I could slip in and out freely, quite unobserved, and when I had only a few minutes to spare I could search out a particular plant, then the pride of the garden, and be off again without delay.

To call in frequently, as I did, gave me the greatest pleasure, for to anyone like myself who has known the Eastern Himalayas well, Stonefield has a unique attraction added to its special charm. Here, more so than in any other garden that I know, is a reminder of the Himalayan scene, as one finds it not far from Darjeeling—on the way from Sandakphu to Phallut, perhaps, or on the Reichi La, one of the minor passes leading to Bhutan. There, rhododendron forests occupy the slopes at altitudes from 9,000 to 12,000 feet and these were part of my charge as Forest Officer in Darjeeling or Kalimpong.

At Stonefield all the commoner Himalayan species will be found again—*Rhododendron arboreum*, *R. campanulatum*, *R. thomsonii*, *R. cinnabarinum*, *R. falconeri*, *R. grande*, *R. campylocarpum* and *R. triflorum*—where they are at least as large and as vigorous as in their native land; furthermore, throughout the policies, many of them seed and regenerate freely in the half shade of surrounding trees or on the mossy lawns. Indeed, many of the parent plants at Stonefield, now long established, are over a hundred years old, having been raised from seed which HOOKER collected in Sikkim (now in part the Darjeeling District) about the year 1850.

RHODODENDRONS AT MINTERNE

FIG. 5—A view in the woodland showing the high shade canopy and the profusion of rhododendrons

Photo, W. E. Lake

Photos, Amateur Gardening

FIG. 6—The stream makes a lovely natural setting

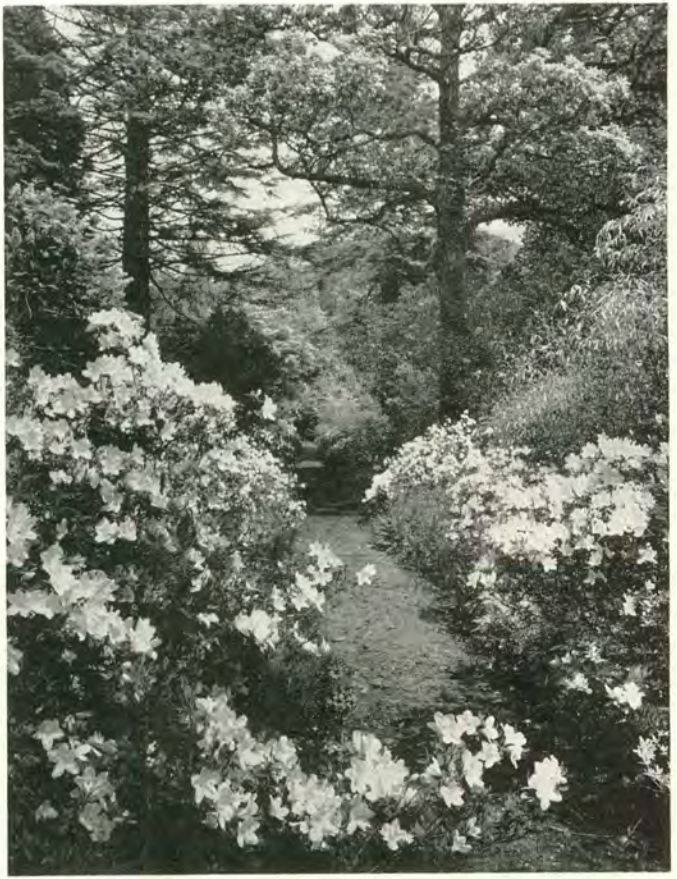


FIG. 7—R. 'Palestrina' makes a fine show along a path

RHODODENDRONS
AT STONEFIELD

FIG. 8 — *Rhododendron niveum* with the house in the background (See p. 18)

Photo, R. M. Adam

FIG. 9 — *Rhododendron falconeri*, well flowered to the ground (See p. 18)

Photo, R. M. Adam

Photo, R. M. Adam

FIG. 10—*Rhododendron grande,* of tree-like proportions (See p. 18)

Photo, Mrs. K. L. Kenneth

FIG. 11—*Rhododendron cinnamomeum*, with its multiple trunk, has grown like a forest tree

Since the war ended, my opportunities of visiting Stonefield have been fewer than before, but I have been able to look in from time to time and I never let a chance go by. Nowadays, the mansion house, having changed hands, is no longer unoccupied but, equipped with modern furnishings, is known as Stonefield Castle Hotel.

Some time ago, soon after the house became a hotel, with my wife and SIR WILLIAM and LADY WRIGHT SMITH, I spent a long week-end there as the guest of the then proprietor, and we named and put labels on all the noteworthy plants. My last visit to Stonefield was with the Scotland's Gardens Cruise in May.

Many of the older Stonefield rhododendrons are, as I have mentioned, among the original introductions of SIR JOSEPH HOOKER, the species he discovered and illustrated so beautifully in his folio volume on *The Rhododendrons of the Sikkim Himalaya.*

His father, who was then Professor of Botany in the University of Glasgow and proprietor also of a small estate in Argyll, was a friend of the CAMPBELLS who then owned Stonefield. And DR. A. CAMPBELL, who accompanied HOOKER on his Himalayan travels, was related to the Stonefield CAMPBELLS and he, too, sent them seed. DR. CAMPBELL had just been appointed to the superintendentship of the sanatorium at Darjeeling, which had recently been opened as a hill station for Europeans, but the surrounding country was still unsettled and botanical collecting hazardous, for on one of the expeditions CAMPBELL was taken prisoner, as we learn from the *Himalayan Journals.*

The climate at Stonefield makes for exceptionally luxuriant growth and, whenever I visit the garden, I find that in conversation one descriptive term is apt to be constantly upon the lips. It is the adjective "enormous" and when by repetition this begins to savour of monotony, then "huge", "immense", "gigantic" and so on, till the obvious synonyms are all exhausted. This applies not only to rhododendrons but also to other trees and shrubs, which are there in great variety.

But to me no others have quite the same interest as the Himalayan rhododendrons and on my last visit, having enlisted the help of PETER COX (Glendoick) and of ARCHIE KENNETH (Stronachullin), to whom I am indebted for some valuable notes, measurements were made of some of them. Detailed descriptions of the species are scarcely required, but the figures are worthy of record.

The tallest *R. arboreum* we estimated to be 42 feet high, the bole of another is 74 inches in girth before it divides about 3 feet above ground. A straggling *R. thomsonii*, in rather dense shade, is about

25 feet high. *R. falconeri*, a tree 28 feet high, has a spread of 30 feet and a trunk 46 inches in girth at 1 foot above ground (Fig. 9). The crown of one of the largest *R. hodgsonii* measures 37 feet across; the plant is about 15 feet high. One of the two fine *R. grande* is 19 feet high with a crown spread of 23 feet; the trunk divides near the ground and one of the branches has a girth of 33 inches at 3 feet above ground (Fig. 10). The largest *R. niveum* is 15 feet high with a spread of 26 feet (Fig. 8). Certainly one of the most noteworthy, and perhaps the most famed, is the Stonefield specimen of *R. eximium*, a species very closely allied to *R. falconeri*, but with a brown tomentum on the upper side of the leaf as well as on the lower. It is 16 feet high and 33 feet in breadth. Several times I have seen the plant completely covered with large trusses which are pinkish purple at first, later fading to a rather shabby whitish brown.

This *R. eximium*, which seeds freely, has produced many of the seedlings scattered throughout the grounds. The whole garden was much neglected during the war and, about 1945, this plant, a prolific parent, was surrounded by a thick hedge of its own offspring, which varied from a few inches to about 2½ feet in height. I made no attempt at an accurate estimate of their number, but there must have been altogether many hundreds, if not, in fact, thousands. Later when I called in once again, I found that, with a change of staff, all these seedlings had been carefully cleared away and burnt ignominiously on a bonfire by a dunder-headed ignoramus whom they called a gardener. A like fate befell hundreds of seedlings of *R. ciliatum* which had bestrewn the lawns. Unfortunately, my visits had by then become infrequent and I had arrived too late to halt the hideous holocaust. However, some escaped and time has passed. The present staff, warned and somewhat more enlightened, take care not to destroy all traces of natural regeneration and in spite of an innate instinct for misplaced tidiness, seedlings are once more abundant on the lawns.

To Mr. Kenneth, who has visited the garden frequently in recent years, I am indebted for a list of all the different seedlings he has found. As he remarks, the species seem to hybridize and have thus given rise to a mixed and varied race commonly known as "Stonefield seedlings". His record of the species which regenerate includes: *R. falconeri*, *R. grande*, *R. hodgsonii* (which rarely comes true to foliage type), *R. arboreum*, *R. niveum*, *R. campanulatum*, *R. barbatum*, *R. maddenii*, *R. ciliatum* (very plentifully) and *R. cinnabarinum* (sparsely). I notice he omits *R. campylocarpum* and I cannot myself recollect having observed any seedlings of this

species at Stonefield, which is curious, since this is one of the most prolific at Inverewe. All these are Indian species, but he mentions also two from China, *R. desquamatum* and *R. megacalyx*, the last a splendid parent plant.

Because the renown of Stonefield rests upon its Himalayan rhododendrons, it is not generally realized how many others are represented in the garden—a full list would be a remarkably long one. The Ceylon rhododendron, *R. zeylanicum*, a plant 12 feet high and some 26 feet across, is a conspicuous feature when its scarlet flowers have appeared in early May. *R. wattii* (formerly known as *R. kingianum*) was not in flower when I last saw it, but should be noted as a rare plant in cultivation. Its native country is Assam, a region which gave us also *R. macabeanum*, but at Stonefield neither of the two plants of this species is the best yellow-flowered form. One plant of *R. mollyanum* has flowered, the other has not. From Western China and Burma the garden has other big-leaved species —*R. sinogrande*, *R. fictolacteum*, *R. sidereum*, *R. arizelum*, *R. basilicum* and *R. coriaceum*—and in each case more than one. Both *R. giganteum* and *R. magnificum* are vigorous of growth and healthy, neither has as yet flowered, but bloom may be expected in the next few years. I noted also *R. auriculatum*, *R. calophytum*, *R. sutchuenense*, *R. eritimum*, *R. ririei*, *R. fulvum*, *R. wardii*, *R. callimorphum*, and *R. yunnanense* to which are to be added three Himalayan species not already recorded, *R. fulgens*, *R. wightii* and *R. griffithianum*, the last, with *R. manipurense*, *R. crassum* and *R. fragrantissimum*, indicative of the mildness of the climate (Fig. 18).

Two more merit a separate paragraph—a remarkably fine *R. souliei* raised presumably from the original seed introduced by WILSON from Tatsien-lu in 1905, and *R. traillianum* which FORREST selected to name after his wife. The first, though hemmed in by encroaching neighbours so that the flowers are partly concealed, is still a thing full of grace and beauty; the second, though it is difficult to account for FORREST's choice, is particularly well-shaped and unusually attractive, an isolated plant on the lawn.

No extensive plantings of the dwarfer rhododendrons will be met with at Stonefield, but species of the Glaucum and Lepidotum series and of the Sanguineum sub-series are here and there on the grassy slopes in company with massed azaleas. Ghent and mollis hybrids and forms of *R. obtusum* are plentiful, while the yellow, sweetly scented, common *R. luteum* abounds.

It will be obvious that anyone specially interested in rhododendrons would be well advised to visit Stonefield, despite the fact

that the garden shows evidence of past neglect and is still rather untidy.

Much the same advice may be given to those to whom conifers make a special appeal. I make no claim to have studied them in close detail, but they cannot fail to impress even the most casual observer. Stately pines with massive stems, firs, larch and cypresses are the predominating trees, the tallest, perhaps, the Douglas and silver firs and the Lawson's cypress. The largest larch is wreathed almost to the top in honeysuckle. Conspicuous, too, are the deodars and yews, Himalayan spruce (*Picea morinda*), *Abies nobilis* (to use the more familiar names), western hemlock *Tsuga heterophylla*, sequoias, and *Cupressus macrocarpa*. Hidden away I came across one large *Cryptomeria japonica* and I noticed also the Californian nutmeg, *Torreya californica*, *Podocarpus chilina* and *Sciadopitys verticillata*, the Japanese umbrella pine, a handsome tree about 30 feet in height.

A huge horse-chestnut, the copper beeches and the eucalyptus are the most striking of the larger broad-leaved trees. The tallest eucalyptus, *E. coccifera*, I estimated to be about 100 feet high. Various other interesting trees are grown, such as the tulip tree, *Liriodendron tulipifera*, *Magnolia campbellii* and *M. denudata*, *Litsea ovata*, the Tasmanian *Nothofagus cunninghamii* and the Japanese rowan (*Sorbus rufo-ferruginea*), which colours so well in autumn, a fine specimen.

As to shrubs other than rhododendron, the garden has again an enviable variety with a majority of New Zealand and Chilean species. A *Griselinia littoralis*, not far from the front of the house, is as large as any in Southern Ireland or Cornwall, about 40 feet high and 50 feet across. Wind resistant and tolerant of salt spray, this species is often a feature of west coast gardens and with *Olearia macrodonta* and *Escallonia macrantha* is among the best of shrubs with which to form protective shelter belts.

Of three other shrubs I might almost say that each alone would well repay a visit to Stonefield. Firstly, *Philesia buxifolia*, which at Stonefield is closely confined by wire netting, grows in a compact mass no less than 3 yards square. If the netting allowed and if rabbits and sheep were more fully under control, it would doubtless spread further, for it appears, as long as I have known it, to be doing its best to burst its bounds. This dwarf shrub of the lily family, a native of Chile, with stiff dark leaves and solitary, tubular, lapageria-like rosy crimson flowers, is, in other places, often disappointing in its growth. Apparently BEAN never had an opportunity of seeing the Stonefield plants, for rather sceptically he remarks:

"It is said to be 3 feet high in its native country, but is usually 6 to 12 inches in this". The Stonefield plants are nearly 4 feet in height. Secondly, *Fuchsia excorticata*, a native of New Zealand, about 15 feet high and 20 feet across, a stately shrub when leafless, festooned with greyish, shaggy, peeling bark. Thirdly, *Pieris forrestii* as high as the 12-foot wall in front of which it stands. For the rich red of its young foliage and the wealth of its lily of the valley-like flowers it is no less outstanding than the remarkable specimen at Bodnant, which it far surpasses in size. It deserves to be relieved of some of the encroaching jungle by which it is partly obscured.

I shall enumerate only a few other shrubs: *Abutilon vitifolium*, a native of Chile, which in the month of July bears many pale mauve, mallow-like flowers; *Eucryphia glutinosa*, *E. cordifolia*, *Cercidiphyllum japonicum*, *Leptospermum scoparium*, *Mahonia nepalensis*, *Tricuspidaria lanceolata*, *Desfontainea spinosa*, *Corokia cotoneaster* and *C. virgata*, akin to the dogwoods, *Cotoneaster frigida*, *Elaeagnus pungens* and the Japanese maples, one of which is of immense size.

I have said little about the wonderful site near the sea on which Stonefield stands and of the natural beauty by which the garden is surrounded. Nor, as to climate have I given figures of temperature or rainfall, but the many plants usually regarded as tender which thrive in the open air and the luxuriant growth of trees and shrubs and weeds alike are evidence of a growth-promoting soil in a kindly climate.

On our recent Gardens Cruise, I was much interested to note how greatly visitors coming to Scotland for the first time are astonished at what may be grown in gardens like Stonefield, Brodick, Logan and Inverewe and to see such exuberance of growth. For the old myth, perpetrated by the Romans, that Scotland is the bleak and barren north, dies hard even today.

The truth is, of course, that, if there is a climatic line which divides the British Isles, it is not, as the Romans thought, the Emperor Hadrian's wall, but a line running north to south dividing the western third of the country from the remainder in the centre and in the east. The fact bears no argument, but is often a topic for discussion.

One lady on the Cruise, in a party at Stonefield, rather bored with an overdose of Latin names and pseudoscientific debate, turning and pointing frigidly to a plant, brought all disputation abruptly to a close with the single remark, "I have seldom seen a better bramble".

THE KURUME PUNCH BOWL AT WINDSOR

By LANNING ROPER

ONE of the great horticultural displays of colour in Great Britain is the Kurume Punch Bowl in the Great Park at Windsor in late April and the first half of May. Here in a vast natural amphitheatre tens of thousands of Kurumes have been grouped in irregular masses of varying sizes and shapes on a scale seldom seen in man-made gardens, but reminiscent of the broad natural landscapes in the United States and Canada where whole hillsides are covered with rhododendrons, both the broad-leaved and azalea types.

The idea of developing this particular site in Windsor Great Park started as far back as 1932 when ERIC SAVILL, now SIR ERIC, who has been so intimately concerned with all the horticultural developments at Windsor in recent years and from whom so many conceptions have originated, was struck by the remarkable opportunity offered by it. The vast semi-circular amphitheatre stretches from east to west and is open to the south so that it is sheltered but enjoys full sunshine. The slope, a pleasant one, falling about 40 feet from the top to the bottom, was in those days completely wooded, for at that time no gardening in the immediate area was contemplated. Such a perfect setting obviously had to be utilized, but what the nature of the planting was to be was not determined until much later.

In 1946, MR. J. B. STEVENSON of Tower Court, who had over the years taken an unusual interest in the Woodland and Valley Gardens and particularly in the planting of rhododendrons, was struck by the suitability of this same site and his first comment was "What a wonderful site to grow Kurume azaleas". With this comment actual plans took immediate shape, for MR. STEVENSON then and there agreed to provide the stock plants of the "Wilson Fifty", as this selection of Kurume azaleas had come to be known, in honour of their collector, E. H. WILSON, who sent them back from Japan to the Arnold Arboretum.

Immediately, two operations were put in motion. From

MR. STEVENSON'S stock plants cuttings were taken in great quantity and these were skilfully propagated. But to that story we will return. Meanwhile, on the actual site, all was activity. A great quantity of the larches were felled in February. The encroaching bracken was a problem in places, but by trenching and repeated cultivation and fires this was gradually brought under control. Water was laid on, as the light porous soil dried out quickly in protracted spells of drought and the young plants would need a bit of cosseting in their early period until established (Fig. 13).

It was decided to construct a series of paths. The first was to circle the top of the slope, and several others were planned at lower elevations with, here and there, connecting paths. These were kept as simple as possible, with logs used as retaining walls where necessary, to be completely in character with the forest surroundings. Great thought was given to proportions, as paths must be wide enough to be practical but it was important that they should not be featured in the final effect when the area was planted up (Fig. 14).

In the beginning there was some fear of erosion. The soil was sandy, but it had been improved by a great deal of natural forest leaf-mould which had accumulated on the site through the years, coupled with vast quantities of leaf and peat which were dug in as the land was trenched. The soil at the top of the slope tended to be of a gravelly nature and that at the bottom more sandy, but the combined effects of the recent intensive cultivation and the high percentage of leaf and peat have had the desired results and erosion has never been a problem.

At the top of the slope the forest trees made a fine background and young *Abies nobilis glauca* and larches had been retained at intervals to break the flatness of the proposed under-planting of azaleas and to provide light shade.

Meanwhile, propagation progressed. It was found that Kurumes were even easier to strike from cuttings in frames than anticipated. SIR ERIC recently used the simile, "easy as geraniums", which tells the story, and he pointed out that best results came from cuttings taken in July and placed in unheated frames. The rooted cuttings were then lined out in carefully prepared nursery beds of leaf-soil, which were watered regularly as needed. In 1948 the first batch of two-year-old cuttings was ready for planting, although thereafter three-year-old plants were used instead (Fig. 15). By 1950 the planting was completed. How many plants were used? Fifty thousand is a very conservative estimate and it is very possible

that the figure is much higher. The actual area planted with Kurumes covers over 100,000 square feet.

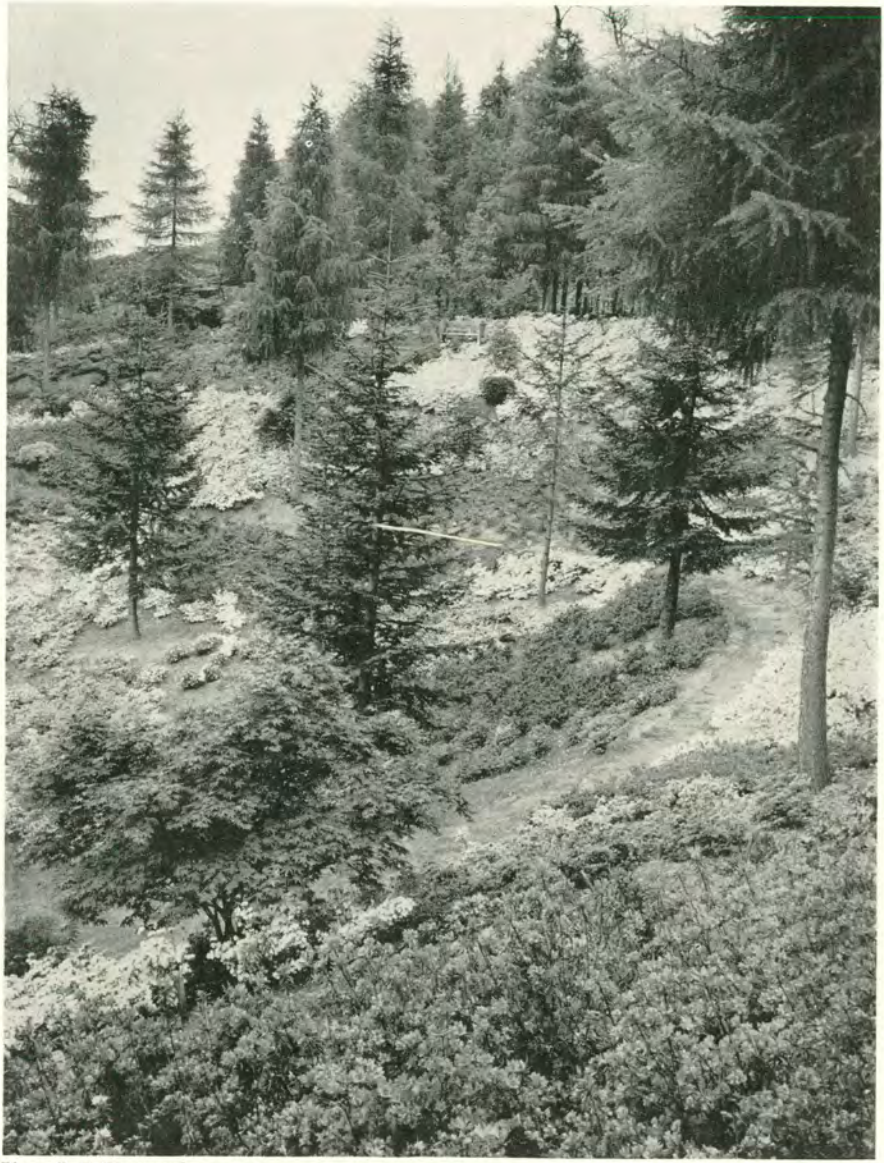
After a great deal of thought about the general planting scheme it was decided that bold plantings of from fifty to two hundred plants of a single variety should be used. Plants were placed from 2 to 3 feet apart depending on the vigour and habit of the variety. Colours were blended and distributed so that one colour would not predominate in any one area. The possibility of clashes was not considered to be a problem as it is a well-known fact that where one is mixing a wide range of colours, intermediate shades prevent the clashing of colours which would be intolerable if used in twos and threes. Here, this again proved to be the case.

For interest, it was decided to use a few plants of other genera, but this was to be strictly limited and this certainly has proved a wise decision. Acers were a natural companion, especially forms of *A. japonicum* and *A. palmatum* and its variety *dissectum*, which, like the Kurumes, are natives of Japan. So, too, are *Styrax japonica*, that charming small tree with its lovely snowdrop flowers in May, and *Enkianthus campanulatus* with its pale yellow flowers striped with red and in the autumn its fine coloured foliage. Stranvaesias are also a feature in autumn, not only for their brilliant foliage but for their sealing-wax red fruit.

All these plants thrive in the same conditions as the azaleas and they are seeding in large quantities, so freely, that they have to be rogued out ruthlessly. The rate of growth has been rapid and their added height is important to the whole scheme.

Looking at the Punch Bowl today, the earliest plantings of Kurumes to the east do not seem much larger than the plants to the west, which are several years younger. All have grown remarkably well and the last planted have caught up remarkably quickly.

Bloom starts at the end of April, is at its peak the first two weeks of May and then gradually goes off until by the end of the month the plants are out of flower. Regardless of the mildness or severity of the winter, the blooming season varies little. One peculiar fact has been established over the years. The plants at the top of the slope always come into flower at least a week to ten days before those at the bottom. It is remarkable that a drop of 40 feet can make such a difference. The first variety to flower is 'Kirin', the familiar, deep rose hose-in-hose. One variety, propagated in error at Tower Court as WILSON 42, which appears to be a form of *Rhododendron obtusum*, has been removed as it invariably flowered six weeks later than the rest.



Photo, J. E. Downward

THE KURUME PUNCH BOWL AT WINDSOR

FIG. 12—A vista from the east side, showing the masses of colour provided in early May

FIG. 13—Looking north across the site in February, 1946, before the larches were felled (See p. 23)

Photos, J. E. Downward

FIG. 14—The same view in February, 1947, showing the clearing of the larches and the construction of the paths (See p. 23)

FIG. 15—The Punch Bowl in 1948, when the first batch of 20,000 Kurumes had been planted (See p. 23)

FIG. 16—A section of the Punch Bowl showing the plantings, irregular both in size and outline

FIG. 17—Looking northeast across the Punch Bowl with the older plants in the foreground and the two later plantings beyond

Photo, J. E. Downward

Of the original "Wilson Fifty", about twelve were discarded as being definitely too tender. The rest, though varying considerably in colour, habit and foliage, are all evergreen, low-growing shrubs. They are easy plants, for once established they more or less look after themselves. They like full sun and need far more ripening than many of the other azaleas and rhododendrons. The slope on which they are planted at Windsor has proved remarkably frost-free. As there is plenty of air circulation, the frost drains away down the slope. In spite of some fairly heavy falls of snow the bushes have been unharmed, having considerable resilience and not breaking easily. At times severe winter frost splits the bark here and there, and this often explains why an odd branch or even a plant will go back for no apparent reason. So far, Kurumes have proved completely disease-free and no honey fungus has appeared in spite of the numerous old stumps of the larches which were cut down because of the impending starvation of the Kurumes, for larches are notoriously greedy trees.

Although young plants require water until established, on the whole the Punch Bowl has required very little, if any, in normal seasons. This last summer, of course, has been exceptionally dry and the watering system has been busy.

When the plants were young, weeds were the major problem, and these had to be removed by hand several times during the season. Now, since the growth of the plants is so thick and many of them have tended to layer themselves making an even thicker mat, the weeds are to a large extent smothered or never start.

"Each year shortly after flowering we put the shears to them", to quote Sir Eric Savill. This annual hair-cut removes a lot of the dead flowers and the few seed pods that might form on the few varieties that set seed. It also shortens the main leaders and encourages hundreds of new side shoots. This shearing improves the shape of the bushes, makes their growth more solid and increases the production of flower-bud for the following year. Yet it in no way impairs the natural shape of the bushes. Another annual treatment is a thick top-dressing of leaf-mould, which helps to keep down weeds, covers the roots which have worked their way to the surface, helps retain the moisture and above all feeds the plants. These two practices may well be adopted by all growers of Kurumes.

Of the different varieties, 'Hi No Mayo' is rated first at Windsor. This fine pink well deserves the F.C.C. it was awarded in 1945. 'Hi No Degiri' is rich deep red, but it is definitely bud

tender at Windsor. Of the very pale pinks 'Takasago' and 'Hoo' are well described by the words "apple-blossom pink", for that is exactly what they are, 'Hoo' being slightly the paler.

Of the whites, 'Kure No Yuki', a hose-in-hose, is extremely prolific, but 'Haru No Kyokii' is a better white. There are other whites faintly tinged with mauve or pink. Of the hot colours, 'Rasho Mon' is a brilliant orange-scarlet and 'Kurai No Himo' an intense carmine hose-in-hose. There are many others, but if one wants to make a selection for one's own garden the obvious thing is to make a pilgrimage in May and to choose for oneself.

There is much more to be said than one might think for a pilgrimage at other times of the year when the plants are not in flower. In summer the subtle variation of the different greens of the foliage makes a delightful carpet under the glaucous blue-green of the *Abies nobilis*. In late July huge specimens of Rhododendron 'Polar Bear' with great trusses of scented white flowers are prominent in the glade which closes the vista looking down from the top of the Punch Bowl. It is then, too, that one can best see the great differences in the habits of the Kurumes, some being much more pendulous or horizontal in habit; a contrast to the erect-growing ones.

In autumn many of the Kurumes colour well, and with the acers, enkianthus and photinias, make a wonderful display. In winter there is the delightful evergreen background and the fine trees. Yes, the Punch Bowl should be visited often.

The Punch Bowl is easily reached from the Valley Garden, but a word of advice. Too many visitors approach from the eastern end and stand at the top, looking across and down at the great curving sweep of colour. To see it at its best it is worth being energetic and circling the top to view it from the far end as well, for the effect is quite different. Then one should walk along the lower paths for the pleasure of being in a sea of colour on every side and eventually viewing it from the bottom in order to look up and appreciate the scale of the conception. Rustic benches have been placed at certain vantage points and it was from one of these that I made the notes for this article one lovely summer afternoon in July with Sir Eric Savill and Mr. Findlay, the creators of this highly original landscape garden.

The future offers certain problems. In time as the azaleas grow and spread will it be necessary to remove alternate plants? Will the *Abies nobilis* grow too big and cast too much shade? What will be the life-span of the Kurumes? These and dozens of other

questions pose themselves, but they must be solved when the time comes. Meanwhile, there is no precedent to follow, for nowhere else in Great Britain have Kurumes been planted on such a scale and under such conditions. For the true gardener it is this constant challenge which is so stimulating. Of one thing I am sure, that SIR ERIC SAVILL and his excellent staff, headed by MR. FINDLAY, will find the right solutions at the right time.

IS *RHODODENDRON KAEMPFERI* A GOOD SPECIES?

By COLLINGWOOD INGRAM, F.L.S., V.M.H.

BEING familiar with both plants in Nature, and having grown them side by side in my garden for many years, I find it difficult to understand why botanists persist in regarding *Rhododendron kaempferi* as only a variety of *R. obtusum*. I am fully aware that the systematic status of a plant is often largely a matter of opinion, but here we are dealing with two azaleas that differ not only in one important respect but in almost every character that would normally be considered of specific significance. For instance, typical examples of *R. kaempferi* are deciduous, those of *R. obtusum* are evergreen; one has orange-tinted flowers, the other pink, red or magenta, while in their habit of growth, as well as in the size, shape and texture of their foliage they are equally, or even more, strikingly distinct (Fig. 26).

Unfortunately, *R. obtusum* was originally described by PLANCHON from a cultivated plant (*Fl. des Serres*, 1854) which has necessitated the creation of varietal names for its two spontaneous forms—*R. obtusum* var. *japonicum* Wilson and *R. obtusum* var. *amoenum* Wilson, the recognized progenitors of the well-known Kurume azaleas of our gardens. These are both low compact shrubs restricted in Nature almost entirely to the mountains of Kyushu, the southernmost of the three principal Japanese islands. The pink-blossomed or red-blossomed *R. obtusum* var. *japonicum* was the form I encountered most frequently on the central zones of Unzendake, a mountain near the town of Nagasaki. As I ascended higher I found it gradually but progressively replaced by the magenta-flowered var. *amoenum*: from about 3,500 feet up to the altitudinal limit of the species, the latter variety reigned almost alone. Both display typical montane characteristics, being squat, densely branched shrublets with small, dark and somewhat leathery leaves of a more or less elliptic shape. *R. kaempferi* on the other hand is a considerably taller, looser-habited shrub. It is normally found at lower elevations and in sparsely wooded country, whereas the

typical forms of the *obtusum* azaleas are essentially plants of exposed heath-like mountain slopes.

Although the range of *R. kaempferi* may, in a few places, touch, or even slightly overlap that of *R. obtusum*, for the most part, as we have seen, it occupies a totally different type of terrain; moreover, while the latter is, I believe, confined mainly to the southern island of Kyushu, *R. kaempferi* is fairly widely and generally distributed throughout the Japanese archipelago to at least as far north as Hokkaido.

Until DR. E. H. WILSON published his *Monograph of the Azaleas* in 1921 (Publication of the Arnold Arboretum, No. 9), no one ever dreamt of regarding these two very distinct shrubs as anything but separate species. In that work, based on what I firmly believe was a fallacious argument, WILSON reduced *R. kaempferi* to a variety of *R. obtusum*, a classification which has since been implicitly followed by almost every subsequent writer. That WILSON himself was more than a little dubious about the advisability of this change of status is clear from his remarks on p. 40. "I confess", he says, "that I should much prefer to keep Kaempfer's Azalea as a species distinct from *R. obtusum* but the facts as I interpret them will not permit of this." The question is, was WILSON right or wrong in his interpretation of those facts—namely the discovery during his ascent of Nishi-Kirishima of plants which he thought "inextricably linked" these two azaleas?

In my opinion he was wrong. That he found such specimens, and in plenty, on Nishi-Kirishima does not surprise me in the least, for my experience on the neighbouring mountain of Unzendake was precisely similar; I there also encountered innumerable intergrading forms which, at first sight, might easily have been taken as irrefutable evidence of specific relationship. Now, in cultivation, I have proved over and over again that *R. kaempferi* will hybridize freely with *R. obtusum* and by crossing and re-crossing the two I have raised seedlings indistinguishable from many of the intermediate forms I found growing wild on Unzendake. I think it may, therefore, be safely assumed that these Japanese plants were all of hybrid origin, and more especially as they appeared to occur most frequently where their presumed parents were growing in closest proximity—namely near the lowest fringe of what might be termed the open "*obtusum* country". That being the case, one can hardly doubt that WILSON's so-called "linking" forms were also of similar mixed parentage and consequently of no taxonomic significance. Incidentally, when I showed some of the intermediate specimens

I had collected on Unzendake to the late MR. H. SUZUKI, of Yokohama, he unhesitatingly agreed that they were all of this hybrid origin.

Since, as I have endeavoured to prove, WILSON's sole reason for associating Kaempfer's azalea with *R. obtusum* was clearly based on a misconception, I contend there is every justification to restore this lovely and very distinct shrub to the specific rank it formerly held for over half a century.

I cannot conclude without briefly referring to the superlative beauty of the *obtusum* azaleas as I saw them, one May morning, growing wild on the upper slopes of Unzendake. In places they were massed in such profusion that they literally coloured the landscape with their pink, red or magenta blossom. Never in all my travels have I encountered such a fine floral display—a display more colourful and, by virtue of their vast numbers, far more spectacular than anything I have seen in the Tropics. Only those who grow Kurume azaleas in their garden, and are blessed with an imagination capable of multiplying their beauty a millionfold, can form any idea of the staggering splendour of that unforgettable scene.

A SYMPOSIUM

MY FAVOURITE RHODODENDRONS

MARY, DUCHESS OF MONTROSE, and MAJOR J. P. T. BOSCAWEN.
Brodick Castle, Isle of Arran, Scotland

It is rightly said, "Comparisons are odious", and I think it applies as much to the many beautiful flowers in one's garden and by the wayside as it does to the good friends one meets on the journey through life.

Certain friends, though, stand out for some particularly delightful trait or sense of humour which appeals to one's own and it is so with the rhododendrons in my garden at Brodick. Therefore I give a list of my "Five Favourite Rhododendrons", as requested by MR. SYNGE, without any disparagement to the many other gorgeous beauties which gladden my days from January to August. So I begin with the refined little beauty—*Rhododendron cubittii*. There is only one plant of this species in the garden, and so far we have been singularly unsuccessful with the seedlings we have tried to raise. This is disappointing, as *R. cubittii*, to my mind, is one of the most charming of small shrubs. Although of the Maddenii Series it is unlike them to look at casually, for the leaf is narrow and 2½ to 3 inches long, the bark is of a red-brown and the lovely apple-blossom pink buds, opening to flowers flushed yellow inside, are much smaller. It is no doubt tender here, but when the flower buds are not cut by frost it flowers in one mass about the middle of May, a sight for which it is well worth waiting.

Next I must put in the one with the most gorgeous scent of all and the most beautiful pink-and-white flowers in the garden, *R. bullatum* var. *jenkinsii*. The half-open buds are a sight that once seen can never be forgotten! This small loose-growing shrub does not seem to make nearly the growth each year that the other plants of *bullatum* do. Its foliage is similar, although, perhaps, the leaves are a little smaller, and so far we have found it difficult to propagate. It grows in front of a group of *R. johnstoneanum* in half shade by the side of a small grass path, its dark green foliage making a nice contrast to the lighter green of *johnstoneanum*, and it flowers

about a month later, towards the end of May. It seems quite a hardy little plant, and well worth every effort to grow.

Though I lean always to flowers with a scent I feel *R. delavayi* should take the next place. It has only been in the garden some ten years, but it has made rapid growth and some plants are now quite 10 feet high. I wish I had had this rhododendron before, as it is undoubtedly one of the finest of the small tree varieties. The rough bark and deep green pointed leaves, heavily veined with a light buff underleaf and the reddish stem of the young growth, make it an attractive plant anyway. But its trusses of deep ruby-red flowers are a truly wonderful colour. There is a group of six plants in the garden planted against a background of silver fir and birch. The sun shining through the flowers against this background and that of the dark green foliage of the plants themselves gives a colour which I cannot describe. This rhododendron flowers here at the end of April or early May, and though, of course, easily damaged by frost when open, neither the flower buds nor the last year's growth took any harm from the hard long winter and early spring of this year.

The fourth choice is another sweet-scented one, *R. polyandrum*. It came to the garden under the number of K.W. 6413. The plants were planted in a group in the autumn of 1934, and now cover an area some 5 yards in diameter and are 4 to 5 feet high.

The plant by nature has a sprawling habit and unless supported by some other plant would probably not grow much more than 3 feet high. Its leaves are noticeably glandular, without being as glabrous as *R. maddenii*. The white flower is beautifully bell-shaped, with a slight pink streak from the base of the outside. Its delicious scent can be smelt for some distance from the plants.

This plant is a free flowerer about mid May, although some seasons many of the flower buds are destroyed by frost.

I think it should be planted in a situation where the sun does not reach it while any frost there may be is on the plant, particularly during February, March and April. The plant itself has stood considerable frost and snow here from time to time, and except for losing its flower buds has taken little harm.

