R.H.S. YEAR BOOKS 1963

LILY

This book is dedicated to Mr. Oliver Wyatt of Maidwell Hall, one of the foremost English raisers and growers of lilies. It contains interesting accounts of lilies in a number of Scottish and English gardens. The forcing and preparation of lilies for early shows is described by Mr. Stewart Hale, one of our foremost exhibitors. Mr. E. K. Balls has written an authoritative article on Californian members of the Liliaceae, while Lilies at Longwood and Nomocharis in Oregon are also discussed. There are also articles from Australia, S. Africa and Japan, so our book again has a cosmopolitan flavour which should interest all lily growers. In addition the Lily Group discussion on Trilliums is reported and should help all growers of these plants. The colour plate section has been increased this year.

DAFFODIL AND TULIP

This issue contains appreciations of two great daffodil raisers who have died during the year—Mr. Guy Wilson and Mr. J. Lionel Richardson. An important article by Mr. Matthew Zandbergen deals with double daffodils both past and present. Miniature daffodils are prominent this year in articles both by Mr. Alec Gray and Mr. J. W. Blanchard, while flower arrangers will find interest in articles by Mrs. F. M. Gray on the arrangement of her exquisite bowls of miniature daffodils with appropriate foliage and by Mr. Harold Piercy, of Constance Spry Ltd., on the Use and Arrangement of Daffodils and Tulips in Flower Decoration. The Daffodil Season is covered by Mr. David Lloyd, and Mr. H. J. Randall has given us an article in a lighter vein. The American Season and Shows are well covered by Mr. Willis Wheeler, the President of the American Daffodil Society, and Mr. M. Jefferson-Brown who visited U.S.A. in the Daffodil Season. Shows and outstanding flowers in New Zealand, Tasmania and S. Australia, as well as in this country, are also reported fully.

Tulips at Chelsea are discussed by Mr. George Barr in an article which should be of help to many gardeners in choosing their bulbs, while there are also notes by Dr. P. F. Yeo on rare species in the National Tulip Collection at Cambridge. An innovation this year is an authoritative article on *Sternbergia* by Mr. E. B. Anderson, and it is planned each year to deal with one genus of the Amaryllidaceae in this way.

The book is illustrated with three colour plates and a number of black and white plates.

Each book. Price 12*s.* 6*d.* U.S.A. $2.00 *post free*
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THE ROYAL HORTICULTURAL SOCIETY
VINCENT SQUARE, LONDON, S.W.1

R.H.S. RHODODENDRON AND CAMELLIA YEAR BOOK 1963

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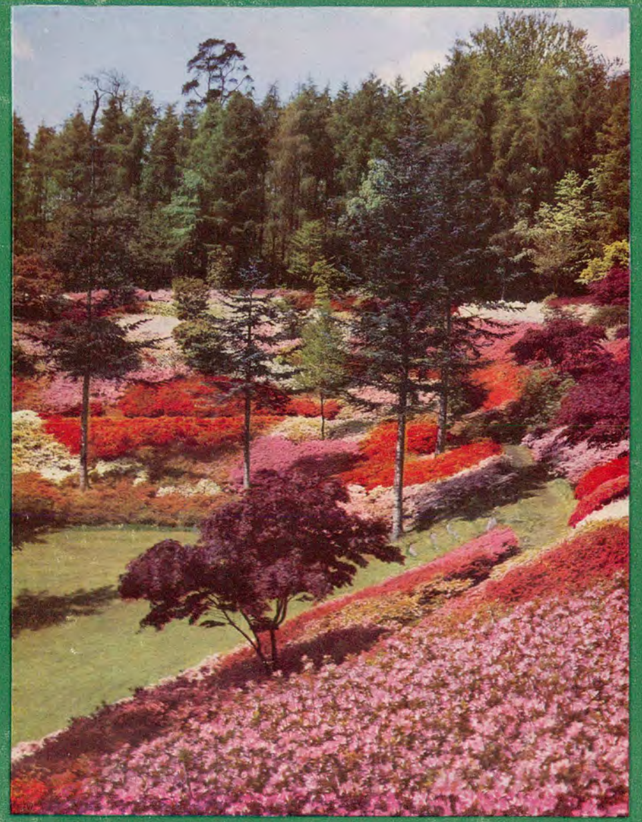
THE RHODODENDRON AND CAMELLIA



YEAR BOOK—1963

THE ROYAL HORTICULTURAL SOCIETY

THIS issue contains an account of Rhododendron species by Mrs. R. M. Harrison who has probably had more experience of these plants than anyone else. Mr. T. H. Findlay of Windsor Great Park writes on the foliage characteristics of rhododendrons, a factor which is exciting greater appreciation each year. We are privileged to publish Mr. Henry Du Pont's account of his magnificent azalea garden at Winterthur and there are a number of other articles of American interest. Mr. H. H. Davidian continues his important revision of the Series of Rhododendrons by dealing with the large Triflorum Series, one of the most widely grown groups. Of interest to Camellia lovers will be several articles dealing with these plants at Wisley, in the U.S.A. and New Zealand, while Mr. C. E. Puddle continues his descriptions of varieties of *Camellia japonica*. This year the section of colour plates has been increased.

COVER ILLUSTRATION

Punch bowl of Kurume azaleas at Windsor Great Park, 1962

Colour photograph by
J. E. Downward

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Acknowledgements

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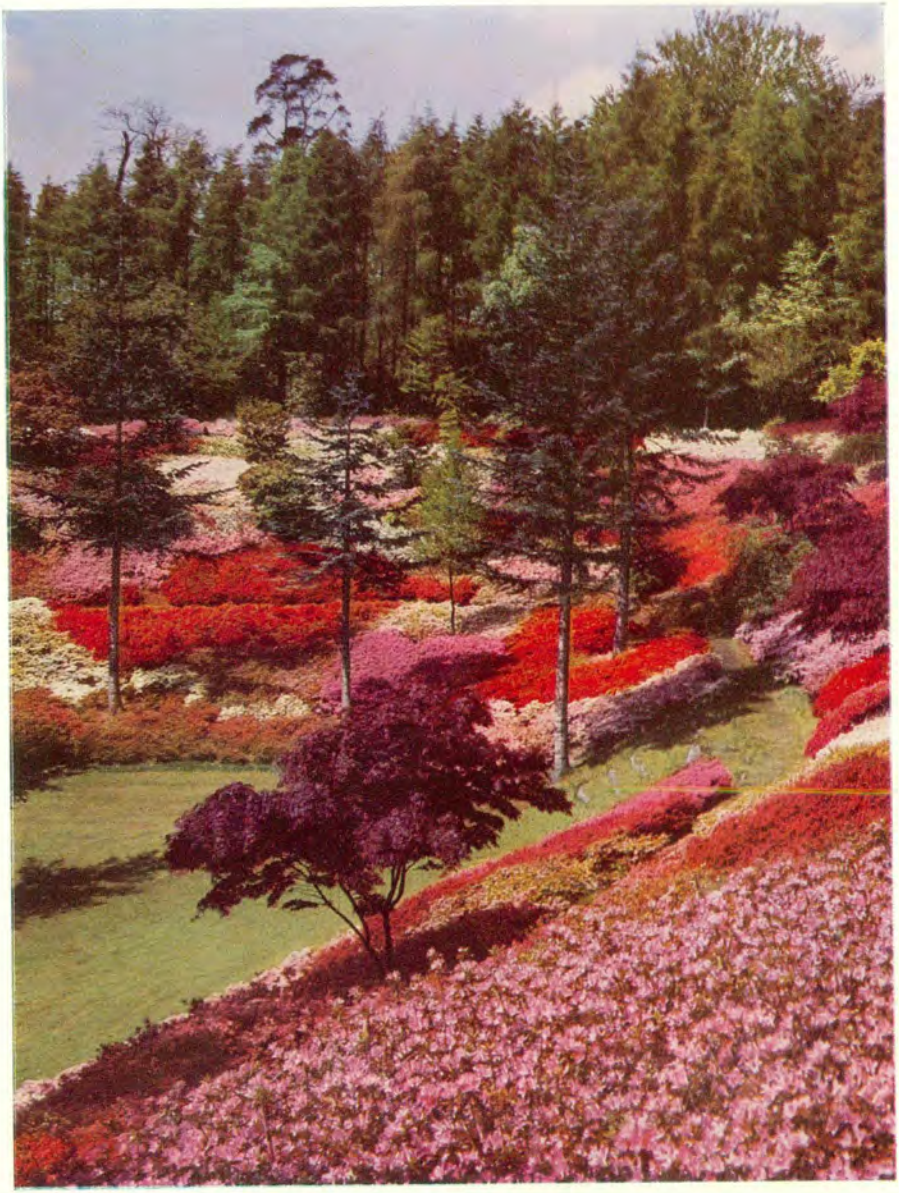

Photo: J. E. Downward

The Kurume Punch Bowl in the Great Park, Windsor, 1962

THE RHODODENDRON AND CAMELLIA YEAR BOOK

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FOREWORD

The Rhododendron and Camellia Year Book for 1963 contains much informative and readable material. Here and there we note a lighter tone, as in Mr. A. C. Gibson's notes from Glenarn, Rhu. This well-known garden seems to have experienced a wretched season in 1962, but I hope Mr. Gibson, when walking round his rhododendrons, will see great promise, particularly with the big-leaved ones, as we do here at Windsor. With good fortune and kindly weather 1963 should be a great year, both for rhododendrons and camellias.

One of the most important contributions—if not the most important—to the Year Book is Mr. H. H. Davidian's further review of rhododendrons in their series. He has tackled the Triflorum series; one of the most difficult and complicated within the genus. He has sunk some species, relegated others such as *R. chasmanthum* to a variety of another, and transferred a few from one sub-series to another. I think Fellows will generally welcome his work in this direction. He may well have further thoughts about some species—for example, should *R. exquisitum* be merged with *oreotrephes*.

Dr. H. R. Fletcher writes vividly on his general impression of rhododendrons on the Pacific West Coast of America, following his visit to that country in the Spring of 1962.

Another very interesting contribution to the Year Book is the collected opinions of various well-known nurserymen on the most popular hybrid rhododendrons in demand by enthusiasts in this country. It will be noted how conservative, on the whole, is the taste of rhododendron growers. It will also be seen how few of the fine new hybrids have become well-known. This defect should be remedied when the Rhododendron Trials at Wisley are substantially augmented, as Council intends that they shall be, in the very near future.

Mrs. R. M. Harrison's lecture on rhododendron species is included in the Year Book for the benefit of those who were unable to attend her lecture.

Mr. T. H. Findlay writes of the genus rhododendron as foliage plants. He lists and describes many of the most rewarding in this connection. Though much divides East from the West, it is

pertinent to recall that many Japanese prefer form to colour, even to the extent of disbudding plants.

There are interesting notes from Mr. Henry du Pont and Mr. C. Gordon Tyrrell on azaleas at Winterthur, and Mr. F. P. Knight has written both historically and factually on the Rhododendron and Azalea Trials at Wisley. He has given us a complete list of rhododendrons and azaleas which have been awarded recognition after plants have been grown under normal garden conditions.

Contributions from abroad are always welcome. Mr. C. Gordon Tyrrell tells us about the 18th Annual Meeting of the American Rhododendron Society. Colonel T. Durrant tells us of historical camellias of New Zealand, and although the following two articles cannot actually be described as contributions from abroad, they none the less are about plants grown outside this country. Sir Giles Loder tells us much about the camellias on the Gulf Coast of America, and Mr. Peter Cox and Mr. Peter Hutchison write of their experiences in north-eastern Turkey.

Another valuable contribution is that of Mr. A. Turner on the relative frost resistance of camellias grown at Wisley, and he has appended a very useful schedule of plants grown there, and of frost effect during the Winter of 1961–2.

Mr. Charles Puddle has added to his list of named cultivars of *Camellia japonica*, with emphasis on newer varieties. His descriptions, historical notes and cultural remarks are most useful.

Mr. Edmund de Rothschild is obviously a Japanese scholar!

There is much further interesting information contained in this Year Book and I commend it most heartily to all rhododendron and camellia enthusiasts.

ERIC SAVILL

Chairman, Rhododendron and Camellia Committee

RHODODENDRON SPECIES

By MRS. R. M. HARRISON

(Based on a lecture given on March 6, 1962, Sir Eric Savill, K.C.V.O., V.M.H., in the Chair)

LAST year the late Mr. Hanger gave us a splendid lecture upon rhododendron species in which he covered most of the important points. I also doubt if there is another genus of plants more interesting and more varied than the species of rhododendron. Because it is such a large genus and so extremely varied, the botanists have had much work in putting the species into order, and they are still working on the various series and sub-series of this genus to try and simplify them.

However, the most outstanding point is: this genus is divided into two sections, namely, lepidotes and elepidotes, and in case many of you do not know what this means, I will explain.

Lepidote rhododendrons have small scales beneath the leaves. A great many are aromatic, for instance, the *Saluenense* series, *Lapponicum* series, and *Cinnabarinum* series. In particular in this last series are two very fine species—*R. concatenans* and *R. xanthocodon*; both give off on a damp warm day an aroma that can be smelt quite a distance away. Various other lepidote series have these qualities.