We have in the garden many plants of *R. maddenii*, but there are two plants which to me are as lovely as any rhododendron in the garden. The seed came here under a SHERRIFF number in about 1937 and seedlings were eventually planted, one on the bank of a small burn, the other overhanging the old roots of a tree on the rim of a small dell. Both these situations, which get a good deal of

Photo, Mrs. K. L. Kenneth

RHODODENDRONS AT STONEFIELD

FIG. 18—A well-flowered specimen of Rhododendron 'Fragrantissimum' which has proved perfectly hardy over a period of years (See p. 19)

FIG. 19—*Rhododendron coelicum* A.M. April 19, 1955. Exhibited by COL. THE LORD DIGBY, Minterne, Dorchester (See p. 116)

Photo, J. E. Downward

FIG. 20—*Rhododendron pubescens* A.M. April 19, 1955. Exhibited by The Commissioners of Crown Lands, Windsor Great Park (See p. 117)

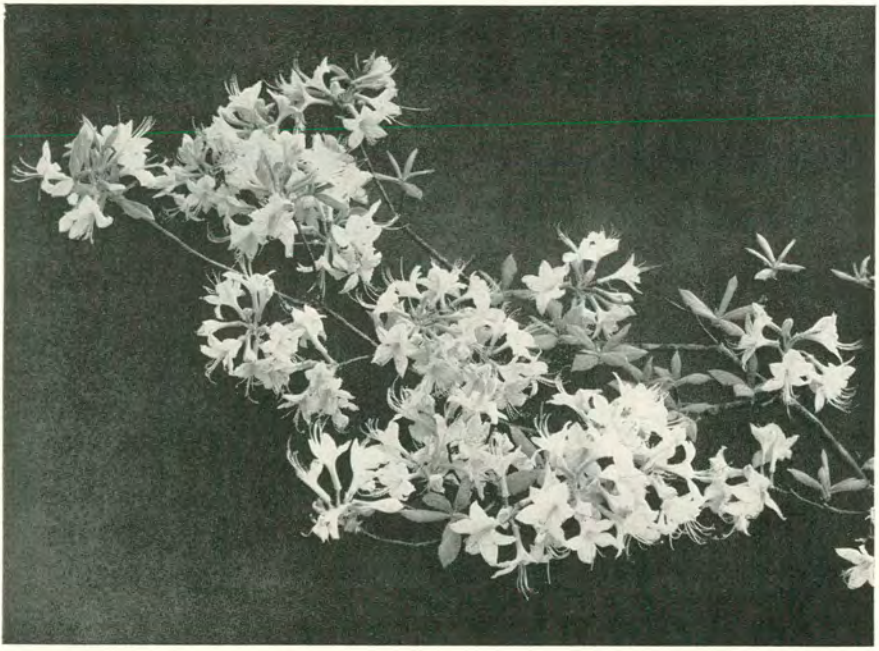
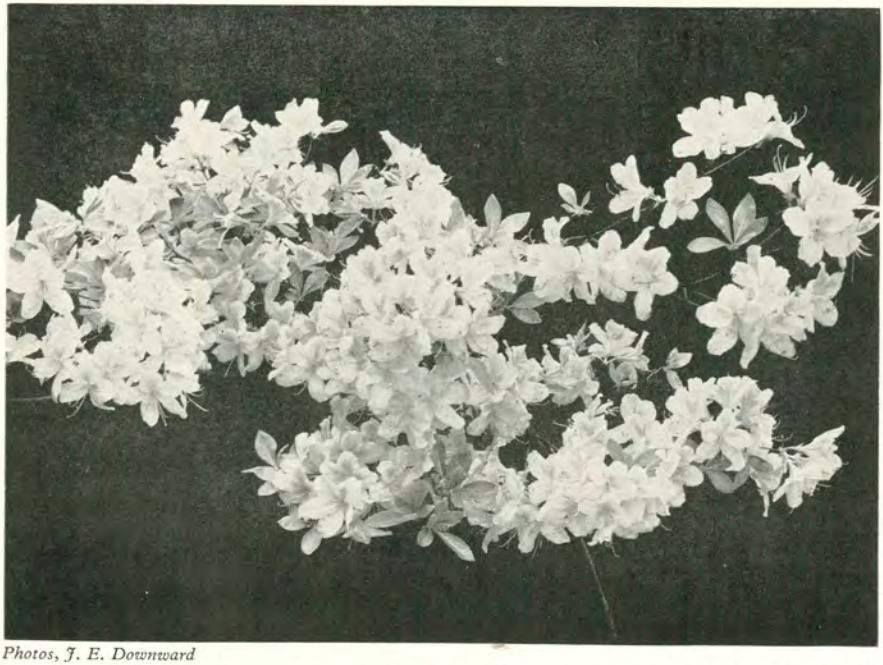


FIG. 21—*Rhododendron roseum* A.M. May 24, 1955. Exhibited by MRS. ROZA M. STEVENSON, Tower Court, Ascot, Berks (See p. 117)



Photos, J. E. Downward

FIG. 22—*Rhododendron obtusum* var. *kaempferi* F.C.C. May 24, 1955. Exhibited by The Commissioners of Crown Lands, Windsor Great Park (See p. 116)

Photo, J. E. Downward

FIG. 23—*Rhododendron sinonuttallii* A.M. May 24, 1955, from seed collected by LUDLOW & SHERRIFF. Exhibited by Messrs. The Sunningdale Nurseries, Windlesham, Surrey (See p. 117)

Photo, J. E. Downward

FIG. 24—Rhododendron 'Moth' A.M. May 3, 1955. Exhibited by LORD ABERCONWAY and The National Trust, Bodnant, Tal-y-Cafn (See p. 116)

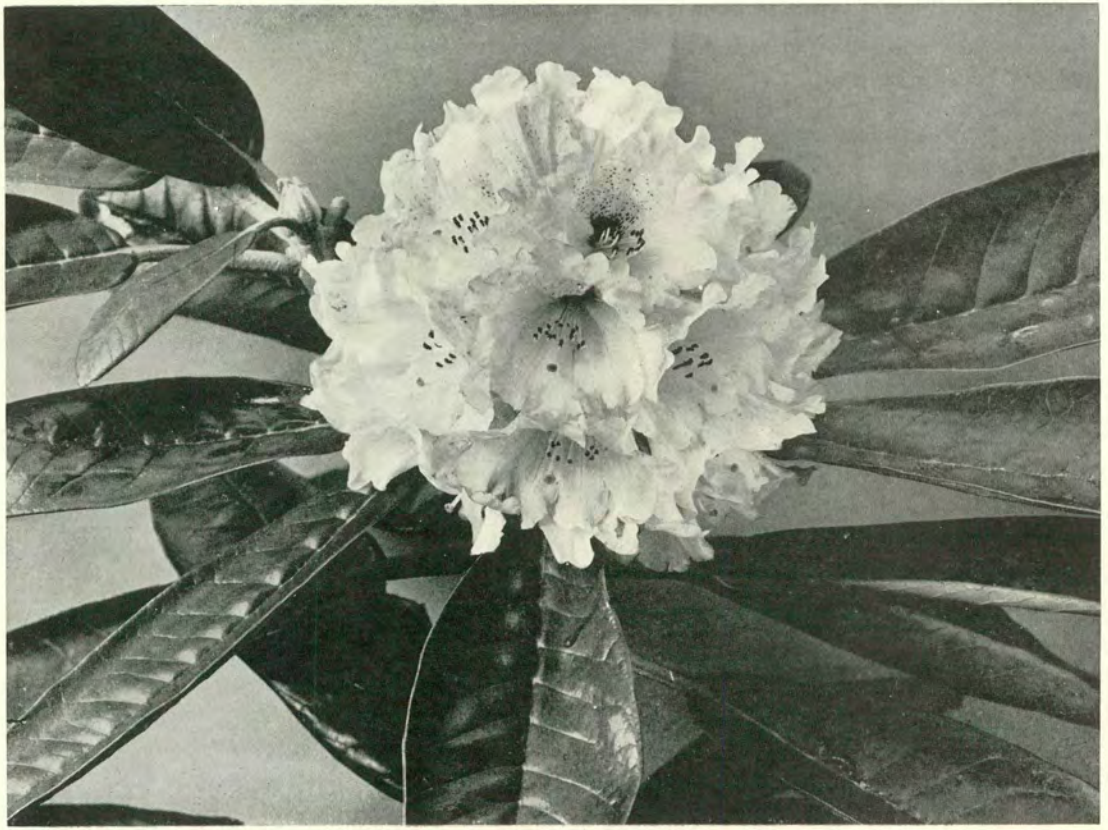


FIG. 25—*Rhododendron rex* A.M. May 3, 1955. Exhibited by Commissioners of Crown Lands, Windsor Great Park (See p. 117)

Photo, J. E. Downward

sun, seem to suit the plants, and they are doing equally well. The large flowers, two or three in a truss, open in early June, a beautiful shell pink and with a scent that fills the air for some distance around. Like the flower buds of most rhododendrons of the Maddenii Series, some years they catch the frost but the plants themselves have not suffered as yet.

To say that *R. rhabdotum* is one of my favourite rhododendrons is, perhaps, an exaggeration, as the plant I have is shy to flower, and the flower buds are easily spoilt by frost. The flower is, however, most striking and exotic to look at—a lovely lemon yellow with a maroon stripe down each lobe, in trusses of two or three lily-shaped flowers some 5 inches in length. There is not the same strong scent as many of the rhododendrons of the Maddenii Series. The plant which is 6 to 7 feet high is of straggling habit and needs the support of some shrub or small tree to grow through. Here it grows between small trees of *Clethra arborea* in a warm and favoured situation. I think the plant is one of the least hardy in the garden.

Rhododendron mollyanum is to my mind the finest of the many forms of *R. grande*. It was given to me under the number K.W. 6261. Planted in 1934 in fairly sheltered places, some specimens are now 18 to 20 feet high, though the plant which seems to be doing best is in full sun, and exposed to the south and south-east winds.

The grey-green foliage, with leaves up to 18 inches long, is a perfect background to the big trusses of beautiful soft rose-pink flowers, and the deeper pink flower buds. The plants here some years flower profusely, and are a truly lovely sight. They seem hardy enough, but strangely there has been no natural regeneration as yet.

R. griersonianum I still think is one of the most striking rhododendrons in the garden here. Perhaps it is because it flowers when most other rhododendrons are already over. It seems to do well in almost any situation in the garden, from the half shade of the trees almost at sea level, to the more open places some 100 feet above. The plant forms a loose bush, and so far has not reached a height of more than 6 to 7 feet. Through one large plant grows *R. taggianum*, straggling to some 6 feet above it.

The flowers are a brilliant scarlet as near as I can easily describe the colour and the truss is loose and graceful. The young growth with its hairy dull red stem is also very attractive, particularly with the sun shining from behind.

★ ★ ★

EDITH, MARCHIONESS DOWAGER OF LONDONDERRY, D.B.E., LL.D.
Mount Stewart, Newtownards, Co. Down, N. Ireland

I was asked the other day to write about my five favourite rhododendrons, but I feel that this would be almost as reprehensible as discrimination in a family! So I select a few, not because I like them the most but for the reason that the climate and shelter at Mount Stewart enables them to give of their best while in other localities they would be condemned to be grown only in the greenhouse.

First on the list is *Rhododendron nuttallii*. My plant was called *R. sinonuttallii*. My old friend, the late SIR HERBERT MAXWELL, said he considered this species to be slightly hardier than *R. nuttallii*. Be this as it may, my plant flourished on a slope in the woodland nursery, where it had grown from a seedling, for many years. It was a wonderful sight when in full bloom, its glorious large clear light yellow blooms shedding delicious fragrance in the surrounding air. I lost it in the very cold spell in the war years when it was about 12 feet in height. I have two young ones now, but they are not planted out permanently at present. I do not know whether our climate is deteriorating but we do seem to have more cold spells than formerly.

Another most attractive plant is *R. rhabdotum*, also like *R. nuttallii* of the Maddenii Series, sub-series Megacalyx. The bell-shaped blooms have red stripes on them, really like a lily. This plant is also growing in the woodland, but in a nice sheltered position.

Yet another of the same series and sub-series seems to thrive in several different sites in the woods, *R. lindleyi*. This, too, has large white scented blooms with a rosy flush. In one situation it is growing trained over a large metal balloon, which seems to suit its habit of growth. Quite close to the house, in order that we may enjoy their fragrance, growing on a wall are several plants of the lovely old hybrid *R.* 'Fragrantissimum'. These are now quite old plants and have braved all the hard frosts of the war years, and I fear neglect also, as there was no time to spare to attend to their needs. Every year I look forward to seeing them bloom and every year I think they are better than ever. I always take off every spent bloom I can myself; otherwise they would flower themselves to death. An *Embothrium longifolium* of the Rostrevor variety stood in the background; its vivid scarlet blooms made a beautiful contrast to the white ones of the rhododendrons. This tree was severely damaged by a heavy snowfall some years ago and died.

Throughout the woods we are fortunate to be able to grow *Rhododendron megacalyx, R. manipurense* and *R. maddenii*. I admit

I find it difficult to discriminate between some of the species. For sheer magnificence I must mention a large group of, perhaps, fifty or so *R. macabeanum*. The seed was collected by Mr. Kingdon-Ward and they have been growing on a steep slope since their infant days and they are now quite high shrubs. Tree-like in growth, their large magnificent foliage is beautiful at all seasons of the year and their pale yellow large conical blooms, with a purple blotch on the inside, make them amongst the most notable of the large-leaved family of rhododendrons, although the leaves of some of our *sinograndes*, the largest-leaved species that exists, are incredibly gigantic. I suppose that for foliage alone they must be ranked as unique.

I must just mention two of the best white scented rhododendrons. First, *R. crassum*, its waxlike white bells unbelievably lovely and contrasting so well with its very dark green stiff foliage, and secondly, the hybrid 'Polar Bear', three of which were large shrubs given to me by the raiser, the late Mr. Stevenson. Both *crassum* and 'Polar Bear' flower late in the season. 'Polar Bear' frequently bears large open flowers well into November, by which time R. 'Nobleanum album' is already out, so that we are hardly ever without some blooms of rhododendrons to cheer us in the winter months.

* * *

The Earl of Stair, K.T., D.S.O., V.M.H.
Lochinch Castle, Stranraer, Wigtownshire, Scotland

I have been asked what are my five favourite rhododendrons and how they grow in my garden. First, I must say that the great majority of the large number of species which we have here are not growing in anything that you would really call a garden, or in any sort of garden soil, but spread over a very considerable area, where they can be seen from various drives and walks. We have probably a pretty favourable climate on the south-west coast of Scotland, considerably helped, I believe, by the proximity of the Gulf Stream, but mostly a pretty poor gravelly soil, only rendered habitable to plant life by a rainfall approaching 1 inch per week, and the addition in the course of years of natural leaf mould. Under these conditions, we can and do grow, quite happily, a large number of species, which are classed in the rhododendron books as only half-hardy or less in most of the country. In fact, a hybrid, which we made and was called after me, was described as a greenhouse plant when given an Award of Merit by the R.H.S.,

whereas none of the plants here have ever been anywhere but in the open.

My five favourites, then, are only plants which grow quite happily and flower freely wherever I choose to plant them, although, as we have only three or four miles of land between us and the South Pole, we do have to try to avoid exposure to the wind. The five I select are:

The old rhododendron hybrid 'Nobleanum', which begins to flower here usually by the beginning of November, and frequently bears flowers continuously until the end of March, with many of its buds surviving quite a lot of frost. The flower is a reasonably good colour and is most useful for picking when there is little else.

Next, I take *R. mallotum*, with its really fine red flowers and its wonderful dark green leaves with strong chestnut undersides, the best contrast I know. The only unfortunate thing about it, is that its scarlet flowers have such an irresistible attraction for the tits that they often destroy every flower. My best bush of this had half of itself flattened to the ground by a large macrocarpa cypress, which fell on it, at the same time killing two hen pheasants! By myself, cutting back the branches of the cypress, I cleared and propped up this limb of *mallotum*, which was about 9 feet long, and it has completely recovered.

For my third, I choose *R. griffithianum*. It is quite hardy here, the most beautiful and sweet-smelling white, and the parent of a vast number of the very finest hybrids in cultivation.

I rather think that any selection of rhododendrons at Lochinch would be absurd without including *R. arboreum*, which really is the main feature, having been raised from seed brought home by HOOKER in about 1849, of which the originals are a huge size running up to above 30 feet with huge girth. There are considerable varieties amongst them, ranging from pure white to red, and their flowering season goes from early February to the end of May. They stand up well to wind and to a reasonable amount of frost.

I am only left with one more to add to my list, and so to carry on to cover the whole season, early and late, I must mention *R. auriculatum*, which is often in flower here in October, and has a very nice sweet-scented white flower.

Five is a very small number to select from such a large available choice and it is difficult to know what to leave out.

It would be inadequate to mention one's favourites without including as alternatives such things as *R. lacteum* with its almost perfect yellow and beautifully shaped flowers, *R. macabeanum*, which

is almost as fine a yellow and has even finer foliage, *R. yunnanense* with its remarkable profusion of flowers and its equally remarkable regularity of flowering, and *R. crassum*, a beautiful white with a lovely scent, which does so well in the open, even when exposed to the north wind.

* * *

LORD ABERCONWAY
Bodnant, Tal-y-Cafn, North Wales

To reduce to five one's favourite rhododendrons is no easy task, though a most agreeable one, involving, as it does, an off-season mental tour of the garden. Eventually, I eased my task of selection by deciding that as Bodnant sometimes tends to be thought of unduly much for its hybrids, I would on this occasion confine myself to species.

Pride of place must beyond question go to *Rhododendron augustinii*. No view of rhododendrons at Bodnant gives to me or to others more pleasure, more reward for a pause in one's walk, than the group of *augustinii*, each a mass of blue, but each a subtly different blue, glowing warmly in the morning sun. One sees them two or three deep in a border facing one, and in the foreground, as an effective and delicate contrast, is a mixture of low-growing *R. schlippenbachii* and *R. albrechtii*.

There is an oval pond at Bodnant, some 15 yards across, in a sunk garden. A formal path surrounds it, and between the path and the pond is a continuous bed, planted without interruption with *R. williamsianum*. We are fortunate to have an attractive free-flowering form of this plant, with unusually large open flowers. The effect is of a ring of pink bells around the pond, with some of the fallen bells drifting upon the water: a few weeks later the pink will be gone and the ring will be bronze with the new growth.

R. aperantum gives almost as much pleasure when not in flower as when it is in flower. We grow it on a curving rising bank in the front of a bed, and in this way it produces a smooth, even top, almost as if swept by the wind: no plant grows taller than its fellows, and all combine to fill the space evenly, with no unseemly jostling. The result is a most natural uniform planting of an attractive rhododendron, readily recognizable by its distinctive star-like head of leaves.

R. thomsonii in flower can hold its own, upon a sunny day, against competition from any of the more flamboyant hybrids,

many of which can trace some ancestry to *thomsonii*. I think particularly of one old plant, 20 feet or more high, standing upright above the path, and flanked by two Lawson cypresses. With the sun shining down through the mass of deep ruby flowers, and with the blue of the sky sharing with the green of the cypresses the duty of providing the backcloth, it leaves a vivid memory long after its flowers have fallen.

And, lastly, for all my good intentions about confining myself to species, I cannot exclude from any such review that most delicate and lovely of all rhododendrons, 'Penjerrick'. If I could switch the clock to any season of the year to enjoy a two-minute walk at Bodnant, my choice would be the Penjerrick Walk in the first week in May, to see on either side of me, interspersed with *arboreum*, 'Loderi', *thomsonii*, and smaller rhododendrons, a succession of Penjerricks, some with creamy-yellow flowers, some with flowers blushing pink at the corners of the petals, some with larger but fewer flowers to the truss, some the reverse, but all holding their heads with that inimitable grace which no other rhododendron has quite achieved.

* * *

LORD STRATHCONA AND MOUNT ROYAL
Kiloram, Isle of Colonsay, Scotland

To be asked this question as I have been and to give a convincing answer is difficult, because, while colour is probably the deciding factor, considerations of size, form, foliage and hardiness complicate the problem. Based, however, on colour, and because there are so many reds, pinks, mauves and whites (whether true white or that mysterious definition "blush"), one has a natural predilection towards the unattainable, which in my opinion is a really good yellow and a really true blue.

I therefore start with a yellow and plump for *Rhododendron macabeanum*. I have one really good yellow, good in colour and truss, which came to me through the kindness of MRS. MAGOR, of Lamellen, and survived the precarious process of removal and transport from northern Cornwall to western Argyllshire. But the finest plant, in shape, colour and foliage, especially in its young state, that I have ever seen is that in MR. GEORGE JOHNSTONE'S garden at Trewithen (and figured in the *Rhododendron Year Book* of 1950). An equally good one grows, too, at Trengwainton, and

I believe that SIR EDWARD BOLITHO was the original donor, from whose seedlings the Trewithen plant and so many other fine ones emanated. In Scotland, there are, I believe, equally good ones at Brodick and Lochinch, which I have not seen, and my neighbour SIR GEORGE CAMPBELL, BART., tells me that his plant at Crarae is a very good yellow, but I have never yet been lucky enough to see it in flower.

Now for a "blue". A good *R. augustinii* fills me with envy and admiration, and a group of good blues, such as I have seen at Tower Court and at Bodnant, is fascinating, if only because I can spend hours trying to select the best blue, and I always end up with an attack of what I call "Augustiniitis". They are difficult plants to grow well in western Scotland, only because (such is my opinion) they demand an equal degree of light, shelter, good well-drained soil and some luck. At any rate *R. augustinii* must get the second place.

Yet another and more dwarf blue is an equally fascinating plant and that is R. 'Blue Diamond' ('Intrifast' × *augustinii*), the original hybrid of which was raised by the late MR. CROSFIELD, of Embley Park (and no bad hybrids were ever sent out from that remarkable garden). It is to my mind more satisfactory in its dark colour and tight truss and habit than any of its rivals, such as 'Blue Tit', 'Blue Bird' and/or 'Sapphire'—yet all are good.

Now for another quasi-blue, R. 'Susan'. I got my best plant from Messrs. Slocock, but 'Susan' is an old hybrid, with so much *R. campanulatum* in it that I have heard it described as just a form of *R. campanulatum*. I first saw it at Trewithen, where MR. JOHNSTONE had placed it in front of and slightly below a lovely pink hybrid of his own, known as R. 'St. Probus'—and I have never forgotten and tried with some success to emulate that picture.

It is time to consider "whites". The experts all claim that the only true and best pure whites are *R. hyperythrum* and/or *R. aberconwayi*. I have the former but not the latter; and the older hybrids R. 'Duchess of Portland' and R. 'Loder's White' are good enough for most people. But I would select another white hybrid, different in size, form and a late (July or August) flowerer—R. 'Polar Bear' (*auriculatum* × *diaprepes*). As seen at Tower Court, where they were first raised in great profusion, they are magnificent, many of the older plants being now some 30 feet or more high and as full of scent as any 'Loderi' or other *fortunei* cross, but then both parents of 'Polar Bear' carry that scent, too. Here in Scotland it grows well but requires good shelter from wind, and has the added

attraction of carrying some of its flowers on into August or even September—and it always flowers well.

I must end with a complete change in colour, size and form and plump for *R. obtusum amoenum*, in its best and more red than magenta form. I have a group of five, which grow and flower well every year; they came to me originally from Knaphill Nursery, and as far as I can discover are now listed by nurserymen as R. 'Hatsu-giri', a Kurume, but this is a much disputed matter and would seem to require an almost International Conference before a settlement or even a formula could be achieved. At any rate for the one month or more (certainly all May) that they are in flower here they excite universal admiration; and I must confess that I always break the Fifth Commandment when I see these plants in great form at Caerhays, or pass by the monster that stands sentinel over the Punchbowl at Windsor. How I would love to steal the latter, and some of the Caerhays ones and secrete them all here! To my mind, no plant (given that it is the more red and less magenta form) gives more pleasure, is less trouble to grow, always flowers profusely and is at home and indispensable in any garden, however big or small.

* * *

Sir Eric Savill, K.C.V.O., C.B.E., M.C.
The Great Park, Windsor, Berks

I find it as difficult to choose my five favourite rhododendrons as it is to write about them but in order to avoid the bewilderment of hybrids, I am taking five of the species. These are not necessarily my favourites, but they are plants of which I am particularly fond.

My first is *Rhododendron souliei* (F.C.C.) in the sub-series Souliei in the Thomsonii Series, a species that has been in this country for seventy-five years or more but has never become a common plant. There have been several early collectings of this species and a comparatively recent one from the Professor Hu expeditions, but this is not actually listed by him other than as being in the Thomsonii Series.

R. souliei is a plant of infinite distinction, with its attractive rounded leaf and the trusses never too crowded but always poised beautifully on the plant. The flower is of a very open saucer shape and varies in colour from white to various shades of shell pink. In my experience it likes a fairly open position in a garden and

certainly one of the drier spots. It is a plant that can stand on its own without other genera to support its beauty.

My next is *R. augustinii* (A.M., A.G.M.), sub-series Augustinii in the Triflorum Series, a very well-known rhododendron which again has been in this country for seventy-five years or more. This is a variable plant in colour and ranges from the palest grey-lavender through to deep purple-blue.

I like to see this rhododendron planted in long drifts and over-planted with white cherries. When it is in flower in May with the cherry blossom above it and in the dappled light of a spring woodland, it is one of the most lovely sights I know.

R. augustinii is a hardy plant and the less coddling it gets the better. In my experience nearly all the Triflorums do best with more exposure both to sun and to wind than is generally given to them.

My third is *R. niveum* (A.M.) of both the sub-series and Series Arboreum. This plant is perfectly hardy. It grows into a well-shaped shrub at least 15 feet high and usually covers itself with small trusses of purple flowers, like faded bunches of artificial violets in a dowager's hat. I think one of its qualities is that it never over-flowers, but the trusses are beautifully spaced and poised on the plant and the colour merges beautifully with the dull green of the foliage and the dull brown underleaf. It is an accommodating plant and, with us, grows in shade or in sunlight. It flowers earlier than most rhododendrons and can be nipped by frost, though the flowers will stand up to at least 5 degrees of frost without damage.

I next take an azalea, *R. obtusum* var. *kaempferi* (F.C.C.) of the Azalea Series, a Japanese azalea, almost deciduous, growing up to 10 feet in height or thereabouts and varying in colour from pale to deep orange. This rhododendron associates very well with primulas and other moisture-loving plants, such as irises. I like to grow it in a large drift with *Primula pulverulenta*, Bartley strain. It appears to be a perfectly hardy plant and will grow in fairly intense exposure or in semi-shade. If submitted to too much sun, the flowers will bleach rather badly.

My last is *Rhododendron pemakoense* (A.M.) of the small Uniflorum Series, a dwarf erect shrub up to 1 foot in height and of two quite distinct forms—one with pale pinkish-purple flowers and the other of a far deeper colour.

This plant tillers out, or suckers, and, therefore, clearly likes to be grown as a thicket. At Windsor it does best growing on a

bank facing north, where it has plenty of room to spread out. We have a drift of it some 20 or 30 feet long, which in early April is a most lovely sight, with camellias growing about it.

Alas, the flowers are very susceptible to damage by frost, but even if it flowers to perfection only every other year, it is a plant well worth growing in any garden where soil conditions are favourable.

I have stuck to describing only five plants that grow at Windsor, but all rhododendrons become my favourites when they are in flower.

* * *

EDMUND L. DE ROTHSCHILD
Exbury, near Southampton, Hants

When I was first asked to write briefly on my five favourite rhododendrons I thought nothing could be easier, but when I tried to make a start I realized how difficult it was to narrow it down to five. There are so many to choose from and all appeal in different ways.

How can I help but put Rhododendron 'Fortune' (*falconeri* × *sinogrande*) at the top of my list? R. 'Fortune' (F.C.C.) is all a hybrid should be—better in every respect than both its parents and surely this is what all hybrids should be if we set our standards high enough. It certainly has more vigour and grows faster than either parent. Its flowers are larger and are of a deeper yellow. Its leaves have the size of *sinogrande* and some of the beautiful indumentum of *falconeri*. It flowers freely and the plants at Exbury (some twenty or more) have grown rapidly without any setback in spite of the fact that they have had no extra attention or different treatment to the mass of other rhododendrons in the garden.

R. 'Naomi' ('Aurora' × *fortunei*), unlike 'Fortune', is a hybrid to suit any garden blessed with an acid soil. Of all its varieties I prefer the Exbury variety. The pale biscuit colour of the round tight trusses is suffused with soft rosy pink, and is in my opinion unique. It is an excellent garden plant quite hardy and the original plants at Exbury are some 15 to 18 feet high and 12 to 15 feet across, all furnished to the ground. There is no more profusely flowering hybrid in my garden. What a wonderful parent is *R. fortunei*.

R. 'Hawk Crest' (F.C.C.) (*wardii* × 'Lady Bessborough') is perhaps the finest yellow so far raised. When this was shown at Vincent Square three years ago it was such an improvement on the

other varieties of 'Hawk' that it was suggested by some members of the Rhododendron Committee that it was not a 'Hawk'. In point of fact there was no doubt of it being a 'Hawk', but what was not generally known was that my father, the late LIONEL DE ROTHSCHILD, made the cross twice and it is thought that he used a different *R. wardii* on the second hybridization. This might account for the completely different make up of the flowers.

R. 'Prelude' (*wardii* × *fortunei*) is a lesser known hybrid and perhaps few people other than ourselves at Exbury have seen this fine yellow hybrid. It is a pure buttercup yellow with completely flat flowers. Although *R. fortunei* can be seen in the leaf and habit of growth and to a certain extent in the shape of the flowers, I find it remarkable that the colour is 100 per cent. the same as an excellent form of *wardii*. This was the last cross my father ever made, a successful one and, I think you will agree, aptly named.

R. 'Kiev' (A.M.) (*barclayi* × *elliottii*) I must include as a red. 'Kiev' is the darkest red in the garden. Very waxy and tight in the truss with its black spots inherited from *elliottii*, it can in some lights appear almost black, but when the sun is shining through it, it shines a pure bright red. Unfortunately, it is rather tender and must be grown only in the more sheltered gardens.

I should so have liked to include some species in "my favourites", but how can one pick out a single rhododendron and say this is my favourite? I often do say this on a walk round the garden when I have the plant in front of me in full bloom, but the following week I say the same about a totally different rhododendron, but then, of course, this is the fun of having a garden and, particularly, a rhododendron garden.

* * *

J. P. C. RUSSELL
Windlesham, Surrey

To choose five favourite rhododendrons is a task of great difficulty and even of agony. There are so many which are favourites because of the beauty of their foliage or their flowers alone; so many which I greatly admire in other climates because of their exotic appearance, their magnificent leaves or superb scent, but which are impossible in a very cold, dry Surrey garden with a low rainfall and inevitable spring frost.

I do not think I could include any plants which are not satisfying the whole year round because of their habit of growth and I very

much appreciate a perfect proportion between leaf and flower. For these reasons my favourites are all species and most of them in the same series; none of them, with the exception of the last, is immediately rewarding as far as flower is concerned, but with due patience I think they are amongst the most satisfactory of all shrubs.

R. caloxanthum forms a dwarf, compact bush increasing slowly to some five feet in height and 6 or 7 feet in diameter. The rounded leaves are blue-green, very glaucous below, and the bell-shaped flowers on red stalks are a vivid primrose yellow. The young growth closely follows the flower and is just as effective, the whole bush becoming a vivid glaucous blue, as surprising as *lepidostylum*. *R. caloxanthum* is a plant which keeps its character much better in a cold climate than a warm one although the flowers are apt to be taken by the spring frost.

R. souliei is perhaps the most beautiful rhododendron. Certainly it is the most perfectly proportioned. The rather heart-shaped leaves seem to have floated into the stems and these form a perfect pyramidal bush. The foliage is always attractive with its deep green colouring. The flowers, at first tight deep crimson buds, expand to the most perfect widely opened bells, sometimes pure white, sometimes white and pink and sometimes entirely pink. The pure white form is my favourite. The young growth is pleasantly glaucous. This species both grows and flowers late and so is ideal for a cold climate.

Again, *R. wardii* would be worth growing for its fine heart-shaped green leaves with their purple leaf stalks and its coppery stems. Many forms of this rhododendron have been introduced and now that *croceum* is merged in this species, there is a wide range of foliage and flower. I should choose the LUDLOW & SHERRIFF introduction (5679). This has very good foliage, is rather later to flower than most and has really superb, widely opened, daffodil-yellow flowers with a deep violet eye.

R. thomsonii was one of the first Himalayan species to be introduced and one of the very best. No one could fail to be stirred by the smooth, shining copper and olive-green trunk supporting a graceful cloud of leathery dark green leaves, glaucous beneath. In April the large fleshy dark-red flowers are shown off by the wheel-like green calyces. The flowers have a plum-like bloom but glow to a brilliant scarlet with the light through them. This is a late grower and has another season of beauty in July when the young foliage is a wonderful metallic blue.

R. yunnanense is an undemanding and extremely free-flowering

plant which will flourish anywhere except on limestone. The willow-like leaves have reddish leaf stalks and with age the whole bush takes on a graceful windswept shape. The butterfly flowers are not large in themselves but they are produced with incredible freedom such that an old bush will look like a great pile of blossom, no leaves being visible at all. The flowers are white with chestnut markings, sometimes flushed with pale lilac.

* * *

F. E. W. Hanger, V.M.H.
R.H.S. Gardens, Wisley, Woking, Surrey

The Editor has asked me to contribute to the above symposium. I find this most difficult, indeed, in fact, quite a puzzle, as I am very partial to the species, for they have a character all of their own with foliage given to them by nature which is in every way a perfect foil for their flowers. Species and hybrids do not in my opinion mix very well together; therefore, I intend to choose five species and to ask the Editor to be kind enough to include my five favourite hybrids also.

In making my choice of five species, different colours of flower, habit of growth and foliage must be considered. The second half of the title of this note "and how they grow in my garden" in my case must refer to their behaviour at Wisley. This will restrict my choice of five species, enforcing me to leave out the majestic-foliaged *sinogrande*, the wonderfully leaved *falconeri* with its brown indumentum, together with the not so hardy *griffithianum*, *barbatum* and all the lovely species belonging to the Maddenii and Edgeworthii Series.

Number one of my species must be *Rhododendron yakusimanum*. It is so perfectly hardy, such a free bloomer year after year with a habit so compact and in every way the ideal rhododendron. The particular plant grown at Wisley has become perhaps the most popular species at the recent Chelsea Shows, where it has been shown several times since the war. On one occasion it received a First Class Certificate and is always greatly admired when covered with its apple pink, fading to white, compact trusses of blooms.

For my second species I must find a good yellow. *R. campylocarpum* and R. *lacteum* readily come into my mind, but I am going to overlook these two and choose *R. macabeanum*. This is, indeed, a very easily grown plant with leaves comparing almost with

those of *sinogrande*, yet much hardier and carrying equally good if not more magnificent trusses of yellow flowers.

Number three must be a red or crimson and here the choice is very wide with a number of plants with various qualities demanding recognition. I must come down in favour of *R. thomsonii*. This species can vary considerably but I have in mind *R. thomsonii* with deep blood-red, waxy-like bells and a contrasting beautiful glaucous calyx. Not only has this rhododendron a glaucous calyx but all through the summer and early autumn months its leaves carry a bluish hue which adds to the beauty and colour in the woodland.

Pale pink, yellow and red species have been chosen and now for variety and interest I should include a colour which rhododendron enthusiasts like to call blue. The first choice must be *R. augustinii*. Again this particular species differs widely in its colour and make-up. Some are a purplish-blue with purple stamens and blotch adding to the depth of the purple. Some are bluish with almost red stamens, but I prefer the pale blue with a green throat and light-coloured stamens. At Wisley the *R. augustinii* known as the Tower Court form has these characteristics and appears quite hardy. The truest blue and also the largest flowering form of *augustinii* which I have seen was one obtained from Caerhays, but, alas, this lovely blue variety appears to be less hardy and usually loses its buds during the winter.

For our fifth and last rhododendron species one must think of *R. aberconwayi* and *R. souliei*. Both have saucer-shaped flowers of great attraction and quality and there is also *R. griffithianum*. The Wisley *R. souliei* does not compare with the F.C.C. forms of Windsor Park and Exbury; therefore, it must be omitted together with *R. griffithianum* which is not represented at Wisley. Beautiful as these rhododendrons are I intend to choose as my fifth species *R. cinnabarinum* var. *blandfordiaeflorum*, for, here at Wisley, it is perfectly hardy, carrying hundreds of yellow to orange bell-shaped flowers. These are so thick in texture and unique in their make-up that they are of interest not only to the connoisseur but also to the hundreds of visitors who frequently visit the gardens. Summarizing my list of five species, they are *R. yakusimanum*, *R. macabeanum*, *R. thomsonii*, *R. augustinii* and *R. cinnabarinum* var. *blandfordiae-florum*.

No doubt other contributors to this symposium will differ considerably regarding the five best rhododendrons, but it is happy to think that the genus *Rhododendron* consists of so many really good species, thus affording such a wide choice for all tastes.

I would also like to put forward five hybrid rhododendrons trusting the Editor will find room to include my selection.

Here again we must of a necessity have different colours and habits of growth.

For our pale pink what can be better than the pink form of R. 'Penjerrick'? Surely where this hybrid can be grown as well as it does in a sheltered position at Wisley, nothing can compare with it for beauty with its glowing bells dangling so profusely from its branches.

As a dwarf red hybrid I can find nothing to beat the F.C.C. form of R. 'Elizabeth'. This particular plant has everything necessary to please the most exacting of customers and will for ever remain as a great monument to its creator, the past President of The Royal Horticultural Society, the late LORD ABERCONWAY.

There are quite a few yellow hybrid rhododendrons now in various gardens, but as I must choose the best yellow hybrid growing at Wisley it must be R. 'Moonshine Supreme', a plant raised here since the war, being the result of R. 'Adriaan Koster' crossed with a very fine form of *R. litiense*.

When choosing five hybrid rhododendrons it is very difficult indeed to leave out R. 'Loderi'. It is of outstanding size, has a sweet scent and is so magnificently prominent when blooming in the woodland. I never think R. 'Loderi' looks half as handsome when cut as when on the plant. There are many varieties of this hybrid, some of which differ only slightly, yet I think my choice must be R. 'Loderi Venus'.

We now come to our final selection, a blue hybrid, and here I believe I am correct in stating that we have bluer hybrids than species. R. 'Electra' is not absolutely bud hardy at Wisley so the choice must be the F.C.C. form of R. 'Blue Diamond' raised by the late MR. J. CROSSLEY, of Embley Park in Hampshire, which stands out as a fine dwarf plant with small leaves and perfectly blue flowers.

This makes my selection of five rhododendron hybrids: R. 'Penjerrick', F.C.C. form of R. 'Elizabeth', R. 'Moonshine Supreme', R. 'Loderi Venus' and the F.C.C. form of R. 'Blue Diamond'.

COLLECTORS' NUMBERS

REASONS FOR THEIR RETENTION

By F. KINGDON-WARD, F.L.S., V.M.H.

THE era of big private gardens, which reached its zenith between the wars, has practically ended. Almost all big gardens in the atomic twilight of the world are managed by committees. This at least has the merit that they remain—well, collections of plants, and not building lots. Now they belong to the nation (whatever that may mean) or to the borough. But they have lost a certain personality and purpose given to them by their former owners; and the writing is on the garden wall, spelling out their slow atrophy, like a tooth whose nerve has died.

As a first step down the slope, less and less heed is paid to collectors' field numbers. This is a matter of no consequence for the great majority of genera; but for the large and complicated genus *Rhododendron* it is a matter of some consequence.

Now, a number like, say, F. 20000 refers not only to a species, but to a particular gathering of that species, which can be seen in one of the national herbaria. It comes from a known spot (or should do so); and though it may, as a matter of fact, look exactly the same as any other gathering of that species from another spot, it *may* nevertheless behave differently in the garden. It may be hardier, a better "doer", later, earlier, more resistant to disease, and several other things. It is as important to distinguish that particular species as it is to distinguish a nurseryman's form of any other well-known plant; and the easiest—certainly the best—way to distinguish it is by the collector's number. So long as that is known, it ought to be possible to return to the very spot where the original plant was discovered, and collect it again.