In the elepidotes the leaves have hairs instead, or most of them have.

These two groups very rarely hybridize. Knowing these important points helps a greal deal to the enthusiastic hybridist, for they will not mate normally. We have already learnt that these species come from the northern hemisphere, right across North America, thorough Europe, Central and Eastern Asia, the Caucasus, to the Himalayas, Northern India, Tibet, Burma, Western China and Southern Japan.

Rhododendrons will not grow on an alkaline soil, preferring the other side of neutrality, namely, an acid soil. Those people who are lucky enough to live on neutral soil, or close to it, can be blessed with many other genera such as primulas, snowdrops, etc. which are very lovely companions.

To return to my subject, I would like to mention my own feelings and ideas upon the species. Up till recent years most people had the wrong idea that the species in general were too tender for their gardens if they were outside the milder counties of the South and West. This is not so. Having lived and worked with them from many early expeditions—I may mention I have handled Forrest's, Farrer's, Kingdon-Ward's, Rock's and Ludlow and Sherriffs' seeds, many thousands direct from their native countries —I have been able to draw my own conclusions. By slight experiment (for my life is not long enough to proceed!) I re-mated some of the species in order to improve their form by taking the best forms of a species; also in order to acclimatize their seeds in our own country, my theory being that by doing so the species became much hardier and better able to withstand our topsy-turvey climatic conditions.

For example, *R. diaprepes* in *The Rhododendron Handbook* is classed as C. I selfed Forrest's form 11958, and its progeny has proved at Tower Court in Berkshire to be extremely hardy. Incidentally, out of this seed one plant, an unusual one, became named *diaprepes* 'Gargantua': this is also very hardy.

One is always being told that the hybrids as a whole are hardier than the species. Does this not prove my own theory, namely, hybrids are bred in this country, the seed conceived here: therefore by re-mating the species within themselves, their seed also being conceived here would stand the same chances.

I wish that I could live for another three generations. I would then proceed with all the species, for they are so magnificent in every way. I cannot see why one should try to improve them, or think one can, by hybridizing. Needless to say, I am also guilty of having tried my hand at hybridizing in my early days, but soon returned to the species, for once having contracted "the species bug", may I call it, one becomes more and more engrossed and fascinated by them. For instance, they can give us joy for practically twelve months in the year; forget their flowering period, which on the whole lasts some three to four weeks, and think of the joy they can give us for the other eleven months through their foliage and form, also their characters (for like humans they certainly have character!).

Take for instance the *Falconeri* series (elepidote) or the *Grande* series (elepidote): not only have these species shape and form, but magnificent foliage, with lovely indumentums—by this I mean the underside of their leaves—some tawny brown, others silvery,

which show up when the wind blows them back, or one is walking beneath them as I do now. Then they have lovely flowers, and above all superb young growths: to me they look like candles on a Christmas tree.

Then take the *Anthopogon* series (lepidote), highly aromatic with very small leaves and daphne-like flowers, a remarkable contrast to the large-leaved types. I think I should add a further quality of the species: because of their varied foliage in size and shape, when winter arrives and one is fortunate to have a snow period the tracery of the various foliage with their "snow caps" is too fascinating. I can see and imagine beautiful lace work.

Rhododendrons are wonderful plants, for they can be transplanted at any age and size within reason. I may mention up to thirty feet is possible, and they still live; provided they are on an acid and not an alkaline soil, the texture of soil is immaterial.

One other point I would like to mention: the flowering period can vary according to (*a*) the series, and (*b*) climatic conditions. Some series are tremendously floriferous, such as the *Triflorums*, *Lapponicums*, etc., but the tree-like forms in the *Fortunei* series, also in the *Arboreum* series and the *Barbatum* series, although extremely floriferous on the whole, I would count as having bumper three-year periods, with moderate flowering in between. These bumper periods, so causing over-flowering and consequently much seed bearing, can produce a lot of dead wood: but the dead wood is nature's control, and not a sign, on the whole, that the plant is dying, as many people fear. Just knock off the dead wood, and the plant looks perfect again, or will do so.

Dead-heading, although advisable, is not always a guarantee to produce a good crop of flowers for the following season. It certainly helps the health of the plant by preventing seed bearing which naturally takes a lot out of the plant.

When planting, give plenty of space between the larger specimens, and certainly no nearer to trees than twelve to fifteen feet. If you wish to fill in the ground space between the larger specimens, then use medium or dwarfer forms, or any other acid-soil loving genus.

Rhododendrons begin to flower with *R. mucronulatum* in January, continuing through to August with *R. kyawi*.

One of the most important points about species rhododendrons is to get them true to the species from seed. One should avoid indiscriminate collecting of seed, because an insect, or even the wind,

can cross-pollinate. The surest and safest way is by pollinating very carefully either direct on one bush (which is "selfing") or by selecting two forms of any one species, and fertilizing them. The collectors' seeds from an expedition, so the explorers told me, were very carefully selected from the middle of a large batch of any one species, so ensuring no overlap of other rhododendrons. Many people take seeds from a species in this country thinking they will be sure to get the correct thing: this is not so, especially with those that flower during late April and through May, when there are many various series and species in flower. Only is it at all possible for those that flower during the very early part, or late part, of the season.

Returning to the planting of rhododendrons, they should never be planted too deep, for they have surface-loving roots. The top surface of their roots should be on the level of the top surface of soil. One should always see that their roots are well protected from the sun's heat by a good covering of leaf mould, bracken, heather, or anything. That is the most important of all: by doing this several good points are served; the mulch becomes food for them, stops evaporation, and acts as a sun shade. One only needs to look at a hedge of *R. ponticum* to see what magnificent leaf mould it makes for itself when it sheds its secondary foliage. Again, one notes a well covered bush spreading its branches around and down to the ground: how well it is looking after and shielding its own roots from hot sun rays.

Now I will discuss some examples, taking them series by series. These I have arranged alphabetically rather than by their natural affinities.

ANTHOPOGON SERIES

R. cephalanthum var. *crebreflorum*. That is what you might call a nice bush, making a low plant, compact, and suitable for a rock garden. This form has pink flowers whereas *cephalanthum* has white flowers.

R. sargentianum. Again suitable for a rock garden, very neat with small lemon-yellow or white flowers and small leaves.

AZALEA SERIES

R. luteum. It is a magnificent thing in itself with a wonderful crop of yellow flowers, very fragrant, and then brilliantly coloured autumn foliage. This azalea you can put anywhere, under trees,

close to anything: it is as hardy as you could wish to have, and very lovely.

Sub-series Obtusum

At Tower Court we have a valley of *R. obtusum* in the azalea species valley. They are very hardy indeed, and come in at a period after the usual Kurumes. The Kurumes on Tower Hill are very happy and most floriferous. They flower for about three to four weeks, then again in the autumn they have their secondary foliage, with most beautiful colours, so giving a second crop.

We use the yellow azalea *R. luteum*, a distinguished plant, to divide any section of azaleas. You can put the deep yellow or orange azalea *R. molle* next to it, and then *R. obtusum*. *R. amoenum* is one of the most floriferous of all the obtusums. Beyond, there is *R. yunnanense*, and all must agree these are very floriferous.

R. simsii. A very fine form from Windsor Great Park was given the F.C.C. It is a very lovely species, magnificently floriferous and with lovely foliage. It is not altogether hardy, but I maintain if it was re-set and re-crossed it would pick up again for our climatic conditions.

R. kaempferi: which also is supposed to belong to the sub-series *obtusum*, again it is floriferous and deciduous, producing lovely foliage after the flowers have finished, very delicate and very light. It is the parent of many fine hybrids.

Sub-series Canadense

R. albrechtii. At Bodnant, by taking and selecting the best forms and mating them, they have selected a very fine deep pink form which is now called 'Michael McLaren'.

BARBATUM SERIES

Sub-series Barbatum

R. barbatum: there we have a very early flowering species. It is next door to being extremely hardy, and has great character. Look at the hanging foliage, and the perfect trusses of the flowers. Although small compact trusses, their bright scarlet shows up at a long distance away. All belonging to the *Barbatum* series have little hairs on the leaves or stem.

R. smithii also belongs to the *Barbatum* series. Another red-scarlet-crimson closely allied to *R. barbatum* but distinguished by the indumentum on the under surface of leaves.

Sub-series Maculiferum

Here we have quite another type in the *Barbatum* series: it includes *R. morii*, which is to my way of thinking one of the most beautiful of the *Barbatum* series. Flowers white or white-flushed rose with crimson spots.

R. pseudochrysanthum, quite a distinct bush. Later on the foliage is exceptional, quite lovely, glaucous looking, with petiole and midrib below covered with woolly indumentum, very floriferous with equally lovely dark pink flowers with deeper rose lines outside, spotted crimson inside.

R. strigillosum is exceptionally floriferous and has been the parent of many good hybrids. It is sometimes called the Chinese *R. barbatum*. The foliage is most striking and the flower trusses are of a most brilliant crimson-scarlet.

BOOTHII SERIES

R. leucaspis: this to my way of thinking is one of the most lovely species, though not altogether hardy. If we could re-mate it, it would probably become hardier to our climate. It flowers very early, but if placed in the right situation it can come through many frosts and its large milky-white flowers will still look lovely.

Another plant in the same series, called *R. tephropeplum*, is quite a contrast to *R. leucaspis* but very lovely. There are many different forms; varying in size of flower, in different shapes, deeper pinks, and paler pinks, some highly aromatic and very scented.

CAMPANULATUM SERIES

R. campanulatum is exceptionally hardy, one of the ewe lambs; people try to show this at the Show and vie with each other doing their best to win for its colour varies in shades of purple—rosy-white, or white, spotted—one of the best forms is 'Knaphill', which is almost blue.

R. fulgens is a very superb red and has good foliage, with great character.

CINNABARINUM SERIES

R. xanthocodon, lemon shade: this is the one I mentioned in my talk. When in its flowering state it does not show its leaf which later becomes beautifully blue and highly aromatic. The flower is scented, also highly aromatic and can be most floriferous. This lemon shade was raised from expedition seed at Tower Court by

me—it was the most outstanding yellow. I promptly named it 'Daffodilly'—the shades vary from white, cream-yellow and yellow.

Another is called *R. xanthocodon* lilac-mauve, but is under question at Edinburgh because it is quite different from the yellow form. I raised it direct from the expedition's seed. Whether it is a new species or not, we do not know, but it is uniform throughout the whole batch. We call this at the present moment the lilac-mauve form.

R. cinnabarinum var. *roylei* has unusual long bell-shaped flowers. That has been the parent of many lovely hybrids.

DAURICUM SERIES

R. mucronulatum: this is the start of the genus, the earliest flowering of the whole lot with bright rosy-purple flowers usually in the first week of January in a cold garden. It is worth growing.

FALCONERI SERIES

Pl. 2 shows a big *R. falconeri* at Logan in Scotland. That is the head of that family. What do you think of it as a tree? I always ask myself: when does a shrub stop being a shrub and when is it a tree? *R. arizelum* is a smaller addition of *falconeri* with the same good qualities.

R. basilicum: this is another species in the *Falconeri* series. It has larger leaves than *arizelum*, pale-yellow or creamy-white flowers with a crimson blotch at base, sometimes pink or tinted crimson and notable young growths (Fig. 8).

R. fictolacteum also belongs to the *Falconeri* series. They all have a lovely indumentum, and again wonderful young growths, white, creamy-white or tinted rose flowers with a dark crimson blotch.

R. rex has a shiny leaf which is larger than that of *fictolacteum*, large trusses of rose or white flowers with crimson blotch and spots.

FERRUGINEUM SERIES

R. ferrugineum is known as the Alpine rose: it is very hardy.

FORTUNEI SERIES

Sub-series Calophytum

R. calophytum: you should notice the character of the foliage hanging long and narrow with large trusses of white or pink with a deep blotch and the most beautiful set of the head on the top of the branch. It becomes a very large but shapely tree (Fig. 6).

Sub-series Fortunei

R. decorum has some forms which flower late such as those from Kingdon-Ward. The whole of the Fortunei series has seven petals, which is very different from the other series. There is only one exception to this among the sub-series, and that is *griffithianum* which has five petals. It was sometime known as *aucklandii.*

Another feature is its beautiful scent, and *fortunei* crossed with *griffithianum* made the famous hybrid Loderi.

Sub-series Orbiculare

R. orbiculare. An unusually good deep pink form. This slide was shown by the late Mr. Hanger last year, and those who were here then may recognize the identical photograph (*R.H.S. Journal,* October 1961, Fig. 138). Flowers rose pink.

R. fargesii is very closely related to *R. oreodoxa*: they are so close together they ought to be named one or the other in my opinion.

This is in the sub-series *Oreodoxa* and is the first to flower; it is exceptionally hardy. The leaves have a lovely habit of curling up in the frost and in the heat, so it is rather full of character. They unfurl and curl up like little cigarettes. Flowers range from rose, rosy-lilac, pink or white and it is extremely floriferous.