How often does one read, in a report of the Rhododendron Show, something like this: "Class 8—one truss or spray of the Series Boothii. Mr. Y's excellent form of *tephropeplum* won first prize". Nothing more. *R. tephropeplum* has been introduced certainly a dozen times, from as many different localities and altitudes; and the forms vary considerably. Which *is* the best? We would be happy to know. It is clear from the above report that if the

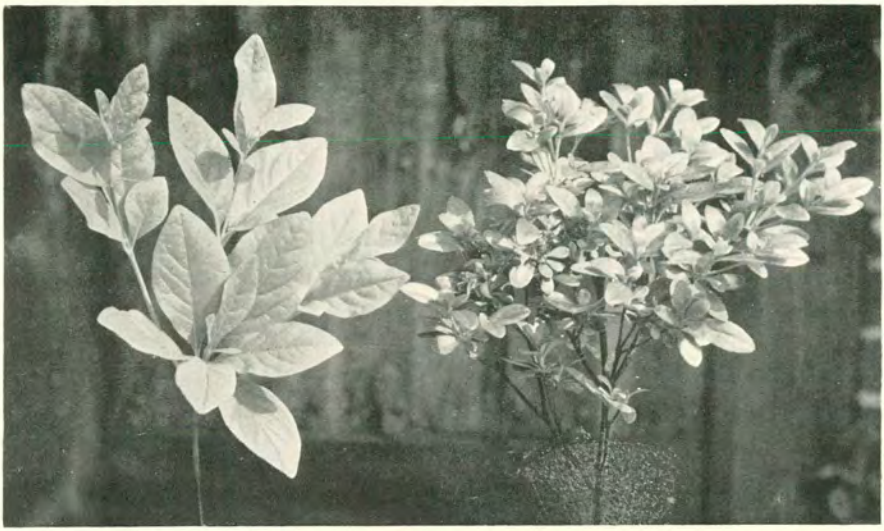
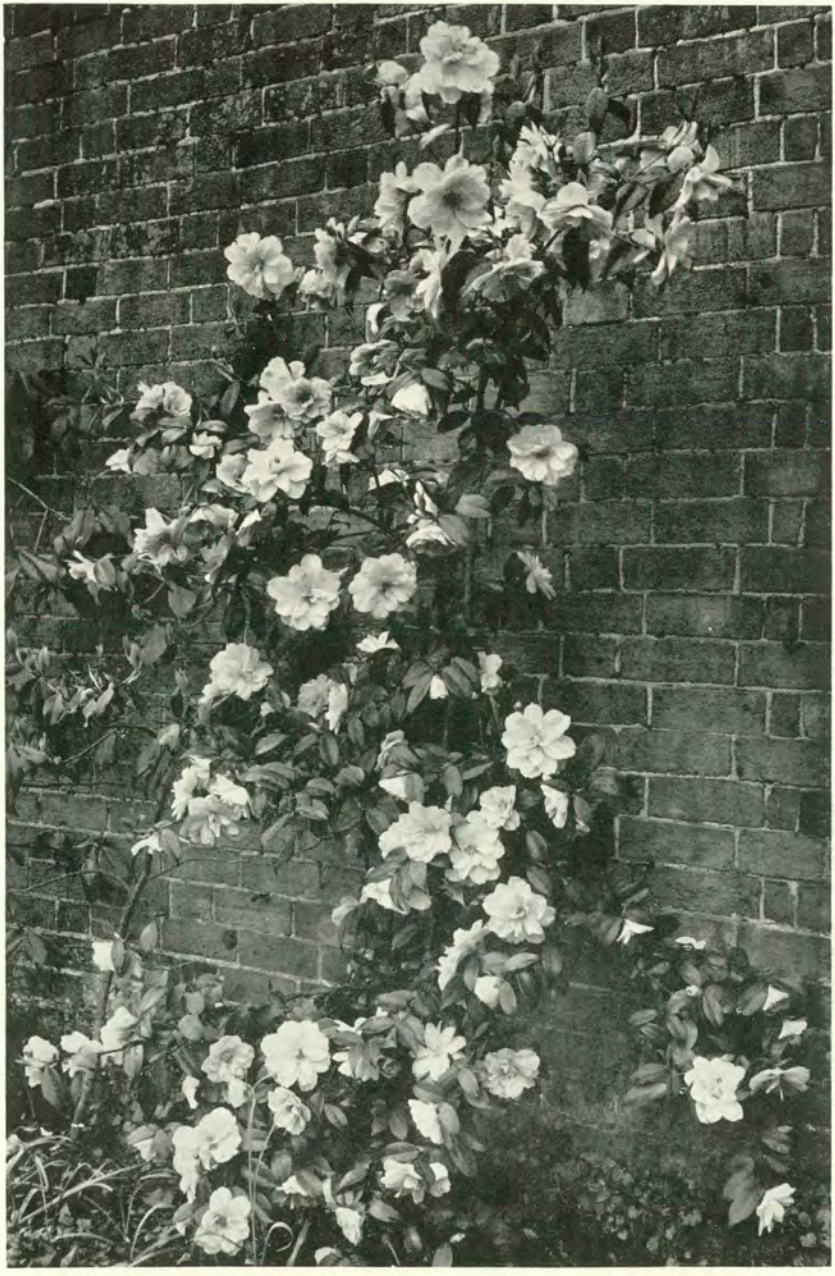


FIG. 26—Foliage of typical forms of *Rhododendron kaempferi* (left) and *R. obtusum* (right) (See p. 28)

Photo, T. H. Findlay

FIG. 27—Self-sown seedlings of *R. sinogrande* at Inverewe (See p. 90)



Photo, F. Wyatt

FIG. 28—Camellia 'Donation' growing on a wall at Borde Hill (See p. 52)

tephropeplum referred to had been an inferior form, the prize might have gone to another species altogether—perhaps to a good *charitopes*. The prize was given, not to *tephropeplum* in general, but to *a tephropeplum* in particular, distinguished by neither name nor number, described merely as "an excellent form".

Obviously, if anyone asks the nurseryman for *tephropeplum*, he may get any one of a dozen different forms, of which three or four will be first class, the others inferior. Why not keep only the best, distinguishing them in the same way that the collector distinguished them? Seed raised direct from collectors' numbers generally comes pretty uniform. The best forms are soon picked out; the best doers after a few seasons.

Some nurserymen dislike collectors' numbers, claiming that the public wants names, even if they are the wrong names—not numbers. This, if true, is curious. The public usually fight shy of "long unpronounceable Latin names" and ask for the "common English name"—oblivious to the fact that a rare foreign plant cannot *have* a common English name, least of all before it has become common. Is it then possible they dislike figures even more? Can it be that they prefer the atrociously ugly names that have been wished on to some of the monstrous army of hybrids? Whatever the answer may be, most nurserymen want names, and some at least would sooner offer a plant under a wrong, or at any rate doubtful, name (pronounceable, of course), than under no name at all. That is one reason why inferior forms come to be propagated.

For many species of rhododendron it does not matter if the collector's number accompanies the name (so long as it is the correct name) or not. The plant has only been collected once, so the number is redundant—until the species is collected a second time. Anyway, the number, with details of locality, is preserved in the archives somewhere.

It may be remarked that there are about 600 species of rhododendron in the compact area of Sino-Himalaya alone, the greatest concentration of species anywhere in the world. Very few species have a wide distribution even within the limits of Sino-Himalaya; the majority have a restricted distribution, but even so manage to vary a good deal. Experience shows that gatherings of the same species from sundered areas differ widely, not only in appearance, but more significantly, in behaviour.

Thus a collector collects *Rhododendron X* in one area, under number L.G. 100. A year or two later he collects in a distant area a plant which, with the best intentions, he cannot make into a

different species; he calls it *Rhododendron X*, L.G. 200. It later turns out to be a much better "doer" than L.G. 100—though still indistinguishable from it. Thus *Rhododendron X* now has two forms in the garden, one of which is inferior.

But *Rhododendron X* is simply *Rhododendron X*, unless it is definitely stated that it is L.G. 200, which is the plant the grower (and the hydridizer) wants. There are bluer and better forms of *R. augustinii*, and better forms of *R. campylocarpum*, of which some are better than others; but I have never heard them referred to either by name or number, but simply as "the best form". Why be content with the second best, if you can get the best? But can you?

From time to time deliberate efforts have been made to find hardier forms of popular or wanted species. Thus *sinogrande*, which was eventually found so far north of its original location that it was boosted with the arctic varietal name of *boreale*; one almost shivered at the mere mention of it. Of course, it was unfortunate that variety *boreale* turned out to be one of the tenderer forms of the dozen or more gatherings of *sinogrande*! But that's the way it goes. There certainly are hardier and more tender forms of *sinogrande*; and when the best three or four forms have been selected by trial and error, the inferior forms should be scrapped except for a specimen or two in complete collections. Until then, it seems only common sense to preserve collectors' numbers and localities.

It is, perhaps, unlikely that any western Europeans will be collecting rhododendrons in Sino-Himalaya during the next fifty years; hence the chances of reintroducing any particularly desirable form from a particular area are slender. But that is all the more reason for preserving hard-won knowledge.

This knowledge is of importance alike both to the geographical botanist and to the taxonomist. In many examples, the particular variety, form, or whatever one likes to call it, can be pin-pointed on the map, where the species as a whole can only be thumb-marked. The collector has his notes beside him, and can look up the exact spot. If he collected it himself, he could sometimes return to the exact bush!

It was for the above reasons that a few private gardeners, in the golden age of Asiatic exploration, bandied species names across the dining-table, coupled with the names and numbers of their collectors. At a sacrifice of time, money and trouble, the complete record was faithfully kept; they knew it was worth the effort. A certain abuse of this patience undoubtedly crept in when a collector employed many native sub-collectors to harvest seeds. It sometimes

entailed a lot of unnecessary labour on the home front—and on the out front too, one would suppose. There is no need, for instance, to collect seed of a species from a single locality under many different numbers, often consecutive, which must imply that the plants were close to one another. It can safely be assumed that they are all the same—and why use twenty different numbers for the same thing! One will do; the rest might as well be forgotten.

An even more cogent argument for retaining collectors' numbers —the equivalent of nurserymen's varieties—is the result of chromosome counts carried out in recent years. In *The Rhododendron Year Book* for 1950 DR. JANAKI AMMAL* records several surprising discoveries. The basic chromosome number x in the genus *Rhododendron* is 13, and the majority of species examined (numbering 360) are diploids. Polyploidy is almost entirely confined to the Lepidotae, and here it is comparatively frequent. The highest percentage of polyploids occurs amongst the 'Lapponicums', which, therefore, should stand out as the latest model for a streamlined rhododendron. This is a fact of great significance—a fact which may cause some geographical botanists to revise their theories.

But more surprising even than that, DR. JANAKI AMMAL discovered that one species—*R. maddenii*—had *two different* chromosome numbers, the second being a polyploid. The specimens examined came from different areas, but cannot be distinguished visually. Yet surely the polyploid has latent possibilities which the other lacks; it might be of practical importance for the hybridist to cultivate it. Hence the importance of the collector's number. It might even be worth while to collect that number again, from the exact locality.

One would like to write more on this topic. But now that rhododendrons have been so unhappily compromised by fraternizing with camellias in the new dual type of year book, I refrain from all but the essential points.

* *Chromosome Numbers in Species of Rhododendron*, by E. K. JANAKI AMMAL, D.Sc., I. C. ENOCH, B.Sc., and MARGERY BRIDGEWATER.

CAMELLIA 'DONATION'

By G. H. JOHNSTONE, O.B.E., V.M.H.

WHEN in 1941 I received, from the late COL. STEPHENSON CLARKE, a present of a camellia raised by him at Borde Hill in Sussex, to which he had given the name of 'Donation', I little thought that it was destined to make, in my estimation, the greatest contribution that any single plant has made to this garden. This was followed in 1942 by another plant of C. 'Donation' and one of C. 'Salutation' (*see* frontispiece and Fig. 28).

'Salutation' did not thrive as did, and still does, the other and has since had to be replaced. Nor is the flower of 'Salutation' to be compared with that of 'Donation'; however, we are not now concerned with that hybrid.

'Donation' has taken kindly to Cornwall; it is planted here on a bank facing North and where on the South side the sunshine is filtered through oak trees. The soil is very acid (pH4) and the site is decidedly a dry one; in addition to which whatever is going is shared by a number of other good-doers planted rather like straws on the camel's back—but 'Donation' has topped them all, the original plants being respectively 10 feet 6 inches high and 12 feet 2 inches through the plant, and 12 feet 8 inches high but without the same corporation, perhaps because of the almost annual shearing to provide my friends or myself with cuttings, or scions; it has a spread of 8 feet 4 inches.

Camellias, provided that you keep away from certain species or have patience to await their first flowering, are not stingy in the flowers that they annually produce, but none surpasses in this quality the generous display which each year bedecks this wonderful hybrid.

The blooms are large and semi-double, as may be seen from the illustration, and here in Cornwall they are borne in countless profusion, so that each plant is a resplendent cascade of pink flowers, somewhat less formal in shape than either of its parents.

'Donation' is easy to increase from cuttings and one plant so raised in this garden cannot be more than twelve years old and is now some 8 feet 5 inches high and 7 feet 10 inches across and has for the last eight years produced flowers which are uncountable in

number—we have tried! Moreover, the flowering period of this hybrid is about a month.

Only once has any of these three plants set any seed and only one seedling from this hybrid has been raised—as yet but two years old.

In his letter accompanying the plants COL. STEPHENSON CLARKE gave the breeding of C. 'Donation' as being *C. saluenensis* × *C. japonica* 'Donckelarii' and that of the other, C. 'Salutation', as *C. saluenensis* × *C. reticulata*, but in a subsequent letter COL. STEPHENSON CLARKE wrote that he was convinced that this was a mistake and that 'Salutation' and 'Donation' were of the same breeding, both being *C. saluenensis* × *C. japonica* 'Donckelarii' and so carrying no *reticulata* blood.

Alas, this mistake has had a long start and will take a lot of catching, but in this the cytologist is the most likely to succeed, for whereas the chromosome count of both *C. saluenensis* and *C. japonica* shows 2n = 30, so that hybrids between these two would be likely to have the same count, *C. reticulata* has 2n = 90 so that a hybrid of this with *C. saluenensis* must give 2n = 60.

Perhaps this note on a very beautiful plant may suitably close with what must surely be the greatest compliment paid to it.

The late MR. C. P. RAFFILL was the writer's guest (alas, it was to be his last visit) at a time when C. 'Donation' was at the peak of its display. MR. RAFFILL having travelled by a night train had arrived for breakfast. When this was over his host suggested that while he dealt with a few urgent letters his friend should start on a round of the garden. As soon as the letters were impatiently finished the host set out to find his guest and as he approached unheard the large plant of C. 'Donation' he saw his old friend, whose back was towards him, repeatedly taking off his hat and replacing it on his head: a sincere tribute from a great judge and a great lover of flowering shrubs.

CAMELLIAS AT QUINTA DO PALHEIRO, MADEIRA

By MILDRED BLANDY

ONE of the almost perfect climates for gardening is the island of Madeira, and it is interesting to note that it is particularly favourable to camellias. The shallow soil, volcanic in origin, is rich and completely lime-free and this helps to explain their phenomenal growth.

Our garden, the Quinta do Palheiro, lies about 1,800 feet up on the eastern slopes of the Bay, about five miles from the town of Funchal, the principal port of the island. The estate was started by the Portuguese CONDE DE CARVALHAL in 1801 and was bought in 1885 by J. B. BLANDY. Since then it has been owned by successive members of this family.

It is a gentle climate with winter temperatures varying between 45° and 60° F. and summer ones between 65° and 80° F. The winter rainfall amounts to 30–40 inches between November and March, roughly the peak of the flowering season for camellias, although there is little during the rest of the year. In the summer there are long periods without rain; thus some means of artificial watering is a necessity, and this is done by the "levada" system of irrigation. Wind has never been a serious factor and it has not been necessary to plant windbreaks as is so often the case with gardens on islands. An abundance of sunshine in summer and autumn ripens the new growth and develops flower buds.

There is a considerable amount of mist over the garden at certain seasons, probably caused in part by the quantity of vegetation at a comparatively high altitude and in part by the lack of strong winds to blow it away. In the winter, during much of the camellia season, clouds gather and the garden is often shrouded in mist while the sun may well be shining at higher or lower altitudes. This mist is obviously beneficial to the growth of our camellias and may influence both the rapid rate of growth and the abundance of flowers.

When J. B. BLANDY bought the Quinta in 1885, there were already many trees planted near and around the CONDE's original

house. Two great avenues of widely spaced planes with one hundred trees on each side and another of oaks formed long shaded vistas. The entrance to the Quinta had been lined with camellias and in all available spaces these shrubs were planted. These include singles and doubles, reds and pinks, purples and whites, as well as striped and spotted varieties; they show endless variations in form, colour and size. These plants have now grown to magnificent proportions and must number over ten thousand with many varieties. A recent measurement of some of them gave a height of 33 feet, although some are getting to an age when they have to be pampered. Of the original group of big *Camellia sasanqua* trees, only five remain. The turf has been lifted for 3 yards around the trunks of these to assist them to assimilate nourishment more readily and this seems to have helped. But with the years the flowers have tended to grow smaller and heavy pruning has been necessary. Even so, it is not possible to check the die-back which obviously is nothing more than the effect of old age (Fig. 44).

Care is taken to preserve existing camellias; all flowers that fall are allowed to lie unswept and it is this rich accumulation—this soil blanket—which protects the roots, retains moisture and is generally so beneficial in its decomposition of organic matter. Portuguese gardeners, with their passion for tidiness and constant sweeping, find this "leaving of the leaves" an irksome rule. I have tried repeatedly to establish single plants as an object of special beauty in herbaceous beds but the growth and progress is never as great as when they are planted in the close proximity of clumps or avenues, where they protect each other.

In September, a month in Madeira usually given to attending to trees, all dead wood is cut from the camellias and pruning on a severe scale takes place. In some parts of the Quinta there are hedges of camellias, formal, squat and prim, like any box or privet hedge in England. These flower abundantly in spite of the heavy pruning. This is explained by the fact that the trimming is done with great care and each shoot is considered individually, for the Portuguese gardeners are expert. In other parts the trees spread themselves in length and breadth as they wish. The very tall *C. sasanqua* trees seed profusely; it is interesting here to recall that hundreds of years ago in Japan these seeds were used as a source of oil. The seedlings are collected and grown on in individual pots. They grow rapidly and give the most suitable stock for grafting purposes when three to four years old. Layering, too, is a successful method of propagation, taking two years to establish roots.

Strangely, the gardeners here seem to prefer these two methods to propagation by cuttings.

The many cultivated forms are derived from *C. japonica, C. sasanqua, C. reticulata* and *C. saluenensis.* Nomenclature of camellias is exceedingly difficult; so many are so closely allied and there are hundreds here still to be identified. We find that differences in foliage are a help in the separation of varieties. Where the plants came from originally we have not traced but they obviously came from Portugal and Belgium in the early days of the garden.

Camellias start to flower in early December and continue until May. Their beauty is indescribable—either on the plant or lying in a thick carpet on the ground. If one can pick out any one variety as being more exquisite than its neighbour, I would choose the one we call "Water Lily", i.e. the snow-white semi-double 'alba superba', with the warm cherry-pink *reticulata flore pleno* as a close second. This latter variety may measure from 5 to 6 inches across. Many camellias are liable to produce "sports"—that is a bloom deviating from the mother plant—an annoying trait and impossible to eradicate. Undoubtedly many of these sports have been propagated through the years and this adds to the difficulty of naming the scores of different varieties.

THE GUICHARDS SŒURS CAMELLIA NURSERIES

By Sir GILES LODER, Bt.

A VISIT to the Guichards Sœurs Nursery at Nantes is a most enjoyable experience for a camellia lover. From England, by air-ferrying one's car to Le Touquet, a pleasant two-day journey may be undertaken, visiting part of Brittany and the Atlantic coast en route. A return via the Loire Valley with its famous châteaux can occupy as long as time allows.

The nursery is of world-wide renown, having been established in 1864 by a grandfather of the present owners. During the early part of the century, camellia plants in very great numbers were exported all over the world. Upon his death, two of his granddaughters have continued to run the nursery, and this they do with the utmost thoroughness, having in mind all details of the habits and eccentricities of camellia plants. In the nursery there are about 200,000 plants of all sizes, which are a joy to behold. All show signs of careful cultivation. They are actually situated in two nurseries—both on the outskirts of the large town of Nantes, where the proximity to the Atlantic brings a fairly temperate winter climate, though the summers can be very dry and hot. Proximity to the ocean means that winds are strong, and this would be a problem for large straggling shrubs.

In the main nursery is a collection composed of trees perhaps fifty to sixty years in age. One or more of over one hundred and thirty varieties grow all together in long lines so that it is possible to make an interesting study of the differences in both flowers and foliage. Each tree, clearly labelled with name and number, has been carefully pruned every year into pyramid form, which allows for the close growing of plants with room enough so that it is possible to move freely amongst them and to see the flowers more easily. For a formal garden or one of limited space, the pyramid form is a good idea, but where a more wild and natural garden is possible the freer growing, branching tree is more harmonious.

It is a difficult task to pick out a few varieties and not to mention

the whole one hundred and thirty, as the bad or uninteresting ones have long since been discarded. However, the following varieties were at their best at the time of our visit: 'Mme Martin Cachet', a very large bright pink paeoniform flower. 'Coletti' paeoniform, deep red with white marking rather similar to 'Kellingtonia' although quite distinct. The double 'Donckelarii' and 'Eugene Lize'. 'Madame Picouline', similar to 'Preston Rose' in form but darker, while 'Linietta' is a paler variety, again paeoniform. 'Comte de Gomer' is easily recognizable by its rose centre in the opening stages of its complete double flower, pale pink, striated with carmine, whilst 'Le Lys' is another easily named variety, being a large white with yellow stamens. 'Unifa del Tabro' is a pretty vivid cherry colour with white stripes. 'Reine Marie Henriette', though a very slow growing plant, being only 3 feet 6 inches high at sixty years of age, bore a mass of beautiful pink speckled white flowers. 'Kenny' is a large-flowered, paeoniform, cherry pink, and 'Imperator' of the same type but of a deeper hue. 'Lallarook', pink striped, with noticeably small leaves, 'Emperor', a brilliant red with full double centre and 'Ville de Nantes', a lovely fimbriated variety with petals resembling a red carnation, with white markings. 'Adolph Audusson', 'Mathotiana', 'althaeaflora', 'Gloire de Nantes', 'Elegans', 'Countess Lavinia Maggi' and 'Tricolor Sieboldii' are all too well known to need further description. *C. sasanqua* does not appear, the one variety catalogued being in reality a fine specimen of *C. maliflora*. A large tree of *C. reticulata semi-plena* stands in a corner, protected from the strong winds that often prevail there.

In the nursery, cuttings of the ripe wood of the past year's growth are taken in December and January. The top bud is cut off and discarded, and the cutting then inserted into a mixture of peat and sand, in covered unheated lights in the open. Here they remain crowded closely together, until September of the following year when they are already 1½ years old; they are then transplanted and the careful pruning system commences, resulting in a compact bush about 2 feet high when seven to twelve years old. These are grown in nursery beds under lathes 3 feet from the ground to protect them from the hot summer sun.

What impresses the visitor is the extraordinary orderliness of the entire nursery over 90 per cent. of which is devoted to camellias. The packing system is interesting; a handful of straight coarse straw 3 feet long is tied in the centre, then folded and opened out forming a plate on to which is placed the ball of root. The straw

then encircles the root and is tied round the neck of the plant, resembling when finished an Italian Chianti bottle.

Before leaving the town of Nantes, a visit to the Botanical Garden in the centre of the town should be made. Here amid a collection of trees and shrubs is a remarkable avenue of *Magnolia grandiflora* several hundred yards long with *Camellia japonica* growing beneath, three or more plants wide on either side of the path, all in pyramid form and all in the picture of health. In the centre of the garden around a circle of seats is a camellia hedge, closely cut and yet a mass of flower. All round this part of France *Magnolia grandiflora* can be found in gardens along the road-side, many being magnificent specimens thriving luxuriantly, whilst in numerous small gardens plants can be seen growing, though the choice is usually one pink, one white and one red variety.

THE PROPAGATION OF CAMELLIAS

By F. P. KNIGHT, F.L.S.
(*Director, R.H.S. Gardens, Wisley*)

DURING the past ten years much has been written about the propagation of camellias, but when analysed with the object of presenting a simple straightforward account of raising young plants I feel that it is not necessary to go outside the scope covered in the following notes. It should, however, be borne in mind that there is always room for experimental work, and that new methods should be adopted if these supersede the old.

PROPAGATION FROM SEEDS

In Britain the raising of camellias from seeds has been primarily restricted in the past to the provision of numerous grafting stocks by specialist nurserymen on to which varieties of *Camellia japonica* were grafted. The seeds had to be imported as these did not ripen in quantity in this country. Recently, however, there has been much more interest taken in raising seedlings, due in part to the use of other species such as *C. saluenensis* in breeding new varieties. Camellia seeds are fleshy and cannot be stored in a dry condition; they must be sown when ripe or temporarily stored under cool conditions in damp sphagnum moss or peat.

Small quantities may be sown in pans or pots or boxes, but large quantities can be sown in prepared beds in a cold frame. In all cases it is wise to protect the seeds from mice. A suitable mixture of soil is a light lime-free loam, with peat or good leaf-mould in equal parts with a gritty sand to keep the mixture porous. The containers should be drained by placing crocks—as broken pots are called—in the bottom and covering these with leaves or coarse fibrous peat or similar material. The mixture of soil should not be unduly firm and the seeds should be covered to the depth of about 1 inch. Cool treatment after sowing is desirable and it is sufficient to give the seeds the protection of a cold frame or greenhouse during the winter months after sowing. A frequent scrutiny must be made in the early part of the year to note when germination commences and at this point I prefer to stand the containers on the staging in a greenhouse where the temperature remains above freezing point.

If this is not possible it is wise to give some protection against sharp frost. I would however emphasize that camellias are hardier than is generally believed and they should not be unduly coddled. I can well remember seeing numerous "self-sown seedlings" growing under and around the fine specimen bushes in the woodland garden at Caerhays Castle. I do not consider it necessary to "chip" the seeds to hasten germination.

When the seedlings are sufficiently large to handle they should be transferred singly to small pots. Much patience is demanded in waiting for the resultant plants to reach flowering size and one line of experimental work which would prove helpful would be that of investigating methods to shorten this period.

LAYERING

Where branches are suitably placed near the ground they can be quite successfully layered. I would suggest doing this in the early autumn, simply selecting short portions of the branches, about 12 to 15 inches long, and burying about half of this length to a depth of about 4 inches, leaving the growing point above ground. The leaves should be cut away from the portion of stem to be buried and the bark on the underside scraped away with a sharp knife. I do not consider it necessary to cut a notch in the wood; in fact, I rarely use this method for layering any woody plant. The essential point is to turn the growing tip of the branch sharply upwards but not to break the branch by being careless. It is not normally necessary to add any special ingredient to the soil for layering, as if the parent plant is thriving the existing soil should be suitable. Firmness in fixing the layer to the ground is essential, and wooden pegs driven into the ground are most frequently used. Stones of sufficient weight can be used to keep the branches down, but professional propagators layer branches without any such artificial aids, simply bending the short length of branch and firming the soil around this. I never layer large branches, which not only would take a long time to produce roots but would also result in shapeless plants. Normally, branches as described will produce sufficient roots to allow for the severing and transplanting of the new young plants in about eighteen months from the date of layering.

AIR LAYERING

This method of propagation, which has proved so successful in raising many woody plants, particularly magnolias, has not so far given very good results with camellias. Experimental work is

being undertaken at Wisley and an account of this may form the subject of a note in a future Year Book. The technique of air layering has been described in the *Journal of The Royal Horticultural Society*, vol. LXXIX, p. 111, by MR. HANGER, and anyone interested should have no difficulty in following the instructions he so clearly gives.

STEM CUTTINGS

With the exception of *Camellia reticulata* and its varieties, most camellias can be easily increased by inserting stem cuttings. There is some difference of opinion about the best time to select the wood for this method, but I prefer to do this in late August and September. My reason for this is simply that the cuttings will then produce a strong root formation but they will not commence growing until after the turn of the year. I find that cuttings inserted earlier tend to make what I call a false start in growth before the end of the year, whereas if the commencement of growth is delayed until after the turn of the year, they have a long uninterrupted growing period ahead and strong plants will have resulted by the following autumn.

The cuttings I select are shoots of the current year's growth about 3 or 4 inches long and made sometimes with a heel of older wood, sometimes at the point where the new growth is a direct elongation of the previous year's wood and sometimes simply cutting through the stem below a joint. The leaf or leaves are cut off from the portion of stem to be inserted. I recently saw in a nursery a two-year-old branch about 9 inches long with side branches which had been left forgotten in a propagating frame and this had produced a well-developed root system in a short period. I insert the cuttings in a mixture of peat moss and sharp silver sand; the mixture to aim at is that of peat moss with enough sand to keep the rooting medium open. I like to make a bed about 4 or 5 inches deep of this mixture, preferably in a shaded propagating frame with bottom heat, sufficient to keep the temperature of the mixture up to 55° F. The cuttings seem to give best results if they are not more than 4 to 6 inches from the glass and whereas I have previously always opened the frames for one hour each morning and removed the condensation, there is now reason to believe it is best to leave the frames closed altogether except for the purpose of watering. I find watering once a day sufficient and if the weather is very dull I have sometimes missed a day. It is all a question of giving what is required. I would like to carry out some experimental work to

establish which procedure gives best results. The percentage of rooting in any case is high and most of the cuttings inserted will be ready for potting within two months of the date of insertion. I have had excellent results without using root-promoting substances.

I have seen 4-lb. glass jars used for propagating camellia cuttings. About half of the jar was filled with a mixture consisting of peat moss, sharp sand and vermiculite placed over charcoal; cuttings were inserted into this and thoroughly saturated and the lids of the jars placed in position. The jars were shaded and left sealed with good results. This method must appeal to amateur propagators who cannot give constant attention to cuttings in propagating frames.

LEAF-BUD CUTTINGS

A leaf-bud cutting is made of no more than 1 inch of the stem with one leaf attached and one growth bud in the axil of the leaf. It will be seen that there is a great advantage in using this type of cutting when quantities of a new or scarce plant are required. I prefer to insert leaf-bud cuttings in September for the reason given when dealing with stem cuttings. I select firm wood which in September is nearly ripe and shave away with a sharp knife the bark and thin layer of the wood on the side of the stem away from the bud. This promotes first the formation of callus and then a strong root formation. The cuttings are inserted in the bed in the propagating frame already described and potted into small pots when rooted.

GRAFTING

The raising of camellias in Britain by grafting scions on to suitable stocks is not practised so widely nowadays, not even among nurserymen. I have noticed when visiting nurseries that leaf-bud cuttings are much in favour.

Grafting, however, does produce a larger plant of flowering size more quickly and the art of cleft grafting is practised in the U.S.A. In this country preference has been given to side grafting. It is not intended to deal comprehensively with these methods in this account of propagation and I feel that there is a field for an enthusiastic skilled propagator to undertake some experimental work to compare results from using the two methods. *Camellia japonica* raised from imported seeds is mostly used for the stock and these are grown on in pots until they are not quite "pencil thickness" before being used. Side grafting is done both in the early spring and during August and September and consists of selecting scions

of firm wood in the spring, of the previous year's growth, and in the summer, of the current year's growth, which have the leaves removed from the actual section to be joined to the stock. A sloping cut is then made on one side and a corresponding cut made low down on the stock, the two cut surfaces are then joined and bound with raffia. The grafted plant is kept in a closed propagating frame until the union is completed and then hardened off. The head of the grafting stock is cut away when the scion commences to grow. *Camellia reticulata* is increased by grafting by approach or inarching in March. This simply means that the scion must be supported while union is taking place and this is accomplished by bringing the grafting stock into contact with the scion without removing this from the parent plant until the union is completed or the end of the scion is immersed in a small jar of water. Some ingenuity is required to fix the stocks into suitable positions, especially if the scions are not near the ground.

Photos, J. E. Downward

FIG. 29—*Camellia japonica* 'Nagasaki', a lovely variegated, semi-double

FIG. 30—*Camellia japonica* 'Elegans' A.M. 1953, one of the hardiest for the garden (See p. 66)

FIG. 31—*Camellia japonica* 'Hino Maru' which received an A.M. in 1953

FIG. 32—*Rhododendron anthopogon* A.M. May 3, 1955. Exhibited by MRS. MESSEL, M.B.E., and The National Trust, Nymans Gardens (See p. 116)

SOME NOTES ON THE HARDINESS OF CAMELLIAS AND OF THEIR FLOWERS

By L. S. FORTESCUE

FORMERLY camellias were planted in greenhouses, but with a few exceptions, such as at Tregothnan in Cornwall, they were not extensively planted out of doors, whereas now their hardiness as garden plants is realized and they are being planted in many gardens. Unfortunately, however, their buds and flowers are subject to damage by frost and wind; a big bush covered with browned flowers, that nobody has time to remove, is a sorry sight. Severe winter frosts may kill a proportion of flower buds of some varieties, but frost damage occurs mainly in spring when it spoils opening buds and flowers.

In this respect it is unfortunate that camellias flower early in the year. Breeders might be able to lengthen the flowering season by raising later-flowering varieties, thus reducing risk of damage to buds and flowers by frost and storm, but with the wealth of shrubs flowering at the end of April and in May, the need for camellias at that time would be less. At Abbotsbury I was told that *Camellia japonica* 'Lady Hume's Blush' is the last to flower and that flowers are seldom damaged.

All varieties are not, however, equally weather-sensitive and, consequently, except in gardens normally free from spring frosts and well-sheltered from wind, care should be taken to select varieties with more weather-resistant buds and flowers. A variety that attracts attention at a show may not be a good general purpose garden plant.

With a view to watching the behaviour of different camellias I have planted during the last few years more than one hundred varieties of camellias, but time will be required to watch them and to make a selection of the more weather-resistant ones. Meanwhile, some indications about bud and flower tenderness can be given.

JAPONICAS

The most tender in bud and flower are the white varieties, large-flowered doubles being more sensitive to wind and storm damage than semi-doubles and singles.

Whites

'Alba grandiflora' ('Sode Gakushi') is the worst offender, a heavy dew being said to be enough to spoil its flowers. Except in a greenhouse, it should be picked in bud and allowed to open in water (Fig. 35).

'Nobilissima' is very sensitive. At Kew it is only suitable as a wall plant.

'Mathotiana alba' is also very sensitive; it is also liable to lose a proportion of its buds in winter frosts.

'Madame Charles Blard' is perhaps a little better than the above.

'White Empress', an American variety, at present scarce, is said to be better than other double whites.

'Alba simplex' is a better garden variety than the double whites, but flowers are spoiled in some seasons.

Double and semi-double—Pinks and Reds

'Magnoliaeflora.' Very sensitive.

'Mathotiana rosea.' Fully double and very sensitive.

'Mathotiana.' Fully double and very sensitive.

'Lady Clare.' Not as sensitive as the above but requires shelter.

'Adolphe Audusson.' This good red weathers better than the Mathotianas, but not as well as most of the following: 'althaeaflora', 'anemoniflora', 'Arejishi' and 'Campbelli'.

'Elegans.' Probably the best garden plant of the large-flowered varieties, flower, foliage and habit all being good. 'Donckelarii', 'Gloire de Nantes', 'Lady de Saumarez', 'latifolia', 'Mars' and 'Mercury' are reliable and can be recommended as good garden plants (Fig. 30).

Singles—Pinks and Reds

'Juno' and 'Sylvia' are large-flowered pinks and very similar, 'Jupiter' is rose-scarlet, while 'Sylva' (in my opinion one of the very best of garden varieties) has large red flowers. These pink and red singles are excellent garden plants, both in habit and flowers.

Singles—White

'Alba simplex'—see above under "Whites".

'Cornish Snow'—see below under Caerhays Hybrids.

C. × *WILLIAMSII*

Some of the *C.* × *williamsii* hybrids (*C. japonica* × *C. saluenensis*) rank among the most useful and decorative garden plants, with a long flowering season.

Semi-double

'Donation' has large flowers that weather well. It is one of the most striking camellias.

Singles

'J. C. Williams', dog-rose pink. Flowers may become weather-beaten, but they fall when faded, so that the bush does not remain untidy.

'Mary Christian', deeper pink than 'J. C. Williams', with the same good qualities.

'Charles Michael.' At Caerhays at its best it is excellent but in some seasons it is covered with browned flowers.

'First Flush' proved useless in my garden, flowers, having been spoiled by weather and by birds, and not dropping when dead like those of 'J. C. Williams'.

'Elizabeth Rothschild' and 'St. Ewe' I have not yet flowered.

At Bodnant in 1955 a very severe winter followed by late spring frosts spoiled the flowers of most *C. japonica* varieties, but *C.* × *williamsii* flowered well. Mr. E. H. M. Cox writes from Glendoick in Perthshire that whereas 'Lady Clare' was practically killed by the winter of 1954–55, *C.* × *williamsii* was undamaged and most satisfactory. In my garden on the edge of Dartmoor at 450 feet above sea level, no *japonica* varieties have been killed by frost, but small plants of *C.* × *williamsii* were roughly treated by 18 degrees of frost and an easterly gale in the winter of 1953–54.

CAERHAYS HYBRIDS

'Cornish Snow' (*C. saluenensis* × *C. cuspidata*), charming free-flowering plant, covered with weather-resistant small white flowers, giving a butterfly effect.

SPECIES

C. saluenensis. In the winter of 1953–54 many laterals and most flower buds of my plants were killed.

C. reticulata (garden form) is doing well on a west wall. The plant has not suffered frost damage and buds are not nearly as tender as those of *saluenensis.*

C. reticulata (wild form). Young plants in winter of 1954–55 lost every leaf, but completely recovered in spring. They have not yet flowered in my garden.

It is interesting to note that the flowers of 'Salutation' (*C. japonica* × *C. reticulata*(?)) are very weather-sensitive, perhaps as a result of its *reticulata* parentage.

C. sasanqua. So far as I have seen, their flowering is not spoiled by rough weather, individual flowers being fleeting and dropping off, but they seem to be shy flowerers in the south-west. They may require hotter sun to produce flower bud. They thrive in Portugal.

It is noteworthy how remarkably tolerant camellias are of widely different conditions of sun and shade, humidity and drought, heat and cold. It is obvious that humidity favours strong growth, as camellias, like rhododendrons, increase considerably in size and vigour as one travels from east to west in the south of England. In Cornwall mature camellias growing close to the trunks of large beech trees may be seen flowering freely. They appear to be much more tolerant of such conditions than rhododendrons. In my garden most varieties are as happy in full sun as in semi-shade and during weeks of sun and drought in 1955 young camellias a few inches high planted in spring from 3-inch pots in rows in an open field site did not suffer, whereas there was a holocaust of young rhododendrons planted beside them.

Captain Collingwood Ingram mentions that he has seen camellias in full sunshine in hot climates. He remembers a well-grown specimen flowering profusely in Cape Province and another in the south of Spain. In the streets of Vigo in north-west Spain there are standard trees up to about 20 feet in height, in spite of paving stones close round their trunks and of the reflected heat from houses. In the relatively humid climate of Portugal and of the Azores camellias flourish. In parts of St. Michael's in the Azores, they have become naturalized and are often used as hedge plants—as indeed I am using them in west Devon. In their native country of Japan they grow wild in heavily wooded areas.

From the above notes, it is clear the main requirements of camellias are adequate moisture at their roots, while for satisfactory flowering they should have sites free from spring frosts and sheltered from wind. Further information about weather sensitiveness of buds and flowers of different varieties of camellias would be useful to garden owners without personal experience of these plants

CAMELLIA MISCELLANY

By CHARLES E. PUDDLE

CAMELLIAS have been cultivated at Bodnant since the development of the gardens commenced at the beginning of the century. The original plantings were of the semi-double form of *Camellia reticulata* and the more common varieties of *C. japonica* and *sasanqua*. The introduction of *S. saluenensis* and the wild form of *reticulata* quickly followed by the *williamsii* hybrids, created a greater interest in the genus and led to the accumulation of the present large collection of all types. In the past few years many of the newer varieties have been obtained by purchase or through the generosity of numerous friends in all parts of the world.

One of the difficulties in writing about camellias is the present confusion in their nomenclature. This problem surely needs determined and immediate attention in this country, for with the continual influx of new varieties some standardization of names is essential. This question has already been tackled in America and Australia and it is to be hoped that the authorities in this country may at last get down to the task.

C. SALUENENSIS, ITS FORMS AND HYBRIDS

The original plants of this species at Bodnant all have small narrow leaves and very pale rose-pink flowers. However, seedlings from these plants, although isolated from all other camellias, show the great variation which appears to be typical of the species. Many of the seedling forms are more handsome both in leaf and flower than the type, but others show a tendency to bluish-pink and do not open their flowers widely. A great deal of selection is necessary and many of the forms already named are rather inferior. The finest at Bodnant is a very deep rose, with larger flowers than normal and the petals lying quite flat to give an open flower. Seedlings not only vary in form but in hardiness and in the main appear to withstand severe frost better than the type, which is one of the few camellias often browned by frost at Bodnant.

The white form of *saluenensis* described by FORREST in his field notes appears to be rare in cultivation. It flowers freely in early spring and appears to be quite happy on a sheltered wall and is certainly a plant which should be more widely grown.

The hybrids of such a variable and free-seeding species as *C. saluenensis* are bound to be a matter of much discussion especially when they closely resemble forms which can be obtained from the seeds of the species. I must admit that I regard one or two of the named hybrids now included in the *williamsii* group with suspicion but do not doubt the parentage of the better-known varieties.

C. × *williamsii* 'J. C. Williams' is the most widely planted of camellias at Bodnant, having been obtained as a gift from the late MR. J. C. WILLIAMS many years ago. It was regarded by the late LORD ABERCONWAY as one of the finest of all garden shrubs and this high praise is certainly well deserved. During the past winter when many camellias suffered it was a mass of bloom, thanks to the fact that its flower buds are particularly frost resistant. It normally blooms from January until May, the dead flowers dropping off naturally so that the plants are never untidy. In the open it has withstood zero frost and in the same season still flowered as freely as ever, so that there can be no doubt of its hardiness. Its, free-flowering qualities, fine foliage and habit make it one of the features of the garden in the spring.

C. × *williamsii* 'Mary Christian' differs from 'J. C. Williams' in several ways. The flowers are much deeper pink and more cup-shaped until they age; the lighter green foliage is more pointed and it has a looser habit. It is perhaps not quite as free-flowering but is nevertheless an equally good garden plant, and affords a fine contrast when grouped with a paler 'J. C. Williams'. I have noticed many plants which are merely deep forms of *C. saluenensis* being grown under this name.

One of the finest of all the new hybrids, *C.* × *williamsii* 'Donation' from Borde Hill has large semi-double flowers of a good clear pink (see Fig. 28). Its flowering period is not as long as those mentioned above nor are the flowers quite so freely produced, but for individual beauty they are outstanding. The attractive leaves are small and narrow and although of fairly upright habit its branches are often weighed down with bloom. Its has proved a good grower and quite hardy and it is definitely a camellia for further planting.

C. × *williamsii* 'Francis Hanger', a hybrid raised at Wisley, is a most valuable introduction. In flower it may be described as a pure white 'J. C. Williams' with petals of more substance and deeper golden anthers. In foliage it is most handsome, and when generally available, should become very popular.

The value of *C.* 'Cornish Snow' lies in its prolific flowering and

attractive bronze young foliage. The flowers are larger than *C. cuspidata*, its other parent, and altogether it is a first-rate garden plant for mass effect.

C. RETICULATA GROUP

The camellia first described by LINDLEY, known in gardens as *reticulata semi-plena* and recognized botanically as the nomenclature type of the species, is really a garden form. The so-called wild forms of the species introduced by FORREST closely resemble from a biological standpoint the majority of plants found in nature. Unfortunately it appears that LINDLEY's *reticulata* must retain its place as type specimen of the species although it is a cultivated form. The designation "Wild Form" is rather ungainly and it is to be hoped that some responsible botanist will create another name for this section, leaving the semi-double and double forms as "forma *reticulata*". There does appear to be a need for a proper varietal name for these two groups, with the likelihood of new hybrids, and named seedlings of the wild form, and the recent finding of the garden forms in Yunnan.

From a gardener's point of view, LINDLEY's semi-double *reticulata* and the double form introduced by FORTUNE make a group with those recently found in Yunnan. These could all be designated "forma *reticulata*" and as the Yunnan garden types have been given cultivar names, it may be advisable, to avoid future confusion, to follow the lead given in America of making LINDLEY's *reticulata* 'Captain Rawes' and FORTUNE's double form 'Robert Fortune'.

'Captain Rawes' succeeds admirably at Bodnant against a wall and each year the large specimens produce a wonderful show of blossom. One plant facing south and catching full sun flowers most freely and I feel that this camellia is hardier than generally realized providing the roots are kept fairly dry during the winter. Neither is it impossible to propagate from cuttings, for with perseverance quite a fair percentage can be rooted. There appears to be two slightly differing types in cultivation and these may correspond with the variation shown in the original illustrations of this camellia from the first two importations.

FORREST seedlings show much the same degree of variation as *C. saluenensis* and this is well illustrated by the wonderful collection at MR. G. H. JOHNSTONE's garden at Trewithen. Some of the forms originally distributed are poor in flower and foliage but the named seedlings are most beautiful. 'Trewithen Pink', given the protection of a wall, is much admired and regarded as the best of the group. Its salmon-pink single flowers are freely produced and the

thick petals withstand the weather. Young plants of these forms are now planted in the open and have shown no damage during the past two severe winters.

The majority of the new Yunnan *reticulatas* have now flowered on three occasions in the gardens. The discovery of this interesting group is already well known and I think they will become a most valuable acquisition to our milder gardens. At first I was a little disappointed, but now they are much improved and they may have been initially affected by their long journey. There appears no reason to anticipate that they will prove any less hardy than other members of this species, but as yet it is too early to give a definite opinion. They are strong growers with good foliage and have quickly made nice plants. Many closely resemble 'Captain Rawes' in colour and size although the petaloids are often more numerous and the centres show a tendency to become confused.

I like 'Purple Gown' very much—the deep red petals of good substance being arranged with regularity forming a flat flower when fully opened. A few stamens remain in the centre. It is one of the best in habit and has beautiful reddish young growth. 'Moutancha' is a light pink with a boss of stamens in the centre of the well-shaped flowers, but grows more slowly than most. 'Pagoda' is almost fully double, but is deeper than 'Robert Fortune' and its less numerous petals are not so pointed. 'Butterfly Wings' has flowers up to 9 inches across and is certainly very startling when seen for the first time. 'Queen of Tali' and 'Noble Pearl' are deep rich pink with very full and confused centres whilst 'Lion's Head', 'Chang's Temple' and 'Large Cornelian' are somewhat paler and suffer from varying degrees of white variegation. I notice that the two Chinese authorities do not agree on the question of nomenclature, but as plants will now be coming from America I have for the present adopted the standardized names used there.

I include a note on C. 'Salutation' under this species, for after careful observation both of the plant and of its propagation I feel sure that it contains *reticulata* blood. I know that the parentage is now said to be the same as *C.* × *williamsii* 'Donation' and that botanical opinion supports this, but like Mr. Hillier (*1955 Year Book*) I beg to differ. This lovely hybrid has large semi-double flowers of soft pink and deserves a greater popularity.

CAMELLIA SASANQUA

This section has not been widely planted here at Bodnant, for many of the older forms proved to be shy-flowering. An exception to this

is the plant grown in gardens as *oleifera* or *sasanqua oleifera*, which, providing the weather is favourable, makes a nice show in November. The correct name of this confused camellia is *sasanqua* 'Naraumi-gata' and it certainly has no connection with the species *C. oleifera*. A good single red form obtained from Japan as 'Crimson King' also flowers freely and makes a fairly dwarf plant with somewhat pendulous branches. I note it is listed under this name in Japan, but expect that it has an older priority. 'Mine-No-Yuki' ('Fungi-No-Mine') occasionally produces its beautiful semi-double white flowers.

Recently we have obtained some of the newer types from America which have so far borne out their promise of flowering more freely. 'Cleopatra', 'Papaver', 'Briar Rose', 'Shishi-Gashira' and the lovely pink, 'Jean May', appear to be the best to date.

A plant, more interesting from the historical aspect than garden value, flowered for the first time last year. It was FORTUNE'S yellow *sasanqua*, which after being lost for many years was found by MR. RALPH PEER growing in a nursery in Portugal. One of the plants he kindly sent survived the journey, and is now growing well. The flower is not truly yellow but a creamy white with a mass of yellow stamens and petaloids. Although it is named *C. sasanqua* var. *anemoniflora* in the *Botanical Magazine* of 1859 (t. 5152) it seems that the name 'Jaune' published by VERSCHAFFELT in 1853 has priority (Figs. 23, 24).

OTHER SPECIES

Whilst visiting Trewithen two years ago I was shown by MR. JOHNSTONE a plant of the rare *C. pittardii*. On my return to Bodnant I recognized that an unnamed camellia growing amongst others on a wall appeared somewhat similar and this was confirmed and identified as *C. pittardii* var. *yunnanica*. Last year this plant produced pink flowers closely resembling those of the wild form of *reticulata*. Its pointed foliage is distinctive but I am not too sure of its hardiness as some of the young growths were browned in the past winter. It certainly has possibilities for hybridization with *C. reticulata*. I should perhaps mention that the *'pittardii'* listed in catalogues and claimed to be the parent of certain hybrids should read *'saluenensis'*.

Young plants of *C. taliensis* have proved too tender for cultivation here even against a sheltered wall. The true *C. oleifera* is also tender but its small white flowers and dull matt green leaves are really no loss to our gardens.

C. JAPONICA

The difficulties of nomenclature are well illustrated by the great variation shown by this species and the thousands of named varieties which already exist.

The oldest *japonicas* at Bodnant are planted in the conservatory and were obtained many years ago from Messrs. Sanders. They are the single white 'Flora' and one of the best of the single reds, 'Sylva'. These two varieties are illustrated and named in Vol. 1 of *Flora & Sylva*, 1903. 'Sylva' has perfectly shaped flowers with a beautiful ring of golden anthers, but, surprisingly, is little known or confused with 'Sylvia' and the variety now known as 'Jupiter'. The original 'Jupiter', of Italian origin, and described by both BERLESE and VERSCHAFFELT in 1849 is a double rose variety. An illustration of a single red bearing the same name appears in Vol. 2 of *Flora & Sylva*, 1904, and this is the plant found under this name today. In 1950 an attempt was made to rename this 'Juno'. Two other single reds are also confused—'Takayama' and 'Kimberley'. The first variety was introduced from Japan in 1887, but to date I have found little information on the status of 'Kimberley'.

'Lady Clare' is a great favourite here, for its drooping habit makes it most useful in garden planting. The semi-double, rose-pink flowers are freely produced but unfortunately do not fall when faded and unless picked off look rather untidy. The first record of this name appears in 1887 at the Caledonia Nurseries, Guernsey. 'Gloire de Nantes' is another good early pink and seems to be very frost resistant; its flowers are unharmed except in very severe weather. 'Elegans' has certainly stood the test of time, being raised by CHANDLER about 1823, and yet is still one of our most popular varieties.

The name 'Mathotiana' (*rubra* is unnecessary and wrong) is so well known that I hesitate to question its validity. I am afraid, however, that I must agree with PROF. WATERHOUSE when he points out in his book *Camellia Trail* that the variety we grow as 'Mathotiana' is really 'Grand Sultan'. Whatever its correct name there is little doubt that this wonderful camellia will always be one of the most beautiful and coveted. 'Mathotiana alba' and 'rosea' are also very fine doubles. 'Souvenir de Bahuaud Litou' is very similar to the rose form.

'Adolphe Audusson' despite its tendency towards doubling is a first-rate semi-double red of good foliage and habit. I do not care for bi-color flowers, but 'Contessa Lavinia Maggi' has good large flowers and deep green foliage. 'Arejishi' is not everyone's

choice, but with its deep rose, paeony-formed flowers it usually opens the *japonica* season and has the advantage of most distinctive foliage. Another of CHANDLER's seedlings 'althaeaflora' raised in 1819 richly deserves the Award of Garden Merit recently bestowed upon it. It has, perhaps, the finest deep green foliage and a most attractive deep crimson double flower. In some gardens it has got confused with 'anemoniflora', whilst 'Charlesii' and 'Blackburniana' are other names for this camellia. I much admire 'rubescens major', a plant from Messrs. Guichard Sœurs, of Nantes. When covered with blossom it is a wonderful sight, the countless double rose-red flowers being beautifully veined and showing up well against its fine foliage.

'Sode-Gakushi', often grown as 'Gauntlettii', 'Lotus', 'Mrs. Sander' and 'alba grandiflora', is a large, semi-double, white variety which needs a shady situation as otherwise its leaves turn very yellow. It does not appear to be a robust grower although its leaves are rather coarse, and its flowers very easily suffer frost damage and show a tendency to "ball". I will not attempt in this article to unravel the great confusion in the single white varieties.

The perfection and simplicity of the blush pink semi-double flowers of 'Magnoliaeflora' cannot fail to appeal. This has become confused in gardens with the pale form of 'Lady Vansittart' and 'Peachblossom', whilst on the Continent another variety is offered under this name.

I have only touched on the fringe of the *japonica* varieties and have omitted the American varieties and many other newer introductions. There is little doubt that the genus offers to all growers an unfailing interest with plenty of scope for research, and the friendship of camellia growers throughout the world.

GROWING CAMELLIAS: NOW AND THEN

By C. H. J. WILLIAMS
(*Head Propagator, Messrs. John Waterer, Sons & Crisp Ltd.*)

THE opening to the general public of the famous private gardens of England by the courtesy of their owners over the past twenty years or so has contributed very largely to the interest and popularity which camellias now enjoy. The magnificent specimens to be seen at Leonardslee and many other renowned gardens, growing in the open must have prompted many gardeners to acquire and grow plants of their own.

Camellias, so very popular during the nineteenth century, are far hardier than is generally supposed. They are capable of withstanding 20°–25° F. of frost unharmed, providing, of course, that they are correctly sited. There is a divergence of opinion about this, however, and local conditions must be taken into account, but the fundamental requirements are a well-drained, rich, acid to neutral soil, filtered sunlight or semi-shade and protection from cold draughts. Hardiness increases with age and it should be understood that a young camellia planted out of doors must be given special care and attention for the first two or three years.

Dense shade or coverage is to be avoided, as this promotes weak straggly growth which is detrimental to the formation of the flower buds. Thin woodlands provide the best sites, but conditions very similar to these may be found in most gardens. An established shrubbery is ideal, especially when small standard flowering trees are incorporated.

Planting near the walls of houses is very popular. If a north wall is used it should be fairly free from draught. A hedge or wall running parallel a few yards distant would be most unsuitable, as a draughty corridor would be created. For south and west walls shading must be available in the form of an existing tree, large shrub or adjacent building.

East walls are seldom used, as early morning sun, whilst beneficial during the growing season, would most certainly ruin the buds at flowering time by causing them to thaw out too quickly

after frost, especially when ground temperatures are below freezing.

It should be remembered that the bases of walls are often very dry, even after heavy rain, and particular attention must be given to watering. Camellias will suffer severe damage during frosty weather if they are dry at the roots.

Planting camellias in full sun and mulching the surface of the ground around the plants is sometimes recommended. This might be possible in certain areas, but, generally speaking, in an unpredictable climate such as ours, where a heavy shower is often followed by burning sunshine, scorching will occur, and the upper surfaces of the leaves will be marred with ugly brown blotches, completely spoiling the appearance of the trees. Planting near tin structures of any kind would produce the same results, due to reflected heat.

Planted in the open in a rich soil with a free root run, many of the stronger-growing camellias will fail to produce an abundance of flower buds whilst their youthful vigour is maintained, and some restriction at the roots may be successfully practised. This does not mean that the roots should be pruned; in fact, this must be rigorously avoided. It simply means the adoption of a method of culture known as "cramping".

This consists of planting into wooden tubs, clay pots or metal containers just large enough to accommodate the ball of roots, with 1–2 inches to spare all round, and working the soil around the ball with a flat piece of stick, and then plunging or sinking the containers into the soil to ground level.

A good acid potting compost must be used, and good drainage provided; 3 to 4 inches of shingle placed beneath the containers will assist this and prevent "padding down" of the soil.

Most camellias may be grown in this way and the method offers other advantages besides early-flowering maturity. They may be moved at any time to suit weather conditions; i.e. given denser coverage upon the approach of bad weather and even completely housed during severe weather. At flowering time the plants may be used for indoor adornment or for exhibition. Providing that the containers are always filled with a good acid compost, excellent camellias may be grown by people on chalk, wet soggy clay or any other unfavourable soil.

Watering must be carefully attended to and the plants replanted into containers 2 to 3 inches larger in diameter every third year. If the soil is rich enough, feeding should not be necessary the first year. For the second and third years about four applications of a

well-balanced organic fertilizer should be given during the growing season. Diluted manure water may also be used.

A future undoubtedly exists for the introduction in this country for an efficient metal or tin container, made in varying sizes. They are used in America with great success and most nurserymen offer container-grown plants, hence the modern Americanism "canned camellias".

Shaded courtyards, terraces, etc., provide excellent places for growing camellias in wooden tubs. It is a mistake however, to plant a small plant into a large tub as, being slow rooting, the soil soon becomes sour and then is actually repellent to the formation of roots. In a smaller container, however, the tendency to blow over in windy weather can be very troublesome. To obviate this the smaller container should be plunged into the tub of soil, increasing the former in size every third year as has already been described until the larger tub is used.

Greenhouse culture of camellias is on the increase and there is no doubt that the finest blooms are produced under glass. Heat is only necessary for certain specific reasons. Some varieties can be relied upon to produce a crop of flower buds with great regularity, especially those varieties which are fairly dwarf and compact growers. These will usually make only one new cycle of growth, hence bud formation. Many of the other varieties, however, will make two and sometimes three complete cycles of new growth and buds will not form if this is allowed to take place.

In culture under glass, therefore, one cannot do better than follow the technique used by talented gardeners of the early 1800's, when camellias were much in vogue for the decoration of conservatories, stove-houses and indoor winter gardens, and the following cultural advice known to the earlier gardeners still holds good now. It should be remembered that the heat advocated below may approximate natural conditions in countries like Portugal, Spain, Italy and Madeira, where camellias do so well, but that it is not necessary as excellent results are achieved in a cold house without heat.

SOIL: The best soil for camellias is one part heath-mould, one part well sifted leaf-mould and two parts lime-free brown loam from a pasture; if leaf-mould cannot be had, use a small portion of very rotten dung. Break the loam and heath-mould fine in preference to sifting it.

POTTING: Always make it a rule to pot each plant immediately after it has finished flowering and before the young growth

appears. If the roots are not matted merely turn out the plants and replace them in larger pots. If matted gently part the mass of roots carefully with the hand. Lay plenty of potsherd at the bottom of the pots and with a flat stick work the soil round the sides of the ball.

HEAT: Place the plants when potted in a heat not exceeding 75° F. by day and 60° F. by night until they have formed their young shoots. Then immediately increase the temperature 10° F. to assist in perfecting their flower buds for about a month. Afterwards expose them gradually to the air and lower the temperature to prepare them for their summer treatment. Any time from the beginning to the end of June place the plants out of doors either under a north wall or other shelter, where they will get no sun except in the morning and evening, and where they are well sheltered from the wind. The increase of heat mentioned above, to be given whilst the shoots are young and tender, ensures abundance of blossom buds.

WATERING: When the plants are potted and during the whole time they are subjected to a high temperature, syringe or sprinkle, with a rose watering pot, the leaves every morning or evening in fine weather and give a plentiful supply of water at the roots.

SHADING: From the middle of March to the end of September camellias are unable to endure a full exposure to the mid-day rays of the sun which invariably cause the leaves to blotch and become yellow. Always, therefore, throw a net or other slight shade over the glass in sunny weather from ten until three or four o'clock.

HOUSING: In the first week in October take the plants into the greenhouse or other cool place. As you wish them to come into bloom remove successively into temperature of 60° to 65° F. When the buds are near expanding keep the heat regular or the buds will fall without opening. When expanded remove to any light cool place and the flower will continue for a long time.

A YELLOW CAMELLIA

By G. E. LOXTON

"DID you ever see a camellia with yellow flowers?" was the question ROBERT FORTUNE put to his Chinese friend during his first three years of wandering in China, from 1843 to 1846.

"No, my never have seen he, my thinkie no have got", was the merchant's reply. But on his second journey to China, in 1848, which also lasted nearly three years, ROBERT FORTUNE found his yellow camellia.

He described the discovery in *A Journey to the Tea Countries of China*, published in 1852.

"I visited several other nursery gardens about ten or twelve miles to the eastward of Shanghai. One of them contained a very remarkable plant which I must not omit noticing. Those who have read 'My Wanderings in China' may remember a story I told of my endeavours to find a Yellow Camellia—how I offered five dollars for one—how a Chinaman found two instead of one—and how he got the money and I got taken in!"

Those who have read the story may not think him quite as gullible as he would like to have appeared, as he only agreed to pay half the money down and the other half when they flowered in Hong-Kong, where he took them. He adds in the first account of this story,

"It is almost needless to say that when they flowered there was nothing yellow about them but the stamens, for they were both semi-double worthless kinds."

He found it needless to add that he did not pay the other half of the money or if he paid originally half the price of one plant or two.

His account of the finding of his yellow camellia continues.

"In one of these nurseries, however, I found a yellow Camellia, and it was in bloom when I bought it. It is certainly a most curious plant, although not very handsome. The flowers belong to the anemone or Warratah class; the outer petals are of a French white, and the inner ones of a primrose yellow. It appears to be a very distinct species in foliage, and may probably turn out more hardy than any other of its race."

FIG. 33—*Camellia sasanqua* var. *anemoniflora* from *Curtis's Botanical Magazine*
(See p. 82)

A YELLOW CAMELLIA

FIG. 34—*Camellia* 'Fortune's Yellow' which has again reappeared in cultivation, as photographed on September 30, 1955 (See p. 82)

From the internal evidence in *A Journey to the Tea Countries of China* it seems probable that the date of FORTUNE's discovery was April 1850. April 1851 is the date given by BRETSCHNEIDER. Probably VERSCHAFFELT's *Nouvelle Iconographie des Camellias* errs by antedating its discovery. It is stated in the 1853 volume of *The New Iconography of the Camellias*, in which the earliest illustration of the camellia appears:

"We owe its introduction in Europe to the famous travelling botanist, FORTUNE, who discovered it in 1848, at horticulturists' near Shanghai and sent it to Messrs. Standish and Noble of Bagshot, who put it for sale two or three years after. One of the original large specimen plants which we purchased at the time bloomed splendidly for us this year, and we immediately had a figure made of the blossom."

At any rate the discovery does not seem to have become known to the horticultural public in England until the publication of FORTUNE's book in 1852, when *The Gardeners' Chronicle* for April 24, 1852, announced:

"At last the mystery of the Yellow Camellia is solved, and we finally make up our minds that DE CANDOLLE's theory of colours is valueless."

The rest of the description in *The New Iconography* is worth quoting:

"Its floral form has nothing unusual, and recalls that of the Warratah or anemone-shaped class. The yellow of the heart is noticed also to a certain extent in those of the white camellias, and this had led one to believe that there existed no doubt a yellow camellia; this belief was justified by the event. The exterior petals are large, sub-biserrate, and of a rather pure white; the central ones are quite numerous, very small, very compact, ruffled, distinctly yellow and resemble, as we have said, by their arrangement, those of an anemone or of certain herbaceous peonies. The leaves are narrow, quite small, thick, lanceolate, oblong, acuminate, very delicately notched. No doubt the horticulturists will know how to profit by it by crossing it with other varieties."

VERSCHAFFELT named it Camellia 'Jaune' ('de Fortune') and it was distributed on the continent as C. 'Jaune'. In English nursery catalogues it was described as C. 'Fortunei', yellow.

BERTHOLD SEEMAN wrote a note in *The Gardeners' Chronicle* of October 8, 1859:

"It was only the other day that I had an opportunity of examining at Kew the famous Yellow Camellia mentioned by FORTUNE . . .

It is merely a form of *C. sasanqua*. The yellow camellia has generally a sickly appearance. . . ."

Finally it attained full botanical respectability by being illustrated in *Curtis's Botanical Magazine*, Vol. 85, Tab. 5152, December 1, 1859, where it is named *C. sasanqua* var. *anemoniflora* (Fig. 33). This date coincided with the decline in interest in the genus *Camellia*, and VERSCHAFFELT's prophecy that horticulturists would know how to profit by it by crossing it with other varieties has not yet been fulfilled.

Such is a summary of the older literature of C. 'Fortune's Yellow' which I was stimulated to look up as a result of reading RALPH PEER's article, 'European Camellia Tour', in the *American Camellia Year Book* for 1952, in which he describes the rediscovery of the plant in the nursery of ALFREDO MOREIRA DA SILVA of Porto, and which he described again in *The Camellia and Rhododendron Year Book* (R.H.S.) 1954. Perhaps MR. PEER would never have visited this nursery if he had not read MR. COLLINGWOOD INGRAM's article describing some European camellia nurseries in *The American Camellia Year Book* for 1951. MR. RALPH PEER sent plants to Kew and to America, but, unfortunately, they all died. I approached MR. COLLINGWOOD INGRAM with the problem and within a few days two healthy plants had been flown to England and one of these he most generously gave me (Fig. 34).

Now that the plant is again in cultivation in England it is worth while looking at it from the point of view of the old literature which I have summarized. Is it a yellow camellia? No, it is not, as RALPH PEER has pointed out; it has yellow petaloids, but the petals are white. It is not a true yellow and *The Gardeners' Chronicle's* suggestion in 1852 that it made DE CANDOLLE's theory of colours valueless is invalid. It is no more a true yellow than *C. japonica* 'Frank Gibson'. Does it belong to the species *sasanqua*, as BERTHOLD SEEMAN wrote, "It is merely a form of *C. sasanqua.*"? And was the name *C. sasanqua* var. *anemoniflora* given it by *Curtis's Botanical Magazine* in 1859 valid? It was not valid according to modern classification, as "anemoniflora" had already been applied to *C. japonica anemoniflora*.

MR. SEALY, of Kew, kindly inspected the plant for me when it was in flower at the end of September this year (1955). He expressed the view that it is a cultivar of more than a hundred years ago and that it is not a *sasanqua*, but more probably derived from *C. oleifera*. There is at present no known means of determining

the parenthood of a cultivar in retrospect and so I suggest its proper name should be Camellia 'Fortune's Yellow'.

Finally, can it be used by horticulturists for crossing? Yes, I think it can. If it is a *C. oleifera*, it is probably a hexaploid and as the flower has a perfect pistil it might act as the mother parent of a cross either with *C. reticulata* or *C. sasanqua*. I hope to try this.

CAMELLIA RUSTICANA

By J. R. SEALY, F.L.S.

IN June 1945, PROF. MASAZI HONDA, of Tokyo University, travelled to Wayakamagi (Ewate Prefecture, Rikuchu Province) in the north-eastern part of the main Japanese island of Honshu (Hondo), to examine a *Camellia* which a MR. GENZO TOBA had found growing wild on Saru-Iwa (Monkey Rock, *fide* L. CHARETTE), and which appeared to be different from the other camellias native in Japan, namely *C. japonica* L. and *C. sasanqua* Thunb. According to HONDA, Saru-Iwa is a rocky hill about 500 metres high and is located about 20 km. west of Mizusawa (39° 7′ N., 141° 7′ E.). Small specimens of the 'Yuki-tsubaki' ('Snow camellia') were found at the foot of the hill, but the plants became larger and more numerous higher up, and from the middle to the summit they formed a prominent feature of the vegetation. All the plants had a slanting habit of growth, apparently due to exposure to wind and the weight of the snow under which they are buried in winter. The plants at higher levels were still in flower and HONDA noted that while the flowers were of much the same size and red colour as the 'Yabu-tsubaki', i.e. the well-known *C. japonica* L., they opened out flat, and the stamens, though firmly united at the base, were not joined above the attachment of the petals to form a fleshy tube as in *C. japonica*. In fact, in their wide-spread petals and stamens free for much of their length, the flowers were more reminiscent of those of *C. sasanqua*. As the 'Snow camellia' did not agree with either of these species, nor with any other known to him, HONDA described it (in *Biosphaera*, **1**, 97–100, c. fig. (1947)) as new, under the name *C. rusticana*, the type being the specimen he collected in 1945 at Wayakamagi which is deposited in the Tokyo University Herbarium. HONDA also proposed that its Japanese name should be 'Saruiwa-tsubaki' ('Monkey Rock camellia'). In his paper he drew attention to two earlier records of camellias from north-eastern Japan, which he suspected might be the same as his Saru-Iwa plant, namely:

(1) *C. japonica* var. *decumbens* Sugimoto (*Key to the Trees and Shrubs of Japan*, 252 (March 10, 1936)), found in the Owu district and characterized by its slanting habit of growth;

(2) *C. japonica* var. *Hajime-Tanakai* Yanagata (*Journ. Soc. Forestry, Japan*, **18**, 629 (August 1936)), found at Hayama, Ogumi, Aizu, and Datekoshi, and said to be characterized by the habit not being erect, by the floral morphology unlike that of any other camellia, and by the petioles being hairy.

In the spring of 1949 the new species was studied at Matsynoyama, Higashi Kubiki-gun, and at Kawa-guchi, in the Niigata Prefecture, by TAKASI TUYAMA, who published a full account of it in the *Journal of Japanese Botany*, **24**, 97–100, figs. 1–3 (1949). He gave a detailed description and distinguished the species from *C. japonica* by the leaves being narrower and more shining with translucent veins, by the petals spreading horizontally and being narrow and deeply notched, by the sepals being fewer with the lower keeled on the back and all spreading widely, by the stamens less highly united, the filaments spreading and of a deep cadmium-yellow. He gave a detailed account of the distribution, which he summed up as the mountains of Honshu at altitudes of 200–1,000 metres from Akita to the Fukui Prefecture, often in large formations under deciduous trees like *Fagus crenata* Bl. In some parts of the Niigata Prefecture, TUYAMA found *C. rusticana* in cultivation and he observed specimens with double flowers.

The close affinity of *C. rusticana* with *C. japonica* is evident from the descriptions, and in 1950 KITAMURA reduced it to the rank of a subspecies of *C. japonica* (*Acta Phytotax. & Geobot. Kyoto*, **14**, 61 (1950)).

In 1954 cuttings and seeds of *C. rusticana* were sent to the Missouri Botanical Garden from Japan at the instigation of MR. LEOPOLD A. CHARETTE, who at that time was serving with the United States Air Force in the Far East. During his sojourn in Japan MR. CHARETTE made a collection of herbarium specimens, and though he himself was able to collect only fruiting material of *C. rusticana*, he obtained a large suite of flowering specimens collected by a Japanese, SYUHO KIRINO. He also had translations made of the literature concerning the plant, to which he added comments on various points. All this material he has, with the friendly cooperation of DR. F. G. MEYER, of the Missouri Botanical Garden, most kindly made available to me for study at Kew, and from them the present account of *C. rusticana* has largely been prepared. Kew is also indebted to the Missouri Garden for young plants and seeds of the species.

In *C. rusticana* the floral perules (sepals and bracteoles) form an involucre which is persistent until after the corolla and stamens

have fallen, the petals are firmly adnate to the stamens, and the style is trifid; the species is, therefore, referable to section *Camellia*. Of the species belonging to that section it stands next to *C. japonica*, with which it agrees remarkably closely in vegetative characters (notably in the leaves having cork-warts on the lower surface), and in having the gynoecium quite glabrous. From *C. japonica* it differs as follows:

(1) the petioles are shorter, 5–8 mm. long (though HONDA found them up to 10 mm. long) against 8–15 mm., mostly 10 mm., in *C. japonica*, and often pubescent on the upper side.

(2) the involucre formed by the floral perules is only 1·5–1·7 cm., rarely 2 cm., high (against 2–3 cm. in *C. japonica*), with the innermost perules smaller, 1·2–1·5 cm. long and 1–1·6 cm. wide (against 2–2·5 cm. long and 1·6–2 cm. wide); moreover the perules are from practically glabrous (slightly pubescent only at the apex) in some flowers to densely appressed silky-pubescent with wide glabrous margins, whereas in *C. japonica* the perules are usually densely velutinous or silky-pubescent all over except for a very narrow membranous margin.

(3) the petals spread widely and are less highly adnate to the androecium, commonly for 4–6 mm. but sometimes for 7–10 mm. (against 8–17 mm. in *C. japonica*).

(4) the androecium is shorter, 1·7–2·3 cm. long (against 2·5–3 cm.) and the outer filaments are united for only 2–3 mm. above the point of attachment of the petals—in *C. japonica* the filaments are high united to form a fleshy tube.

(5) in some flowers the gynoecium is only 1·1–1·6 cm. long, but in others it is 2·3–2·8 cm. and so comparable with *C. japonica* where it is usually 2·5–3 cm.

Finally there is a difference in geographical distribution. *C. japonica* is recorded from Formosa northwards through the Liu Kiu Islands and Yakushima to the main islands of Japan (Kyushu, Shikoku, and Honshu), and to Quelpaert, Port Hamilton, south Korea, and Dagelet. In Honshu it is said to be confined to the southern part of the country, to about 36° N., and with one exception the few wild specimens of it that I have examined have been from localities south of 36° N. The exception is a specimen in the British Museum Herbarium collected by PÈRE URBAIN FAURIE (no. 6126) in woods at "Kominota prope Aomori", which is near the north coast of the island, 40° 55′ N., 140° 58′ E., some 12–13 miles north-east of Aomori. In contrast, *C. rusticana* is known only from Honshu, where it is widely distributed in the mountains of

the northern half of the island as far south as the Fukui area (36° N.) on the west coast and a little farther south inland—to the Gifu area (about 35° 25′ N.). Apart from the station near Aomori mentioned above, *C. japonica* has a more southerly distribution than *C. rusticana*, and according to TUYUMA the areas occupied by the two species do not overlap.

It seems strange that a plant so widely distributed as *C. rusticana* should not have been recognized until 1945, but this may be because none of the earlier material in herbaria represented this plant. It may be noted, however, that the plant figured and described in SIEBOLD & ZUCCARINI, *Flora Japonica*, **1**, 155, t. 82 (1841) as the wild form of *C. japonica*, would seem to be *C. rusticana*.

There can be no doubt that *C. rusticana* is closely related to *C. japonica*. The only question concerns the degree of kinship. Is *C. rusticana* sufficiently distinct to merit the rank of a species, or should it be treated as a variant of *C. japonica*? It is variable in shape and size of leaf, but the variation is just the same as in *C. japonica*. It also varies noticeably in the corolla. In some flowers the petals are longer than broad and when spread out they overlap only towards the base; such flowers, especially when on the small side, are uncommonly reminiscent of those of *C. sasanqua*, a species which is otherwise completely different. In other flowers, however, the petals are as broad as long, or broader, and overlap to a considerable extent when they spread horizontally; these flowers are much more like those of *C. japonica*. Some flowers in the material examined were semi-double and very much like comparable flowers of *C. japonica*; these were presumably from cultivated plants. Of the differences enumerated above, the most important are those of the perules and androecium. In two species of sect. *Camellia* (*C. saluenensis* Stapf and *C. pitardii* Coh. Stuart) there is considerable variation in size and degree of hairiness of the perules, and both these species include variants with perules similar to those of *C. rusticana*. There is no reason why a comparable range of variation should not be attributed to *C. japonica*. The difference in the androecium is more substantial, but attention must be drawn to the fact that TUYAMA illustrates one androecium 1·8 cm. high with the outer stamens united for 6 mm. at the base, which he describes as the "common form", and another androecium 2·5 cm. high with the outer stamens united for 1·5 cm. which is labelled "the less common form". The latter would do, of course, for *C. japonica*. There was nothing to match it in the material I examined, but in a few flowers the androecium was 2 cm. long with the outer

stamens united for 1 cm., or 2·3 cm. long and united for up to 1·2 cm.

It would seem therefore that the range of variation in floral characters in *C. rusticana* may be such that some plants may have flowers scarcely distinguishable from those of *C. japonica*, and this, taken in conjunction with the exceedingly close correlation in vegetative characters—the differences in the leaves adduced by TUYAMA do not hold for the material examined—suggests that it would be better to regard *C. rusticana* as a subspecies of *C. japonica* rather than as a distinct species. The description below is of the collectings cited.

C. japonica subsp. **rusticana** (Honda) KITAMURA in *Acta Phytotax. & Geobot. Kyoto*, **14**, 61 (1950).

Syn. *C. rusticana* Honda in *Biosphaera*, **1**, 97–100, c. fig. (1947); TUYAMA in *Journ. Jap. Bot.* **24**, 97–100, figs. 1–3 (1949).

A SHRUB 2–5 metres high, commonly more or less decumbent *fide* HONDA & TUYAMA; young branches light brown, glabrous; older branches ash-grey, often slender and somewhat zigzag. LEAVES shortly stalked, very variable in size and shape; BLADES elliptic to broadly elliptic or oblanceolate-elliptic or obovate-elliptic, apex long acute to shortly acuminate, base cuneate, mostly 6–10·3 cm. long and 2·7–4·4 cm. wide but a few leaves may be shorter (5·5 cm. long) or narrower (2·4–2·5 cm. wide), and sometimes larger 10·5–12 cm. long and 3·9–5·2 cm. wide (the size and proportions vary on different branches, examples being 6 cm. × 2·9 cm. to 7 cm. × 3·8 cm., 6·5 cm. × 3·6 cm. to 8 cm. × 4·5 cm., 7·5 cm. × 2·8 cm. to 10·3 cm. × 3·9 cm., 7·5 c.m. × 2·8 cm. to 9 cm. × 4 cm., and 9·5 cm. × 3·9 cm. to 10·5 cm. × 4·4 cm.), serrulate with teeth 1·5–4 mm. apart, thinly leathery, glabrous, upper surface dark green, lower surface light green with well-marked scattered brownish cork-warts; PETIOLES (4)–5–8 mm. long, channelled and pubescent above. FLOWERS perulate and appearing to be sessile, borne singly at the end of shoots and branches, very variable in size, from about 4·5 cm. to over 8 cm. across judging from dried specimens. PERULES 8–10, persistent to post-anthesis and forming an involucre 1·5–1·7 cm. occasionally 2 cm. high, from ovate-triangular blunt and 2 mm. long (outermost) to sub-orbicular about 11 mm. long and 13 mm. wide and then to oblong-orbicular 12–15 mm. long and 10–16 mm. wide (innermost), green, concave, thinly leathery with a narrow thin ciliolate margin, from practically glabrous (the upper pubescent only at the apex) in some flowers to densely white appressed silky-pubescent with broad glabrous margins. COROLLA mostly 4–5 cm. long, but sometimes smaller and occasionally scarcely 3 cm. long, red, of five to seven petals (sometimes with a "petal" transitional between perules and true petals in addition), rarely semi-double with up to seventeen petals; PETALS adnate to the

androecium for 4–10 mm. at the base, wide-spreading, broad obovate to broad oblong and varying from outer 1·9 cm. long and 1·8 cm. wide with free part of rest 1·9–3 cm. long and 1·8–2·5 cm. wide to outer 2·8 cm. long and 2–4 cm. wide with free part of rest 2·8–3·5 cm. long and 2·6–3·1 cm. wide, or petals oblate to orbicular or suborbicular or broadly obovate the outer 2·2 cm. long and 3 cm. wide and the free part of the rest 3·7–4·5 cm. long and 3·6–4 cm. wide, all more or less deeply notched. ANDROECIUM 1·7–2·3 cm. long, outer filaments adnate to petals for 4–10 mm. from the base and united among themselves for up to 2–3 mm. above the union with the petals; filaments and anthers yellow, pollen deep yellow. GYNOECIUM 1·1–1·6 cm. long in some flowers, 2·3–2·8 cm. long in others, quite glabrous; OVARY 2–3 mm. high; STYLE 9–14 mm. long and trifid for 3–7 mm., or 20–25 mm. long and trifid for 5–10 mm. CAPSULES subglobose, about 2·5 cm. in diameter, dehiscing loculicidally with three valves which spread widely, loculi one-seeded, walls woody and 2–3 mm. thick when dried, dark fuscous brown. SEEDS rounded on back, bluntly wedge-shaped in front, about 2·2 cm. long and 1·8 cm. wide, smooth greyish brown.

Honshu: Yatsuo village, 17 km. S.W. of Toyama city (137° 7′ E., 36° 55′ N.), *S. Kirino 162*; Muronaki village, 19 km. S.W. of Toyama city, *S. Kirino 163*; Otaka Mt., Hosori village, 20 km. N.E. of Toyama city, *L. A. Charette 1932*; Zaosan, Kitakanbaragun, Echigo Prov., *M. Togasi 200*.

RHODODENDRON AND CAMELLIA NOTES

The Naturalization of Rhododendron Species

TO the rhododendron enthusiast, the discovery of natural seedlings is always exciting, especially among the species. It appears that the young plants thus obtained are generally stronger than those raised under glass, and, of course, time and labour are saved.

Given the right conditions, certain rhododendrons will reproduce themselves very freely, almost in competition with *R. ponticum* and *R. luteum*.

Here at Windsor, the north edge of a mossy path or a north-facing bank, seems to make an ideal natural seed-bed, as, indeed, does an old and mossy tree-stump. Close observation has been kept on these natural seedlings from species, and in no case, as far as one can judge, has any hybridization taken place.