GRANDE SERIES

This most magnificent plant you also saw last year. *R. macabeanum* from Trewithen in Cornwall (*R.H.S. Journal,* October 1961, Fig. 137). One of the species of the *Grande* series. When you look at the flower, with its lovely foliage, you should notice the magnificent set of the flower and the truss. The young growth I mentioned is also very notable. It is very silvery, like little candles on a Christmas tree.

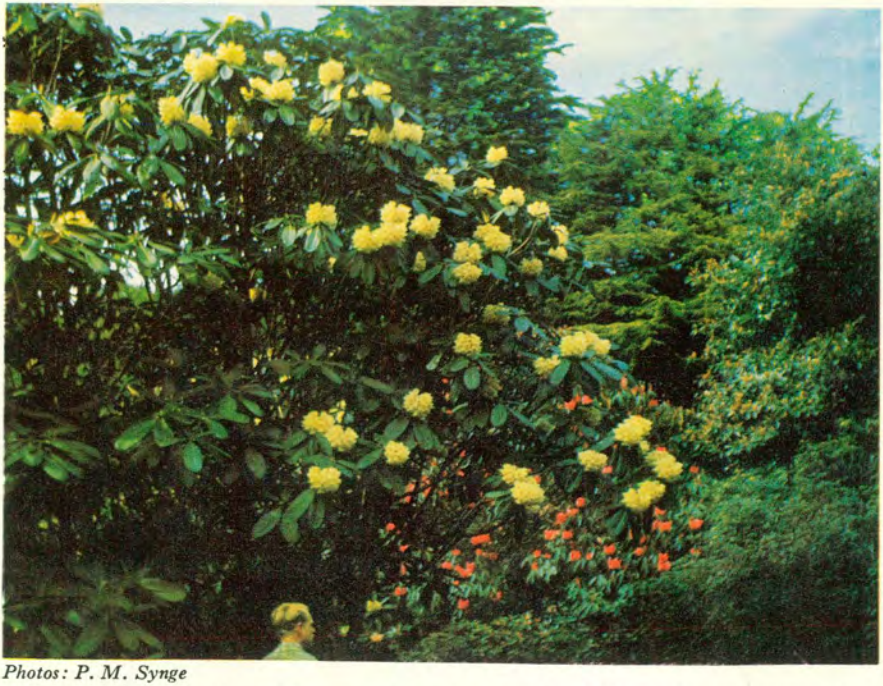
R. praestans, one of the species of the *Grande* series. A magnificent flower with magnificent stigma.

R. sinogrande has the largest leaf of all. On the Isle of Colonsay the late Lord Strathcona planted a grove of these. It is almost a forest tree (Fig. 9).

HELIOLEPIS SERIES

R. rubiginosum is one of the strongest growers. There is a plant so magnificently shaped, as I said, with its "clothing" protecting its own roots. No need to do much more to that plant, it shades itself,

PL. 1—*Rhododendron campanulatum* var. *aeruginosum*, which is notable for the blue foliage of its young growth (see pp. 21 and 37)



Photos: P. M. Synge

PL. 2—*Rhododendron falconeri*, a tree at Logan in S.W. Scotland (see p. 15)

PL. 3—*Rhododendron nuttallii* in the Strybing Arboretum of the Golden Gate Park, San Francisco (see p. 46)

Photos: P. H. Brydon

PL. 4—*Rhododendron dalhousiae* in the Strybing Arboretum, Golden Gate Park, San Francisco

and its own secondary foliage will drop and give it its own leaf mould. The picture I showed was taken as far north as Inverewe in Scotland. One could not wish to see more flower than that. It is also aromatic.

IRRORATUM SERIES

Sub-series Irroratum

R. irroratum can vary tremendously in colour. They were in magnificent show right in the woodlands last year, well shaded, but in good flower.

There is a fine spotted form of *irroratum* which won an Award of Merit when shown by Mr. de Rothschild who called it 'Polka Dot'. Most beautiful. If you go near that bush it will shower you with honeydew, which is very sweet, so no wonder the bees come to it.

R. aberconwayi is one of the finest in the *Irroratum* series—named after the late Lord Aberconway, it has a flat white flower like a saucer. I do not think you could try to improve upon that.

LAPPONICUM SERIES

This is a very hardy race, suitable for the rock garden, and very early flowering. There are fifty-two different species in this series, some very rare and unobtainable.

The true *lapponicum* grows in the Royal Botanic Garden at Edinburgh. Edinburgh is very cold, and yet there it is growing. We tried it at Tower Court, but it died.

(THE CHAIRMAN: The true *lapponicum* is about the most difficult rhododendron to grow in this country. It is remarkable to see a plant as healthy as that. We cannot grow it; we are too soft.)

Edinburgh is too hard; that may be the answer.

R. impeditum: a plant reproduced at Tower Court, the cushion form from Forrest seed. It has flowers in shades of mauve or light purplish blue.

NERIIFLORUM SERIES

Sub-series Forrestii

R. chamae-thomsonii in the *Forrestii* sub-series is a little bush, not creeping or crawling, but an upright bush.

At Tower Court *R. forrestii* var. *repens* grows in full exposure on the top of the hill along with the species Narcissi. Do you see how well they go together. The species Narcissi grow well on an acid soil: at Tower Court although we can never grow the ordinary

larger daffodils, they died, but the species live, and it is a good complement with var. *repens*. You must admit that is very lovely. Talking of different forms, there is also *R. forrestii* var. *tumescens*; I showed it, and it got an Award of Merit. It has two flowers to the truss, or three, sometimes four. The flower is much larger than *repens*.

Sub-series Haematodes

R. chaetomallum is one of the best of this sub-series. If you try to re-make this and have great fun in re-crossing inside the species you would get probably an even better form altogether.

A fine form of *R. chaetomallum* var. *hemigymnum* won an Award of Merit in 1957. It is a little dark, but it is a different form of *chaetomallum*. In a species you can get these different forms, often ranging in a series. Underneath the leaves are brown.

R. mallotum. Flowers very early. In all the species of the series *Neriiflorum* you see the "juice" from the flowers which are dark crimson. Those are honey drops having fallen out of the flower, which draws all the bees and insects. This shrub is noted for its shape, the branchlets are densely hairy and the undersides of the leaves are covered with cinnamon-brown woolly tomentum.

PONTICUM SERIES

Sub-series Caucasicum

In the *Ponticum* series there are no less than sixteen different known species, twelve in this sub-series of *caucasicum*.

In the *Caucasicum* sub-series is *R. metternichii* (usually pink) but there is also a white form, again very lovely.

There is another one *hyperythrum* which would almost beat that, but not quite.

(THE CHAIRMAN: And *yakusimanum*?)

Yes, a lovely one, and again in sub-series of *caucasicum* occurs *chrysanthum* a dwarf, not an easy doer, but it is a good example showing the variety in any one series.

SALUENENSE SERIES

There are eight species belonging to this series, *R. radicans* being one of the best and most interesting, very deep purple: I nickname the flowers "pansy face". Flowering in May, the leaf is extremely small and prostrate in habit.

Then comes *R. keleticum*, a semi-prostrate spreading shrub, June flowering.

SCABRIFOLIUM SERIES

R. spiciferum. This is in the *Handbook* as C. I would like to re-make this and get it hardier in this country. It is very floriferous, and, if in anybody's garden there is normally a cosy corner, and one could grow it, I would advise it. It is most beautiful.

Sub-series Roxieanum

R. roxieanum, one of the hardiest of any, is always a shy flowerer, but it has a beautiful young growth, and they look like little candles on this little round bush. Look at the leaf, quite narrow, quite small with a thick indumentum.

Another one of the same series, *R. wiltonii*, is exceptionally hardy, very beautiful, with lovely foliage and beautiful texture of flower. Small trusses of whitish or flesh-pink flowers with red spots or a small blotch.

THOMSONII SERIES

Sub-series campylocarpum

We have several bushes of *R. callimorphum* at Tower Court, grown from expedition seed. They are amazingly floriferous. I have not re-mated it. It is quite hardy and is remarkably floriferous in dense woodland, but it is not necessary to have dense woodland for shelter. Flowers pink or deep rose, with or without a crimson blotch at the base inside.

Sub-series Souliei

R. wardii named after the late Captain Kingdon-Ward, one of our famous explorers, another beautiful rhododendron with yellow flowers, saucer shaped, sometimes has a crimson blotch at the base.

Sub-series Thomsonii

R. meddianum, the Chinese *R. thomsonii*, is next door to being hardy although marked C in the *Handbook*. One of the best in this series I feel *meddianum* beats *thomsonii* in many respects; it is much more floriferous, with rich deep-crimson or bright-scarlet flowers on a shapely bush.

R. thomsonii may be considered the head of the family: it has a heart-shaped leaf which applies through all this series, and a magnificent calyx, deep red bell-shaped flowers; another distinctive character is the smooth, peeling bark.

Sub-series Williamsianum

R. williamsianum in the *Thomsonii* series has a sub-series to itself. It has clear shell-pink flowers. After it has flowered, and sometimes when flowering, its young copper foliage is a most wonderful combination. It can be grown in rock gardens or any other part of one's garden.

TRIFLORUM SERIES

Sub-series Hanceanum

R. hanceanum nanum. It has lovely pale-yellow flowers and is an excellent compact-growing plant. This is more or less what you would call the dwarf class in the *Triflorum* series. It makes a most lovely little bush and is suitable for the rock garden.

Sub-series Yunnanense

R. chartophyllum in the sub-series *Yunnanense* is very close to *yunnanense*. They would like, at Edinburgh, to join it up with *yunnanense*; it is most floriferous.

R. yunnanense does very well at Tower Court. The trusses are very big and our best form has a good red blotch. We have obtained a very round truss through breeding, again the three flowers have joined up and made a tremendous truss of multiples of three. *R. yunnanense* at Tower Court looks almost like a hedge; it is tremendously floriferous. It makes an upright bush, more shrubby than the little *hanceanum nanum.*

R. davidsonianum was re-bred by selection at Bodnant. Again I want to find out if it is improved over the actual species. The flowers are deep pink, with a lovely blotch, and beautiful in multiples of three which have turned into a complete round truss.

Sub-series Augustinii

R. augustinii is beautifully floriferous. These are really blues, if you see them in the Hall and outside. I re-bred it to give a pale form and named it 'Mist Blue'. *Augustinii* will flower magnificently every third year, as thick and heavy, but in between they also give a good flowering. You cannot dead-head if you have a quantity, it is almost impossible.

Sub-series Triflorum

R. keiskii grows well at Leonardslee, and is again a small shrub.

There is a very compact type in the main "Species Collection" which is now at Windsor Park.

UNIFLORUM SERIES

R. imperator in the series *Uniflorum* is a wonderful rock-garden plant, flowering its head off. It has tiny leaves and grows close to the ground, yet it is most floriferous practically every year. This plant should not, in my opinion, be confused with *R. uniflorum*, for that grows more upright.

VIRGATUM SERIES

R. racemosum in the *Virgatum* series is a very hardy plant. I have proved at Tower Court that you can grow that in boggy ground, on very dry and hard ground, under shelter, and in full exposure, and it will do its best at every point. It is well worth having, early-flowering, very hardy, and frost-resistant, up to a point. You cannot expect anything to stand the frosts like we have been having lately.

FOLIAGE CONTRASTS

Most of the sub-series *Taliense* have beautiful young blue foliage, and nearly all of the *Taliense* series form round and shapely bushes with magnificent indumentum to their foliage.

One of the gems of the whole of the foliage plants is *R. lepidostylum* in Series *Trichocladum*, noted for its magnificent young foliage. A beautiful compact round bush. There is a wonderful plant at Brodick in the Isle of Arran (Pl. 7). Flowers are funnel-shaped in pairs, pale yellow. There is another magnificent bush of that variety at Edinburgh, and it is also to be seen at other gardens.

CAMPANULATUM SERIES

Again noted for its foliage, in particular var. *aeruginosum* (Pl. 1). The young foliage has a metallic lustre, and the unfolding leaves are quite glabrous above.

DISCUSSION

THE CHAIRMAN: Which do you consider is the best? You have done so much breeding and inter-breeding by selection, by improving series and species, which do you think is your most successful?

MRS. HARRISON: I did re-breed *R. pseudoyanthinum*. I tried to breed from the various shades of blue-mauve and got the red form, deep claret shade. That turned out most successful, and we got a tremendous round truss instead of the multiples of three.

If you mention success, I would say *Rhododendron diaprepes* has proved itself, from a health point of view, improved from C in the *Handbook* to almost A. I cannot mention any others.

A MEMBER: Last year, Mrs. Harrison, you were judging at the Edinburgh Show. There was a very fine form of *R. thomsonii* with red calyx which got a First Prize. It was grown by the Balfours at Dawyck. Has it achieved specific rank?

MRS. HARRISON: I could not answer that. That is one for the botanists, the question of the red calyx. It came under question at the time, and there was nothing to prove it was not *thomsonii*. It may be more unusual to have a red as against a green calyx. I cannot answer why it had it.

THE SAME MEMBER: Has it been given specific rank?

MRS. HARRISON: Do you mean it should have a proper clonal name? I think probably it should have. It did not gain the Award of Merit, it was a First Prize. If it comes up for an A.M. or F.C.C. it has to have a clonal name.

A MEMBER: I received seed of *R. chrysanthum* from the Alpine Garden Society's seed distribution. Should I be successful in raising these? Are you able to give me any special tips for this species which is reputed to be difficult?

MRS. HARRISON: It is: I have mentioned growing this, it is in the *Ponticum* series. It went with our species collection to Windsor, and I got a little plant back from Sir Eric Savill. I have got it growing in Cornwall on a bank with stones and rocks to help it to grow. We have succeeded: Sir Eric Savill kept it going.

THE CHAIRMAN: There is no particular difficulty about this species: it is very slow growing.

MRS. HARRISON: A lot of the species have never been brought to the public, therefore there has not been the interest in them. Now they are getting more interested, and I see no reason why this species *R. chrysanthum* should not be grown as well as many others.

A MEMBER: I very much admired your *yunnanense* which the Crown Commissioners had at the Show two years ago, that very white form with the red flash, a selected form.

MRS. HARRISON: I re-bred in order to get this red flash, and luckily it came off!

A MEMBER: In raising rhododendrons from seed the difficult time is the first two or three weeks after germination. I have recently sown some seed as a result of my own hybridizing, and unfortunately within two or three days of the seed being sown I have a fungus growth on the surface. Is there anything I can treat the soil with before germination to get rid of this?

THE CHAIRMAN: What sort of fungus?

THE SAME MEMBER: Having stood the pan in water before sowing and letting the compost soak up the water, I have not watered since. I have a growth of very fine hairs, a cobweb film over the surface.

THE CHAIRMAN: It might be lack of ventilation.

A MEMBER: Permanganate of Potash might be a remedy.

THE PREVIOUS MEMBER: Or the sheet of glass on top?

A MEMBER: Could we ask Mrs. Harrison whether she would be good enough to say how she germinates her seed, what particular precautions does she take?

MRS. HARRISON: That is a very fair question. I have not done it for a long time. In our early days of big expeditions, we had seedling pans made with wood outside and netted bottoms, never a solid bottom, good drainage; leaf mould, then crocks, then proper soil conditions right through. We then put them on ordinary railings in the greenhouse, to allow complete ventilation from underneath and all round the boxes, so they never became thoroughly damped, although the watering had to be watched very carefully. We found we got a tremendous germination through that.

In the pricking-off stage, too, there was never any fungus on the top. We put that down to complete airing round the roots as well as the boxes. It was always a cool house, not a hot house. No bottom heat. The actual seedlings were brought on with a little glass over the top of the boxes, but all in the most hardy condition we could get them, from the start.

A MEMBER: At what time of the year do you plant the seeds?

MRS. HARRISON: That again depends upon the series and when you receive them from the expeditions. They start flowering early until the end of August: a lot depends on the genus itself. On the whole I would sow them in the Spring, and get them started early Spring.

THE CHAIRMAN: If there are no other questions, you will, I know, wish to join with me in thanking Mrs. Harrison very much indeed for her very interesting talk.

AZALEAS AT WINTERTHUR

By HENRY F. DU PONT

IN 1917, two or three years after the San Francisco World's Fair, I visited the Cottage Garden Nurseries of Mr. Brown in Long Island to see the collection of Kurume azaleas he had got at the Fair. None were in bloom, and his many greenhouses were full of azalea cuttings or young stock. I noticed here and there some azalea plants in 6- or 7-inch pots, and on inquiring about them I was told the florists did not think these varieties would be suitable for forcing. I told Mr. Brown I would take these seventeen plants, and practically all the Kurumes I have naturalized in our woods are cuttings from them.

The Chestnut Blight had left many open areas, and before I knew it, Robertson, our Scottish gardener, had numerous young Kurume plants with no place to go except the woods, where they have been ever since. For over forty years they have grown and prospered. Every plant was planted in a hole 30 inches deep, 40 to 48 inches wide, with 8 inches of stone at the bottom, and a mixture of loam, leaf mould, and peat. They are sprayed regularly and are watered after three weeks without rainfall. Out of the original seventeen varieties we still have twelve surviving. These have been difficult to name, but four, the names of which we are certain, are 'Apple Blossom', 'Cherry Blossom', 'Pink Pearl' and 'Snow'.

Little by little I have found many new hybrids which are not Kurume and have selected eight to twelve varieties which bloom one week apart. These groups are planted quite separately from the forty-year-old Kurumes in their original locations in the woods. They are in groups before entering the Pinetum, beside the Pinetum paths, and beyond with the June shrubs and the native azaleas.

The longer I grow azaleas the more I realize how beautiful they are when grouped in harmonious colours and pleasing contrast. They naturalize in every imaginable terrain and contour (no other species are in bloom in Delaware for almost four months), and due to their various height and habit of growth they are never monotonous and are perfect with countless varieties of bulbs and wild bloom.

Photo: Gilbert Ask

FIG. 1—A formal path in the Winterthur Gardens of Mr. and Mrs. Henry Francis du Pont near Wilmington, Delaware, is bordered by pink Kurume azaleas 'Coral Bells' with ground cover of ivy beneath. The Henry Francis du Pont Winterthur Museum

FIG. 2—Dogwood and spring foliage on Oak Hill frames the Henry Francis du Pont Winterthur Museum of early American decorative arts in the background

FIG. 3—The White Azalea Walk of *R. mucronatum album* winds through the Pinetum. The Henry Francis du Pont Winterthur Museum

Photos: Gilbert Ask

Photo: Gilbert Ask

FIG. 4—Virgin growth of oaks and tulip poplars shade a small stream which flows through a flower-filled glade. The Henry Francis du Pont Winterthur Museum

Photo: J. E. Downward

FIG. 5—*Rhododendron pulchrum* 'Violet Cloud'. A.M. May 21, 1962, when exhibited by Crown Estate Commissioners, Windsor Great Park, Berks (see p. 226)

They are also in good scale for small house plantings, but the average colour schemes normally used are so terrific that one does not realize how beautiful they might be.

In milder climates the rhododendron hybrids are superb and full of interest, but alas, at Winterthur the varieties that will grow here have come and gone during three or four weeks.

Early in April *mucronulatum* azaleas in shades of mauve or purple are quite lovely each side of a grass path and going back as well in the woodland, having three varieties of primrose-flowered Corylopsis bushes behind them. There is also with them an occasional shrub of *Prinsepia sinensis* with tiny primrose flowers and striking in full green leaf. *Corydalis densiflora*, a mauve ground-cover perennial, carries out the colour scheme, as well as several groups of purple and mauve Lenten Hellebores and dog-toothed violets and bergenias.

The path ends at the lawn, where among a few conifers and small trees of *Prunus subhirtella* and 'Accolade' are large shrubs of pale-pink *Viburnum fragrans* and many 'Cornell Pink' azalea *R. mucronulatum*.

As the Corylopsis, *R. mucronulatum*, *Viburnum fragrans* are fading, Gable's 'Conewago' and other *mucronulatum* × *carolinianum* hybrids, big robust plants in shades of mauve and purple, come into bloom on each side of the steps and also may be found at the beginning of the "once a week" path with the *R. reticulatum*, Henry Skinner's selection, slightly darker in colour, which are also at the big sycamore. Then come the *schlippenbachii*, the loveliest big pink flowers and in paler shades as well, that if selected will provide two weeks of successive continuous bloom. I plant near them both the 'Miss Susie' (Dr. Wheeldon) as it has the same big flowers and almost the same shade, and some azalea 'Cattleya' (Kurume) and 'Conewago' (Dr. Wheeldon selection), both pale mauve, as they all flower as the *schlippenbachii* are fading.

The *schlippenbachii* are planted on both sides of the lawn going to the first tee and also in the Pinetum as far as the *Cedrus atlantica glauca* circle.

On the left of the *Cedrus atlantica glauca* circle above the wall, is a group of soft mauve 'Fujimanyo' with a few primrose-yellow *japonicum*, and at the right of the steps, one or two more 'Fujimanyo', and beyond them on the slope, the large-flowered 'Lilacina' with a couple of 'Miss Christine' (Wheeldon). Leaving the *Cedrus atlantica glauca* circle on the left are three 'Colorado' (Merritt) salmon rose, nine 'Mayflower' (Glenn Dale) soft salmon,

and farther to the left above the circle a group of Exbury for later blooms; and to the right of the path leaving the *Cedrus atlantica glauca* circle are some 'Cecile' (Exbury). The path crosses at right angles the glade with the Chaenomeles which bloom the last two weeks of April, and continues on to the white gate passing on the left-hand side azalea 'Coral Cluster' (Merritt) salmon, 'Flower Queen' (Merritt) mass of salmon flowers tight together, 'Melody', 'Ambrosia', 'Fashion', three salmon Glenn Dales, 'Pirate' (Glenn Dale) red salmon, and on the right, a large bed of Ghents and *iaponicum* with a few azalea 'Miss Louisa Hunnewell' and Flavum ['Flame'?] underplanted with blue *Scilla campanulata.*

At the left of the Ghents there are steps and a sloping lawn edged with big specimen *mucronatum album* (formerly *ledifolia alba*) and for later bloom, on the left, a later blooming group of Ghents and at the bottom of the slope the main lilac groups and specimens. Returning to our path, it goes to the white gate taken from the one-hundred-year-old estate of Mrs. Mary Latimore.

Opposite the gate at the edge of two Paulownias and clustering at the base and among the huge *Buddleia alternifolia* are some azalea 'Millicent' (Merritt) salmon rose.

My "once a week" path is on the slope of the Pinetum below the *Cedrus atlantica glauca* circle, and above my forty-five-year-old *Malus sargentii* at the west end of which there is a large group of 'Henriette', which is a beautiful rose and really begins the lower side of my "once a week" path, which follows on with three each of the following: *R. reticulatum*, 'Mayflower' (Glenn Dale) salmon, 'Coral Cluster' (Merritt), 'Gaiety' pink salmon, 'Glacier' white, and 'Sagittarius' pink—these last three being Glenn Dale.

The east end of the "once a week" path on the upper side starts with Gable's *mucronulatum* × *carolinianum* with an underplanting of *Deutzia rosea* which bloom at the same time.

At the end of the Chaenomeles garden and across the lawn from the sundial garden, which skirts eight huge Chaenomeles, is a big planting of 'J. T. Lovett' bordering the edge of the woods; and in these woods and as far down the hill as the swimming-pool are large plantings of some sixty-year-old *R. kaempferi* hybrids in shades of pink. My father got these plants from Professor Charles Sargent and Mr. Hunnewell, of Wellesley, Massachusetts.

On the far side of the woods is a big group of azalea 'Firefly', lacquer-red flowers, with sage-green leaves, and 'Magnifica', a form of *R. mucronatum* with 'Winterthur', a mauve sport of it.

Near the woods from the sundial garden and the lilacs, and

across the road, is a splendid old sycamore with many June-blooming shrubs and grass paths. One of these goes downhill past the quarry and then comes a beginning of June-blooming Chugai (Satsuki) in great variety. Below the quarry bridge are many yellow and some red *calendulaceum* azaleas.

The quarry bridge path brings you to Oak Hill, where a bed of native American azaleas are planted. These include *R. canadense albiflorum*, very early white; *R. canescens*, *R. nudiflorum* and *R. roseum*, early pinks; *R. atlanticum*, dwarf mid-season white; *R. arborescens* × *atlanticum*, late blush-pink; *R. arborescens* × *bakeri* and *R. bakeri* × *viscosum*, late pinks; *R. austrinum*, early yellow; and *R. bakeri*, late, shades of orange.

Azaleas, both here and in England, are all too often planted in mixed groups with no regard for colour. It is hoped that Winterthur will show all who visit here what lovely and invaluable plants azaleas are, when planted according to a well-planned colour scheme.

WINTERTHUR GARDENS

By C. GORDON TYRRELL

VISITING famous gardens is rapidly becoming a pleasant part of any well-planned trip, and Winterthur (pronounced *winter-tour*) is no exception to this rule. Of the acreage of the large estate, some thirty are planted to gardens, and all who visit will find it very rewarding.

Any discussion of Winterthur should include mention of its architect, Henry Francis du Pont, who was born in the house built in 1839 by his great-aunt and great-uncle, near where the first of the family from France set up their powder mill on the banks of the Brandywine Creek. He inherited the estate in 1927 and since then has worked extensively in the planning and development of the gardens. All of the prodigious amount of work done since then has been under his direct supervision, for, as he will admit with a smile, he is still head gardener! A man of wide and varied interests, his eye for beauty, keen sense of colour and balance, and extensive knowledge of horticulture have made of the gardens a creative effort which combines loveliness with the impression of complete naturalness.