To give a few examples, *R. yunnanense* gave us hundreds of flowering plants within five years. Also from the Triflorum Series, *R. davidsonianum* and *R. pseudoyanthinum* seed freely, while the lovely *R. augustinii* seems to delight in old tree-stumps, the roots sinking deeply into the rotten wood.

A near relation, *R. rubiginosum*, from the Heliolepis Series, has the same generous reproductive characteristics, as have *R. fictolacteum* and *R. rex* from the Falconeri Series. Other youngsters found near parent plants include *R. euchaites*, *neriiflorum*, *sperabile*, *diaprepes*, *fortunei* and *sutchuenense*, while only a few months ago a drift of hundreds of young *R. albrechtii* was discovered on mossy banks near the parent plant.

The photograph taken at Inverewe some years ago aptly illustrates the point of these notes, for here *R. sinogrande* has seeded in the mossy bark of a dead tree in the shade of bamboos and ponticums (Fig. 27).

In 1950 on the Camellia and Magnolia Tour in Cornwall seed was collected of *R. sinogrande* at Heligan. This seed was divided into two lots, one of which was scattered on a north-facing mossy bank; the other was sown in pans and placed in a heated house to

Photo, J. E. Downward

FIG. 35—A fine plant of *Camellia japonica* 'alba grandiflora' growing in the Temperate House at Kew (See p. 66)

FIG. 36—A plant of *R.* 'Elsae', tip-grafted in late August, 1954, on *R. fortunei*, covered with polythene and planted in a shade house. The shoot appeared in November 1954; photographed April 1955

Photos, K. A. Rose

FIG. 37—A bed of rhododendrons, grafted in February 1955 and covered with polythene. In the background plants raised by the same process in 1954 (See p. 92)

germinate. The interesting thing is that today the plants sown outside are further along than those raised under glass. Some of the former are over two feet in height with leaves over 18 inches long.

In the plantation devoted to the STEVENSON collection of species two or three seed pods are left on each bush to sow themselves in the rich leaf-mould around them. This idea developed from the experience we had when the plants, on which many of the seed pods remained, were moved from Tower Court. The first season after planting, literally thousands of seedlings appeared and those which have flowered have all been true to type.

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Further Experience with Tip-Grafting of Rhododendrons

THE tip-grafting method of propagating rhododendrons which has already been described in the 1953 and 1954 *Year Books*, has since then been regularly used by us for propagating several hundred plants each year. These plants, of recently raised or newly introduced hybrids, are propagated for distribution to members of the N.Z. Rhododendron Association.

Thorough trials have now been made on two points involving the after-care of grafted plants. First of all we tried grafting as usual, but omitting the tying of damp sphagnum moss around the union before covering with the polythene plastic bag. The plants without the moss failed completely.

We next tried using a coating of plastic ("Wilt-Pruf") on the grafted scion, as a substitute for the polythene bag. This method had been tried in the U.S.A. and was claimed to be a satisfactory method, enabling grafted plants to be set out in the open immediately after grafting. Although we covered our scions very thoroughly with the plastic and subsequently set the grafted plants out in a shade house alongside others covered with polythene plastic bags, the plants from the "Wilt-Pruf" treatment all dried out and died, while the polythene-covered plants gave the normal percentage of successful grafts.

Our present practice is to graft on to seedling stocks which are mostly about eighteen months old from seed, and some 6 or 8 inches in height. Seedlings of *R. decorum* or *R. fortunei* are generally used, but seedlings of *R. griersonianum* hybrids are often used when the scions are of *R. griersonianum* hybrids. Grafting is done on the potting-shed bench, the moss and polythene fitted into place, and the grafted plants are then lined out in beds in an old gravel pit, covered with slats and hessian. From that stage onwards, care consists of weeding and watering the beds occasionally, and spraying against any pests. The plastic bags are removed about five months after grafting (Figs. 36, 37).

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Camellia × *williamsii* 'C. F. Coates'

The making of this hybrid was deliberate but it could not have come about save for the following happy circumstance.

When I was in charge of the Arboretum Nurseries in the Royal Botanic Gardens, Kew, I had much of interest to do; none the least was to give attention to a great variety of the earlier introductions of rare and uncommon seeds, including camellias. These included *C. saluenensis* from the West Chinese expeditions, so a few lines on its introduction ought to be of interest.

The original plant from which the hybrid was made was grown from seeds sent back by FORREST from his expedition in Western China in 1931. These seeds had been coated in wax, which no doubt helped their vitality. Four seedlings germinated and in time they varied a little in character, both in foliage and flower and degree of hairiness on the shoots and leaves. At first I had fears that *C. saluenensis* would not be truly hardy, so the very young plants were grown in pots and kept in a warm or cool pit, and we hoped by growing it there to fulfil as soon as possible our desire to see it flower for the first time. It not only flowered indoors, but it was also beneficial, for it enabled me to complete the operation of cross pollination under ideal conditions.

About this time *C. japonica* var. *quercifolia* (the oak-leaved camellia) was obtained for the gardens from the Slieve Donard

Nursery in 1932. This plant has an appealing simplicity with its lovely pink, well-modelled flowers and deep oak-like serrations terminating the leaves, from whence the varietal name.

It was by chance, then, that these two camellias were in the same house and each with a solitary flower out at the same time as if specially ordered. The pollen of *C. saluenensis* was placed on the stigma of *C. japonica* var. *quercifolia* with the happy result that the fruit developed and ripened. During this time watchful care was necessary and the seed was sown with due care on September 25, 1937, and it germinated and grew well. The resulting plant was in turn called *C.* × *williamsii* 'C. F. Coates'. It has lustrous deep green leaves, 3–6 inches long, with a peculiar fish-tail formation which terminates each leaf, the lobes of which vary considerably in shape. The flowers are deep rose in colour and the corolla lobes more oblique than customary with other single-flowered camellias. When the flowers are past their best, they do not die but wither on the plant and fall off strewing the ground with their coloured corollas.

It has so far proven hardy and bushes planted for several years in various outdoor positions have not suffered in spite of extreme cold. A bush 8 feet or so tall in my own garden, planted in a narrow border exposed full south, is quite happy but makes short growth yearly and now in August the small flower buds for next season can already be seen. This particular plant was in full flower on Easter Day, April 10, 1955, and arrested the attention of passers-by. When it is planted in partial shade in a well-prepared position in good loam, with added peat and leaf soil, strong growth is made.

Propagation is by the usual methods. The best material for cuttings is that taken in early July or later from young plants. Select growing shoots, preferably without flower buds, cutting them off close to the axil. Insert five or more in small pots in a mixture of 2 parts peat to 1 of sand and keep in a closed case until rooted. They should then be potted off into 3½ inch pots, using a more loamy mixture, and again in time to a larger sized pot when they soon show their free-flowering qualities.

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THE RHODODENDRON SHOW

May 3 and 4, 1955

By N. K. GOULD

IN spite of the very cold and wet spring weather, rhododendrons generally flowered well this year and exhibitors found plenty of interesting material to fill the competition classes. The trade exhibits were also bright and varied.

Messrs. Waterer, Sons & Crisp, Ltd. filled a large central site with some fine large specimens of hardy hybrids, surrounded by many different azaleas and small-flowered species. Some outstanding varieties were 'Betty Wormald' and a white 'Loderi', represented by standard trees, 'Earl of Athlone', 'Corry Koster', 'Britannia' and 'Mrs. Lindsay Smith'. The Silver-gilt Banksian Medal was awarded for this exhibit.

The same award was made to a striking display by the Knap Hill Nursery, Ltd., who used the well-known varieties 'Mrs. W. C. Slocock', 'Bagshot Ruby', 'Cynthia', and 'Blue Peter', surrounded by some excellent specimens of the Knap Hill azaleas 'Lapwing', 'Goldfinch', 'Cockatoo', and 'Firecrest'.

The Silver Flora Medal was awarded to the Sunningdale Nurseries for an attractively staged group, mainly in shades of purple and cream. *R. augustinii* filled the centre, surrounded by fine bushes of *R. bullatum*, *R. formosum* and 'Eldorado', and around the edges of the exhibit there were large specimen Kurumes together with *R. scintillans*, *R. russatum*, *R. impeditum*, and other small-flowered species.

Messrs. Reuthe included in their exhibit a number of specimens of the large-leaved species, such as *R. sinogrande*, *R. coryphaeum* and *R. macabeanum*. Well-flowered bushes of *R. tephropeplum*, *R. racemosum* and 'Emasculum' contrasted effectively with the heavier material.

From The Commissioners of Crown Lands came an extremely interesting exhibit of over twenty different forms of *R. fictolacteum*, showing considerable variation in leaf character combined with diversity of size, colour and spotting in the flowers. The MISSES GODMAN staged a group of similar character, featuring

over a dozen forms of *R. irroratum* from their garden at South Lodge.

Messrs. Charlton arranged some excellent large examples of hardy hybrids. 'Madame de Bruin', 'Cynthia', 'Pink Pearl', and 'Fastuosum plenum' were some of the popular varieties represented. Messrs. Hillier's exhibit consisted of some small bushes of Kurumes and vases of cut sprays of *R. thomsonii*, *R. ciliatum*, *R. schlippenbachii*, and other species.

Mr. Frederick Street had shapely young plants, well covered with flowers, of a selection of hardy hybrids.

Among the small exhibits on the dais were the curious double-flowered form of *R. johnstoneanum*, with blooms suggesting carnations, and the heavily scented, many stamened *R. polyandrum*, both from The Commissioners of Crown Lands.

The competitive section of the Show was divided into two sections; the first, for species only, comprising fifty-four classes, the second, of thirty-six classes, mainly for hybrids, but admitting species in some instances.

In Class 1, for eight species, the first prize was awarded to Lord Aberconway and the National Trust for a set of *fictolacteum*, *haematodes*, *vernicosum*, *hodgsonii*, *basilicum*, *calophytum*, *thomsonii* and *arboreum*. Mr. Edmund de Rothschild won the second prize with *fictolacteum*, *arboreum*, *campanulatum*, *irroratum*, *euchaites*, *sinogrande*, *falconeri*, and *hyperythrum*. The third went to The Commissioners of Crown Lands for an entry comprising *falconeri*, *arboreum*, *irroratum*, *rex*, *campanulatum*, *hodgsonii*, *thomsonii*, and *habrotrichum*. Class 2, for three species, attracted eight entries, of which the most meritorious was from Mr. E. M. King and consisted of a superb yellow *macabeanum*, *falconeri*, and *fictolacteum*. Wing-Cdr. F. L. Ingall's group of *sutchuenense*, *lacteum*, and *sphaeroblastum* was placed second, and following this came an entry of *arizelum*, *lacteum*, and *thomsonii*, from Sir Henry Price, Bt. The popular Class 3, for a single truss, was supported by seventeen competitors. A large truss of *rex*, from the Crown Lands, was placed first, winning the McLaren Challenge Cup, an equally fine *lacteum* from Sir Henry Price was second, and *falconeri* from Major A. E. Hardy was third.

Class 4 required one spray or branch of any species, and of the eight entries the large deep yellow *concatenans*, entered by Lord Aberconway, was judged to be the best. The second place was taken by *schlippenbachii* from the same exhibitor, and a blush-pink *rex* with superb foliage, from the Crown Lands, was third. Very

considerable variation was to be seen in the following class, for a truss of *arboreum*. The three prize-winning entries were a form called 'Apple Blossom' from Sir Giles Loder, Bt., a white one from Sir George Jessel, and a blood-red one from Mr. de Rothschild. There were ten other entries. Class 6, for a truss of any other species of the Series Arboreum, produced *floribundum*, from Mrs. R. M. Stevenson, *argyrophyllum* from Sir Giles Loder, and *niveum* from Lord Aberconway.

There were thirteen entries in Class 7, for a species of the Series Barbatum. Sir Henry Price won the first prize with *pseudochrysanthum*, and two similar examples of *crinigerum*, sent by Mrs. Stevenson and Mr. de Rothschild, were placed second and third. In the next class, for the Series Boothii, Lord Aberconway showed a glistening yellow *megeratum*, and Sir Giles Loder entered *tephropeplum* and a yellow, pink-flushed *auritum*. The first prize in Class 9, for a truss of the Series Campanulatum, was won by Mr. E. de Rothschild with a clear lavender form of the type species. Lord Aberconway's exhibits of *lanatum* and *campanulatum* filled the second and third places, respectively. There were eight other exhibits.

Class 10, for a spray of a species of the Series Cinnabarinum, contained some very interesting material among its nine entries. Attractive forms of *concatenans* were shown in the first and second places by Lord Aberconway and the Crown Lands, and the most unusual Ludlow and Sherriff purple form of *cinnabarinum* was exhibited by Capt. Collingwood Ingram, and placed third.

In Class 11, *falconeri* was shown very nicely by six competitors, Major Hardy won first prize, Sir Giles Loder the second. Mr. M. Haworth-Booth's third-prize entry was of a pretty pale primrose, unspotted form with extra good foliage. All the nine entries of *fictolacteum* in the following class were of high quality, and the prizes went to Mr. King, Lord Aberconway, and Wing-Cdr. Ingall, in that order. Class 13 was for a truss of other species of the Series Falconeri, and here Sir Henry Price's imposing specimen of *arizelum* was selected for the first place, followed by *rex* from the Crown Lands and *hodgsonii* from Lord Aberconway.

It was surprising to find only two entries in Class 14, for a truss of *griffithianum*, and the only prize awarded went to Mr. E. de Rothschild. The next class, for other species of the Series Fortunei, attracted a dozen entries. The first prize was won by Lord Aberconway with a striking truss of *calophytum*. The Crown Lands entered a neat pink *vernicosum* (*f. euanthum*, Forrest 5881)

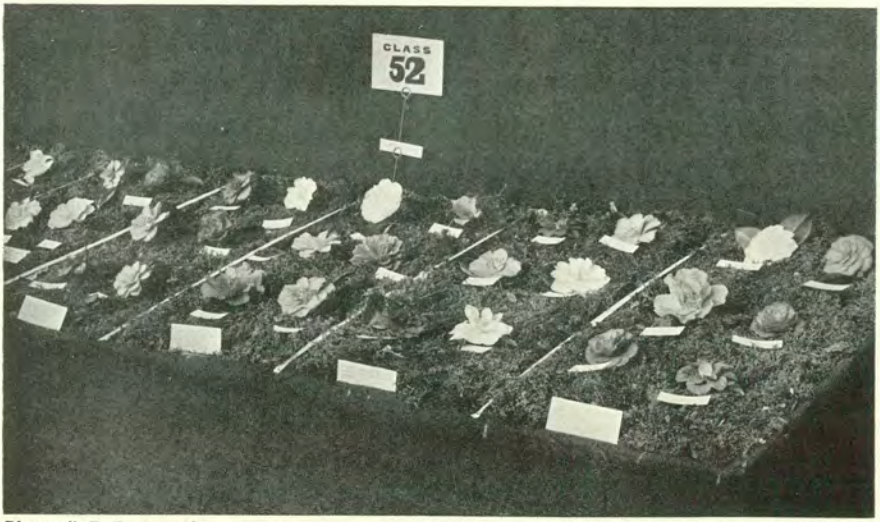
Photo, Richards

FIG. 38—A section of the Seventh Annual Tacoma Rhododendron Show, Inc.
(See p. 106)

Photo, Forde

FIG. 39—The main concourse at the 1955 Seattle Rhododendron Show
(See p. 103)

FIG. 40—SIR RALPH CLARKE'S exhibit of *Camellia saluenensis* which won first place in Class 83 of the Camellia Competition (See p. 115)



Photos, J. E. Downward

FIG. 41—Class 52 in the Camellia Competition with Messrs. John Waterer Sons & Crisp's first-prize exhibit on the right (See p. 114)

which won second prize, and the third place was occupied by *sutchuenense* entered by WING-CDR. INGALL.

The species *fulvum* was entered by three exhibitors in Class 16, for the Series Fulvum: MRS. L. F. DAVID, MR. E. DE ROTHSCHILD, and LORD DIGBY. The Series Grande was represented in Class 17 by two excellent heads of *macabeanum* which won the first prize for MR. KING and the third for LORD ABERCONWAY, and a very large-leaved *sinogrande* from MR. DE ROTHSCHILD, which was given second place.

In Class 18, for a truss of any species of the Series Irroratum, there were eleven entries. The MISSES GODMAN secured the first place with a pure white form of the type species. Following this were a heavily red-spotted form from MR. E. DE ROTHSCHILD and a slightly different one entered by SIR GILES LODER. The next class asked for a species of the Series Lacteum. SIR HENRY PRICE staged a fine deep yellow *lacteum* which won the first prize, WING-CDR. INGALL put in another nice example of the same species for second place, and MRS. GORDON took the third prize with *wightii*. There were eight other entries.

In Class 20, for a truss of any member of the Sub-series Megacalyx, CAPT. ADAMS-ACTON won first prize with the fragrant white *taggianum*, and the other prizes were awarded to the Crown Lands and LORD ABERCONWAY for specimens of the lovely *dalhousiae*. There were only two entries to represent the other two Sub-series Maddenii in Class 21. These were a truss of the pleasantly scented *polyandrum* from the Crown Lands, and *johnstoneanum* from LORD ABERCONWAY.

In Class 22, for a truss of any species of the Sub-series Haematodes, there were twelve entries. Fine specimens of *haematodes* and *catacosmum* brought by LORD ABERCONWAY were given the first two places, and MRS. STEVENSON'S *beanianum* filled the third. The next class, for the Sub-series Neriiflorum, was even more popular. MR. E. DE ROTHSCHILD and LORD DIGBY entered *euchaites* and won the first and second prizes, the third going to SIR HENRY PRICE for *neriiflorum*. Class 24, requiring a truss or spray of *aperantum*, contained only two exhibits, from LORD ABERCONWAY and WING-CDR. INGALL. In the next class, species of the Sub-series Sanguineum other than *aperantum* were specified. Here, LORD DIGBY'S entries of *sanguineum* and *haemaleum* found the first and second places and *rhodanthum*, from the Crown Lands, the third.

A truss of a species of the Series Taliense was required in Class 26, and the first prize was given to MR. E. DE ROTHSCHILD

for a deep blood-red *gymnocarpum*. The second was won by LORD ABERCONWAY with *wasonii* and LORD DIGBY qualified for the third with *rhododactylum*.

The next five classes were devoted to the Series Thomsonii. Class 27 was reserved for the species *campylocarpum*, allowing a spray not over 2 feet in height to be staged. The three prizes were awarded to SIR GILES LODER, SIR HENRY PRICE, and MR. E. DE ROTHSCHILD. Other species of the same Sub-series were catered for in the following class, and here only *caloxanthum* was represented. The first two places were taken by LORD ABERCONWAY's entries, the third by one from SIR HENRY PRICE. The two entries in Class 29, for a species belonging to the Sub-series Martinianum or Selense, were a light rose-pink *rhaibocarpum* shown by LORD ABERCONWAY and *erythrocalyx* subsp. *docimum* (FORREST 21917) from MRS. STEVENSON. The only species represented in the next class, for the Sub-series Souliei, was *williamsianum*, beautifully exhibited in its finest forms by LORD ABERCONWAY, MR. E. DE ROTHSCHILD, and the Crown Lands. Similarly, *thomsonii* appeared in the winning places in Class 31, for the Sub-series Thomsonii. The prize-winners here were SIR GILES LODER, SIR HENRY PRICE and LORD DIGBY.

Class 32, for a spray of *schlippenbachii*, was, as usual, one of the most attractive. Although there were but four entries, these were of the best large and clear-coloured forms of this lovely species. The prize-winners were LORD ABERCONWAY, MR. E. DE ROTHSCHILD, and SIR GEORGE JESSEL. In the next class, for any other deciduous species of the Series Azalea, there were fourteen entries; the three successful competitors, MR. KING, LORD ABERCONWAY and the Crown Lands, all choosing *albrechtii*. The first prize for a spray of each of three deciduous azaleas was awarded to LORD ABERCONWAY for *albrechtii*, *reticulatum* and *schlippenbachii*. The second was won by MR. E. DE ROTHSCHILD with *albrechtii*, *quinquefolium* and *reticulatum*, and the third went to the Crown Lands for a similar selection.

In Class 35, for a spray of a species of the Series Anthopogon, MRS. STEVENSON showed a pretty, pale rose *primulaeflorum* which was judged to be the best entry, and also *cephalanthum* var. *crebreflorum* which was given third place. The other prize-winning entry was *trichostomum* var. *ledoides*, shown by LORD ABERCONWAY. From Bodnant came the only entry in the following class, a deep purplish-rose form of *campylogynum*.

It was somewhat surprising that in Class 37, for a spray of any

species of the Series Edgeworthii there were only two entries, and the only prize awarded went to the Crown Lands for a specimen of *bullatum*. The class for the Series Glaucum, however, attracted fifteen entries, the finest being LORD ABERCONWAY'S large, old-rose coloured, mountain form of *glaucophyllum*. The other prizes were awarded to the Crown Lands for *charitopes* and to Messrs. Slocock for *glaucophyllum*. Of seven entries in the class for the Series Heliolepis, *desquamatum* (FORREST 17483) from the Crown Lands was placed first, and two dissimilar forms of *rubiginosum*, from LORD ABERCONWAY and MR. ARMYTAGE-MOORE, came second and third. Class 40, for a spray of the Series Lapponicum, was very well filled, with eighteen exhibits. SIR HENRY PRICE'S neat example of *russatum* covered with deep violet blossom, won the first prize, Messrs. Slocock's pale china-blue *hippophaeoides* the second, and LORD ABERCONWAY'S rosy-purple *ravum* the third. Two examples of the Series Lepidotum were shown in the next class, and the only prize went to the Crown Lands for a rather small branchlet of *baileyi*. Sprays of *repens* won prizes for MRS. STEVENSON and LORD ABERCONWAY in the next class, for the Sub-series Forrestii.

In Class 43, for a spray of any species of the Series Saluenense, an example of the type species from the Crown Lands was the judges' first selection from six entries; LORD ABERCONWAY'S *calostrotum* and MRS. STEVENSON'S *chameunum* being given the other places. The Crown Lands exhibit of *spiciferum* was also placed first in Class 44, for the Series Scabrifolium, and followed by a spray of the same species from SIR GILES LODER and one of *scabrifolium* from MRS. STEVENSON. Only *racemosum* represented the Series Virgatum in Class 45, the winning entries being supplied by SIR HENRY PRICE, LORD DIGBY, and SIR GILES LODER. SIR HENRY PRICE also won the first prize in the following class for the Series Trichocladum, with a spray of mustard-yellow *mekongense*, and the only other prize, for a primrose-hued *trichocladum*, went to the Crown Lands. Six entries appeared in the *augustinii* class, and of those the ones from the Crown Lands, Exbury and Bodnant were given the places of honour. The first of these was a particularly handsome dark violet-blue form. Three further classes were reserved for species of the Series Triflorum. The best of the entries in the class for Sub-series Polylepis were the glowing violet *pseudo-yanthinum*, shown by MRS. STEVENSON and the Crown Lands, and *polylepis*, also from Windsor. To represent the Sub-series Triflorum SIR GILES LODER entered the dwarf form of *keiskii*, and LORD ABERCONWAY showed *ambiguum*. In the Sub-series Yunnanense,

davidsonianum filled the first two prize-winning places, being shown in excellent condition by LORD ABERCONWAY and SIR GILES LODER. LORD ABERCONWAY's *caeruleum album* was placed third.

In Class 53, any species not catered for in the earlier classes was admissible, but strangely enough there were only four entries here, and these were not of outstanding interest. From the Crown Lands came the true *minus* and *dauricum*, and LORD ABERCONWAY showed *adenopodum*.

The Class 61, for one truss of each of eight hybrids, received four entries, each of very high quality. The first prize was awarded to MR. E. DE ROTHSCHILD, for a group of 'Jason', 'Mariloo', 'Queen of Hearts', 'Fortune', 'Yvonne', 'Naomi', 'Gaul', and 'Eurydice', all superb hybrids raised in the garden from which they were exhibited. The second prize was won for the Crown Lands with 'Rose', 'J. G. Millais', 'Rose Perfection', 'Loderi', 'Mariloo', 'Queen Wilhelmina', 'Penjerrick', and an unnamed hybrid of *orbiculare*. LORD ABERCONWAY won the third award for 'Cornish Cross', 'Siren', 'Cardinal', 'Matador', 'Rosa Bonheur', 'Red Queen', 'Greeting', and 'Mikado'.

There were no fewer than thirteen entries in Class 62, for three hybrids, one truss of each. The judges selected the Crown Lands' group of 'Moonglow', 'Gretia', and an unnamed *campanulatum* hybrid for the first place. The MISSES GODMAN won second prize for 'Elsae', 'Marion', and 'White Glory'. A set of 'Gaul', 'Marcia', and 'Matador' from MR. L. S. FORTESCUE was placed third, and a further prize was awarded to MRS. STEVENSON for 'Penjerrick', 'Shepherd's Delight', and the Logan variety of 'Damaris'. For one spray of each of three hybrids the Crown Lands' entry led again, being composed of 'Bodartianum', 'Rose', and an unnamed 'Loderi' hybrid. The second prize went to MR. E. DE ROTHSCHILD for 'Cornish Cross', 'Carita', and 'Gaul', and the third to LORD ABERCONWAY for 'Penjerrick', 'Greeting', and 'Cornish Cross'.

In Class 64, for a single truss of one hybrid, there was keen competition, and from sixteen entries SIR GILES LODER's 'White Glory' was chosen for the first prize of the Loder Challenge Cup. The second prize went to the Crown Lands for 'Rose', and the third to LORD DIGBY for 'Lady Digby'.

The Crosfield Challenge Cup is annually awarded for an exhibit of six hybrids raised by, or in the garden of, the exhibitor and shown in the spray. Here again SIR GILES LODER was the winner, with a collection of 'Sunkist', 'Glory of Leonardslee', 'Pink

Glory', 'H. Whitner', 'White Glory', and 'Queen Wilhelmina' × *thomsonii*. Mr. E. de Rothschild's exhibit, placed second, contained 'Avalanche', 'Mariloo', 'Kiev', 'Fortune', 'Brinco', and 'Queen of Hearts'. Lord Aberconway's exhibit, in the third place, was made up of 'Coresia', 'Greeting', 'Matador', 'Rosa Bonheur', 'Siren', and 'Welkin'. There were four other entries in this class. In the following class, for a spray of each of three home-raised hybrids, the first prize went to Mr. E. de Rothschild for 'Eleanore', 'Naomi', and 'Carita'. Sir Giles Loder won the second with 'White Glory', 'Mai', and 'Dignity', and Lord Aberconway the third with 'Hiraethlyn', 'Matador', and 'Edusa'.

Class 67 called for a truss of each of six hardy hybrids, classified A or B in the Handbook. Messrs. Waterer staged the first prize entry with 'Betty Wormald', 'Purple Splendour', 'Diane', 'Corry Koster', 'David', and 'Peggy'. Mr. Frederick Street showed 'Bagshot Ruby', 'Sappho', 'Mrs. C. B. van Nes', 'Mevr. P. A. Colijn', 'Zuiderzee', and 'The Hon. J. M. Montague'. Mr. Armytage Moore entered a set of 'Handsworth White', 'J. G. Millais', 'Bodartianum', 'Ascot Brilliant', 'Unique', and 'Horsham'. Mr. Haworth-Booth showed 'Sunfast', 'Bodartianum', 'Unknown Warrior', 'Unique', 'Baron Leuterbach', and 'Belisha Beacon'.

Classes 69 to 90 inclusive were for single trusses of hybrids, and as usual in this section of the competition the entries were numerous and varied, but it is not possible to describe them in detail.

In Class 92, for one plant of a dwarf rhododendron suitable for the rock garden, the first place was allotted to Mr. E. de Rothschild's 'Carmen', represented by a compact bush 4 feet across, covered with darkly glowing bells. From the Crown Lands came *microleucum*, an attractive white-flowered species of the Series Lapponicum, and also a plant, 2 feet across, of the purplish-pink *imperator*. In the next class, for a plant of an evergreen rhododendron in flower, the first prize was awarded to the Crown Lands for a splendid example of *tephropeplum* 3 feet high and nearly 5 feet across, full of flower. Messrs. Waterer won the second prize with a fine plant of the large, pure white 'Mrs. A. T. de la Mare', and the third went to Messrs. Slocock for a compact specimen of 'Mrs. W. C. Slocock', with large ivory, pink-flushed flowers. In the next class, for a specimen plant of a deciduous rhododendron in flower, the Crown Lands were the only exhibitors, with a very lovely bush of *quinquefolium*, 4 feet tall and 5 feet across, with

dainty white flowers hanging from every branchlet, and an even larger bush of *reticulatum*.

Class 95, for two leaves of each of six rhododendrons, one showing the front and the other the back of the leaf, was less well supported than in recent years, and there were only three entries. The Crown Lands' entry consisted of *mallotum*, *basilicum*, *fulvum*, *sinogrande*, 'Polar Bear', and *falconeri*, and this won the first prize. The second was awarded to MR. DE ROTHSCHILD for a set of *calophytum*, *sinogrande*, *falconeri*, *haematodes*, *fictolacteum*, and *insigne*. LORD DIGBY showed *mallotum*, *sinogrande*, *exasperatum*, *serpyllifolium*, *coelicum*, and *macabeanum*.

The final class required a bowl or vase of cut rhododendron flowers grown in the open, with no foliage other than their own. There were seven entries. The first prize was awarded to MRS. L. DE ROTHSCHILD for an arrangement of spreading branches of *spinulosum*, *davidsonianum*, *wardii*, and several small-flowered species of restrained colouring, the whole constituting a very pleasing display. The second-prize arrangement, by MR. E. DE ROTHSCHILD, was more compact. Here again the small-flowered species predominated, and included some Kurume azaleas, species of the Series Lapponicum, *racemosum*, and a touch of intense colour supplied by flowers of *didymum*. MRS. E. DE ROTHSCHILD took the third prize with a tall white vase in which were arranged *schlippenbachii*, *reticulatum*, and *oreotrephes* together with some pink Kurume azaleas. The effect was light and harmonious.

THE 1955 RHODODENDRON SHOW SEATTLE, WASHINGTON, U.S.A.

By HARRY R. MADISON

THIS, the sixth Annual Rhododendron Show, staged by the Seattle Rhododendron Society and co-sponsored by the University of Washington Arboretum Foundation, was the most popular and the best show to date. Commencing with a modest little show held in a tent, the event has grown larger and better each year until now it has become an attraction to compete with the best rhododendron exhibitions anywhere (Fig. 39).

This year the show was held in the lower concourse of the University of Washington Stadium, and covered an area of about 20,000 square feet with wooded and landscaped flower wonderland. Although the show dates, May 12 to 15, inclusive, were right for a normal season, this year was, perhaps, the most retarded spring on record. Therefore, it was indeed surprising to find such an abundance of bloom on display, and it was a tribute to the skill of the competing nurserymen and non-professional growers. Competition was keen and of the highest order.

Top honours went to the Prentice Nursery and Decorating Company, which for the second consecutive year won the Frederick and Nelson Trophy, a perpetual cup for the best landscape display. MR. CLARENCE PRENTICE also had the noteworthy distinction of winning the Seattle Trust and Savings Bank Trophy, also a perpetual cup, for the best plant in the show, a beautiful 7-foot-high 'Bow Bells'.

ANDRÉ OSTBO's King of Shrubs Nursery received the Seattle Rhododendron Society Annual Achievement Award Trophy for the best hybrid seedling plant, described under Class 15.

Winners of the various classes were as follows:

SECTION A DISPLAYS

Class 1. Group of rhododendrons, azaleas and suitable associated plants on an area of not less than 350 square feet. The best landscape display in the show was selected from this class and as aforementioned the winner was the Prentice Nursery and Decorating

Company. Malmos Nursery was runner-up, ANHALT'S Sure-Gro Nurseries won third place, and VAN'S Northgate Nursery received honourable mention.

Class 2. Group of rhododendrons, azaleas and suitable associated plants on an area from 200 to 350 square feet. First place went to Rainier Mountain Alpine Gardens, second place to King of Shrubs Nursery, third to L. N. Roberson Company, and honourable mention to Lem Nursery.

Class 3. Group of rhododendrons, azaleas and suitable associated plants on an area of less than 200 square feet. E. R. JOHNSON was awarded first place, DONALD MCCLURE second, Hopkins Nursery third, and honourable mention was given to WRIGHT'S Nursery and Landscape Service.

SECTION B SPECIMEN PLANTS

Class 5. Group of three specimen hybrid or species rhododendron or azalea plants all of one variety or a mixture of varieties. First place was won by MRS. CHARLES SULLY.

Class 6. One specimen plant of any rhododendron species exceeding 3 feet in height. DONALD GRAHAM, exhibiting a *R. campylocarpun* var. *elatum* 10 feet tall, was awarded first place. Second place went to MRS. GERTRUDE SULLY for her *R. augustinii*, 7 feet tall. Third place went to MRS. JOHN BLACKFORD for a *glaucophyllum* 3 feet tall.

Class 7. One specimen plant of any rhododendron species less than 3 feet in height. *R. deleiense* (*tephropeplum*) shown by MRS. JOHN BLACKFORD was awarded first place. There were no other entries.

Class 8. No entries.

Class 9. One specimen plant of any rhododendron hybrid, excluding R. 'Loderi', exceeding 3 feet in height. First place was awarded to MRS. GERTRUDE SULLY for 'Earl of Athlone', second to DR. JOHN SHIACH for 'Unique' and third to DONALD GRAHAM for 'Diane'.

Class 10. One specimen plant of any rhododendron hybrid, excluding R. 'Loderi', less than 3 feet in height. MRS. WENDELL TROSPER was awarded first place for her 'Arthur J. Ivens', MRS. GERTRUDE SULLY second place for 'May Day', and DONALD GRAHAM third for 'Rosy Bell'.

Class 15. One flowering plant of any hybrid seedling rhododendron not previously exhibited, this plant to be the result of a

cross made in the state of Washington. First place and the Seattle Rhododendron Society Annual Achievement Award were given to Mr. André Ostbo for his seedling 'Romany Chal' × 'Britannia'. The flower of this plant has a deep red colour, similar to the colour of 'Earl of Athlone', with a silky sheen. The 4-inch diameter blooms had faint black spots on the upper lobe of the corolla. The foliage was a good dark green. Second place was given to another seedling of the same cross 'Romany Chal' × 'Britannia', also exhibited by André Ostbo. Third place was won by Clarence Prentice for a cross between the hybrid ('Fabia' × *elliottii*) × *williamsianum*.

SECTION C CUT BLOOMS

The best cut truss was 'Unknown Warrior' exhibited by Mrs. Don Palmer. It was a large truss, well shaped and supported by a perfect rosette of leaves.

In the seedling class for "One truss of any new hybrid rhododendron raised from seed by the exhibitor", first place was awarded to Mr. Don McClure for the cross (*souliei* × 'Loderi') × (*lacteum* × 'Mary Swathling'). The blossoms were pale pink, 4 inches in diameter and fragrant. Second place went to the cross of 'Earl of Athlone' × 'King George' exhibited by Mrs. Picard, which had a dark pink tubular flower 3 inches in diameter.

The cut truss section was an improvement over that of last year's show, but due to the late spring was not so good as it might have been.

An interesting and well executed section of non-competitive Japanese flower arrangement exhibitions was represented by about thirty entries.

One of the most unique and educational exhibits of the show was a species display presented by the University of Washington Arboretum. It occupied an 80-foot frontage and contained four distinct groups of rhododendrons, all from the southern slopes of the Himalaya Mountains and those of Central and Eastern China. The rhododendrons were arranged in groups according to their climatic requirements. The hardiest were Groups Three and Four while the more tender species were in Group One. All plants were nicely displayed in a natural manner and were well labelled.

Credit for the success of the show should be given to President Edward B. Dunn of the Seattle Rhododendron Society, and to General Show Chairman Donald K. McClure, as well as to many assistants who gave so freely of their time and efforts.

TACOMA (WASH.) RHODODENDRON SHOW, INC.

By LEONARD F. FRISBIE

THE Tacoma Rhododendron Society, Inc., held its 7th Annual Show on May 14–15 at City Motors Show Rooms in South Tacoma. This was an unusually good show which attracted a great amount of attention from the general public (Fig. 38).

ELMER JONAS, of Maplewood Greenhouse, Puyallup, staged a very attractively landscaped display with plants of 'Susan', 'Mrs. G. W. Leak', 'Lady Bligh' and other hybrids along with numerous azaleas. The colours were pink, white, mauve to blue and light red. This display was awarded first place for commercial landscaping, first for five hybrids, first for a single hybrid with a beautiful plant of 'Mrs. G. W. Leak'; second place for a single hybrid with 'Mrs. E. C. Stirling' and the sweepstakes for the best plant in a commercial display with 'Lady Bligh'. Since the awards for this display, including cups, medals and ribbons totalled highest in value, it was also awarded the Banksian Medal from The Royal Horticultural Society in London.

MR. and MRS. W. E. CRABTREE, of Puyallup, brought plants of *R. yunnanense*, *R. chasmanthum*, *R. occidentale* and *R. mucronatum amethystinum* as well as large plants of the following hybrids: 'Loder's White', 'Mrs. C. B. Van Nes', 'Unique', 'Letty Edwards' and 'Earl of Athlone'. This display was awarded third place for a single hybrid with 'Earl of Athlone', and second place for commercial landscaping, and second place in the species class with *R. chasmanthum*.

Sears Farm Store landscaped their display beautifully and received second place award in this class. Dwarf conifers and azaleas 'Hi No Degiri', 'Serwood Red', 'Fedora' and 'Anchorite' were used in the foreground effectively, while plants of 'Betty Wormald' and 'Alice' were used for background.

Woodland Park Floral Co. used massed azaleas in the foreground with 'Goldsworth Red' predominating. Red, white and pink astilbes made a centre-piece for the azaleas, while low plants of pink and white rhododendron hybrids formed a massed border

in the rear. This display was awarded third place for commercial landscaping.

HOWARD HARMON, of the Metropolitan Park Board of Tacoma, employed his artistry with flowers to form a gigantic centre-piece for the show, using rhododendron hybrids and azaleas with geraniums, calceolarias, cinerarias and coleus.

DR. CHARLES BERRY had a non-commercial display with some huge plants of 'Mrs. G. W. Leak', 'Loderi Pink Diamond', 'Souvenir of W. C. Slocock', 'Mrs. Ashley' and 'Unique'. Some of the plants were 12 feet high and as much across. Awards for this display were first, second and third for hybrids in an amateur display.

MISS GERTRUDE CUNNINGHAM brought a large and very beautiful plant of 'Earl of Athlone' and a plant of 'Maxwelli', a hardy red azalea.

LEONARD F. FRISBIE staged a display with a mixture of hybrids and species, including a number of American natives. The display was competitive only in the species class and was awarded first place for a large plant of *R. davidsonianum*, which had very pale pink coloured flowers. *R. carolinianum album* was placed third. In addition there were plants of *R. nudiflorum*, *R. wightii*, *R. roseum*, *R. neriiflorum*, *R. vaseyi album*, *R. albrechtii* and *R. carolinianum*. The hybrids included: 'Beauty of Littleworth', a large plant of 'Loderi King George', 'Letty Edwards', 'Betty Wormald' and a natural hybrid between *R. canescens* and *R. atlanticum*, which grows quite tall and has small pure white flowers in profusion. In former publications this plant has been called *R. atlanticum album* erroneously. Microscopic examination clearly shows intermediacy between the two parents listed above.

FIRST COWLITZ COUNTY RHODODENDRON SHOW

The newly organized Washington Rhododendron Society, Inc., of which the Tacoma Rhododendron Society, Inc., is the Pierce County Unit, sponsored a show in the lobby of the Hotel Monticello in Longview, Washington, for its Cowlitz County Unit on May 21–22. With the exception of a very fine mauve-coloured form of *R. augustinii*, this was a show of hybrids. Sloan's Nursery, of Castle Rock, won first place with the best commercial display, and first, second and third for single hybrids in a commercial display. An enormous plant of R. 'Butterfly' won the sweepstakes award as the best plant in the show.

FLOYD HADDERLY, also of Castle Rock, won first place for a

hybrid in the amateur class with a nice plant of 'Loder's White'. He also won third place with a plant of 'Unique'. MRS. MILTON BETTESWORTH, of Longview, won second place in this class with a wide-spreading plant of 'Maxwelli'.