The design of the gardens has been laid out with meticulous care, creating vistas, planting to a colour scheme, and always preserving the natural trees and shrubs. Our native trees are predominantly Beech, Hickory, Red, Black, and White Oak, and the magnificent Tulip Poplar (*Liriodendron tulipifera*); our native shrubs mainly *Viburnum acerifolium*, with inconspicuous white flowers and maple-like leaves, and *Lindera benzoin*, the Spicebush, which has very early greenish-yellow flowers, green foliage, and an attractive habit of growth. Also through the woods are large masses of self-sowing Viburnums, including *setigerum*, *tomentosum*, *sieboldii*, and *dilatatum*. The "second story" of the forest is composed almost entirely of Flowering Dogwood (*Cornus florida*), while on the ground are massed ferns, trilliums, violets, anemones, scillas, *Mertensia virginica*, claytonia (Spring-Beauty), bloodroot, and jack-in-the-pulpit. The addition of white azaleas into this pleasing picture of green, white, and soft blue makes the general effect even softer, creating a setting into which the

bright pinks, reds, and mauves of the azaleas fit beautifully and naturally.

Our rainfall averages 45 inches in the year but also we usually have 18 to 20 inches of snow from January through March. In January our average temperature is 36° and in July 78°, when it is very humid. Our first killing frost does not usually come until the middle of October. The soil is acid with a pH of 5·5 to 6.

Although the genus *Rhododendron* is the very backbone of our garden, Winterthur is nevertheless not devoted to rhododendrons alone. Nor are we (unlike most arboreta) interested in botanical collections of plants or "sets" of hybrids. We find that groups of this kind create a very spotty picture and are totally unsuited to our purpose, which is to give, through large mass plantings, a total effect in the landscape. To this end, there are no plants more satisfactory than the evergreen azaleas.

This has become increasingly apparent since 1917, when Mr. du Pont obtained his first Kurume azaleas—seventeen plants that were among the very first to be imported into this country. The ensuing years have seen the rise of numerous hybrid groups—Gables, Glenn Dales, Pericats, Kaempferis, and others—and many of these have become permanently naturalized at Winterthur. To-day we have more than 235 species and varieties of azaleas, with the total number of plants well into the thousands.

Our main planting of azaleas lies on the wooded crest of a hill overlooking the Museum. Leading up to this hill on either side of the path is the tree-paeony garden of Professor Saunders hybrids, with a small group of Japanese paeonies. On each side of the lawn are planted a mass of Kurume azalea 'Coral Bells', earliest to bloom, beyond which is a large bed of 'Magnifica' (white with splashes of raspberry), clone of *R. mucronatum*, and its mauve sport 'Winterthur' underplanted with *Scilla campanulata*. Also planted in the area are some *R.* hybrids, such as 'Mme. de Bruin', 'Blue Peter', and *R. catawbiense album* 'Glass'.

The path leads into the Azalea Woods, flanked by large Kaempferi hybrids, and still further up are the Torch azaleas, *R. kaempferi*, tall plants of almost tree-like aspect in shades of red and rose, with touches of orange.

Further along, the wood opens out to the main planting of Kurumes, offspring of the original plants bought in 1917. Colours run mainly in shades of pink, with some red, lavender, mauve, and a good deal of white. One block, consisting of the three varieties, 'Snow' (Kurume), 'Samite' (Glenn Dale), and 'Rose Greeley'

(Gable), is entirely white. Here also is more 'Magnifica', which is extremely popular with our visitors.

In this area are most of our large-leaved rhododendrons, including some 100 plants of Dexter *fortunei* hybrids. These bloom with the azaleas and their colours run through light and deep pink, mauve, cherry, apricot, and amber. Fully hardy with us and very floriferous, they are now about 10 feet tall and have enough room to develop to full maturity. Enough is thought of them that records have been kept on sixty-four clones, and young plants are being propagated for future development of new areas.

Our cold winters, of course, deny us so many of the beautiful rhododendrons that flourish in England and on the West Coast. Some which we do manage to grow, however, are 'Carita', 'China', 'Goldfort', 'Jalisco', and *R. vernicosum*. The colours of these are in harmony with the *fortunei* hybrids just mentioned.

On the far edge of the main azalea planting is a block of *R. praevernum*. This species varies in colour from pale to deep pink and, though frost sometimes injures the very early flowers, does quite satisfactorily with us. Three plants of *R. calophytum* grow along with the *praevernum*. Though not as yet a dependable bloomer, it is a striking foliage plant all year round.

Here also is a small planting of dark-red azaleas: 'Gable's Flame', 'Sherwood Red', 'Red Pippin', and the blood-red sport of 'Howraku' named by Dr. Thomas Wheeldon, of Richmond, 'Henry F. du Pont'. These come into bloom after *R. praevernum*, so that any colour difficulty between the two is avoided. Instead, the polished foliage of the rhododendron, combined with the dark green of pine and spruce and the light green of young hay-scented-fern (*Dennstaedtia punctilobula*), provides a suitable setting for the heavy colours of the azaleas.

Leaving this area, the path leads us downhill, past the superb *Magnolia soulangeana* in pink, white, and dark red. At the top of the next rise is the Pinetum, and, approaching it, we pass through two areas planted to colour. The first is in white and reaches its height in mid-May. It includes *Deutzia gracilis*, *Spiraea cantoniensis lanceata*, *S. vanhouttei*, and *R. mucronatum* 'Magnifica' planted on a bank facing a road. Colour contrast is provided by yellow jonquils, late squills, Star-of-Bethlehem, *Iris tectorum* and *sibirica*; and the china-blue spikes of *Camassia scilloides* are particularly good with the raspberry-and-white motif of 'Magnifica'. At the bridge the other colour motif is mauve, with mauve Kurume azaleas beginning to bloom in early May, with the lilacs, *Syringa*

persica, *laciniata*, and *meyeri* extending the colour season two weeks.

The Pinetum, consisting of mature plants of many species of fir, spruce, pine, hemlock, and other conifers, provides a background with a wide range of colour contrast and foliage texture for some of the other garden features. The key trees in this area are two beautiful specimens of Blue Atlas Cedar (*Cedrus atlantica glauca*). Nearby stand the dark, stately columns of *Thuja plicata*, the Giant Arbor Vitae, and *Libocedrus decurrens*, the Incense-Cedar. There are several fine plants of the Oriental Spruce (*Picea orientalis*), and the elegant Nikko Fir (*Abies homolepis*), in addition to such uncommon species as *Abies nobilis*, *fabri*, and *veitchii*; *Picea montigena* and *purpurea*; *Chamaecyparis obtusa*, *lawsoniana*, and *pisifera* (including both the "gray-moss" and the "gold-thread" forms of the last); *Cephalotaxus drupacea nana*; and the Dawn Redwood, *Metasequoia glyptostroboides*. All these trees, with the exception of the last, are about fifty years old. The Dawn Redwood, though only about twelve years old, is already the equal of many of them in height.

The entire north end of the Pinetum is devoted to the early *R. mucronulatum*. Backed by a little knoll on which grow White Pine (*Pinus strobus*), Japanese White Pine (*P. parviflora glauca*), and Japanese Black Pine (*P. thunbergi*), the mauve *mucronulatum* are lovely in early April, giving us our first large-scale display of spring. They are planted with three species of pale-yellow Corylopsis and underplanted with Hellebores, Bergenias, and mauve *Corydalis densiflora*. In one corner, somewhat remote from the main planting, are massed the pink forms of *R. mucronulatum*, including the fine cultivar 'Cornell Pink'. These are planted with other early flowering pink shrubs, *Viburnum fragrans*, *Prunus tomentosa*, *P. subhirtella*, and varieties of *P. serrulata*, and shaded by large plants of Yellow-Wood (*Cladrastis lutea*), Goldenrain-Tree (*Koelreuteria paniculata*), and Pagoda-Tree (*Sophora japonica*).

Adjoining this is a planting of the Gable hybrid 'Conewago' (*carolinianum* × *mucronulatum*) which picks up the colour in mid-April; adjacent plants of *R. schlippenbachii* come into bloom slightly later. Fine plants of this azalea are scattered through this end of the Pinetum, planted among such conifers as *Pseudotsuga taxifolia*, the Douglas-Fir; *Sciadopitys verticillata*, Japanese Umbrella-Pine; *Tsuga caroliniana*, the Carolina Hemlock; and varieties of *Taxus cuspidata*, the Japanese Yew. Also in this area and very early

blooming is a combined planting of the lemon-yellow *R. keiskei*, the purple *R. carolinianum* hybrid 'P. J. M.', and the deep mauve hybrid *R. chapmani* × *mucronulatum*. Later colour in tones of purple is provided by the Korean azalea *R. poukhanense*, and the Nearing dwarfs 'Ramapo' and 'Purple Gem', separated from the pink *R. schlippenbachii* by large conifers.

Far to the right at the western edge of the Pinetum is a small group of striped Glenn Dale azaleas: 'Killarney', 'Memento', 'Sarabande', and 'Dowager', interplanted with cotoneasters and fringe-trees (*Chionanthus virginica* and *C. retusa*). This planting gives an attractive off-white effect in mid- to late May.

R. schlippenbachii leads us to a group of evergreen azaleas, chiefly Dr. Wheeldon's 'Miss Susie', with some Pericats and Kurumes, in similar shades of rose pink. Here we have reached the central point of the Pinetum—a large Blue Atlas Cedar surrounded by a circular stone wall. To the left are plantings of evergreen azaleas in shades of salmon.

Beyond the central point of the Pinetum is a spacious glade with large plants on both sides of *Chaenomeles lagenaria* in shades of pink, white, salmon, and deep red, a feature of the garden in mid-April, which leads us down into the Sundial Garden with its formal beds and box hedges.

Here the Golden Currant (*Ribes aureum*) and Gable's hybrids of *R. carolinianum* and *mucronulatum* bring in the yellow-and-purple motif in early April. The main scheme of this area, however, is pink and white.

In bloom in late April and early May are four species of *Spiraea*; the Almond Cherry, *Prunus glandulosa*, in pink and white; *Exochorda*, the Pearl-Bush; *Chaenomeles* 'Apple Blossom' and 'Phyllis Moore'; and *Viburnum carlesii*, *macrocephalum sterile*, *burkwoodi*, *bitchiuense*, *juddi*, and *carlcephalum*, as well as the taller *Prunus* 'Hally Jolivette' and 'Amanogawa'. Beyond the box hedge are the early magnolias, *M. soulangeana*, *kobus*, *stellata*, and its variety 'Waterlily'; *Fothergilla major* and *monticola*; and *Halesia carolina*. Fine old Flowering Crabs and more *Chaenomeles* meet the Viburnums on the slope down from the Pinetum, creating an expanse of pink and white bloom backed by the dark conifers.

Blue is introduced into the sundial garden through *Phlox divaricata* and *stolonifera* 'Blue Ridge', which are used as underplanting for the pink and white *Chaenomeles* 'Apple Blossom', and through the lilacs. Included in our collection of the latter are many old varieties of the French type as well as the earlier flowering

Photo: J. E. Downward

PL. 5—Rhododendron 'St. Breward'. F.C.C. May 1, 1962, when shown by Major-General E. G. W. W. Harrison of Tremeer, St. Tudy, Cornwall

Photo: J. E. Downward

PL. 6—Camellia 'Mrs. D. W. Davis', one of the newly raised American varieties of *C. japonica* described by Mr. G. E. Puddle

Hyacinthiflora varieties. Soft lavender-blue predominates in these.

The same colour is repeated in the flowers of the Princess Tree (*Paulownia tomentosa*), which carries the colour across the road towards a newly developed area, dominated by a huge Sycamore tree (*Platanus occidentalis*), beneath whose branches rich purple azaleas bloom in splendid isolation. In this planting may be found 'Sherwoodi', 'Mossieanum', *R. reticulatum*, and the lovely 'Elizabeth Gable'. These azaleas and the Judas-Tree (*Cercis canadensis*) bloom in early May. Even earlier bloom is provided by several plants of *Forsythia ovata*, the earliest forsythia of all, and great drifts of naturalized daffodils. But the majority of bloom in this area comes in June, with species lilacs, Deutzias, Philadelphus, *Buddleia alternifolia*, many Viburnums, Weigelas, *R. brachycarpum* and *discolor*, quantities of Mountain-Laurel (*Kalmia latifolia*), and the June Dogwood (*Cornus kousa*). The recent acquisition of a collection of Chugai (Satsuki hybrid) azaleas allows us to extend the azalea blooming season in this area well into June. These are attractive, dwarf plants with immense flowers usually variegated in shades of pink, red, and white. These are on the hillside opposite the quarry. In this quarry, with its boggy base, is a large primula garden, below which is a footbridge leading to Oak Hill.

South-west of the Sycamore area, going towards the Museum, lies Oak Hill. The road leading in that direction is flanked by bold masses of the red Kurume 'Hinodegiri'. Beyond a wooded portion with a scattering of white Kurumes, one encounters drifts of the vivid scarlet Kurumes 'Firefly' and 'Yayegiri', each specimen of these varieties a plant 6 or 7 feet tall and 10 feet in diameter. At the crest of Oak Hill this bright colour scheme gives way to a cloud of white Dogwood (*Cornus florida*). Through May and June white dominates on Oak Hill in the successive blooming of *Cornus florida*, *R. mucronatum* 'Magnifica', Deutzia and Philadelphus in variety, and the late Japanese Dogwood (*Cornus kousa*), added colour being provided by groupings of Glenn Dale azaleas in many shades, Scotch Broom (*Cytisus scoparius*) in yellow, lilacs in pink and mauve, and a collection of native azaleas. These interesting natives, including the species *R. atlanticum*, *austrinum*, *bakeri*, *canadense albiflorum*, *canescens*, *nudiflorum*, *prunifolium*, *roseum*, *speciosum*, and *viscosum*, are being used in the development of the east side of Oak Hill and below the quarry footbridge. The first of them begins blooming in mid-April and the last blooms sometime in July, but the best of them bloom in early June—the fragrant

white *R. arborescens*, flaming orange *bakeri* and *calendulaceum*, and the bright pink hybrids of *R. bakeri* with *arborescens* and *viscosum*.

Taking up the red 'Firefly' at the crest of Oak Hill again and continuing towards the Museum, one encounters on the opposite side of the road a planting of our sport of *R. mucronatum* 'Magnifica'. This plant, named 'Winterthur', is a large-flowered, cool blue-mauve and blooms in mid- to late May with the other *mucronatum* clones. Further along are extensive plantings of the late Kaempferi hybrids obtained years ago by Mr. du Pont from Professor Charles Sargent and Mr. Hunnewell, of Wellesley, Massachusetts. These are vigorous, floriferous plants, quite large now and giving a laudable performance each year. Their colours, ranging from pink through salmon-red, are very clear and bright, and they are among the hardiest of azaleas.

The Kaempferi hybrids, along with the similarly coloured Glenn Dales, 'Revery', 'Gracious', 'Magic', and 'Prudence', extend to the foot of the hill where the Museum parking lot begins. Thus do we complete our circle through the garden, and we see that, as the Winterthur Museum tells the story of America during the early days of the colonists and on through the country's first 200 years, so does the garden show a development which brings us to the realm of to-day.

Winterthur in the spring is an experience not to be forgotten, for here the visitor may appreciate a heritage of natural beauty which has come down through many years, and which is intended for posterity.

FOLIAGE IN RHODODENDRON SPECIES

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

TO any rhododendron enthusiast, the growing of these plants for foliage effect is both absorbing and rewarding. In common with hosts of other horticulturists, I find this subject fascinating, and never tire of comparing the habits and colouring of these noble plants.

In this article I shall write about those rhododendrons which I like to grow most for foliage effect. All of these are growing at Windsor, so it is safe to assume that they should be perfectly hardy over most of the country.

Any rhododendron grown for its colouring in leaf must have woodland conditions, with dappled shade and adequate moisture during the growing season, both in the ground and in the atmosphere. The large-leafed species require cultivation in the form of annual top dressing with equal parts of leaf soil and old cow manure. This treatment pays for itself, putting size and colour into the foliage, but never softening the plant against winter frosts.

The choice of species is a very wide one: indeed, few gardens today could hope to accommodate them all. It must be remembered that the greatest colour effect comes in the spring and early summer, from the new growth, and in my opinion, this can equal that of many flowering plants. The foliage colouring can range from silvery-white to grey, from fawn to rich bronze, and from jade green to a delicate powder blue.

If I have a favourite rhododendron it is *R. macabeanum*, which is I think one of the finest hardy large-leafed rhododendrons. It flowers freely on reaching maturity, some ten to twelve years after planting. One point of interest here is that the best colour in foliage comes from the best coloured flower form, namely, the F.C.C. variety. *R. macabeanum* is magnificent in late April and May, when the young growth is covered with a silvery indumentum, and the stems with scarlet bud scales. It should be planted away from the wind, with plenty of room to grow, for it makes a big plant.

Another startling plant is *R. sino-grande*; the largest in leaf and stature grown in this country. Again, this plant is lovely in spring, with its young growth of silvery-grey; but its main attraction is its

huge green leaves of bright green, with a silver reverse, in summer and winter.

I know that some people regard *R. sino-grande* as tender, but surely this is not so if the correct form is found. A 2 feet high plant was planted in the Valley Garden here some fifteen years ago. It is now 12 feet by 12 feet, with leaves 2 feet long, and it has survived severe frosts. A point to note here is that some forms make their young growth in April, and others as late as July and August. It would appear that forms collected by the late Captain Kingdon-Ward, especially from his last collection, are of early growth, and are therefore more hardy than those collected earlier (Fig. 9).

For the small garden, with little shade, nothing could be better than *R. yakusimanum*. The F.C.C. form is lovely in habit; a mound of silvery-grey in the spring and holding this colour well into the autumn. It is, of course, renowned for its flower, but I rate it very highly as a foliage plant. A member of the Ponticum series, it makes a plant of 2 to 3 feet high, but 3 to 4 feet in width.

Moving along the colour range, many good rhododendrons show in their young foliage the golden-bronze indumentum. From the Falconeri series alone there is a choice of some six types. These are *R. falconeri* itself, *R. arizelum*, *R. eximium*, *R. fictolacteum*, *R. rex* and *R. lanigerum*. I particularly like *R. rex*, K.W. 4509. This makes a large tree, with leaves a foot long. Its young foliage is a rich golden-bronze. It is quite hardy. Smaller in habit is *R. eximium*, with deep bronze-red young foliage which persists well into the winter. This rhododendron requires shade to be seen at its best.

Three members of the Ponticum series, although having rather poor flowering qualities, are worthwhile, from the foliage point of view, in the open garden. These are *R. metternichii*, *R. makinoi* and *R. degronianum*. They have narrow dark green leaves with pale brown indumentum. Two others worthy of mention are *R. bureavii*, from the Taliense series, and *R. tsariense* from the Campanulatum series. *R. bureavii* has deep salmon-orange indumentum on bottle green leaves, and is a very attractive foliage plant. For some years *R. tsariense* has attracted much attention here with its coppery bronze young foliage. It is very dwarf in habit, only 2 feet high after fifteen years.

Breaking away from the thick, woolly leaves of the aforementioned plants, and while it is not generally considered as a foliage plant, I like to grow *R. lutescens*, for its gloriously bronze young growth which it produces so early every year. From the Triflorum

series, this rhododendron is light, airy, and elegantly beautiful when allowed to grow naturally.

A large number of rhododendrons have a bluish green tint in both the young and the mature foliage. Included in this range are the Campanulatum, Cinnabarinum, Thomsonii, Triflorum and Trichocladum series. From these I would choose *R. campanulatum* var. *aeruginosum*, a bushy shrub with metallic blue young foliage. It is not a large grower, so is useful for the smaller garden (Pl. 1). *R. cinnabarinum* var. *roylei*, a tall-growing shrub, with blue-green leaves, is beautiful all the year round. A plant which attracts me is *R. lepidostylum*, from the Trichocladum series. Poor in flower, it earns its place in any garden with its fine blue foliage and dwarf habit (Pl. 7).

Most of the foregoing species are seen at their best in either spring or summer, but with the use of rhododendrons from the azalea series the season can end in a blaze of yellow, scarlet and orange.

The common *R. luteum*, so lovely in spring, has no rival in autumn with its beautiful yellow and orange colouring.

The more classic *R. quinquefolium* and *R. pentaphyllum*, with their distinctive pale green leaves in Summer, can also be very beautiful, with a soft golden display at leaf-fall.

In conclusion, I would say that the rhododendron species well repay spending a little time and trouble in the choice of the right setting, for surely no other plant gives quite as much reward for time and money, keeping its interest as it does right through the year.

RHODODENDRONS ON THE PACIFIC WEST COAST OF AMERICA

By H. R. FLETCHER, F.R.S.E., V.M.H.

Lecture given on May 1, 1962

ALTHOUGH I propose to deal with rhododendrons which are *in cultivation* on the Pacific West Coast of America,—yet I would like first of all to discuss the species which are *native* to this part of the world. There are only three of them and only one has played a major role in rhododendron hybridization.

*R. albiflorum** can be found in the mountains of Oregon and Washington—in the Cascade, Olympic and Blue Mountains, and its distribution extends eastwards to the Rockies. It is always found above 4,000 feet, in fully exposed sites, usually with abundant moisture. It is by no means a spectacular plant; deciduous, up to 6 feet high, with white, sometimes yellow spotted flowers about an inch long, single or in pairs and growing on the branchlets of the previous year. This species has been in cultivation in Britain for long enough (probably it flowered for the first time in Britain—in Edinburgh—in 1837)—and yet one hardly ever sees a really good specimen. It appears to be a very slow grower and never seems really at home in conditions which are so obviously to the liking of other rhododendrons. As in Britain, so on the Pacific West Coast; in those few gardens and nurseries where I saw it, I didn't see a really fine plant. And obviously it isn't thought highly of in cultivation in America, for in the latest American rating it is given one star for habit and nothing for flower. I know of no record of its having been used in hybridization.

The second native species, *R. macrophyllum**, the so-called Western Rhododendron and the national flower of Washington, was discovered by Archibald Menzies, who had been a student gardener in the Royal Botanic Garden, Edinburgh, in 1792, at Port Discovery, Washington. Later it was introduced into cultivation in Europe by Wm. Lobb when he was collecting for Messrs. Veitch, who exhibited plants at the Crystal Palace Show in 1855. One finds it all along the West Coast of America, from British Columbia,

* An asterisk after a plant name signifies that the lecturer showed a photograph.

southwards through Washington and Oregon to Monterey Bay, California, often in more or less shaded woods below 4,000 feet in Red Wood, Douglas Fir, Yellow Pine (*P. ponderosa*) and mixed evergreen forests. The flower colour varies from pale-pink* to rose-purple* whilst there is also a pure white form*. There is also some variation in habit; whilst normally it is open and upright, there is, in the Portland Test Garden, a very good dwarf form. In cultivation on the West Coast it appears to flourish better almost in full sun, rather than in the partial shade of Red Wood and Douglas Fir. The American merit rating is one star for flower and two for habit.

The distribution of *R. macrophyllum*, the Western Rhododendron, overlaps that of the Western Azalea, *R. occidentale**, in the region from S.W. Oregon south along the coast to Santa Cruiz in California. *R. occidentale** was discovered by another Scotsman, David Douglas, when collecting for this Society soon after 1830, and introduced to cultivation in Britain by Wm. Lobb in the early 1850's. Usually it grows in moist shaded and cool situations, on the edges of streams or bogs, whereas *R. macrophyllum* inhabits much drier situations. Natural hybrids between the two occur very occasionally.

R. occidentale, of course, is much the finest of the three West Coast species and the latest American rating gives it three stars for flower and three stars for habit. It is extremely variable, for the scented funnel-shaped flowers may be pure white, or white with a yellow blotch, creamy yellow, dark pink, and in bud deep red. In its own right it is a fine garden plant and should be grown much more than it is. But its greatest contribution to horticulture has been its use in hybridization, in the creation of such groups of plants as the Albicans Hybrids, the Occidentale Hybrids, and the Knap Hill Hybrids. And I think it very likely that we haven't heard the last of *R. occidentale*, for some American enthusiasts are busy collecting various colour forms of different flowering periods, which one day could give new colour and later flowering forms by intelligent breeding.

It is of interest that in recent years several State Parks or Reserves have been created in Oregon and California with the object of preserving native stands of *R. occidentale*. One is at Brookings, Oregon, where all competing trees and shrubs have been destroyed and the rhododendron plants, which were burned to the ground by a forest fire almost sixty years ago, are given every chance to develop to their utmost. Of course, such a Reserve offers a wonderful opportunity for studying the diversity of a single

species. And American rhododendron growers, on the whole more so than in Britain, are very much alive to the variability of rhododendron species and to the importance of the good forms. They realize that they have some poor forms of some species, and also that some of the hybrids they grow are by no means the Award of Merit, or the First Class Certificate, forms which they believed they were introducing when they purchased material from Britain. All over the West Coast of America it is very obvious that rhododendron growers are desperately anxious to collect all the best forms, and equally obvious that all the best forms can be grown supremely well.

Consider for a moment the physical features of the Pacific States. The three States of Washington, Oregon and California extend along the shore of the Pacific from 49° to 32° 35′ north latitude, a distance of 1,300 miles. The outstanding physical features are the two great mountain systems—the Cascade-Sierra Nevada Ranges and the Coast Range—which, in general, run more or less parallel to the coast. The first is much the more prominent and exerts much the greater influence on climate, forming a remarkably distinct divide between the Pacific slope on the west and the interior or Great Basin region on the east. The Pacific slope has an oceanic climate with mild rainy winters and, near the coast, cool dry summers, whilst east of the divide the climate is continental with cold winters and hot summers. Rainfall is greatest in the northwest and gradually diminishes southward and towards the interior. From the Puget Sound area in Washington to N.W. California the average rainfall is over 75 inches, in the San Francisco Bay region between 20–25 inches, and at San Diego, S. California, about 10 inches. East of the Cascade-Sierra Nevada Divide rainfall is much reduced, producing semi-arid conditions in eastern Washington and Oregon and typical desert conditions in S.E. California where the average rainfall may be 2–5 inches.