DR. A. E. GRAUER, of Longview, won first place for a plant in the azalea series with 'Carmen', and second place with 'Snow'. The Riverside Nursery won third place with 'Corsage', a Gable hybrid.

Shulz Hobby Shop Garden won second place for commercial displays with an exhibit made up of small plants of rhododendron hybrids and azaleas. Riverside Nursery won third place with a nice plant of 'R. J. H. Van Nes', numerous azaleas and rhododendron hybrids.

This was a very successful show for a first county effort, and the State Society will develop local shows in each county in western Washington.

THE CAMELLIA COMPETITION

19th and 20th April

By LANNING ROPER

THIS year the Camellia Competition was somewhat reduced in size because of the excessively late season and the generally bad weather which had been unfavourable to camellias. Entries dropped from 312 in 1954 to 207, with only twelve exhibitors against eighteen the previous year, but in spite of this the competition was an interesting one and there were some excellent blooms. Generally speaking, they were smaller in size than those of the last few years and many of the individual flowers lacked substance and did not stand up well on the second day of the show. The remarkable thing was that so many exhibitors managed to bring on blooms in time for the show as in some localities the flowering season had scarcely commenced.

Messrs. John Waterer, Sons & Crisp, Ltd., were in the lead with eighteen first prizes, followed by The Commissioners of Crown Lands, Windsor, SIR GILES LODER, MR. C. ARMYTAGE MOORE and MR. GEORGE BARRANGER, all of whom had about the same number of first-prize entries.

The first nine classes were devoted to single-flowered varieties of *Camellia japonica*. In Class 1, for a single bloom *C. japonica* 'alba simplex' there were four entries. MR. C. ARMYTAGE MOORE took first place with a symmetrical flower with eight smooth white petals around a high boss of golden stamens. Messrs. John Waterer, Sons & Crisp, Ltd. were second with a slightly smaller, less regular bloom and SIR GILES LODER's entry in third place was distinctly cup-shaped. There were only three entries in Class 2, for a single bloom of 'Devoniensis', first and second places as above with The Commissioners of Crown Lands taking third. In Classes 3 and 4 there were no entries. Class 5, for any single-flowered red not already specified, had four entries, MR. REGINALD TRY's entries filling first and third places and The Commissioners of Crown Lands, second.

Class 6, for any single-flowered variety of *Camellia japonica* not previously specified, attracted only three entries. First prize went

to Messrs. John Waterer, Sons & Crisp, Ltd., for a fine bloom of 'White Swan'. The Commissioners of Crown Lands were second with a bloom from a plant originally received from WADA's nursery in Japan, outstanding because of the very broad lustrous dark green leaves and the orange-yellow centre of the flower. In Class 7, for a single bloom of any single-flowered, self-coloured variety other than red or white, first place was filled by a very large bloom of the striking candy-pink 'Hatsu-Sakura' entered by The Commissioners of Crown Lands, second prize also going to them for a strong pink symmetrical bloom of an unnamed variety and third to SIR GILES LODER for a single apple-blossom pink of great delicacy.

The Commissioners of Crown Lands had no competition in Class 8, for a single-flowered, blotched or striped variety, but their lovely 'Sieboldii', pink striped with darker splashes of red, well deserved its first place. In Class 9, for any three single-flowered varieties of *C. japonica*, there were four entries, but only first and second prizes were given, first going to Windsor for 'Hatsu-Sakura' and two unnamed flowers from WADA, one white, the other deep pink with darker reticulation. Second place was awarded to Messrs. John Waterer, Sons & Crisp, Ltd.

The next two classes are always popular. The winners of the six contestants in Class 10, for one bloom of 'Adolphe Audusson', were MR. C. ARMYTAGE MOORE, with a large regular flower in first place, followed by MR. GEORGE BARRANGER and Messrs. John Waterer, Sons & Crisp, Ltd. The MISSES E. and E. GODMAN entered a medium-sized bloom of fine substance and heavily marbled with white for first place among the seven entries in Class 11 for a single bloom of 'Donckelarii'. Messrs. John Waterer, Sons & Crisp, Ltd. took second prize with a larger but looser and less well marked form and SIR GILES LODER was third.

C. japonica 'Gloire de Nantes' in Class 12 showed considerable variation in size and form. The Commissioners of Crown Lands' first-prize entry was a symmetrical bloom of medium size with good colour and a solid centre. Messrs. John Waterer, Sons & Crisp, Ltd., took second with a more ruffled form and SIR GILES LODER third with a bloom of good size and excellent colour but unfortunately slightly past its prime.

The Commissioners of Crown Lands were the uncontested winners in Class 13 for *C. japonica* 'latifolia'. It is strange that this beautiful camellia is not more popular, for as shown it was a variety of fine form and substance.

'Lady Clare' is always popular with the public and the five

entries in Class 14 caused much comment. Mr. Armytage Moore's winning bloom measured over 4¾ inches across and was the palest pink with a slightly darker streak in some of the petals. The Commissioners of Crown Lands showed a bloom of even colour but slightly smaller and Sir Giles Loder's entry in third place was 4½ inches across with paler marbling on the strong pink self colour.

Of the five entries in Class 15, for *C. japonica* 'Magnoliaeflora' (white or pink), first prize was awarded to Messrs. John Waterer, Sons & Crisp, Ltd., for a flower with a high crown and prominent golden stamens. Mr. C. Armytage Moore's second-prize entry was slightly paler pink with petals in the centre and that of The Commissioners of Crown Lands in third place had narrow rather pointed petals making a more star-shaped flower.

Class 16, for any semi-double red not specified above, was one of the most popular with eight entries and the three winning entries oddly enough all had mythological names. Messrs. John Waterer, Sons & Crisp, Ltd., were in first place with a fine evenly coloured bloom of 'Mars'. Mr. Michael Haworth-Booth took second place with a 3½-inch bloom of 'Apollo' and The Commissioners of Crown Lands showed 'Mercury' for a third prize. Mr. George Barranger entered his lovely fimbriated red 'Fred Sander' but the bloom was not in its prime.

Class 17, for any semi-double white variety not specified for previously, attracted only two entrants. The Commissioners of Crown Lands, who showed a fine bloom of 'Sode-Gakushi', and Messrs. Waterers, second, with a little-known variety, 'White Empress'.

Class 19, calling for any semi-double blotched or striped variety not specified above, had only three entries. Messrs. John Waterer, Sons & Crisp, Ltd., were placed first with a good bloom of 'Kelvingtonia', Sir Giles Loder was second with 'Lady McCulloch' and The Commissioners of Crown Lands, third with an unnamed variety.

Class 20, for one bloom each of three semi-double varieties, was won by Messrs. John Waterer, Sons & Crisp, Ltd., with 'Apollo', 'Lady Clare' and a newcomer to the competition, 'Bikashi-Bia'. The Commissioners of Crown Lands had selected 'Mercury', 'Sode-Gakushi', and also strangely enough, 'Bikashi-Bia'. Mr. George Barranger was in third place with 'Gloire de Nantes', 'Fred Sander' and 'Donckelarii'. In Class 21, for *C. japonica* 'elegans' (Syn. *C. japonica* 'Chandleri elegans'), the winners were as above save for third place, which was won by Mr. C. Armytage

Moore. Messrs. John Waterer, Sons & Crisp, Ltd., were again first in Class 22 for 'nobilissima', with Mr. C. Armytage Moore and Mr. Reginald Try taking the other two places.

Class 23, for 'Preston Rose', attracted only one entry and no award was given. In Class 24 for any anemone-centred variety there were two entries, Messrs. Waterers and The Commissioners for Crown Lands, both of whom selected 'althaeaflora' which were placed first and second. Class 25, calling for a bloom of any incomplete double red variety not specified above, was won by The Commissioners of Crown Lands with 'Hina Maru'; Sir Giles Loder and Messrs. Waterers placed second and third with 'althaeaflora' and 'Arajishi'. The Commissioners of Crown Lands had little competition in Class 26 for any incomplete double white variety not specified above, taking first with an unnamed white flushed with pale pink and of perfect round form.

In class 26, for an incomplete double white not specified above, The Commissioners of Crown Lands were first with an unnamed, neat, round, white flower flushed pink. Mr. Michael Haworth-Booth was placed first with 'Joy Sander' in Class 27 for an incomplete double self-coloured variety other than red or white. The Commissioners of Crown Lands were second with 'Daikagura' and Messrs. Waterers third with 'platypetala'. Class 28 for an incomplete double splashed or striped variety had three entries, all of which showed marked variation. The winners were Messrs. Waterers, The Commissioners of Crown Lands and Mr. Barranger.

Mr. Barranger was the only entrant in Class 29 for 'Countess Lavinia Maggi', as was Sir Giles Loder in Class 30 for 'Lady Hume's Blush'. Each was awarded a first prize.

The next three classes called for 'Mathotiana' in its three forms—red, pink and white. Mr. Barringer was first with 'Mathotiana' (red) and 'Mathotiana alba', Messrs. Waterers taking first for 'Mathotiana rosea'. The Misses Godman showed a wonderful large red flower as 'Mathotiana', but there was some doubt as to the validity of the variety. In any case it was one of the loveliest flowers in the show. They took first place in Class 34 for 'imbricata alba', Sir Giles Loder taking second. Messrs. Waterers were first in Class 35 for 'imbricata rubra', followed by The Commissioners of Crown Lands and Sir Giles Loder.

Class 36, calling for the attractive 'Souvenir de Bahuaud Litou', had only one entry, from Messrs. Waterers. The next four classes called for complete doubles. Class 37, for a red, was won by

Colour photo, J. E. Downward

FIG. 42—*Rhododendron lacteum* at Tower Court (See p. 142)

Photo, Royal Botanic Garden, Edinburgh

THE LACTEUM SERIES

FIG. 43—*Rhododendron wightii* with its high flower trusses (See p. 123)

FIG. 44—A *Camellia sasanqua* tree at Quinta do Palheiro, measuring 33 feet high (See p. 55)

Messrs. Waterers with 'Coquette', a beautiful light red, imbricated, symmetrical flower. Mr. Barranger was second with 'eximea' and Mrs. M. E. McDonald showed a 3-inch rich red bloom of 'Margharita Caleonie'. For a white, Mr. Barranger won Class 38 with 'alba plena fimbriata'. Class 39, for a self-coloured variety other than red or white, had six entries. Messrs. Waterers were placed first with 'rubescens major', Mr. F. K. Butler, of Lingfield, second with an unnamed, pale pink, neatly imbricated flowers with light rays in the middle of each petal, and Mr. Barranger third with 'imbricata rosea'.

Class 40, for a complete double blotched or striped variety, had seven entries. Competition was keen but Messrs. Waterers were awarded first for a delightful flower of 'Kelvingtonia' and Sir Giles Loder second for his lovely form of 'Lady McCulloch'. The Commissioners of Crown Lands were third with an unnamed entry.

Class 41 for three complete double varieties was closely contested by Mr. Barranger and The Commissioners of Crown Lands, the former winning first place with the three forms of 'Mathotiana'. Class 42, calling for six complete doubles, attracted four entries, the winners being Mr. Barranger, Messrs. Waterers and The Commissioners of Crown Lands, who were placed in that order. Besides the three colour variations of 'Mathotiana' Mr. Barranger showed 'Adolphe Audusson', 'Contessa Lavinia Maggi' and 'eximea' Messrs. Waterers' selected 'Pink Ball', 'C. M. Hovey', both American varieties, 'Souvenir de Bahuaud Litou', 'Beauté de Nantes' and an unknown red. The Commissioners of Crown Lands staged 'Lady Clare', 'althaeaflora', 'Hatsu-Sakura', 'Général Le Clerc', 'Sode-Gakushi' and an unnamed red.

Class 43, for the wild form of *Camellia reticulata*, as usual had only two entries, Sir Giles Loder taking a second, and Mr. C. Armytage Moore's entry unfortunately not placing, having suffered from adverse weather. Class 44, for a double or semi-double variety of *C. reticulata*, is always spectacular. Sir Giles Loder captured the first two places, his first-prize flower being large, very regular, of intense colouring and with fimbriated edges. His second-prize entry was even larger, over 6 inches across, but rather looser with crinkled petals. Mr. Armytage Moore was in third place with a smaller flower of good colour and form. He took first prize in Class 45, for *C. saluenensis*, and in Class 46, for *C.* × *williamsii*, both first and second.

Class 47, for *C.* × *williamsii* 'Donation', had four entries and this shows the increasing popularity of this lovely flower (see Fig. 28). Sir Ralph Clarke was placed first with a 4-inch flower with heavy deep rose reticulation on a paler candy-pink ground. Sir Giles Loder showed a slightly smaller and paler, less regular flower for second place. Class 49, calling for any other hybrid of *C. saluenensis*, had three entries, The Commissioners of Crown Lands and Sir Ralph Clarke showing 'Salutation' in first and second places respectively, and Messrs. Waterers, the well-known 'J. C. Williams' for third.

Of the five entries in Class 51, calling for any three species and/or varieties and/or hybrids, Messrs. Waterers, Mr. Armytage Moore and Sir Giles Loder placed in that order, as they did again, curiously enough, in Class 52 for six instead of three blooms, as above (Fig. 41).

Sir Giles Loder was the only exhibitor in the next two classes, for a spray of *C. cuspidata* and a spray of any single-flowered *C. japonica*, Sir Giles having selected a lovely form of 'alba simplex'. Class 63, for one spray of a semi-double variety of *C. japonica*, was won by the Misses Godman with a well-flowered branch of a medium-size-flowered 'Donckelarii' with heavy white marbling, Sir Giles winning second and third with 'Lady Clare' and 'Tricolor'. Sir Giles was equally successful in the next class, for a spray of a double variety, taking first place with 'althaeaflora' and third with 'nobilissima', a variety which also won the second place for Windsor.

In Class 68, for a spray of any double or semi-double variety of *C. reticulata*, Sir Giles won first place with *C. reticulata flore pleno* 'Robert Fortune' and he also exhibited a garden form which had a large rather loose flower and a variegated leaf. Mr. Armytage Moore was in third place with a good garden form. Sir Ralph Clarke was the only prize-winner in the next two classes, for a spray of *C. saluenensis* and *C.* × *williamsii*, taking first prize in both. Sir Giles Loder alone showed 'Cornish Snow' in Class 71; Sir Ralph Clarke was second, placed before Windsor in Class 72, which called for a spray of any other hybrid of *C. saluenensis*.

Two of the most attractive classes were 73 and 74, calling for three and six sprays of species and/or varieties and/or hybrids. Sir Giles, followed by The Commissioners of Crown Lands and Sir Ralph Clarke, was supreme in the former, Sir Giles alone exhibiting and winning first in the latter class. He also won the prize for one camellia plant in bloom, with 'Donation', which had

eleven fine flowers and two fat buds. Messrs. Waterers were second with a very good plant of 'Mathotiana alba'.

The latter won the next class, for three plants in bloom, with fine specimens of 'Fleur de Pêche', 'Compton's Brow' and 'Mathotiana alba'.

The last class, for a vase or bowl of camellias, had five entries which were very varied in the choice of flowers. SIR RALPH CLARKE showed a mass of well-flowered sprays of *C. saluenensis*, of rich colour and in perfect condition (Fig. 40). In second place he showed a pleasing colour combination in shades of pink including 'J. C. Williams', 'Magnoliaeflora' and 'Salutation'. MRS. MCDONALD was third with a fine arrangement of 'Margharita Caleonie'. MR. J. B. NICHOLS staged a crescent-shaped flat group of *C. japonica* 'Campbellii' in a low grey bowl, and SIR GILES LODER arranged very large branches of 'nobilissima' in a crystal vase.

In spite of the season it was a satisfactory competition. It is always gratifying to see the names of new exhibitors and it is to be hoped that more growers of this lovely genus will enter the competition next year.

AWARDS TO RHODODENDRONS, 1955

Rhododendron anthopogon, A.M. May 3, 1955. An attractive, low-growing shrub found naturally high up in parts of the Himalayas. Each truss is made up of about ten blooms formed into a tight, small globe. The flowers are coloured Fuchsine Pink (H.C.C. 627/3), which on ageing, fade to a darker shade. Exhibited by Mrs. L. C. R. Messel, M.B.E., and The National Trust, Nymans Garden, Handcross, Sussex (Fig. 32).

Rhododendron coelicum, A.M. April 19, 1955. The singular characteristic of this rhododendron is its leathery leaf blade covered on the under surface with a particularly thick and attractive tomentum. This covering is cinnamon-coloured and is dense enough to hide all the primary veins. About twelve flowers make up the tight, rounded truss with each flower of a fleshy nature, containing five pouches in the tube and coloured a dark shade of Oriental Red (H.C.C. 819/3). Exhibited by Col. The Lord Digby, D.S.O., M.C., T.D., Minterne, Dorchester, Dorset (Fig. 19).

Rhododendron davidsonianum (pink form), F.C.C. May 3, 1955. A description of this particularly lovely form appeared in the R.H.S. JOURNAL 60: 323–4. Exhibited by Lord Aberconway and The National Trust, Bodnant, Tal-y-Cafn, Denbighshire.

Rhododendron (megeratum × mishmiense) 'Moth', A.M. May 3, 1955. As a tender plant, this rhododendron must be afforded the protection of a cool greenhouse. The leaves are 1½ inches × 3 inches long, broad-lanceolate, are scaly beneath and have ciliate margins. Six flowers make up the loose truss. The corolla is 2¼ inches × 1¾ inches long, flat-campanulate and has large, slightly recurved lobes. In colour the flowers are Lemon Yellow (H.C.C. 4/3–H.C.C. 4/2) and the upper lobes are heavily spotted with brown. The filaments are also yellow and the anthers dark brown. Exhibited by Lord Aberconway and The National Trust, Bodnant, Tal-y-Cafn, Denbighshire (Fig. 24).

Rhododendron obtusum var. kaempferi, F.C.C. May 24, 1955. A description of this plant may be found in the R.H.S. JOURNAL 78: 302. Exhibited by Commissioners of Crown Lands, Windsor Great Park, Berks (Fig. 22).

Rhododendron pubescens, A.M. April 19, 1955. This rhododendron makes a small shrub up to 6 feet high and has rather a spread-

ing habit. It flowers freely every year displaying an abundance of small, axillary flowers at the apex of each shoot. The small, narrow-lanceolate leaves are slightly revolute at the margins and covered on both sides with long hairs. On the flower stalk is a dense, pubescent covering together with some scales while the rudimentary calyx is fringed with long hairs. The corolla is ¾ inch × ½ inch long and has deep lobes. In colour the flowers are white suffused with varying shades of Persian Rose (H.C.C. 628/1), and the buds a deep shade of pink. Exhibited by Commissioners of Crown Lands, Windsor Great Park, Berks (Fig. 20).

Rhododendron rex, A.M. May 3, 1955. Owing to its size this plant can be seen at its best only in large gardens. Under such conditions, it makes a tree 20 feet high with characteristically thick branches and stout flowering shoots. The leaves are 4 inches × 12 inches long, narrow oblanceolate with a distinctly obtuse base and the underside covered with a thin, hard, brown tomentum; petiole 3 inches long, stout, tomentose. Each flower is 3 inches across, tubular-campanulate and in colour, white with a faint pinkish-blue tinge, a deep crimson blotch in the base of the throat and scattered, crimson spots on the upper lobes. Exhibited by Commissioners of Crown Lands, Windsor Great Park, Berks (Fig. 25).

Rhododendron roseum, A.M. May 24, 1955. Flowers on this species appear as the leaves expand. The flower stalk and calyx are pubescent and the corolla funnel-form, the limb being 1¼ inches across and the pubescent tube ½ inch long; in colour the flower is Phlox Pink (H.C.C. 635/2) with the tube and unopened buds a slightly darker shade. This delightful addition to our gardens from eastern North America is an important one, for, apart from its rich fragrance, the plant is a most accommodating one and will thrive in situations unsatisfactory for many of its congeners. Exhibited by Mrs. Roza M. Stevenson, Tower Court, Ascot, Berks (Fig. 21).

Rhododendron sinonuttallii, A.M. May 24, 1955. This is a shrub for the cool greenhouse. Its elliptic leaves are 4 inches × 8½ inches long and the margins gently waved; on the underside, the mid-rib and lamina are densely scaly. Up to six nodding flowers are in a lax truss. The pedicel is 1 inch long and scaly and the translucent calyx ½ inch × 1 inch long. The colour of the large corolla with its reflexed, waved lobes is white with sparse, pale crimson markings on the outside; inside the throat there is a pale orange stain. Exhibited by Messrs. The Sunningdale Nurseries, Windlesham, Surrey (Fig. 23).

AWARDS TO RHODODENDRONS AFTER TRIAL AT WISLEY, 1955

THE Council of The Royal Horticultural Society has made the following awards to rhododendrons after trial at Wisley, on the recommendation of the Rhododendron & Camellia Committee. The number in brackets after the description of the variety was that under which it was grown in the trial.

MRS. CHARLES PEARSON. (Raised, introduced and sent by Messrs. M. Koster & Son, Boskoop, Holland.) **F.C.C.** June 2, 1955. A hardy hybrid rhododendron. Plant 10 feet high, 10 feet across; vigorous, upright habit, very free flowering; leaves 5¼ inches long, 2¼ inches wide, light glossy green. Flower truss 6¾ inches diameter, 8 inches deep, compact, dome-shaped, ten to twelve flowers per truss; corolla 4 inches diameter, 2½ inches long, fully expanded funnel-shaped, margins frilled, white, margins flushed Mallow Purple (H.C.C. 630/2), upper petal at throat spotted with bronze, buds Mallow Purple (H.C.C. 630/1). Flowering from May 28, 1955. (**A.M.** 1933.) [294]

SIR JOHN RAMSDEN. (Raised, introduced and sent by Messrs. John Waterer, Sons & Crisp Ltd., Bagshot, Surrey.) **F.C.C.** May 17, 1955. A hardy hybrid rhododendron. Plant 12 feet high, 12 feet across; vigorous, loose habit, free flowering; leaves 5 inches long, 2 inches wide, medium-dark glossy green. Flower truss 7 inches diameter, 5½ inches deep, lax, flattened dome-shaped, ten flowers per truss; corolla 3 inches diameter, 2½ inches long, open funnel-shaped, margin slightly wavy, exterior Carmine (H.C.C. between 21 and 21/1) changing to very pale pink at margins, midribs pencilled Carmine (H.C.C. 21), interior pale Camellia Rose (H.C.C. 622/3). Flowering from May 12, 1955. (**A.M.** 1948.) [192]

FAGGETTER'S FAVOURITE. (Raised, introduced and sent by Messrs. W. C. Slocock Ltd., Goldsworth Nursery, Working, Surrey.) **A.M.** May 17, 1955. A hardy hybrid rhododendron. Plant 6½ feet high, 12 feet spread; vigorous, very free flowering; leaves 8 inches long, 3 inches wide, medium glossy green. Flower truss 7 inches diameter, 7½ inches deep, compact, dome-shaped, thirteen flowers per truss; corolla 3¾ inches diameter, 2¾ inches long, open funnel-shaped, margin recurved and wavy, scented, cream delicately flushed Phlox Pink (H.C.C. 625/2), upper petal at throat with slight speckling of bronze, buds Spinel Pink (H.C.C. 0625). Flowering from May 10, 1955. [369]

MARION. (Raised, introduced, and sent by Messrs. J. Cheal & Sons Ltd., Crawley, Sussex.) **A.M.** June 2, 1955. A hardy hybrid rhododendron.

Plant 8 feet high, 10 feet across, vigorous, upright and spreading habit, free flowering; leaves 5½ inches long, 2 inches wide, light glossy-green. Flower truss 5½ inches diameter, 5½ inches deep, very compact, dome-shaped, twenty flowers per truss; corolla 2⅗ inches diameter, 1⅗ inches long, open funnel-shaped, margins frilled, Tyrian Rose (H.C.C. 24/3), upper petal at throat spotted with orange, reverse Tyrian Rose (H.C.C. 24/2). Flowering from May 26, 1955. [385]

THUNDERSTORM. (Raised, introduced and sent by Messrs. W. C. Slocock Ltd.) **A.M.** June 2, 1955. A hardy hybrid rhododendron. Plant 6 feet high, 8 feet across; vigorous, upright, compact habit, free flowering; leaves 5½ inches long, 2 inches wide, dark glossy green. Flower truss 5¾ inches diameter, 5¾ inches deep, compact, dome-shaped, eighteen flowers per truss; corolla 2¾ inches diameter, 1¾ inches long, open funnel-shaped, margins slightly waved, a deep rich red near Rose Opal (H.C.C. 022), stamens conspicuous white. Flowering from May 26, 1955. [364]

RHODODENDRON NAMES REGISTERED DURING 1955

Name	*Parentage*	*Exhibitor*
ALGERIENNE	'Margaret Dunn' × 'May Day'	Sunningdale
BRINCO	'Loderi' × *thomsonii*	Rothschild
CHANGELING	'Belvedere' × *decorum*	Sunningdale
CONEYGAR	'Decsoul' × *thomsonii*	Digby
CREAM CHEESE	*decorum* × 'Margaret Dunn'	Sunningdale
DONUM	*campanulatum* × 'Purple Splendour'	Knap Hill
DORA AMATEIS	*carolinianum* × *ciliatum*	Amateis
DRYOPE	'Latona' × 'May Day'	Sunningdale
ECHO	*decorum* × 'Lady Bessborough'	Sunningdale
EGYPTIAN	'Halcyone' × 'Margaret Dunn'	Sunningdale
FIREBRAND	*beanianum* × *euchaites*	Harrison
FLAMEHEART	*auriculatum* × 'Azor'	Haworth-Booth
FOTIS	'Lady Bessborough' × 'Margaret Dunn'	Sunningdale
GIGHA GEM	*euchaites* × 'Pleasant'	Horlick
GREENEYE	*augustinii* × 'Blue Tit'	Harrison
HAROLD HEAL	('Cornish Cross' × *wardii*) × 'Loderi King George'	Ingram
HILDE	*fulvum* × *lacteum*	Stevenson
LOUIS AMATEIS	*bullatum* × *carolinianum*	Amateis
MARMORA	*dichroanthum* × 'Margaret Dunn'	Sunningdale
MILDRED AMATEIS	*carolinianum* × *edgeworthii*	Amateis
MOTH	*megeratum* × *mishmiense*	Aberconway
NEAPOLITAN	*decorum* × 'Fabia'	Sunningdale
PLEASANT	*campylocarpum* × *thomsonii*	Horlick
PYREX	*facetum* × *haematodes*	Reuthe
RAEBURN	*racemosum* × *tephropeplum*	Ingram
REDSKIN	'Lady Bessborough' × 'May Day'	Sunningdale
SEALING WAX	*dichroanthum* × 'May Day'	Sunningdale
SOLARIUM	*caloxanthum* × 'Damaris'	Sunningdale
SPANISH GALLEON	'Belle' × 'Margaret Dunn'	Sunningdale
SUN CHARIOT	'Solarium' × *wardii*	Sunningdale
SWAN LAKE	*auriculatum* × 'Godesberg'	Rothschild
TOWER BEAUTY	*atlanticum* × unknown Azalea	Stevenson
TOWER DAINTY	*atlanticum* × unknown Azalea	Stevenson
WARDEN WINK	'Tip the Wink' × *wardii*	Mansfield (1939)

* * *

CORRECTION TO LIST PUBLISHED IN 1955 RHODODENDRON YEAR BOOK

Name	*Parentage*	*Exhibitor*
For:		
ROCKET	*meddianum* × *strigillosum*	Digby, 1954
Read:		
ROCKET	*meddianum* × *strigillosum*	Stevenson, 1954

A REVIEW OF RHODODENDRONS IN THEIR SERIES

VI. The Lacteum Series

By H. H. DAVIDIAN, B.Sc.*
and Dr. J. MACQUEEN COWAN, C.B.E., V.M.H.

THE Lacteum Series as considered in this review comprises fourteen species. These are distributed in mid, west and north-west Yunnan, in south-west Szechuan and in south and south-east Tibet, with extensions to Upper Burma, Kansu and Bhutan. *R. wightii*, the Himalayan member of the Series, is confined to Sikkim, Nepal and Bhutan.

The species of this Series are medium to large shrubs or small trees and possess an inflorescence which is a racemose umbel, an indumentum on the under surfaces of the leaves which is thin and generally continuous, the hairs usually radiate or long-rayed, and a calyx which is usually minute. The relationship of the Series as pointed out in the Introductory Notes to the Series in *The Species of Rhododendron*, is with the Taliense Series, the Caucasicum subseries of the Ponticum Series, and with the Campanulatum Series.

As indicated in *The Species of Rhododendron*, the main distinction between the Lacteum and Taliense Series lies in the thin continuous indumentum in marked contrast to the thick woolly indumentum, the former with radiate or long-rayed types of hairs, the latter with ramiform hairs. Although most species of the Taliense Series conform to this distinction, several species in the Adenogynum and Taliense subseries have a thin indumentum but differ from the Lacteum Series in having ramiform hairs, a difference in hair structure. In the Roxieanum and Taliense subseries others have a thin indumentum and with long-rayed hairs, agreeing in these respects with species of the Lacteum Series.

The initial problem, therefore, is to find some criteria to distinguish between the Series.

* In the revision of the Lacteum Series Mr. Davidian has been responsible for much of the detailed investigation required and for the final compilation of our notes.

It is to be noted, however, that these exceptions in the Adenogynum and Roxieanum subseries, apart from indumental characters, are typical members of the subseries to which they belong for they share the main diagnostic criteria by which they are distinguished from the remainder of the Taliense Series and from the Lacteum Series.

But if the species of the Taliense subseries are examined, it will be seen that the subseries comprises a heterogeneous group of species in so far as indumental characters are concerned; a number of species have a thick woolly indumentum with ramiform hairs, and conform to the main characteristics of the Taliense Series; others have a thin indumentum also with ramiform hairs, and, as already pointed out above, they are distinguished from the Lacteum Series by the hair structure only; still others have a thin indumentum with long-rayed hairs, and are inseparable from the Lacteum Series by indumental characters, nor can any other character be found by which to separate these species from the Lacteum Series.

It will be observed that the group of species in the Taliense subseries with thin indumentum and long-rayed hairs include *R. phaeochrysum* (also *R. syncollum* and *R. lophophorum* which are indistinguishable from *R. phaeochrysum*), *R. agglutinatum* and *R. przewalskii*. Although by their general appearance an association with the Taliense subseries is suggested, these species show a closer relationship to *R. dryophyllum* and immediate allies of the Lacteum Series, with which they agree in general morphological features and in indumental characters. Accordingly, in this review, these species are transferred from the Taliense subseries to the Lacteum Series; the main distinction between the two Series thus being maintained.

As to the Lacteum Series, it is seen that *R. wightii*, which has a thin indumentum, differs markedly from all the other species in having the ramiform hairs of the Taliense Series. Its relationship with *R. lacteum* which it resembles in some respects, and with other Series is discussed in some detail in the notes under the species. It may be noted that its inflorescence is usually lax and somewhat candelabroid, in which respect it resembles the species of the Ponticum Series. The hair structure suggests some affinity with the Campanulatum Series. Although *R. wightii* is an aberrant member of the Lacteum Series, it is preferable to leave it in this Series rather than to transfer it to some other where it would be equally aberrant (Fig. 23).

Again, a thin indumentum with radiate hairs is also possessed by

R. brachycarpum of the Caucasicum subseries in the Ponticum Series. In this respect the species is comparable with members of the Lacteum Series. In spite of this character, its kinship is undoubtedly with the Caucasicum subseries in having a candelabroid inflorescence which is a feature of diagnostic significance for all the Ponticum Series.

It may now be stated that the main distinction between the Lacteum and Taliense Series, with very few exceptions, is one of hair structure, the hairs being radiate or long-rayed in the former; ramiform in the latter. Moreover, the indumentum is thin continuous in the Lacteum Series (discontinuous in *R. dignabile* and sometimes in *R. przewalskii*). In the Taliense Series it is also generally continuous but, with some exceptions, it is thick and woolly.

Taking the Lacteum Series as arranged in this review, the species fall into the following three groups according to the type of hair.

(a) Radiate hair: *R. lacteum, R. beesianum, R. traillianum, R. aberrans, R. dignabile.*
(b) Long-rayed hair: *R. nakotiltum, R. dictyotum, R. dryophyllum, R. dumosulum, R. pomense, R. phaeochrysum, R. agglutinatum, R. przewalskii.*
(c) Ramiform hair: *R. wightii.*

It may be of interest to make some further remarks on the characteristics of the species which comprise the Lacteum Series.

HABIT. The species are usually medium to large shrubs or small trees up to 9 m. high, except sometimes *R. dumosulum*, a dwarf shrub 30 cm. high.

BRANCHLETS. In most species the branchlets and petioles are moderately to densely tomentose; variable in *R. beesianum, R. dictyotum, R. phaeochrysum* and *R. agglutinatum* from glabrous to densely tomentose; usually glabrous in *R. przewalskii*. With regard to the presence or absence of glands, in *R. dignabile, R. pomense, R. phaeochrysum* and *R. agglutinatum* the branchlets and petioles are glandular or eglandular; in all other species they are eglandular.

LEAVES. Leaf shape is too variable to be an absolute diagnostic criterion. It is usually an aid in separating *R. lacteum*, with its oval to broadly elliptic leaves, from *R. wightii*, where the leaves are oblong-elliptic to oblanceolate. Leaf size is a useful character in distinguishing *R. traillianum*, with large leaves, from *R. aberrans*, with smaller leaves, and similarly *R. dryophyllum* and *R. phaeochrysum* from *R. dumosulum* and *R. agglutinatum* respectively. The under surfaces of the leaves of all species are covered with a thin

continuous indumentum of hairs, excepting *R. dignabile* and sometimes *R. przewalskii*, where the indumentum consists of scattered hairs or a thin veil of hairs. The agglutinate indumentum is usually a diagnostic feature of *R. phaeochrysum* and *R. agglutinatum*. The structure of the hair is an important character in distinguishing between species or groups of species. *R. wightii* has ramiform hairs, differing in this respect from all other members in the Series. The hairs are radiate in *R. lacteum*, *R. beesianum*, *R. traillianum*, *R. aberrans* and more or less so in *R. dignabile*. Two species, *R. traillianum* and *R. aberrans* are readily distinguished by the characteristic somewhat pear-shaped arms. All other species in the Series have long-rayed hairs, the arms of the hairs being longer in *R. nakotiltum*, and broader oblongoid in *R. dictyotum*.

INFLORESCENCE. The inflorescence is a racemose umbel, usually lax and somewhat candelabroid in *R. wightii*. It is 8–25-flowered in the Series, but in *R. pomense* it is about 5-flowered.

PEDICELS. The pedicels vary from 0·6–4·3 cm. in length; in *R. wightii* up to 7 cm. In the majority of species the pedicels are moderately to densely floccose, sometimes glabrous; in *R. przewalskii* they are usually glabrous. As regards glandularness, the pedicels are eglandular or glandular in *R. aberrans*, sometimes glandular in *R. wightii*, and rarely sparsely glandular in *R. dignabile*. In all other species they are eglandular.

CALYX. The large calyx, 1·2 cm. long, is a diagnostic character of *R. pomense*. A minute calyx 0·5–2 mm. long, is a common feature throughout the Series. The calyx lobes are floccose or glabrous and eglandular, except in *R. dignabile* and *R. wightii*, where they are sometimes glandular.

COROLLA. The shape of the corolla is campanulate or funnel-campanulate; the length is variable from 2–5·3 cm. Flower colour varies in the Series. *R. lacteum* and *R. wightii* have yellow flowers—a character of diagnostic importance. All other species have white, pink or rose flowers except *R. dignabile* in which the flowers may be white, pink or yellow.

STAMENS. The number of stamens is 10, usually puberulous at the base.

OVARY. The ovary is conoid, oblong or slender cylindric. It is densely tomentose in *R. lacteum*, *R. wightii*, *R. beesianum*, *R. nakotiltum* and *R. pomense*; densely to sparingly tomentose in *R. dictyotum*; variable from glabrous to densely tomentose in *R. traillianum* and *R. dignabile*; and usually glabrous in all other species. The ovary is eglandular in the Series except in *R. aberrans* and *R.*

dignabile where it is glandular or eglandular. In most species it is 5–9-celled; in *R. lacteum* 10- rarely 9-celled, in *R. wightii* 10-celled, and in *R. beesianum* 8–11-celled. The style is usually glabrous.

CAPSULE. The capsule is oblong or slender cylindric, rarely oblong-oval.

* * *

LACTEUM SERIES

GENERAL CHARACTERS: Shrubs or small trees, 60 cm.–9 m. high, rarely less, branchlets densely tomentose to glabrous, eglandular or sometimes glandular. Leaves evergreen, lamina oval to lanceolate, 3·5–30 cm. long, 1–10 cm. broad; under surfaces with a thin continuous indumentum of hairs (in *R. dignabile* and sometimes in *R. przewalskii* with scattered hairs or a thin veil of hairs); petiole 0·5–4·7 cm. long, densely tomentose to glabrous, eglandular or sometimes glandular. Inflorescence terminal, a racemose umbel of 8–25 flowers (rarely 5); pedicels 0·6–7 cm. long, densely tomentose to glabrous, eglandular or sometimes glandular. Calyx 5-lobed, minute, 0·5–2 mm. long (in *R. pomense* large, 1·2 cm. long), glabrous or floccose, rarely glandular. Corolla campanulate or funnel-campanulate, 2–5·3 cm. long, white, yellow, pink or rose; lobes 5. Stamens 10. Ovary conoid, oblong or slender cylindric, 4–8 mm. long, 5–11-celled, glabrous to densely tomentose, usually eglandular; style usually glabrous and eglandular. Capsule oblong or slender cylindric, rarely oblong-oval, 1–4·2 cm. long, 4–9 mm. broad, straight or slightly curved, glabrous to tomentose, calyx persistent.

KEY TO THE SPECIES

A. Indumentum on the under surfaces of the leaves forming a continuous covering.
  B. Corolla *yellow*; ovary 9–10-celled; hairs on the under surfaces of the leaves ramiform or radiate.
    C. Leaves usually oval, ovate-elliptic or broadly elliptic; inflorescence somewhat compact; corolla unspotted; *hairs radiate*; Chinese species . . . . . *lacteum*
    C. Leaves usually oblong-elliptic, oblong or oblanceolate; inflorescence usually lax; corolla spotted; *hairs ramiform*; Himalayan species . . . . . *wightii*
  B. Corolla *white, pink or rose*; ovary 5–11-celled; hairs on the under surfaces of the leaves long-rayed or radiate.
    C. Calyx minute, 1–2 mm. long; inflorescence 8–25-flowered.
      D. Ovary densely tomentose.
        E. Indumentum on the under surfaces of the leaves suede-like or felty; hairs radiate with *oblong or ovoid arms* or *long-rayed.*

F. Leaves 9–30 cm. long; inflorescence 10–25-flowered; *hairs radiate* . . . . . *beesianum*
F. Leaves 5–13·5 cm. long; inflorescence 8–15-flowered; *hairs long-rayed.*
G. Indumentum bistrate, grey or fawn, arms of hairs long . . . . . *nakotiltum*
G. Indumentum unistrate, brown, rust or cinnamon-coloured, arms of hairs shorter . . *dictyotum* (part)

E. Indumentum on the under surfaces of the leaves usually powdery; hairs radiate with *somewhat pear-shaped-arms* . . . . . *traillianum* (part)

D. Ovary glabrous or sometimes sparsely floccose.
E. Indumentum on the under surfaces of the leaves usually powdery; *hairs radiate with somewhat pear-shaped arms.*
F. Leaves usually 7·5–17 cm. long, 2·8–6·8 cm. broad; ovary eglandular . . . . *traillianum* (part)

F. Leaves usually 3·5–7·2 cm. long, 1·6–2·5 cm. broad; ovary glandular or eglandular . . *aberrans*
E. Indumentum on the under surfaces of the leaves suède-like, felty or agglutinate; *hairs long-rayed.*
F. Indumentum on the under surfaces of the leaves suède-like or felty; branchlets and petioles eglandular; ovary sparsely floccose or glabrous.
G. Branchlets and petioles usually densely or moderately tomentose; pedicels usually floccose; ovary sparsely floccose or glabrous; leaves lanceolate, oblong-lanceolate, oblong, elliptic or oblong-ovate.
H. Leaves large, usually 7·5–14 cm. long.
I. Corolla 3·2–5 cm. long; hairs of the indumentum with broad ribbon-like oblongoid arms . . . . *dictyotum* (part)

I. Corolla 2–4 cm. long; hairs of the indumentum with narrow arms . *dryophyllum*
H. Leaves small, usually 3·8–7 cm. long . *dumosulum*
G. Branchlets, petioles, pedicels and ovary usually glabrous; leaves ovate, elliptic to oblong . . . . . *przewalskii* (part)

F. Indumentum on the under surfaces of the leaves usually agglutinate; branchlets and petioles glandular or eglandular; ovary glabrous . .
G. Leaves large, usually 7·5–14 cm. long; corolla 3–5 cm. long . . . . . *phaeochrysum*
G. Leaves small, usually 4–7·2 cm. long; corolla 2–3·5 cm. long . . . . . *agglutinatum*
C. Calyx large, lobes unequal, the longest 1·2 cm. long, the shortest 5 mm. long; inflorescence about 5-flowered. . *pomense*
A. Indumentum on the under surfaces of the leaves discontinuous, consisting of scattered hairs or a thin veil of hairs.
B. Branchlets, petioles and pedicels floccose, glandular or eglandular; ovary densely floccose to glabrous, glandular or eglandular; leaves up to 18 cm. long; hairs of the indumentum somewhat *radiate* . . . . . *dignabile*
B. Branchlets, petioles, pedicels and ovary usually glabrous, eglandular; leaves up to 11 cm. long; hairs of the indumentum *long-rayed* . . . . . *przewalskii* (part)

Description of Species (*Amp. et Em.*)

R. aberrans Tagg & Forrest in Notes R.B.G. Edin., XV, 305 (1925–7); Rhod. Soc. Notes, III, 161 (1925–31); Tagg in The Sp. of Rhod., 372 (1930); Rhod. Assoc. Year Book, 39 (1936); Rhod. Handb., 2 (1952).

HABIT: shrub, 60 cm.–4·50 m. high; branchlets densely tomentose with rusty-brown thin tomentum, those below the inflorescences 5–7 mm. in diameter.

LEAVES: lamina oblong, oblong-lanceolate or oblong-elliptic, 3·5–9·5 cm. long, 1·6–3·3 cm. broad, apex obtuse or shortly acuminate, base obtuse or rounded; upper surface with vestiges of juvenile tomentum, midrib grooved, primary veins 10–15 on each side, impressed; under surface covered with a thin, continuous, *powdery* indumentum, brown or cinnamon-coloured, midrib prominent; petiole 0·8–1·5 cm. long, densely tomentose with a thin rusty-brown tomentum.

INFLORESCENCE: racemose umbel of about 10 flowers; rachis 0·8–1·2 cm. long, tomentose.

PEDICELS: 1·2–2 cm. long, moderately or densely tomentose, eglandular or glandular with minute glands.

CALYX: 5-lobed, minute, 1 mm. long, lobes triangular or broadly ovate, outside and margin floccose or minutely puberulous, eglandular.

COROLLA: funnel-campanulate, 2·2–3·5 cm. long, white or white flushed rose, with crimson markings; lobes 5, 1–1·4 cm. long, 1–2 cm. broad, rounded, emarginate.

STAMENS: 10, unequal, 1–2 cm. long; filaments puberulous at the base.

GYNOECIUM: 2–2·7 cm. long; ovary slender cylindric or conoid, 4–6 mm. long, 8-celled, sparsely or moderately floccose, glandular with minute glands or sometimes eglandular; style glabrous.

CAPSULE: not seen.

HABITAT:

Yunnan. FORREST 23395—holotype, 21924, 23373, 23379. ROCK 9583.

Szechuan. FORREST 22508.

The type material of this species was collected by FORREST in June 1923 on the Chienchuan-Mekong Divide, Mid-west Yunnan. In the original diagnosis it is associated with *R. traillianum* from

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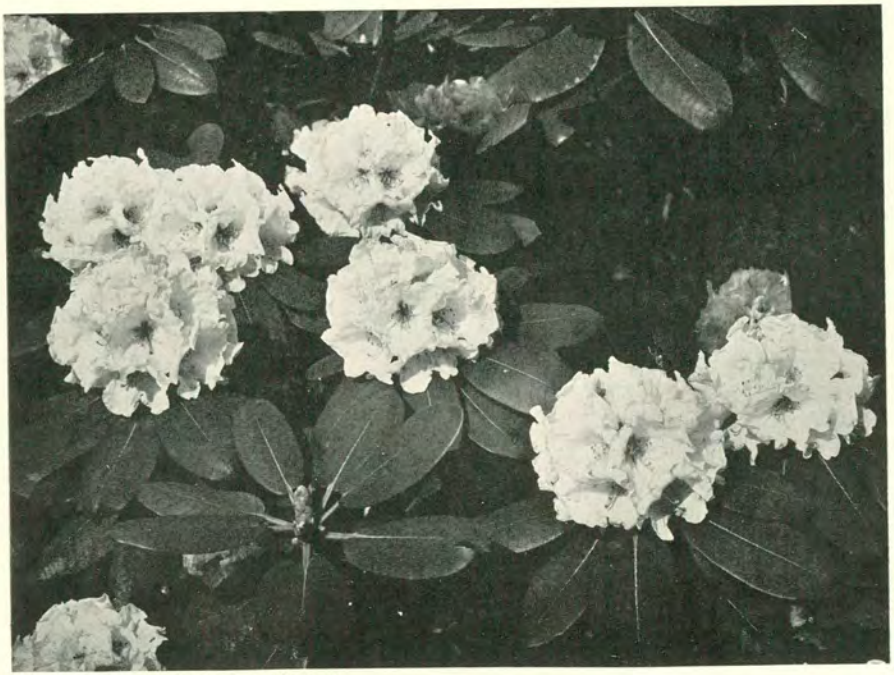
FIG. 45—*Rhododendron phaeochrysum* in the Royal Botanic Garden, Edinburgh
(See p. 144)



Photos, Royal Botanic Garden, Edinburgh

FIG. 46—Fine trusses of *Rhododendron lacteum* (See p. 141)

FIG. 47—*Rhododendron beesianum* (See p. 130)

Photos, Royal Botanic Garden, Edinburgh

FIG. 48—A well-flowered plant of *Rhododendron przewalskii* (See p. 148)

which it is said to be separated by the smaller leaves and smaller flowers and by the more or less glandular ovary. These species are very much alike in general characters, and they agree in having a powdery indumentum of radiate hairs with somewhat pear-shaped arms. The stated distinctions as to leaf and flower size are not constant. The ovary is somewhat floccose and with few or several minute glands which sometimes are absent. *R. aberrans* usually deviates from all the members of its Series in having a more or less glandular ovary. Whether this one criterion is of sufficient importance on which to regard *R. aberrans* as specifically distinct, is a matter of some doubt. The leaf epidermis has been shown to be two-layered in *R. aberrans*, but three-layered in *R. traillianum*.

Until more adequate material is available, the specific name *R. aberrans* may be retained for plants with small leaves and sometimes with small flowers, with or without glandular ovaries, although intergrading forms link these with *R. traillianum*.

R. agglutinatum Balf. f. & Forrest in Notes R.B.G. Edin., XII, 88 (1920); ibid. XIX, 249 (1937); Millais, Rhododendrons, ser. 2, 78 (1924); Tagg in The Sp. of Rhod., 674 (1930); Rehder, Manual Cult. Trees & Shrubs, 704 (1947); Rhod. Handb., 3 (1952); Rhod. & Camellia Year Book, 42 (1954).

HABIT: shrub or tree, 60 cm.–4·50 m. (rarely up to 7·60 m.) high; branchlets glabrous to densely tomentose with a thin tomentum, eglandular or glandular, those below the inflorescences 4–7 mm. in diameter.

LEAVES: lamina elliptic, oblong-ovate, oblong-elliptic, oblong or oblong-lanceolate, 4–9 cm. long, 1·4–5 cm. broad; apex obtuse, acute or shortly acuminate, base truncate, obtuse or rounded; upper surface with vestiges of a juvenile tomentum or glabrous, midrib grooved, primary veins 10–15 on each side, impressed; under surface covered with a thin, continuous, *agglutinate* or sometimes suède-like indumentum, brown, cinnamon or fawn, midrib prominent; petiole 0·5–1·8 cm. long, glabrous to densely tomentose with a thin tomentum, eglandular or glandular.

INFLORESCENCE: racemose umbel of 10–15 flowers; rachis 0·5–1 cm. long, floccose or puberulous or glabrous.

PEDICELS: 0·8–1·8 cm. long, floccose or glabrous, eglandular.

CALYX: 5-lobed, minute, 0·5–1 mm. long, lobes triangular, eglandular, outside glabrous, margin floccose.

COROLLA: funnel-campanulate, 2–3·5 cm. long, white, creamy-white, white flushed rose or pink, with or without crimson markings; lobes 5, 0·6–1·5 cm. long, 1·3–2 cm. broad, rounded, emarginate.

STAMENS: 10, unequal, 0·8–2·3 cm. long; filaments puberulous in the lower half or glabrous.

GYNOECIUM: 1·8–2·8 cm. long; ovary conoid or oblong, 4–6 mm. long, 5-celled, glabrous, eglandular; style glabrous, eglandular.

CAPSULE: oblong, 1·4–3 cm. long, 5–7 mm. broad, glabrous, calyx persistent.

HABITAT:

Szechuan. FORREST 16319—holotype, 16435, 16459, 17100, 20414. ROCK 16078, 16099, 17473, 17511, 17513, 17555, 17556, 18272, 23704, 23710, 23735, 23803, 23805, 23806, 23808, 23838, 23961, 24037, 24068, 24295, 24302, 24306, 24363, 24365, 24366, 24395, 24414, 24524, 25469, 25470.

Tibet. FORREST 15354, 15415, 18653, 19714, 19733. LUDLOW & SHERRIFF 1761, 1770. LUDLOW, SHERRIFF & ELLIOT 13795, 14026, 15179, 15256, 15288, 15290, 15324, 15327, 15328, 15443, 15462, 15466, 15535. WARD 5759.

Yunnan. FORREST 16439, 16464, 16464A, 16489, 17020, 17031, 17359, 17783, 19729, 19822, 21045, 29324. MCLAREN "AD" 72, "P" 103. ROCK 3979, 9267, 9305, 9411, 11108, 11335, 22818, 23324, 24611. YÜ 10983, 13806, 14636.

Bhutan. LUDLOW, SHERRIFF & HICKS 16851, 18966, 19071.

FORREST discovered this plant on the mountains around Muli, south-west Szechuan, in June 1918. Further gatherings by various collectors show that the species has a wide distribution extending from Szechuan to Yunnan through east and south-east Tibet to Bhutan. It is found in rhododendron, pine and spruce forests, in thickets and on rocks at elevations of 11,000–16,000 feet.

The species is closely allied to *R. phaeochrysum*; the distinctions between them are discussed under the latter species. *R. agglutinatum* is distinguished from its ally mainly by the smaller leaves and smaller flowers. From *R. dryophyllum* it differs usually in the agglutinate indumentum on the under surfaces of the leaves.

R. beesianum Diels in Notes R.B.G. Edin., V., 214 (1912); Millais, Rhododendrons, 127 (1917); ibid., ser. 2, 92 (1924); E. H. M. Cox, Rhod. for Amat., 69 (1924); Tagg in The Sp. of Rhod., 374 (1930); New Fl. & Silva, IV, 6 (1931); Bean, Trees & Shrubs, III, 31 (1951); Rhod. Assoc. Year Book, 39 (1936);

Bot. Mag., CLXVII, t. 125 (1950); R.H.S. Dict. Gard., IV, 1767 (1951); Rhod. Handb., 11 (1952). *R. colletum* Balf. f. et Forrest in Notes R.B.G. Edin., XI, 39 (1919); Millais, Rhododendrons, ser. 2, 115 (1924); Tagg in The Sp. of Rhod., 375 (1930); Rhod. Assoc. Year Book, 39 (1936); Bot. Mag., CLXVII, t. 125 (1950); Rhod. Handb., 102 (1952). *R. emaculatum* Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 42 (1920); Millais, Rhododendrons, ser. 2, 134 (1924); Tagg in The Sp. of Rhod., 379 (1930); Rhod. Assoc. Year Book, 40 (1936); Bot. Mag., CLXVII, t. 125 (1950); Rhod. Handb., 103 (1952). *R. microterum* Balf. f. nomen.

HABIT: shrub or small tree, 1·80–7·50 m. high; branchlets glabrous or sometimes floccose, those below the inflorescences 6–10 mm. in diameter.

LEAVES: lamina oblong-lanceolate or narrowly oblanceolate, 9–30 cm. long, 2·6–8·3 cm. broad, apex acuminate, obtuse or narrowed to the base; upper surface glabrous or with vestiges of hairs, midrib grooved, primary veins 16–25 on each side, impressed; under surface covered with a thin continuous grey to cinnamon indumentum, midrib prominent; petiole 1·3–3 cm. long, narrowly winged or ridged on each side, deeply grooved above, glabrous or sometimes floccose.

INFLORESCENCE: racemose umbel of 10–25 flowers; rachis 0·5–3 cm. long, puberulous.

PEDICELS: 1·4–2·9 cm. long, sparsely or moderately floccose.

CALYX: 5-lobed, 1–2 mm. long, lobes triangular or rounded, glabrous, rarely floccose.

COROLLA: broadly campanulate, 3·5–5·3 cm. long, white to magenta-rose, spotted crimson or unspotted, with or without a crimson blotch at the base; lobes 5, 1–1·5 cm. long, 1·6–2·6 cm. broad, rounded, emarginate.

STAMENS: 10, unequal, 1·5–3·1 cm. long; filaments puberulous at the base.

GYNOECIUM: 2·8–3·5 cm. long; ovary oblong or conoid, 5–7 mm. long, 8–11-celled, densely tomentose with brown hairs; style glabrous.

CAPSULE: oblong, 2–4·2 cm. long, 6–9 mm. broad, straight or slightly curved, floccose.

HABITAT:

Yunnan. FORREST 2323—holotype, 10195, 10460, 10477, 10546, 10852, 10958, 11247, 11303, 11313, 11732, 12428, 12937, 12987, 13032, 13143, 13363, 13568, 14116, 14226, 14450—holotype of

R. colletum, 14461, 14862, 14964, 15003, 15014, 15040, 15124, 15960, 16474, 16694, 17295, 17344, 17394, 17407, 17019, 17144, 17409, 17453, 17458, 17467, 17469, 19529, 19552, 19579, 19581, 19795, 20041, 20111, 20121, 20195, 20279, 20376, 22044, 22978, 22979, 23325, 25513, 25516, 25897, 25983, 29247, 29279, 29301, 30526, 30532, 30892, 30894. McLaren 'D' 105, 107, 272, 'P' 49, 64. Rock 3504, 7795, 8250, 8259, 8379, 8458, 8460, 8466, 8467, 8664, 8752, 8761, 8762, 8785, 8832, 8845, 8865, 8867, 8879, 8880, 9102, 9108, 9109, 9127, 9128, 9393, 9573, 9627, 9674, 9725, 9946, 10896, 10908, 10916, 10987, 10988, 10990, 11004, 11017, 11021, 11068, 11099, 11110, 11112, 11240, 11334, 11337, 11349, 11383, 11501, 17105, 17107, 17125, 18440, 18443, 18445, 22801, 23308, 24650, 24963, 24964, 25053, 25130, 25345. Tsai 58466. Yü, 7871, 7927, 10596, 10685, 13730, 13765, 13920, 13926, 13931, 13989, 14663, 14947, 10974.

Tibet. Forrest 14352—holotype of *R. emaculatum*, 14488, 14603, 14686, 14790, 14794, 14803, 14811, 14812, 15290, 15303, 15352, 16683, 16693, 16699, 16724, 16735, 16743, 16746, 18635, 18656, 18668, 18681, 19010, 19011, 19158, 19619, 19626. Ludlow, Sherriff & Elliot 13180. Rock 11636, 22040, 22041, 22221, 22223, 22234, 22306, 22536, 22538, 22610, 22614, 22616, 22618, 23137, 23142, 23619, 23625. Ward 10497.

Szechuan. Forrest 16324, 16375, 17418, 20451, 21586. Rock 5535, 16013, 16018, 16024, 17907, 18150, 23700, 24160, 24165, 24307, 24582, 24583.

Yunnan/Tibet Border. Rock 8, 36, 42, 109, 117, 155, 164, 176, 22915, 22916, 22917, 22934, 22996, 23452, 23518, 23521, 23527, 23528, 23530. Ward 325, 5323.

Yunnan/Szechuan Border. Ward 4211, 4764, 5068.

Burma. Ward 6953.

R. beesianum is one of the discoveries of George Forrest during his first expedition to western China. The type material was collected in May 1906 on the eastern flank of the Lichiang Range. Subsequent collections by Forrest, Ward, Rock, Ludlow, Sherriff & Elliot, and Yü show that the area of distribution of this species extends from Central to north-west Yunnan and Upper Burma, through south-west Szechuan to south-east Tibet. It grows in rhododendron forests and in open pine forests, in thickets and on rocky slopes and gullies at 11,000–14,000 feet (Fig. 47).

As would be expected from the wide geographical distribution, diverse habitats and altitudinal range, *R. beesianum* shows considerable variation in habit, in size of the leaves, in the nature of the

inflorescence, in size and colour of the corolla and in size of the capsule. In 1919 an apparently divergent species, *R. colletum* Balf. f. et Forrest was described from a specimen No. 14450 collected by FORREST on the Mekong-Salwin Divide, north-west Yunnan, and in 1920 another species, *R. emaculatum* Balf. f. et Forrest was founded on FORREST No. 14352 from Doker La, Tsarong, south-east Tibet. The relationships between these species have already been discussed in the *Botanical Magazine*, CLXVII, t. 125 (1950). *R. colletum* has been stated to differ from *R. beesianum* "in its smaller narrower leaves, more tapered at the base, and in its thinner petioles". The very ample material now available shows that the diagnostic criteria which were used are very variable and the species merge into each other. In the specimens of each species there is great variation in leaf size—in *R. beesianum* the leaves are 11–30 cm. long, 2·7–8·3 cm. broad; in *R. colletum* 9–17 cm. long, 2·6–5·4 cm. broad. The tapered leaf base and thin petioles are common to both species. Moreover, they occupy the same geographical areas as indicated above, from Central Yunnan to south-east Tibet. As to *R. emaculatum*, it was supposed to differ from *R. beesianum* "in the grey indumentum, the deep colour of the corolla, and the complete absence of spots". These characteristics, however, are shared by *R. beesianum*. In all these plants the hairs of the indumentum are radiate, and the upper epidermis of the leaf is shown to consist of two layers of cells. *R. microterum*, a manuscript name, appears in synonymy under *R. colletum* in *The Species of Rhododendron*.

It is apparent that no significant difference can be found between these species, and the whole material under these names represents a single variable unit.

R. beesianum is closely allied to *R. nakotiltum* Balf. f. et Forrest and *R. dictyotum* Balf. f. ex Tagg, differing from both in the thinner indumentum, in the radiate hair, and usually in the larger leaves. From *R. lacteum* it is readily distinguished by the colour of the flowers.

The species was introduced into cultivation by FORREST from China in 1906 and flowered for the first time at Caerhays in 1927. It is a slow-growing plant, and somewhat difficult in culture.

R. dictyotum Balf. f. ex Tagg in Notes R.B.G. Edin., XV, 309 (1925–7); Tagg in The Sp. of Rhod., 376 (1930); Rhod. Assoc. Year Book, 40 (1936); Rehder, Manual, Cult. Trees & Shrubs, 703 (1947); Rhod. Handb., 28 (1952).

HABIT: shrub, 1·20–3·60 m. high; branchlets glabrous to densely tomentose with a thin brown tomentum, those below the inflorescences 5–8 mm. in diameter.

LEAVES: lamina oblong, oblong-elliptic or oblanceolate, 5–13·5 cm. long, 2–5·5 cm. broad, apex obtuse or shortly acuminate, base obtuse or rounded; upper surface with vestiges of a juvenile tomentum, midrib grooved, primary veins 14–16 on each side, impressed; under surface covered with a thin felty continuous indumentum, brown, rust- or cinnamon-coloured, midrib prominent; petiole 1–2 cm. long, glabrous to densely tomentose with a thin tomentum.

INFLORESCENCE: racemose umbel of 8–15 flowers; rachis 0·4–1·3 cm. long, sparsely puberulous, floccose or glabrous.

PEDICELS: 1·4–2·5 cm. long, glabrous or puberulous to densely floccose.

CALYX: 5-lobed, 1–2 mm. long, lobes triangular, outside glabrous, margin glabrous or floccose.

COROLLA: campanulate, rarely funnel-campanulate, 3·2–5 cm. (rarely 2·3 cm.) long, white or white flushed rose, spotted crimson or unspotted, with or without a crimson blotch at the base; lobes 5, 1–1·5 cm. long, 1·8–2·8 cm. broad, rounded, emarginate.

STAMENS: 10, unequal, 1–2·8 cm. long; filaments puberulous at the base.

GYNOECIUM: 2·1–3·5 cm. long; ovary slender cylindric or conoid, 4–7 mm. long, 6–9-celled, densely to sparingly tomentose; style glabrous.

CAPSULE: oblong or slender cylindric, 1–2·7 cm. long, 5–6 mm. broad, straight or slightly curved, glabrous or sparsely tomentose, calyx persistent.

HABITAT:

Tibet. FORREST 16734—holotype, 14487, 14809, 16755, 17332, 19174.

Yunnan. FORREST 20007, 21041. ROCK 10262, 10358, 10933, 17110, 18437. YÜ 15089.

Szechuan. ROCK 17430.

The name *R. dictyotum* Balf. f. ex Tagg was given in 1927 to a plant (No. 16734) collected by FORREST in June 1918 on Doker La, Mekong-Salwin Divide, south-east Tibet. Subsequently it was found in other localities in south-east Tibet, Yunnan and south-western Szechuan, at elevations of 11,000–14,000 feet.

The specific status of this plant is very doubtful. The original diagnosis associates it aptly with *R. beesianum* and *R. nakotiltum*, but distinguishes it from both by the thicker and darker indumentum, and by the white corolla with numerous spots.

R. dictyotum shows a strong resemblance to *R. nakotiltum* in habit, leaf size and shape, size and colour of the corolla, the densely tomentose ovary, and in other morphological details. In both species, the leaf epidermis is two-layered. Moreover, they agree in their geographical distribution. The criteria separating these two plants are not of great validity. *R. dictyotum* deviates only in the unistrate indumentum, in the shorter arms of the hairs, and somewhat in the colour of the indumentum.

The question as to whether these are two distinct species or only one variable unit cannot be decided on the available evidence; the herbarium material of *R. nakotiltum* is too scanty for a definite assessment. It may be convenient meanwhile to leave the names as they stand.

R. dictyotum does not appear to be easy to grow, and is rare in cultivation.

R. dignabile Cowan in Notes R.B.G. Edin., XIX, 241 (1933–8); ibid, XXI, 146 (1953); Rhod. Handb., 28 (1952).

HABIT: shrub or small tree 60 cm.–6 m. high; branchlets moderately or sparsely floccose, eglandular or glandular, those below the inflorescences 3–6 mm. in diameter.

LEAVES: lamina oblong-elliptic, elliptic, oblong-obovate or oblanceolate, 4–18 cm. long, 2–6·5 cm. broad, apex obtuse or shortly acuminate, base obtuse, cordulate or rounded; upper surface with vestiges of a juvenile tomentum, midrib grooved, primary veins 10–18 on each side, impressed; under surface with *closely scattered brown hairs or sometimes with a thin veil of hairs*, midrib prominent; petiole 0·6–2·2 cm. long, sparsely or moderately floccose, eglandular or glandular.

INFLORESCENCE: racemose umbel of 8–15 flowers; rachis 0·5–1·2 cm. long, puberulous, rarely glabrous.

PEDICELS: 1·2–3 cm. long, floccose, rarely sparsely glandular.

CALYX: 5-lobed, minute, 0·5–1 mm. long, lobes triangular or rounded, outside glabrous, rarely floccose, margin glabrous or floccose, glandular or eglandular.

COROLLA: campanulate, 2·5–4·3 cm. long, pink, cream or lemon-yellow or white, with or without a purplish or dark crimson

blotch at the base and with or without purple spots; lobes 5, 0·6–1·2 cm. long, 1–2·4 cm. broad, rounded, emarginate.

STAMENS: 10, unequal, 0·8–3 cm. long; filaments puberulous at the base or glabrous.

GYNOECIUM: 2–3·5 cm. long; ovary conoid or slender cylindric, 4–7 mm. long, 5-celled, glabrous to densely floccose, eglandular or sometimes glandular; style glabrous, eglandular, rarely glandular in lower half.

CAPSULE: not seen.

HABITAT:

Tibet. LUDLOW & SHERRIFF 1564—isotype, 1566, 1607, 1619, in 21/5/1938. LUDLOW, SHERRIFF & ELLIOT 13703, 13760, 13793, 13794, 13843, 13857, 15044, 15048, 15049, 15050, 15175, 15307, 15308. LUDLOW, SHERRIFF & TAYLOR 4808. WARD 5718, 5757, 5758, 5764, 5765.

This species was described from specimens collected by LUDLOW & SHERRIFF in southern Tibet in May 1936. Further gatherings show that the plant is distributed from south to south-east Tibet, growing in rhododendron and in conifer forest, and on rocks, on hillsides at elevations of 11,000–14,500 feet.

This species shows considerable resemblance to *R. beesianum* in habit, in leaf shape and size, in the nature of the inflorescence, and in flower shape and size. A diagnostic feature of *R. dignabile* is the indumentum on the under surfaces of the leaves, consisting of closely scattered hairs or of a thin veil of hairs; by this criterion it is readily distinguished from *R. beesianum* and from all the other members in the Series, where the indumentum is dense and continuous, except sometimes in *R. przewalskii.* The hairs are somewhat radiate, more or less similar to those of *R. beesianum*, but usually with shorter arms. There is no record of the species in culture.

R. dryophyllum Balf. f. & Forrest in Notes R.B.G. Edin., XI, 58 (1918–19); Millais, Rhododendrons, ser. 2, 131 (1924); Tagg in The Sp. of Rhod., 377 (1930); Rhod. Assoc. Year Book, 40 (1936); Rhod. Handb., 30 (1952). *R. aiolopeplum* Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 226 (1920–2); Millais, Rhododendrons, ser. 2, 79 (1924); Tagg in The Sp. of Rhod., 373 (1930); Rhod. Assoc. Year Book, 39 (1936); Rhod. Handb., 3 (1952). *R. helvolum* Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 262 (1920–2); Millais, Rhododendrons, ser. 2, 154 (1924); Tagg in The Sp. of Rhod., 382 (1930); Rhod. Handb., 104 (1952).

R. intortum Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 269 (1920–2); Millais, Rhododendrons, ser. 2, 162 (1924); Tagg in The Sp. of Rhod., 384 (1930); Rhod. Handb., 104 (1952). *R. levistratum* Balf. f. et Forrest in Notes R.B.G. Edin., XI, 88 (1918–19); Millais, Rhododendrons, ser. 2, 173 (1924); Tagg in The Sp. of Rhod., 382 (1930); Rhod. Assoc. Year Book, 41 (1936); Rhod. Handb., 52 (1952). *R. sigillatum* Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 294 (1920–2); Millais, Rhododendrons, ser. 2, 237 (1924); Rhod. Soc. Notes, III, 37 (1925–31); Tagg in The Sp. of Rhod., 384 (1930); Rhod. Handb., 85 (1952). *R. theiophyllum* Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 61 (1920–4); Millais, Rhododendrons, ser. 2, 249 (1924); Tagg in The Sp. of Rhod., 385 (1930); Rhod. Handb., 108 (1952). *R. vicinum* Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 305 (1920–2); Millais, Rhododendrons, ser. 2, 257 (1924); Rhod. Soc. Notes, III, 37 (1925–31); Tagg in The Sp. of Rhod., 382 (1930); Rhod. Handb., 108 (1952).

HABIT: shrub or small tree, 60 cm.–7·60 m. high; branchlets densely (rarely sparsely) tomentose with a thin fawn, brown or whitish tomentum, those below the inflorescences 3–6 mm. in diameter.

LEAVES: lamina oblong, oblong-elliptic, oblong-lanceolate or lanceolate, 5–14 cm. long, 1·4–5·2 cm. broad, apex acute, shortly acuminate, obtuse or rounded; narrowed to the base, obtuse or rounded; upper surface with vestiges of a juvenile tomentum, midrib grooved, primary veins 12–20 on each side, impressed; under surface covered with a thin suède-like continuous indumentum, fawn, brown, yellowish-brown, cinnamon-coloured or sometimes yellowish, midrib prominent; petiole 1–2 cm. long, densely (rarely sparsely) tomentose with a thin, fawn, brown or whitish tomentum.

INFLORESCENCE: racemose umbel of 8–16 flowers; rachis 0·4–1 cm. long, puberulous or floccose.

PEDICELS: 0·8–2·3 cm. long, floccose or sometimes glabrous.

CALYX: 5-lobed, minute, 1 mm. long, lobes triangular or rounded, outside and margin glabrous or puberulous.

COROLLA: funnel-campanulate or campanulate, 2–4 cm. long, white, creamy-white, white flushed rose, pink or pinkish-purple, with or without crimson spots, rarely with a crimson blotch at the base; lobes 5, 0·6–1·8 cm. long, 1–2·5 cm. broad, rounded, emarginate.

STAMENS: 10, unequal, 1–2·5 cm. long; filaments puberulous at the base.

GYNOECIUM: 1·6–3·5 cm. long; ovary slender cylindric, 4–7 mm. long, 5–8- (rarely 9-) celled, glabrous or sparsely or rarely moderately tomentose; style glabrous, rarely puberulous at the base.

CAPSULE: oblong, 1·3–3 cm. long, 4–8 mm. broad, straight or slightly curved, glabrous, rarely floccose, calyx persistent.

HABITAT:

Yunnan. FORREST 14107—holotype, 13364, 14021, 14024—holotype of *R. vicinum*, 14026—holotype of *R. levistratum*, 14041, 14100, 14114, 14115, 14145—holotype of *R. sigillatum*, 14267, 15253, 16303—holotype of *R. intortum*, 16358, 16467—holotype of *R. aiolopeplum*, 16540, 17021, 17029, 17125, 17151, 17292, 17307, 17326, 17337, 17341, 17345, 17355, 17367, 17415, 17473, 17784—holotype of *R. helvolum*, 19582, 19731, 19793, 19798, 20162, 20192, 20223, 20275, 20278, 20318, 20330, 21012, 21018, 21019, 21047, 21287, 29131, 29243, 29253, 29254, 29274, 29325, 29327, 29334. ROCK 8851, 8852, 8854, 8855, 8856, 8857, 8860, 8861, 8862, 8863, 8888, 9242, 9264, 9271, 9273, 9318, 9329, 9330, 9331, 9335, 9339, 9355, 9413, 9414, 9942, 9978, 10883, 10936, 11087, 11090, 11096, 11102, 11103, 11104, 11105, 11106, 11107, 11119, 11120, 11121, 11149, 11322, 11324, 11329, 11333, 11338, 11342, 11344, 11500, 11702, 17212, 17356, 22767, 22798, 22811, 22819, 22847, 22895, 23319, 23350, 23369, 23394, 23406, 24616, 24962. YÜ 7990, 8000, 10952.

Tibet. FORREST 14519, 16673, 16775, 17328, 17335, 17339, 18910. 18940, 19022, 19024, 19718. WARD 10579.

Yunnan/Tibet Border. WARD 382.

Szechuan. FORREST 16656, 16836—holotype of *R. theiophyllum*, 20418, 20668, 21011, 21052, 21392, 21400. ROCK 16015, 17558, 17568, 17569, 17576, 17578, 17904, 17906, 17909, 17910, 17911, 17912, 18090, 18093, 18138, 18141, 18159, 18168, 18171, 18179, 23691, 23809, 23906, 23922, 23958, 23966, 23974, 24314, 24403, 24418, 24445, 24457, 24459, 24461, 25473, 25474.

Yunnan/Szechuan Border. WARD 4835, 5325.

Burma. Ward 6954.

Bhutan Frontier. WARD 13708.

R. dryophyllum Balf. f. et Forrest has a wide geographical distribution, extending from Yunnan and Upper Burma to south-west Szechuan and through south-east Tibet to the Bhutan Frontier. It is found in rhododendron, pine and spruce forests, in thickets, and scrub in side valleys and on rocky slopes at 11,000–14,000 feet.

This plant was discovered by FORREST on the Mekong-Salwin Divide, north-west Yunnan, in 1917. In the same year and subsequently in the same region collections were made of very similar plants, and these were described as *R. levistratum* Balf. f. et Forrest, *R. dumosulum* Balf. f. et Forrest, *R. aiolopeplum* Balf. f. et Forrest, *R. sigillatum* Balf. f. et Forrest, *R. helvolum* Balf. f. et Forrest, *R. vicinum* Balf. f. et Forrest and *R. intortum* Balf. f. et Forrest. It will be noted that in *The Species of Rhododendron*, *R. helvolum*, *R. vicinum* and *R. intortum* have been regarded as variants, and in the same work the first two names appear in synonymy under *R. levistratum* and the last-mentioned name under *R. sigillatum*. In the *Botanical Magazine*, Vol. 147, t. 8893, (1938) STAPF relegates *R. levistratum* and its synonyms *R. helvolum* and *R. vicinum*, to synonymy under *R. traillianum*. From this species, however, they differ widely in indumental characters, particularly in the long-rayed hairs (in *R. traillianum* the hairs are radiate with the arms swollen at the base) and in these and in all other characteristics they are identical with *R. dryophyllum*. Moreover, *R. theiophyllum* Balf. f. et Forrest, a plant from south-west Szechuan, which has been regarded in *The Species of Rhododendron* and in the *Botanical Magazine*, Vol. 147, t. 8893 (1938) as synonymous with *R. traillianum*, also belongs to the above assemblage of plants; it agrees with *R. dryophyllum* in the leaf indumentum and in every morphological detail, as confirmed by plants in cultivation raised from seed from the type number.

The very adequate collections now show that the supposed distinguishing characters are inconstant, and this is confirmed by additional evidence of plants in cultivation. Although there is a great range in habit, in leaf shape and size, in the size of the corolla, and in the degree of hairiness of the ovary. The recorded differences in the Key in *The Species of Rhododendron*—"flowers spotted: flowers unspotted", "leaves more or less pointed at both ends: leaves more or less rounded at both ends"—are unreliable. All these plants agree in having a thin indumentum with long-rayed hairs.

Although in general appearance there is a closed similarity between all these presumed species, nevertheless, it is possible to distinguish between the more extreme forms where differences in habit and leaf size call for a distinguishing name. Accordingly, two names are retained, namely, *R. dryophyllum* for a medium-sized or large shrub with long leaves; *R. dumosulum* usually for a small shrub with small leaves. However, these species are linked by intergrading forms.

R. dumosulum Balf. f. & Forrest in Notes R.B.G. Edin., XIII, 41 (1920-2); Millais, Rhododendrons, ser. 2, 132 (1924); Tagg in The Sp. of Rhod., 378 (1930); Rhod. Assoc. Year Book, 40 (1936); Rhod. Handb., 30 (1952).

HABIT: a small shrub, 30 cm.–1·20 m. high; branchlets densely to sparsely tomentose with a thin brown tomentum, those below the inflorescences 4–5 mm. in diameter.

LEAVES: lamina oblong or lanceolate, 3·8–7 cm. long, 1–2·4 cm. broad, apex obtuse, acute or shortly acuminate, obtuse or narrowed to the base; upper surface with vestiges of a juvenile tomentum, midrib grooved, primary veins 10–15 on each side, impressed; under surface covered with a thin suède-like continuous indumentum, brown or rust-coloured, midrib prominent; petiole 0·5–1·2 cm. long, densely to sparsely tomentose with a thin brown or rust-coloured tomentum.

INFLORESCENCE: racemose umbel of 7–8 flowers; rachis 3–5 mm. long, puberulous.

PEDICELS: 0·6–1·5 cm. long, floccose.

CALYX: 5-lobed, minute, 1 mm. long, lobes triangular, outside and margin floccose or glabrous.

COROLLA: funnel-campanulate, 2–3·2 cm. long, white faintly flushed rose, with crimson spots; lobes 5, 0·8–1·2 cm. long, 1–1·6 cm. broad, rounded, emarginate.

STAMENS: 10, unequal, 1–2·4 cm. long; filaments puberulous at the base.

GYNOECIUM: 2–2·5 cm. long; ovary slender cylindric or conoid, 4–6 mm. long, 6-celled, glabrous; style glabrous.

CAPSULE: not seen.

HABITAT:

Yunnan. FORREST 14088—holotype.

Tibet. FORREST 16742, 17343.

R. dumosulum may be regarded as a small-leaved expression of *R. dryophyllum*. It was first found by FORREST in June 1917, in the Mekong-Salwin Divide, Yunnan, in open moorland at 13,000 feet. In *The Species of Rhododendron* it is stated to be the smallest species of the series, distinguished by its dwarf habit, narrow revolute leaves and small flowers. Further gatherings by FORREST show that this species is variable in its habit ranging from 30 cm.–1·20 m., and also in the size of the corolla which is 2–3·2 cm. long. From *R. dryophyllum* the species differs usually in the dwarfer growth and in the smaller leaves. The two, however, merge into each other.

R. lacteum Franch. in Bull. Soc. Bot. Fr., XXXIII, 231 (1886); Journ. Linn. Soc. Bot., XXVI, 26 (1889) ex parte; Notes R.B.G. Edin., V, 215 (1909–12); Bot. Mag., CXLIX, t. 8988 (1923); Gard. Chron., LVIII, 338, f. 119 (1915); ibid., LIX, 168 (1916); ibid., XCI, 440 (1932); Trans. Bot. Soc. Edin., XXVII, 97 (1916); Millais, Rhododendrons, 199 (1917); ibid., ser. 2, 168 (1924); Rhod. Soc. Notes, II, 10 (1920–4); Tagg in The Sp. of Rhod., 381 (1930); New Flora & Silva, V, 276, f. XCVII (1932–3); Bean, Trees & Shrubs, III, 88 (1951); Rhod. Assoc. Year Book, 40 (1936); R.H.S. Dict. Gard., IV, 1776 (1951); Rhod. Handb., 49 (1952). *R. mairei* Lévl. in Fedde Repert., XII, 285 (1913); Millais, Rhododendrons, 206 (1917); ibid., ser. 2, 183 (1924); Tagg in The Sp. of Rhod., 381 (1930); Rhod. Handb., 105 (1952).

HABIT: shrub or tree, 1·20–9 m. high; branchlets densely to sparsely tomentose with a thin, fawn tomentum, those below the inflorescences 0·6–1 cm. in diameter, leaf scars large, conspicuous.

LEAVES: lamina oval, ovate-elliptic, obovate, elliptic, oblong-elliptic or rarely oblanceolate, 6·8–18·5 cm. long, 3·7–10 cm. broad, apex rounded, often with a short acuminate tip, base rounded or cordate; upper surface with vestiges of a juvenile tomentum, midrib grooved, primary veins 14–20 on each side, impressed; under surface covered with a thin continuous, suède-like, fawn or brown indumentum, midrib prominent; petiole 1–4·7 cm. long, densely to sparsely tomentose, tomentum thin, fawn.

INFLORESCENCE: a large racemose umbel of 12–20 flowers; rachis 1·2–3·5 cm. long, floccose or puberulous.

PEDICELS: 1·8–4·3 cm. long, moderately or rather densely floccose.

CALYX: 5-lobed, minute, 0·5–1 mm. long, lobes triangular or rounded, outside and margin glabrous or sometimes floccose, eglandular.

COROLLA: broadly campanulate, 3·5–5 cm. long, *pale yellow or clear canary yellow*, rarely pure white, with or without crimson blotch at the base, unspotted; lobes, 5, 1·2–1·5 cm. long, 1·8–3 cm. broad, rounded, emarginate.