Almost the entire Pacific coastal slope comes between the Plant Hardiness Zone ratings of 8 and 9; i.e. the approximate *average minimal* temperatures range between 10°–30° F., whilst the San Francisco Bay region, northwards to Fort Bragg, averages between 30°–40° F.—Hardiness Zone 10. The climate of the San Francisco Bay area is particularly favourable as the following statistics show.

Monthly and Yearly Average Temperatures in San Francisco

Jan.	*Feb.*	*Mar.*	*Apr.*	*May*	*June*
50·1	53·0	54·9	55·7	57·1	59·1

Photo: J. E. Downward

FIG. 6—*Rhododendron calophytum* (see p. 15)

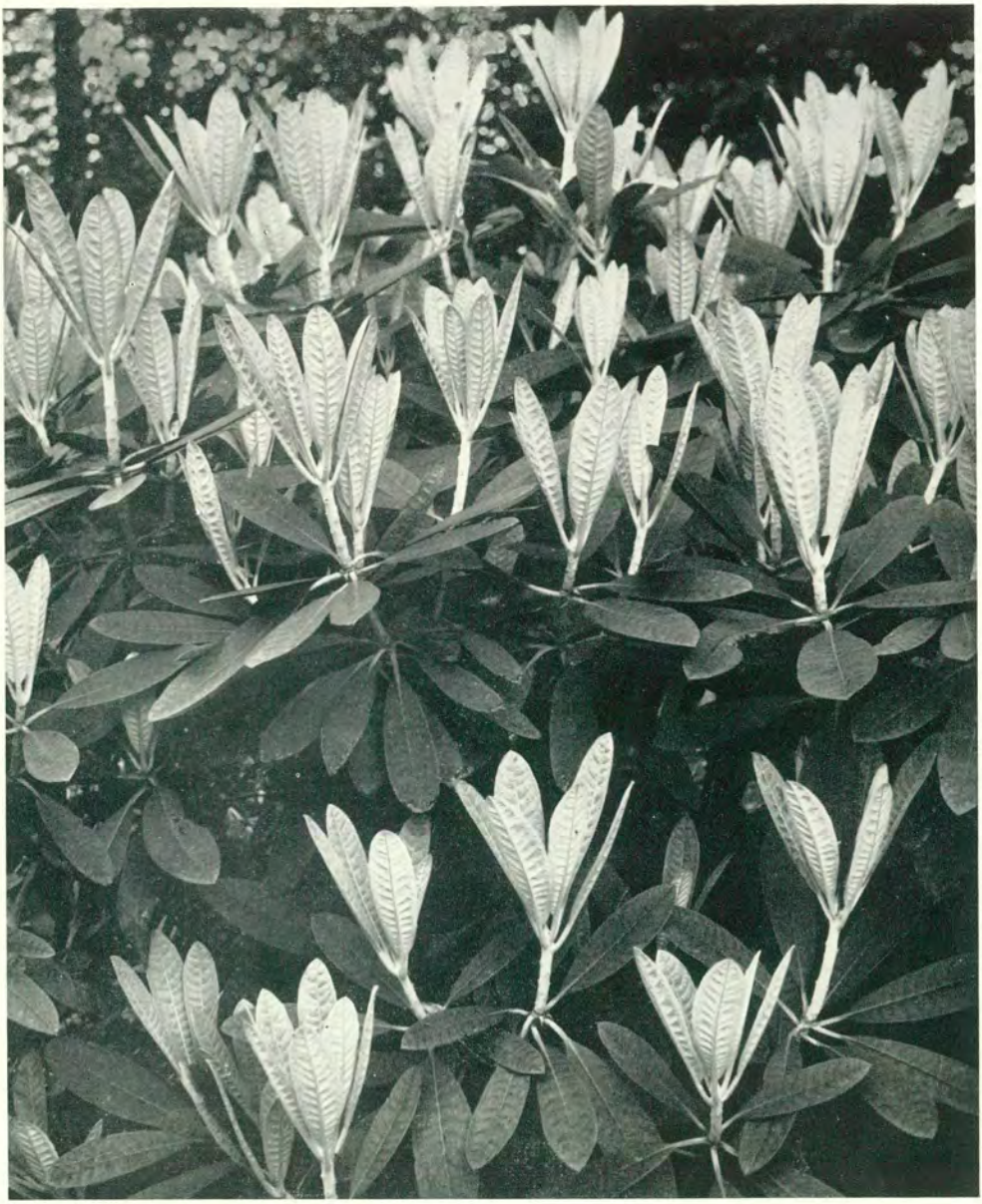


Photo: A. T. Johnson

FIG. 7—The white kid-like leaves of *Rhododendron coriaceum*

Photo: Michael Cox

FIG. 8—A young plant of *Rhododendron basilicum* showing the contrast between the young and old foliage (see p. 15)

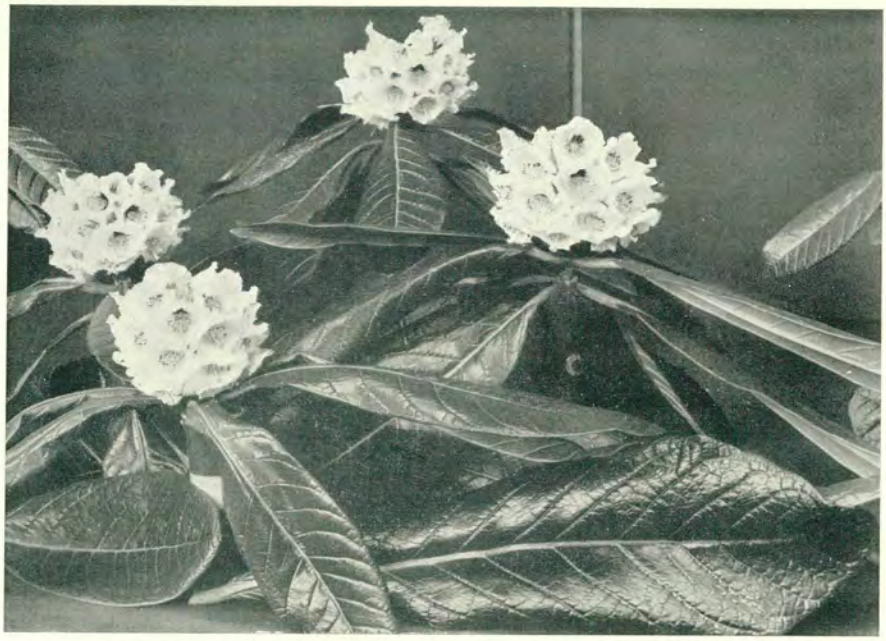


FIG. 9—*Rhododendron sinogrande* in flower. This species has the largest leaves of any rhododendron (see pp. 16 and 36)

FIG. 10—*Rhododendron pulchrum* var. *calycinum*. A.M. February 6, 1962, as a flowering plant for the cold greenhouse, exhibited by the Director of the Royal Botanic Gardens, Kew (see p. 226)

Photos: J. E. Downward

July	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Yearly*
59·9	59·3	61·6	61·0	57·2	56·1	56·7

January is the coldest month of the year and has an average temperature of 50·1° F. September is the hottest month with an average temperature of 61·6° F. The range of average monthly temperature is 11·5° F.

Monthly and Yearly Average Rainfall in San Francisco

Jan.	*Feb.*	*Mar.*	*Apr.*	*May*	*June*	
4·03	3·91	2·78	1·49	0·59	0·15	
July	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Yearly*
0·01	0·00	0·13	1·07	2·27	4·07	20·51

Thus the rainy season begins in October and continues through April and sometimes into May. June, July, August and September usually are more or less rainless. But during these summer months coastal fogs are common and fog drip can and does compensate for lack of rain; for instance, it was shown that from July 20 to August 28 in 1951 the fog drip under *Lithocarpus densiflorus* amounted to 58·8 inches.

Thus from a three weeks' visit to the Pacific Coast it seemed to me that in the cool fog belt from San Francisco to Fort Bragg, for instance, almost any rhododendron which is in cultivation can be grown—and grown to a state of perfection unknown elsewhere in America or in Europe, whilst up the Oregon and Washington Coast there is as much scope—or more—as on the West Coast of Scotland for instance. In fact, I think it is true to say that at the present time Western Oregon and Washington and Great Britain are the two great centres of rhododendron culture in the Western World.

And enthusiasm for rhododendrons is *at least* as great on the Pacific Coast as in Britain. Everyone with a garden grows a rhododendron of some kind. Everyone attends a Rhododendron Show. At Eugene in Oregon, for instance, a one-day show can attract 8,000 visitors; in Edinburgh we are lucky if a three-day show attracts 800 visitors. There are test or trial gardens in various parts of the country. There is one at Eugene, containing many plants raised by the late Mr. James Barto, one of the pioneer rhododendron growers of the West Coast; there is another at Tacoma, Washington; and there is the National Test Garden of the American Rhododendron Society in Portland, containing well over 4,000 rhododendrons—over 400 hybrids and over 300 species including

R. hemsleyanum of the Fortunei series, a species I did not know was in cultivation either in America or Britain. The object of these test gardens is to test plants under local climatic conditions as to quality, hardiness and rate of growth. In the A.R.S. Test Garden practically all the plants have been donated, and all the work of cultivation is done by a small volunteer crew of workers of the Portland Chapter of the American Rhododendron Society. Test gardens apart, there are comprehensive collections in the Golden Gate Park, San Francisco, the Botanical Garden of the University of California, Berkeley (just across San Francisco Bay, in Oakland, where the climate is quite different from that in San Francisco with midsummer temperatures reaching 90°–100° F. and in winter with temperature drops to 18° or even 22° F.), the Garden of the State of Oregon Horticultural School at Corvallis and the Arboretum of the University of Washington in Seattle—and elsewhere. Mr. J. Brydon, one of the most enlightened rhododendron growers on the West Coast and now Director of the Strybing Arboretum at San Francisco, is in process of laying out a Rhododendron Garden there. Of course there are private gardeners with tremendous enthusiasm and much knowledge who have visited Britain and seen the best that we have to offer and who are determined to build together superb collections of the best species and hybrids. And there are breeders who are continually producing good new hybrids; breeders moreover who are well indoctrinated in the clone concept and who are determined to destroy all but the very best of their seedlings. For instance, Mr. Rudolph Henny of Brooks, Oregon, over the past twenty-four years or so has flowered well over 30,000 seedlings and is now growing some 300 which he has selected; the rest he has destroyed.

What then are one's impressions of the cultivated rhododendrons of the Pacific West Coast. First the species. My impression is that all along the Coast certain rhododendron enthusiasts—only a few of them—are growing fairly representative collections of species—members of such series as Thomsonii, Triflorum, Heliolepis, Ponticum, Arboreum, Neriiflorum, Grande, Falconeri, Lapponicum and others—and in the San Francisco and Fort Bragg areas—the Maddenii series. On the whole there is a feeling of immaturity about the collections—many growers seem to have become desperately keen only in recent years, and only in such places as the Golden Gate Park in San Francisco, the Botanic Garden at Berkeley where there are many rhododendrons from Dr. Rock's expeditions to Tibet and Western China of thirty years ago, and in

such private gardens as that of Mrs. Berry in Portland, has one a feeling of maturity. However, no doubt there are collections of a fair age elsewhere for plants and seeds have been going into the country for round about seventy-five years; the first species in the Golden Gate Park, for instance, arrived in 1887; the late Mr. James Barto, to whom present-day rhododendron growers on the Pacific Coast owe so much, began collecting material from Forrest, Rock and Kingdon-Ward expeditions round about 1925 and was greatly encouraged in his preliminary work by Mrs. Rae Berry, one of the greatest gardeners in the whole of the U.S.A., who even at that time had a fairly wide experience of rhododendron species. But for all that, my impression last year was that of young collections in a very vigorous state of growth which promised wonderfully well for the future. And with one or two exceptions species are not nearly so popular as hybrids. This is not an impression; it is a fact, for 98 per cent of rhododendrons sold by nurseries and grown in the average home garden are hybrid rhododendrons.

Though the American Rhododendron Society now has its own rating for hardiness, nevertheless growers on the Pacific Coast have been greatly influenced by the hardiness ratings of the Royal Horticultural Society's *Rhododendron Handbook*, and have found that the British ratings in very large measure apply to the Pacific Coast where one sees almost all the species grown in Britain with hardiness ratings of A, B, C and D. Mr. David Leach, in his most excellent book *Rhododendrons of the World*, recently published, has compiled lists of species which on the basis of beauty of flower, good habit, ease of culture and general garden usefulness are best suited to the Pacific North-West and to San Francisco and Coastal California. The selections were made by groups of specialists and are listed in the order of the frequency with which they were selected by the specialists. Mr. Leach points out that the apparent discrepancies in his lists are due to the natural variation among species in stature, flower colour and season of bloom (pp. 44, 45). Locally popular forms are sometimes considerably different from the typical species.