STAMENS: 10, unequal, 1·3–3·4 cm. long; filaments puberulous at the base.

GYNOECIUM: 2·2–4 cm. long; ovary conoid, rarely slender cylindric, 4–7 mm. long, 10- (rarely 9-) celled, densely tomentose; style glabrous.

CAPSULE: slender cylindric or sometimes oblong, 1·5–3 cm. long, 5–7 mm. broad, curved or straight, tomentose, calyx persistent.

HABITAT:

Yunnan. DELAVAY 164—isotype, June 28, 1887. FORREST 4160, 6778, 11575, 15568, 21949, 22021, 22325, 25583, 25589, 25776, 25819, 28248, 28255, 28272, 28276, 28279, 28288, 28292, 28303, 29113, 30983. MCLAREN "C" 209, "L" 108A, 126A, "Miss Coll." 108. MAIRE in May 1911—isotype of *R. mairei.* ROCK 6346, 8260, 8264, 11379.

Burma. FORREST 25591.

Szechuan. ROCK 5541, 17742.

R. lacteum is one of the finest rhododendrons in cultivation. It was described by FRANCHET in 1886 from a specimen (No. 164) collected by M. L'ABBÉ DELAVAY in 1884 on Mt. Kua-la-po, north-west Yunnan. It was later found by FORREST on both the eastern and western flanks of the Tali Range and at the Mekong Divide, Yunnan, also on the western flank of the Salwin-Kiu Chiang Divide, north-east Upper Burma. MCLAREN's collectors found it in Central Yunnan, and ROCK both in Central Yunnan and in south-western Szechuan. The plant grows in rhododendron forests, as underwood in coniferous forests, and in mixed thickets on rocky slopes in side valleys, at elevations of 10,000–13,000 feet (Figs. 42 and 46).

In its general appearance *R. lacteum* indicates kinship with *R. beesianum* Diels. There is a definite resemblance between these plants in the nature of the inflorescence, in the shape of the flowers, in the thinness of the indumentum on the under surfaces of the leaves, and in the densely tomentose ovary. Both have radiate hairs; in *R. lacteum* the arms are elliptic-ovoid or oblong, in *R. beesianum* they are narrower. *R. lacteum* is readily distinguished from its ally by the yellow flowers, and usually by the oval to oblong-elliptic leaves, with rounded or cordulate base and rounded apex. The upper epidermis of the leaf is said to be three-layered in *R. lacteum*, but only two-layered in *R. beesianum.*

In some respects, particularly in the colour of the flowers, *R. lacteum* approaches the Himalayan species, *R. wightii* Hook. f. The relationship between them is discussed under the latter species.

In the original description the corolla of *R. lacteum* is described as being 6-lobed and the stamens 12 in number. This, however, would appear to be fortuitous. Subsequent collections, as well as cultivated plants, have invariably 5-lobed corollas and 10 stamens.

In 1894, STAPF described a species from Borneo, under the name *R. lacteum*. For this plant, however, HEMSLEY substituted the name *R. stapfianum*. A specimen collected by E. E. MAIRE in 1911 in north-eastern Yunnan and described as *R. mairei*, Levl., is correctly referred to *R. lacteum* in *The Species of Rhododendron*.

R. lacteum was confused for a number of years with a plant also collected by DELAVAY and described by FRANCHET in 1887 as *R. lacteum* var. *macrophyllum*. The latter was figured in the *Botanical Magazine*, t. 8372, under *R. lacteum*, and the flowers have been described and figured as white with a blood-red blotch at the base. The matter was investigated by SIR ISAAC BAYLEY BALFOUR, who recorded his observations in the *Gardeners' Chronicle*, LIX, 168 (1916) and in the *Trans. Bot. Soc.* Edin., XXVII, Part I, 97 (1916). In the latter publication he gives an account of the differences between the two plants, and he distinguishes the plant which was described and figured in the *Botanical Magazine*, t. 8372, under *R. lacteum*, as a new species *R. fictolacteum* Balf. f. The true *R. lacteum* was figured by O. STAPF in the *Botanical Magazine* in 1923, t. 8988. Moreover, another plant, WILSON No. 4254, recorded by WILSON & REHDER under *R. lacteum* in *Plantae Wilsonianae*, p. 545 (1913), was also given a new name, *R. galactinum*. The description was published in the *Notes Roy. Bot. Gard.* Edin., LXXII, 103 (1926) after SIR ISAAC BAYLEY BALFOUR'S death.

The species was introduced into cultivation in this country by FORREST in 1910 from the Tali Range. It received a First Class Certificate when exhibited by MR. A. M. WILLIAMS from Cornwall in 1926.

In culture it requires well-sheltered positions outdoors. It is slow in growth, reluctant to seed, and somewhat difficult to propagate by layering.

R. nakotiltum Balf. f. & Forrest in Notes R.B.G. Edin., XII, 143 (1919–21); Millais, Rhododendrons, ser. 2, 192 (1924); Tagg in The Sp. of Rhod., 833 (1930); Rhod. Handb., 62 (1952).

HABIT: shrub, 90 cm.–3·60 m. high; branchlets floccose, those below the inflorescences 5–8 mm. in diameter.

LEAVES: lamina oblong or oblong-elliptic, 6·5–12 cm. long, 2·5–4·2 cm. broad, apex acuminate, base obtuse; upper surface with vestiges of a juvenile tomentum, midrib grooved, primary veins 12–15 on each side, impressed; under surface covered with a thin continuous felty, grey or fawn indumentum, midrib raised; petiole 1·3–2 cm. long, floccose.

INFLORESCENCE: racemose umbel of 12–15 flowers; rachis about 1 cm. long, puberulous or glabrous.

PEDICELS: 1·4–2 cm. long, floccose.

CALYX: 5-lobed, minute, 1–1·5 mm. long, lobes rounded, outside and margin glabrous.

COROLLA: openly campanulate or funnel-campanulate, 2·8–3·5 cm. long, pale rose or white flushed rose, with or without a crimson blotch at base, spotted deep crimson or unspotted; lobes 5, 1–1·2 cm. long, 1·6–2·2 cm. broad, rounded, emarginate.

STAMENS: 10, unequal, 1·3–2·4 cm. long; filaments puberulous at the base.

GYNOECIUM: 2·5–2·8 cm. long; ovary conoid, 4–6 mm. long, 8-celled, densely tomentose; style glabrous.

CAPSULE: not seen.

HABITAT:

Yunnan. FORREST 14060—holotype, 14068.

This species is known from two collections made in June 1917 by FORREST in the Mekong-Salwin Divide, north-west Yunnan. It was found in pine forests and in open scrub at elevations of 11,000–13,000 feet. Its nearest ally is *R. dictyotum*, from which it is distinguished mainly by the bistrate indumentum. The colour of the indumentum, which has been regarded as of diagnostic significance in the Key in *The Species of Rhododendron*, varies from grey to fawn. The hairs are long-rayed, and in this respect it is comparable in the Series with *R. dictyotum*, *R. dryophyllum*, *R. phaeochrysum* and their immediate allies, also *R. pomense* and *R. przewalskii*. The upper epidermis of the leaf has been stated to consist of two cell layers. It resembles its close ally *R. beesianum* in general morphological characters, but deviates in the thicker more felted indumentum and often in the smaller leaves; moreover, it differs markedly from that species in the long-rayed hair of the indumentum. There is no record of its occurrence in culture.

R. phaeochrysum Balf. f. & W. W. Sm. in Notes R.B.G. Edin., X, 131 (1917); Millais, Rhododendrons, 225 (1917); ibid., ser. 2, 207 (1924); Tagg in The Sp. of Rhod., 680 (1930); Rhod. Handb., 69 (1952); Rhod. & Camellia Year Book, 42 (1954). *R. lophophorum* Balf. f. et Forrest in Notes R.B.G. Edin., XI, 95 (1919); Millais, Rhododendrons, ser. 2, 177 (1924); Tagg in The Sp. of Rhod., 679 (1930); Rhod. Handb., 54 (1952); Rhod. & Camellia Year Book, 42 (1954). *R. syncollum* Balf. f. et Forrest in Notes R.B.G. Edin., XI, 142 (1919); Millais, Rhododendrons, ser. 2,

246 (1924); Tagg in The Sp. of Rhod., 686 (1930); Rhod. Handb., 89 (1952); Rhod. & Camellia Year Book, 42 (1954). *R. dichropeplum* Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 40 (1920); Millais, Rhododendrons, ser. 2, 128 (1924); Rhod. Soc. Notes III, 224 (1925–31); Tagg in The Sp. of Rhod., 680 (1930).

HABIT: shrub, 1·20–4·50 m. high; branchlets densely to sparsely tomentose with a thin tomentum or glabrous, glandular or eglandular, those below the inflorescences 0·4–1 cm. in diameter.

LEAVES: lamina oblong-elliptic, oblong, oblong-ovate, oblong-lanceolate or lanceolate, 5–14 cm. long, 1·8–5·8 cm. broad, apex obtuse or acute, base cordulate, rounded or obtuse; upper surface with vestiges of a juvenile tomentum or glabrous, midrib grooved, primary veins 14–20 on each side, impressed; under surface covered with a thin, continuous, agglutinate or suède-like dark brown or fawn indumentum, midrib prominent; petiole 0·8–2·4 cm. long, densely to sparsely tomentose or glabrous, glandular or eglandular.

INFLORESCENCE: racemose umbel of 8–15 flowers; rachis 0·5–1·5 cm. long, glabrous or puberulous or sometimes floccose.

PEDICELS: 1–2·2 cm. long, floccose or glabrous, eglandular.

CALYX: 5-lobed, minute, 0·5–1 mm. long, lobes triangular or rounded, eglandular, outside glabrous, rarely floccose, margin floccose or glabrous.

COROLLA: funnel-campanulate, 3–5 cm. long, white or white flushed rose, creamy-white, rarely yellow, purple or pinkish, rarely with a blotch, with or without crimson spots; lobes 5, 0·8–1·5 cm. long, 1–2·3 cm. broad, rounded, emarginate.

STAMENS: 10, unequal, 0·8–2·8 cm. long; filaments puberulous up to one-half their length or sometimes glabrous.

GYNOECIUM: 1·5–3 cm. long; ovary conoid or oblong, 4–8 mm. long, glabrous, rarely with a few hairs at the apex, eglandular; style glabrous, eglandular.

CAPSULE: oblong or oblong-oval, 1·3–2 cm. long, 6–7 mm. broad, glabrous, eglandular, 5-celled, calyx persistent.

HABITAT:

Yunnan. FORREST 10547—holotype, 10612—holotype of *R. dichropeplum*, 11321, 12651, 12742, 13004, 13971—holotype of *R. lophophorum*, 14035—holotype of *R. syncollum*, 14105, 14939, 14959, 16491, 17206, 17346, 17356, 17393, 17434, 17471, 19737, 19783, 20213, 20347, 20348, 21020, 21021, 21048, 21275, 23010,

23329. Rock 9272, 9392, 9678, 9712, 9714, 9724, 11325, 22814, 23321, 24742, 25314. Yü 10755, 10795, 10857, 10979.

Tibet. Forrest 14914, 16754, 16767, 17333, 17381, 18647, 18651, 18657, 19715. Ludlow, Sherriff & Elliot 13855, 13858, 14006, 14024, 15245, 15246, 15326. Ludlow, Sherriff & Hicks 19039. Ward 5409, 11586.

Szechuan. Forrest 17157. Rock 16082, 16097, 16334, 16366, 17564, 17760, 17770, 23706, 23736, 23801, 23818, 24006, 24017, 24284, 24317, 24359, 24410, 24512, 25481, 25482.

Yunnan/Szechuan Border. Ward 4843.

The area of distribution of *R. phaeochrysum* extends from mid- to north-west Yunnan, through south-west Szechuan to south-east Tibet. It is found in rhododendron thickets and forests, in pine and spruce forests, on rocks, and on boulders and ledges of cliffs in side valleys, at elevations of 11,000–17,500 feet (Fig. 45).

Forrest discovered this plant on the mountains north-east of the Yangtse bend, Yunnan, in 1913. Another plant collected by him in the same year in the same locality was described as *R. dichropeplum* Balf. f. et Forrest in 1920, and in *The Species of Rhododendron* the name appears under *R. phaeochrysum* in synonymy.

Again in 1920 two other species, *R. lophophorum* Balf. f. et Forrest and *R. syncollum* Balf. f. et Forrest were founded on Forrest's Nos. 13971 and 14035, which had been collected on the mountains north of Atuntze in June 1917. In the Key in *The Species of Rhododendron* no distinction has been indicated between *R. phaeochrysum* and *R. syncollum*, whilst *R. lophophorum* is distinguished from both these species with glabrous ovaries, by the "ovary with an apical tuft of white hairs". Diagnostically this distinction is insignificant. Recorded differences in the notes under the descriptions, in leaf size, in the more glandular petioles, in the smaller flowers, and in the more compact indumentum are not constant. The ample material now available shows that *R. phaeochrysum* is a very variable plant, and it is evident that *R. syncollum* and *R. lophophorum* are expressions of this species.

Furthermore, in 1920 still another species, *R. agglutinatum* Balf. f. et Forrest was described from a specimen (No. 16319) collected by Forrest in south-west Szechuan in 1918. The species shows a definite resemblance to *R. phaeochrysum* in general characters. In *R. agglutinatum*, as the name suggests, the indumentum on the under surfaces of the leaves is usually agglutinate, forming a crustaceous surface. This characteristic is often to be seen in *R. phaeochrysum*. In the original diagnosis *R. agglutinatum* is said

to be "smaller in all its parts". In extreme forms this distinction is so markedly evident that the name *R. agglutinatum* is retained for plants with small leaves 4–7·5 cm. long, and small flowers 2–3 cm. long, although intermediates link these with *R. phaeochrysum*.

R. phaeochrysum is very closely allied to *R. dryophyllum* Balf. f. et Forrest. There is a marked similarity between them in general appearance. The main distinctions between them are that in *R. phaeochrysum* the indumentum on the under surfaces of the leaves is often agglutinate and the ovary is invariably glabrous, whereas in *R. dryophyllum* the indumentum is felty and the ovary is glabrous or floccose. In both species the hairs are long-rayed. It is apparent that these species, which were placed in different Series in *The Species of Rhododendron*, are closely allied members of the Lacteum Series.

R. pomense Cowan et Davidian in Notes R.B.G. Edin., XXI, 146 (1953).

HABIT: shrub, 60 cm.–1·20 m. high; branchlets glandular and floccose, those below the inflorescences about 6 mm. in diameter.

LEAVES: lamina oblong-oval, 8·5–10 cm. long, 3·6–4·7 cm. broad, apex rounded and mucronate, base rounded or broadly obtuse; upper surface glabrous, midrib grooved, primary veins 12–16 on each side, impressed; under surface covered with a thin continuous indumentum of brown hairs, midrib raised; petiole 1·6–2 cm. long, floccose.

INFLORESCENCE: shortly racemose, about 5-flowered; rachis 5 mm. long, floccose.

PEDICELS: 1·3–2·4 cm. long, densely tomentose.

CALYX: 5-lobed, *large*, lobes unequal, rounded or ovate, *the longest* 1·2 *cm. the shortest* 5 *mm. long*, outside glabrous or floccose at the base, margin ciliate.

COROLLA: campanulate, 3·8 cm. long, pink; lobes 5, 1·5–1·8 cm. long, 1·8–2·3 cm. broad, rounded, emarginate.

STAMENS: 10, unequal, 2–2·6 cm. long; filaments puberulous towards the base.

GYNOECIUM: 3·2–3·5 cm. long; ovary conoid, 4–5 mm. long, 5-celled, densely tomentose; style glabrous.

CAPSULE: not seen.

HABITAT:

Tibet. LUDLOW, SHERRIFF & ELLIOT 13177—isotype.

This distinct species was discovered by LUDLOW, SHERRIFF & ELLIOT in June 1947, above Showa Dgory in Pome, south-east

Tibet at an elevation of 11,000 feet. A marked feature of this plant is the large unequal calyx 1·2 cm. long, by which the species is readily distinguished from all the other members in the Series where the calyx is invariably minute, 1–2 mm. long. It further deviates from the Series (except sometimes *R. phaeochrysum*, *R. agglutinatum* and *R. dignabile*) in the glandular branchlets. The hairs of the indumentum are long-rayed, and in this respect it may be compared with several other members in the Series with a similar type of hair. In general characters, it resembles *R. dignabile*, another Tibetan plant, from which it differs in the continuous indumentum on the under surfaces of the leaves, in the long-rayed hair, in the large calyx, and usually in the densely tomentose ovary. The plant has not been in cultivation.

R. przewalskii Maxim. in Bull. Acad. Petersb., XXIII, 350 (1877); Mél. Biol., IX, 771 (1877); Journ. Linn. Soc., XXVI, 29 (1889); Bean, Flora & Sylva, III, 164 (1905); Schneid. Ill. Handb. Laubh., II, 485, f. 321d (1909); Hemsl. et Wils. Kew Bull., 108 (1910); Pl. Wils., I, 534 (1913); Rhod. Soc. Notes, I, 14 (1916); Millais, Rhododendrons, 231 (1917); Tagg in The Sp. of Rhod., 682 (1930); Gard. Chron., ser. 3, LXXXIX, 338 (1931); Rehder, Manual Cult. Trees & Shrubs, 704 (1947); Bean, Trees & Shrubs, III, 118 (1951); Rhod. Handb., 73 (1952); Rhod. & Camellia Year Book, 42 (1954); *R. kialense* Franch. in Journ. de Bot., IX, 392 (1895); Pl. Wils., I, 534 (1913); Millais, Rhododendrons, 199 (1917); Tagg in The Sp. of Rhod., 682 (1930); Bean, Trees & Shrubs, III, 118 (1951).

HABIT: shrub, 90 cm.–2·70 m. high; branchlets glabrous, rarely tomentose, eglandular, those below the inflorescences 4–8 mm. in diameter.

LEAVES: lamina elliptic, oblong-elliptic, ovate-elliptic, ovate or oblong, 5–11 cm. long, 2–5 cm. broad, apex obtuse or shortly acuminate, base rounded, obtuse or cordulate; upper surface glabrous or with vestiges of a juvenile tomentum, midrib grooved, primary veins 12–16 on each side, impressed; under surface with a thin, continuous fawn, brown or white indumentum or sometimes with a thin veil of hairs, *rarely with a few scattered hairs*, midrib prominent; petiole 0·8–2·5 cm. long, glabrous, rarely floccose, eglandular.

INFLORESCENCE: racemose umbel of 10–15 flowers; rachis 0·4–1·5 cm. long, glabrous.

PEDICELS: 1–3 cm. long, glabrous, rarely floccose, eglandular.

CALYX: 5-lobed, minute, 0·5–1 mm. long, lobes triangular or rounded, eglandular, outside glabrous, margin glabrous or floccose.

COROLLA: funnel-campanulate or campanulate, 2·3–3·5 cm. long, white or rose-pink, with or without spots; lobes 5, 0·8–1·2 cm. long, 1·2–2 cm. broad, rounded, emarginate.

STAMENS: 10, unequal, 0·8–2 cm. long; filaments puberulous at the base.

GYNOECIUM: 1·7–3 cm. long; ovary conoid or slender cylindric, 4–6 mm. long, 5-celled, glabrous, eglandular; style glabrous.

CAPSULE: oblong, 1·6–2 cm. long, 4–8 mm. broad, glabrous, eglandular, calyx persistent.

HABITAT:

Kansu. PRZEWALSKI in 1872, in 1880. FARRER 104, 510A, 510B, no number. ROCK 12364, 12373, 12417, 12652, 13302, 13612, 13677, 13685, 13694.

Tibet. ROCK 13278. SOULIÉ 760—holotype of *R. kialense.*

Szechuan. ROCK 24003, 24008, 24413.

This plant was first collected by PRZEWALSKI in Kansu, in 1872. Subsequently it was found by other collectors in Kansu, east Tibet, and in south-west Szechuan. *R. kialense* Franch., described in 1895 from a specimen collected by SOULIÉ in east Tibet, correctly appears in synonymy in *The Species of Rhododendron* under *R. przewalskii* (Fig. 48).

In this species the indumentum on the under surfaces of the leaves may be thin, continuous or sometimes a thin veil of hairs or rarely with a few hairs that are widely scattered. The hairs are long-rayed as in some other members of the Series.

R. przewalskii shows a resemblance to *R. agglutinatum* and *R. dryophyllum*; it is distinguished from the former usually by the non-agglutinate indumentum, and from the latter by the glabrous branchlets, petioles and pedicels, and sometimes by the thinner indumentum.

R. traillianum Forrest & W.W. Sm. in Notes R.B.G. Edin., VIII, 204 (1913–15); Millais, Rhododendrons, 254 (1917); ibid., ser. 2, 251 (1924); Rhod. Soc. Notes, II, 68 (1920–4); Tagg in The Sp. of Rhod., 385 (1930); Journ. Roy. Hort. Soc., LVI, 160 (1931); Bot. Mag., CXLVII, t. 8900 (1938); Rehder, Manual Cult. Trees & Shrubs, 703 (1947); Rhod. Handb., 92 (1952).

HABIT: shrub or small tree, 90 cm.–9 m. high; branchlets moderately or densely tomentose with brown, fawn or grey thin tomentum, those below the inflorescences about 4–8 mm. in diameter.

LEAVES: lamina oblong, oblong-elliptic, oblong-obovate or oblong-lanceolate, 5·2–17 cm. long, 2–6·8 cm. broad, apex obtuse or shortly acuminate, base obtuse, rounded or cordulate; upper surface with vestiges of a juvenile tomentum, midrib grooved, primary veins about 14–18 on each side impressed; under surface covered with a thin, continuous, *powdery* or sometimes suède-like indumentum, brown, fawn, rust- or rarely cinnamon-coloured or yellowish, midrib prominent; petiole 1–2·5 cm. long, moderately or densely tomentose with brown, fawn or grey thin tomentum.

INFLORESCENCE: racemose umbel of 9–15 flowers; rachis 0·5–1·3 cm. long, floccose.

PEDICELS: 0·8–2·5 cm. long, moderately or densely floccose, rarely glabrous.

CALYX: 5-lobed, minute, 1 mm. long, lobes triangular or rounded, outside and margin glabrous or floccose.

COROLLA: funnel-campanulate, 2·6–4 cm. long, white, white flushed rose, pink or rose; lobes 5, 0·8–1·5 cm. long, 1·2–2·4 cm. broad, rounded, emarginate.

STAMENS: 10, unequal, 0·8–2·5 cm. long; filaments puberulous at the base.

GYNOECIUM: 1·6–3 cm. long; ovary slender cylindric, rarely conoid, 4–7 mm. long, 5–9 celled, tomentose or glabrous; style glabrous.

CAPSULE: oblong or slender cylindric, 1·6–2·6 cm. long, 5–8 mm. broad, straight or slightly curved, glabrous, rarely sparsely floccose, calyx persistent.

HABITAT:

Yunnan. FORREST 5870—holotype, 2408, 2409, 5872, 10154, 10156, 10166, 10204, 10272, 10298, 10364, 10541, 12429, 12548, 13763, 15083, 15123, 15217, 15305, 15572, 16120, 16126, 17147, 17167, 17197, 17198, 17331, 22042, 22199, 23326, 23327, 23328, 23330, 23332, 23334, 23335, 23336, 23338, 23339, 23400, 23401, 25740, 25741, 25918, 29311, 30530, 30531, no number. McLAREN "D" 62, 65, 253, "P" 7, 52, 63, 65, 67. ROCK 3371, 3375, 3489, 3506, 3873, 4259, 5394, 6832, 7796, 8202, 8224, 8382, 8383, 8384, 8399, 8401, 8462, 8464, 8496, 8498, 8499, 8500, 8669, 9545, 9675, 9721, 9723, 9774, 11246, 11313, 11314, 11371, 11372, 11373, 11396, 11421, 11454, 11459, 11460, 11461, 11470, 17116,

17117, 17121, 17122, 18438, 18441, 18444, 18484, 24623, 24646, 24765, 24799, 24853, 24965, 24966, 25252, 25259, 25301, 25328, 25368, 25384. Yü 10684, 10953, 13995, 14311, 14904, 15157.

Szechuan. FORREST 16380, 16432, 20442, 21934.

Yunnan/Szechuan Border. WARD 4860, 4875, 5069, 5104.

FORREST discovered this distinct plant on the western flank of the Lichiang Range in June 1910. It is distributed from mid-west to north-west Yunnan, extending to the Muli mountains in south-west Szechuan, and grows in rhododendron and pine forests, thickets in side valleys, in alpine pasture and in rocky situations at elevations of 11,000–14,500 feet. The species is variable in general characters due perhaps to the various environmental conditions in which it is found. It was figured in the *Botanical Magazine*, Vol. 147, t. 8900 (1923). *R. levistratum*, *R. helvolum*, *R. vicinum* and *R. theiophyllum*, names which have been regarded as synonyms, disagree with this species in the characters of the indumentum and are now placed under *R. dryophyllum* in synonymy.

R. traillianum is readily distinguished from all the members of its series, except *R. aberrans*, by the radiate hairs with characteristic somewhat pear-shaped arms. The powdery indumentum which is usually consistent in the herbarium specimens, and to a greater or less degree in plants in cultivation, is a further criterion of distinction. The original diagnosis associated the species with *R. adenopodum* Franch., *R. przewalskii* Maxim, and *R. beesianum* Diels. From *R. adenopodum* it is very remote, and from *R. przewalskii* it differs markedly in indumental characters. Its kinship is undoubtedly with *R. beesianum* which it resembles in general features but it diverges in the thicker usually powdery indumentum, in the radiate hair with pear-shaped arms, and in the less densely tomentose or glabrous ovary. The leaf epidermis is said to be three-layered in *R. traillianum* but only two-layered in *R. beesianum*. It is also allied to *R. dryophyllum*, which, however, has a different indumentum. From *R. aberrans*, to which it is very closely akin, it differs in the larger leaves and usually in the eglandular ovary.

R. Wightii Hook. f. in Rhod. Sikkim Himal., 30, t. 27 (1851); Journ. Hort. Soc. London, VII, 79, 99 (1852); Fl. des Serres, VIII, 792 (1852–53); Hook. f. Fl. Brit. Ind., III, 467 (1882); Gard. Chron., L, 268, f. 121 (1911); Bot. Mag., CXXXIX, t. 8492 (1913); Journ. Roy. Hort. Soc., XXIX, cxxxi (1913–14); Millais, Rhododendrons, 262 (1917); ibid., ser. 2, 260 (1924); Garden, LXXXIV, 452 (1920); Tagg in The Sp. of Rhod., 386

(1930); Notes R.B.G. Edin., XIX, 320 (1933–38); Rhod. Assoc. Year Book, 41 (1936); Bean, Trees & Shrubs, III, 150 (1951); R.H.S. Dict. Gard., IV, 1786 (1951); Rhod. Handb., 98 (1952).

HABIT: shrub or small tree, 60 cm.–4·60 m. high; branchlets moderately or densely tomentose with a thin fawn tomentum, those below the inflorescences 0·6–1·2 cm. in diameter, leaf scars large, conspicuous.

LEAVES: lamina oblong-elliptic, oblong-obovate, oblong or oblanceolate, 6–19 cm. long, 2–7·8 cm. broad, apex rounded, obtuse or shortly acuminate, base rounded, truncate or obtuse; upper surface with vestiges of a juvenile tomentum, midrib grooved, primary veins 12–16 on each side, impressed; under surface covered with a thin suède-like continuous indumentum, fawn, brown, rust- or rarely cinnamon-coloured, midrib prominent; petiole 0·8–3·8 cm. long, densely to sparsely tomentose with a thin, fawn or grey tomentum, rarely glabrous.

INFLORESCENCE: a racemose umbel of 12–20 flowers, usually large and lax, bud-scales very viscid; rachis 1–5·5 cm. long, glabrous or floccose.

PEDICELS: 1–7 cm. long, moderately or densely tomentose with a brown tomentum, rarely glabrous, eglandular or sometimes glandular.

CALYX: 5-lobed, minute, 0·5–1 mm. long, lobes triangular or rounded, outside glabrous, eglandular or sometimes rather densely glandular, margin glabrous or floccose, eglandular or sometimes rather densely glandular.

COROLLA: campanulate, broad at base, 2·5–5 cm. long, *pale yellow or lemon-yellow*, rarely white tinged pink, with or without a crimson blotch at the base, spotted crimson on the posterior side; lobes 5, 1–1·6 cm. long, 1·4–3·2 cm. broad, rounded, emarginate.

STAMENS: 10, unequal, 1·2–3·4 cm. long; filaments puberulous at the base.

GYNOECIUM: 2·5–4·5 cm. long; ovary slender cylindric or conoid, 4–7 mm. long, 10-celled, densely tomentose; style glabrous.

CAPSULE: slender cylindric or oblong, 2–3·7 cm. long, 4–7 mm. broad, slightly curved, tomentose, calyx persistent.

HABITAT:

Sikkim. WATT 5270, 5286, 5288, 5417, 5420, 5449, 5459, 5488. BOR & KIRAT RAM 18606. CAVE 6936, 25/4/14, 15/5/15, 17/1/20,

12/2/23, 15/12/23. LAKSHMAN MALI 11, 49. RIBU & RHOMOO 15/6/12, 1116.

Bhutan. COOPER 750, 2590, 3234, 3904. LUDLOW & SHERRIFF, 49, 606, 3088, 3091. LUDLOW, SHERRIFF & HICKS, 16100, 16249, 18899, 18959, 20277, 20641, 20642.

R. wightii was discovered by HOOKER in the course of his Himalayan explorations of 1848; it was described and figured by him in *The Rhododendrons of Sikkim-Himalaya* in 1851. HOOKER found it growing abundantly in wooded valleys and on the spurs of mountains. Subsequent collections show that the distribution of this plant extends from Sikkim to Bhutan and Nepal, and it occupies very varied habitats at elevations of 11,000–14,000 feet. Writing in *Rhododendrons* in 1917, MILLAIS points out that FORREST also found this species on the Lichiang Range in Western China in 1913–14, and he cites F. 11575; but this is incorrect, the herbarium specimen under this number is *R. lacteum*.

R. wightii is very variable in several of its features, and it may be of interest to point out some of the variations. In habit, it may be a shrub or a small tree, 60 cm.–4·50 m. high. At one extreme the inflorescence may be very large and lax with a rachis 5·5 cm. long, with long pedicels as much as 7 cm., and plants with these characteristics can commonly be seen in cultivation; at the other extreme in herbarium specimens, the inflorescence may be very small, somewhat compact with very short rachis and pedicels, about 1 cm. long. Between these extremes, however, the gradation in the characters of the inflorescence is complete. The leaves vary from 6–19 cm. long, and the corolla 2·5–5 cm. The divergences depend, perhaps, on different types of habitats and variations in altitudinal range, and cannot be correlated with the geographical distribution. The plant to which MILLAIS has accorded the varietal name "minor" appears to be the lesser expression of the species.

R. wightii is the only Himalayan member of the Series. The original diagnosis makes no reference to its affinity. In the *Botanical Magazine*, Vol. 139, t. 8492 (1913), it is associated with *R. campylocarpum*, also from the Himalayas. With this species, however, it has very little in common, although both occupy the same geographical areas. TAGG in *The Species of Rhododendron* has placed *R. wightii* near *R. lacteum* to which it is undoubtedly allied. It is easily recognized by the narrower and longer leaves, usually by the lax inflorescence, by the viscid flower bud-scales and by the spotted corolla. However, in the herbarium specimens, the similarity between the smaller forms of these species is indeed so marked that

without examining the hair structure, it is not always possible to assign with certainty these specimens to the one or the other species. The ramiform hair is a diagnostic feature of *R. wightii* and serves to distinguish the species from *R. lacteum* with radiate hairs, as well as from all the other members of the Series. In both species, the leaf epidermis has been indicated to be three-layered.

In *The Species of Rhododendron*, Tagg refers to the indumentum of *R. wightii* as favouring somewhat *R. campanulatum*, another Himalayan plant. There is no doubt, there is a certain degree of resemblance between them in general morphology. The hair structure of *R. wightii* would also suggest affinity with the Taliense Series but apart from indumental characters, it deviates markedly in distinctive features from the species of that Series. The truth is that placed in the Lacteum Series, *R. wightii* is a remarkably aberrant member of the Series. As noted it has some affinity both with the Campanulatum and Taliense Series although it is no more happily placed in either of these Series than it is in the one to which it presently belongs. It will probably cause no confusion to leave this species where it is and this seems preferable to making a new Series for a single species.

R. wightii was introduced into cultivation in 1851. It was given an Award of Merit when exhibited by Miss C. Mangles in 1913. In culture it grows best in sheltered positions with some shade, but appears to be difficult to establish.

LIST OF SPECIES AND SYNONYMS

ABERRANS Tagg et Forrest
AGGLUTINATUM Balf. f. et Forrest
aiolopeplum Balf. f. et Forrest = DRYOPHYLLUM
BEESIANUM Diels
colletum Balf. f. et Forrest = BEESIANUM
dichropeplum Balf. f. et Forrest = PHAEOCHRYSUM
DICTYOTUM Balf. f. ex Tagg
DIGNABILE Cowan
DRYOPHYLLUM Balf. f. et Forrest
DUMOSULUM Balf. f. et Forrest
emaculatum Balf. f. et Forrest = BEESIANUM
helvolum Balf. f. et Forrest = DRYOPHYLLUM
intortum Balf. f. et Forrest = DRYOPHYLLUM
kialense Franch. = PRZEWALSKII
LACTEUM Franch.

levistratum Balf. f. et Forrest = DRYOPHYLLUM
lophophorum Balf. f. et Forrest = PHAEOCHRYSUM
Mairei Lévl. = LACTEUM
microterum Balf. f. nomen = BEESIANUM
NAKOTILTUM Balf. f. et Forrest
PHAEOCHRYSUM Balf. f. et W.W. Sm.
POMENSE Cowan et Davidian
PRZEWALSKII Maxim.
sigillatum Balf. f. et Forrest = DRYOPHYLLUM
syncollum Balf. f. et Forrest = PHAEOCHRYSUM
theiophyllum Balf. f. et Forrest = DRYOPHYLLUM
TRAILLIANUM Forrest et W.W. Sm.
vicinum Balf. f. et Forrest = DRYOPHYLLUM
WIGHTII Hook. f.

THE NAMING OF RHODODENDRON HYBRIDS AND THE REVISION OF THE RHODODENDRON HANDBOOK

Correspondence and discussions with the American Rhododendron Society and the members of the Rhododendron and Camellia Year Book Committee have taken place which make it desirable to suggest certain modifications in the method generally adopted for the future naming of rhododendron hybrids and for the revision of the *Handbook*. As a result of discussions between Lord Digby, Dr. Fletcher, Mr. Gilmour, Mr. Gould, Mr. Hanger, Mr. Simmonds and Mr. Synge the following suggestions are now put forward for wider circulation and consideration.

1. INTRODUCTORY

Up to about thirty years ago practically all rhododendron hybrids in commerce were clones, i.e. all the plants under a given name were the progeny of a single seedling propagated by grafting or layering. During the last thirty years, however, the practice has grown up of giving names not only to *individual clones* resulting from a particular cross, but also to *collections* of seedlings from that cross. Thus the name 'Albatross' has been used to cover all the seedlings resulting from the cross *R. discolor* × *loderi*, individual clones being distinguished as varieties, e.g. 'Albatross Exbury var.', and 'Albatross Townhill var.' This is clearly undesirable as it means that seedlings differing very considerably from each other are included under the one name 'Albatross' and that, consequently, no one, wishing to acquire Rhododendron 'Albatross', can be sure of what plant he is going to get.

It is, therefore, suggested that, in future, this method of naming should be discontinued, and that no "collective names" of the type of 'Albatross', covering numerous seedlings, should be given, but that *all* names should refer to individual clones.* Thus, if, in future a cross is made between Rhododendron A and Rhodendron B, producing, say, twenty seedlings, and one of these seedlings is exhibited, the name chosen for it (say 'Mars') would be used only for that particular seedling and its vegetatively propagated progeny.

* This method of naming would be all that is required for commercial purposes, but for botanical reasons it may be desirable for a botanist to give a *Latin* name covering all the seedlings resulting from crossing two particular species; such a Latin name would have to be accompanied by a Latin description.

If, later, another seedling is shown, it would not be called say, Rhododendron 'Mars var. Peach', but would receive a separate name of its own, i.e. Rhododendron 'Peach', and so on with other seedlings. In this way the confusion that has grown up during the last thirty years will be avoided in the naming of future hybrids.

2. THE NEW EDITION OF THE HANDBOOK

A. GENERAL

While the above method should, it is suggested, be adopted for the future, the problem remains of dealing satisfactorily with existing names recorded in the Stud Book Section of the *Rhododendron Handbook*. As will be clear from the above, some of these are "collective names" covering numerous seedlings, some of them are names referring to clones, while in many cases it is not possible to say definitely whether a particular name is a collective name or a clone name. Further, in some cases, a single name may have been used both as a collective name and as a clone name for a particular seedling (often the first one to receive an award) and its progeny.

It is suggested that the following principles should be adopted in the new edition, to deal with this situation:—

(*a*) *Collective names.* The method laid down in the International Code for indicating collective names is to write the word grex (Latin for a flock or group), or the abbreviation g., after the name, and it is suggested that names in the Stud Book which are known to refer to collections of seedlings should be written in this way. For example, the name 'Albatross' would appear as 'Albatross g.' This will enable users to distinguish at a glance names covering a number of seedlings which may differ markedly from each other.

(*b*) *Clone Names.* Names which are known to refer to clones would be followed by the abbreviation cl.

(*c*) In cases where it is not definitely known whether a name is a collective name or a clone name, neither g. nor cl. would be placed after that name.

(*d*) A thorough study of the names in the Stud Book may, as indicated above, reveal cases where a particular name has, in the past, been used both as a collective name and as a clonal name. In such cases the collective use of the name would have to be distinguished from its clonal use, and it is suggested that this should be done by writing g. after the name for its collective use and by adding an appropriate word to the name for its clonal use. Say, for example, that 'Mars' was such a name, and that it had been used both for the seedlings of a particular cross, and for one individual

clone exhibited, say, from Exbury; then the collective name would become 'Mars g.' and the clonal name 'Exbury Mars', so as to distinguish clearly between them.

(*e*) In Table III there is a list of clones which have been named as "Varieties" under previously existing names, e.g. 'Albatross Exbury var.', and 'Angelo var. Solent Snow'. Such "varietal names" should in the new edition be treated as names "in their own right", and not as varieties under another name, e.g. Rhododendron 'Angelo var. Solent Snow' would become Rhododendron 'Solent Snow'. In some cases, however, it would be possible to preserve the link with the old name by combining the varietal name with it, e.g. Rhododendron 'Albatross, Exbury var.' could become Rhododendron 'Exbury Albatross'. There is a possible danger to guard against in the above suggestions, namely that they might lead to duplication of names. For example, there might already exist a Rhododendron 'Solent Snow' in addition to 'Angelo var. Solent Snow', in which case it would not be permissible to create a second R. 'Solent Snow'. If such cases arise during the detailed work on the Stud List they must be dealt with on their merits.

B. PROPOSED ALTERATIONS IN TABLES I, II AND III

It is suggested that:

Table I should remain approximately in its present form, but that the names in column I that are known to be grex names or clone names should be indicated in the appropriate way by writing g. after the grex names and cl. after the clone names; other names should have neither g. nor cl. added to them.

The "varietal names" at present listed in Table III (modified in some cases as indicated above) should be included in column I of Table I and marked as cl.

Similarly in the right-hand column of Table II, grex and clone names should be indicated, and the "varietal names" from Table III should be added in their appropriate places. Thus under *griffithianum* × *discolor* the following entry would appear:

griffithianum × *discolor*	—'Angelo g.'
	—'Exbury Angelo cl.'
	—'Sheffield Park cl.'
	—'Solent Queen cl.'
	—'Solent Snow cl.'

If these changes were carried out, it is suggested that Table III should be omitted from the Stud Book. All the names that it contains at present will be readily found in their proper place in Table I, and if it is wished to ascertain what plants have been produced from any particular cross (e.g. *griffithianum* × *discolor*) this information would now be found in Table II.

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

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