As in Britain, so on the Pacific Coast, one sees good forms and bad of the same species. Happily rhododendron growers have made good use of the background of appreciation evidenced in the much longer period of rhododendron study in Britain; they now know the good forms from the bad and as a result of importation from Britain by nurserymen and private growers, many Award of Merit and First Class Certificate clones of species are now in

Species for the Pacific North-West†

Red

Before May 1	dwarf	neriiflorum
		forrestii, KW6832
	medium	spinuliferum
		meddianum
	tall	barbatum
		thomsonii
May 1 to June 1	dwarf	haematodes
		neriiflorum
	medium	cinnabarinum
		neriiflorum "subspecies euchaites"
	tall	elliottii, KW7725
		cinnabarinum
After June 1	dwarf	didymum
	medium	griersonianum
	tall	eriogynum

Blue and Lavender

Before May 1	dwarf	scintillans
		impeditum
	medium	concinnum (selected form)
		hippophaeoides
	tall	campanulatum
		augustinii
May 1 to June 1	dwarf	russatum, F.C.C.
		intricatum
	medium	oreotrephes
		chasmanthum
		augustinii
		trichanthum
After June 1	dwarf	calostrotum
	tall	ponticum

Pink

Before May 1	dwarf	racemosum
		williamsianum
	medium	orbiculare
		fargesii
	tall	calophytum
		sutchuenense
May 1 to June 1	dwarf	williamsianum
		callimorphum
	medium	chartophyllum
		oreotrephes
	tall	souliei
		vernicosum
After June 1	dwarf	keleticum
	medium	eudoxum‡
		makinoi
	tall	heliolepis

‡Mr Leach's note: evidently an unusual form, locally distributed. Most forms bloom much earlier

Shades of Orange

May 1 to June 1	dwarf	dichroanthum
	medium	concatenans
After June 1	dwarf	apodectum
		scyphocalyx
	medium	scyphocalyx (selected form)

Cream to Yellow

Before May 1	dwarf	lutescens, F.C.C.
		chryseum
	medium	caloxanthum
		keiskei
	tall	stewartianum (yellow form)
		lutescens
May 1 to June 1	dwarf	campylocarpum (Hooker's form)
		caucasicum ('Cunningham's Sulphur')
	medium	wardii
		campylocarpum
	tall	xanthocodon

† Lists reproduced by kind permission of Mr. David Leach, the author. Dwarf, less than 5 feet; medium, 5–8 feet; tall, more than 8 feet.

WHITE

Before May 1	dwarf	leucaspis
	medium	eclecteum
		irroratum
	tall	sutchuenense
May 1 to June 1	dwarf	wasonii
	medium	puralbum
	tall	arboreum subspecies cinnamomeum
		decorum
After June 1	medium	aberconwayi
		crassum
	tall	discolor

CREAM TO YELLOW (*contd.*)

After June 1	dwarf	lepidostylum (Rock's form)

Species for San Francisco and Coastal California

RED

Before May 1	dwarf	sperabiloides
	medium	neriiflorum
	tall	arboreum
May 1 to June 1	dwarf	haemaleum
		forrestii, KW6832
	medium	spinuliferum
		elliottii

BLUE AND LAVENDER

Before May 1	dwarf	impeditum
May 1 to June 1	medium	augustinii
After June 1	medium	bodinieri
		yunnanense

PINK

Before May 1	dwarf	pemakoense
	tall	fortunei
May 1 to June 1	dwarf	racemosum, F19404
	medium	williamsianum
	tall	discolor

SHADES OF ORANGE

Before May 1	medium	concatenans

CREAM TO YELLOW

Before May 1	dwarf	burmanicum
	medium	arizelum
May 1 to June 1	dwarf	valentinianum
	tall	nuttallii
After June 1	medium	wardii

WHITE

Before May 1	dwarf	leucaspis
		ciliatum
	tall	ciliicalyx
May 1 to June 1	dwarf	veitchianum
		moupinense
	medium	lindleyi
	tall	decorum
After June 1	medium	maddenii
	tall	auriculatum

cultivation there. Also in cultivation are fine forms selected by American growers. For instance, a particularly fine clone of *R.*

augustinii known as 'Barto Blue'* seemed to me as good as the best forms in Britain. Quite obviously Barto, to whom present-day rhododendron growers on the Pacific Coast owe a very great deal, distributed some splendid plants, including a wonderful form of *R. fargesii*, very free-flowering, and with richly coloured spotted flowers, as well as a big-leaved, big-trussed *R. barbatum*. Such species as *R. lutescens* are as variable there as here, some hardly worth growing, some, including the F.C.C. form or something approaching it, quite splendid, and just about as good a yellow rhododendron species as there is, though the plant of *R. lacteum* I saw in the garden of Mr. and Mrs. Del James, at Eugene, would take some beating. This plant, I believe, commonly has over thirty flowers to the truss and an odd truss may have as many as forty flowers. The James's have found this species difficult to handle and very variable from seeds. And on its own roots it appears to be a short-lived plant. Their particularly fine form is grafted on to *ponticum* rootstock, is a very sturdy plant, and was undamaged by the appalling 1955 freeze which wiped out thousands of plants in the Pacific North-West. In America much has been written about *R. yakusimanum* and Dr. Serbin, a keen grower, has even collected material from the Island of Yaku Shima where he found it almost as variable as it is in this country and America, when grown from seeds. It is now one of the most sought after species, and whilst some are growing the wonderful Exbury Form* others are growing plants raised from seeds which aren't nearly so good. On the whole I don't think I saw very much more variation in species than I see in Britain. On the other hand I believe I did see a greater awareness that species *do* vary. Without any question at all the most exciting experience was to see so many species, which in most parts of Britain are on the tender side or even need the protection of a cold glasshouse, flourishing out of doors, especially in California. I wasn't really surprised to see in the open such members of the Parishii sub-series as *elliottii** and *eriogynum**, nor such members of the Edgeworthii series as *R. edgeworthii** (even though it *is* rated F in the *Rhododendron Handbook*) and *R. bullatum**; nor such members of the Maddenii series as *R. lindleyi**, *taggianum**, *odoriferum**, *maddenii**, and even *parryae** and *rhabdotum**. I wasn't surprised because I can see these species growing in the open on the West Coast of Scotland and in Cornwall. But it was quite an experience to see magnificent and very compact plants—not the leggy things we so often see under glass in Britain—of such species as *nuttallii** (Pl. 3), *sinonuttallii*, *dendricola**, *scottianum**,

*ciliicalyx**, *veitchianum**, *cubittii** and *carneum**, all of which hold the hardiness rating of F in the *Rhododendron Hand Book*. In the coastal fog belt all these species can be grown in full sun and full exposure and as a result the majority are compact plants such as are almost unknown in the mildest parts of Britain. Dr. Bowman, at Fort Bragg, California, grows some thirty Maddenii rhododendrons—all of them out of doors of course. His plants are nurtured in the lath house until they are from five to six years old and have reached blooming size and are then placed in their permanent positions in the open garden. Some of his plants are more than thirty years old and none has been badly damaged by frost. *R. carneum* has proved to be slightly more tender than the others. I am perfectly certain that in another ten years' time a great many more of these scented rhododendrons will be grown on the Pacific Coast slope than there are to-day. So much for species.

As I have said, hybrids, both old and new, very greatly outnumber the species on the Pacific West Coast. In every collection there is a fair representation of the so-called hardy hybrids, and very often big plants they are—'Mrs. G. W. Leak', 'Mrs. E. C. Stirling', 'Mrs. Furnival', 'Van Nes Sensation', 'Blue Peter', 'Cynthia'. It is not without interest to know that the first two plants to be gifted to the Trial Gardens of the American Rhododendron Society in Portland were specimens of 'Cynthia' nearly 15 feet tall and in 1945 well over forty years old. Neither is it without interest to know that at the Show in Eugene where there were fine trusses of *R. elliottii* and 'Crest', the Award for the best truss in the Show was given to a truss of 'Cynthia'—raised round about a hundred years ago. I wonder what would be the reaction at an R.H.S. Rhododendron Show if, say, 'Pink Pearl', surely a better rhododendron than 'Cynthia', were given the prize for the show's best truss? By the way, 'Pink Pearl', still one of the most popular rhododendrons, was introduced into California in 1912 and in the Golden Gate Park at San Francisco there is a great stand of it surrounding the statue of John McLaren, the creator of this astonishing Park. But also in this Park there are stands of *R.* 'Exoniense'* (*ciliatum* × *veitchianum*) which received an F.C.C. in 1881; 'Fragrantissimum'* (*edgeworthii* × *formosum*) F.C.C. in 1868; 'Countess of Haddington' (*ciliatum* × *dalhousiae*) F.C.C. in 1862 (Fig. 11); and 'Forsterianum'* (*edgeworthii* × *veitchianum*). All these hybrids, mostly of the Maddenii series, are fine plants for the fog zone of the San Francisco Bay area with 'Fragrantissimum' smothering itself with enormous flat white flowers tinged with pink

on the reverse. One finds it as a specimen shrub, or as a hedge, and it is even used as a bedding-out plant. As, in the main, only the more hardy of these tender Maddenii—such as *ciliatum*—have been used in hybridization it would appear that the San Francisco Bay area, and north to Fort Bragg, for instance, offers tremendous scope for the creation of many new hybrids of Maddenii parentage for cultivation in this particular part of the world.

Thanks to the foresight and enlightenment of a few enterprising nurserymen and private growers, most of the Award of Merit hybrids raised in Britain are now in cultivation on the Pacific Coast, though some appear to be in short supply. There are many *griffithianum* hybrids, including, of course, most of the Loderi cultivars (two of which, 'Superlative' and 'Queen Mary', we do not grow in Britain), 'Beauty of Littleworth', 'Loder's White', 'Mother of Pearl' and others. There are many *griersonianum* hybrids—'Tally Ho', 'Fusilier', 'Azor', 'Romany Chai', 'Fabia' and a score of others—though many of these, away from the coast, are subject to foliage burn from the sun. Red-flowered hybrids appear to be very popular and are much in evidence everywhere: 'Britannia', 'Earl of Athlone', 'Gill's Crimson', 'Lady Bligh', 'J. G. Millais', 'Cornubia', 'C. B. van Nes', 'Mars', etc. And there are many of the Slocock *R. campylocarpum* hybrids, 'Unique', 'Dairymaid', 'Elspeth', 'Mrs. W. C. Slocock' and 'Souvenir of W. C. Slocock'—all with fine foliage, rather low growing and of neat compact habit, and with a tremendous amount of flower—wonderful plants for the small garden and all in great demand. Moreover the yellow shades are becoming very popular—as in Britain; every collector is acquiring some of the Hawk clones, including 'Jervis Bay', 'Beaulieu Hawk' and of course the wonderful 'Crest'*. At any rate one saw wonderful *trusses* of 'Crest'—though hardly ever a really sturdy and vigorous *plant*; one did not get the impression that this finest of all large yellow-flowered hybrid rhododendrons was to be a long-lived plant.

As with species so with hybrids. Mr. Leach gives lists of all types recommended by a panel of experts, on the basis of beauty of flower and plant and ease of culture, both for the San Francisco region and the Portland–Seattle region. They are as shown on pages 49–50.

Almost all of these are British hybrids, and indeed it is only in comparatively recent years that hybridization on a large scale has been practised on the Pacific Coast; in fact, from the time the good forms of the species and the A.M. and F.C.C. hybrids raised in

Photo: P. M. Synge

PL. 7—*R. lepidostylum* at Brodick Castle, Isle of Arran (see pp. 21 and 37)

San Francisco Region

Red

Before May 1	dwarf	Doncaster
	medium	Felix de Sauvage
		Gill's Crimson
	tall	Cornubia
		Earl of Athlone
May 1 to June 1	dwarf	May Day
	medium	Gill's Crimson
		Jean Marie Montague
		Lady Bligh
	tall	Princess Elizabeth
		Cynthia
After June 1	dwarf	Elizabeth
	medium	Grenadier
	tall	Tally Ho!

Blue and Lavender

Before May 1	dwarf	Augfast
		Blue Diamond
	medium	Lavender Girl
	tall	Mrs. Charles Pearson
May 1 to June 1	dwarf	Blue Peter
	medium	Susan
	tall	Van Nes Sensation
After June 1	medium	Purple Splendour

Shades of Orange

Before May 1	dwarf	Golden Horn
	medium	Fabia hybrid group
	tall	Lady Chamberlain hybrid group
May 1 to June 1	dwarf	Dido
	medium	Sarita Loder
	tall	Royal Flush
After June 1	dwarf	Medusa
	medium	Radium

Pink

Before May 1	dwarf	Bow Bells
	medium	Corona
	tall	Pilgrim
May 1 to June 1	dwarf	Mrs. Mary Ashley
	medium	Naomi hybrid group
		Hugo de Vries
	tall	Betty Wormald
		Pink Pearl
After June 1	dwarf	Goblin
	medium	Azor
	tall	Bonito

Cream to Yellow

Before May 1	dwarf	Moonstone
		Unique
	medium	Rosa Mundi
	tall	Dr. Stocker
May 1 to June 1	dwarf	Broughtonii Aureum, Moonstone
	medium	Diane
	tall	China
After June 1	dwarf	Harvest Moon
	medium	Margaret Dunn
	tall	Lady Bessborough

White

Before May 1	dwarf	Cilpinense
		Forsterianum
	medium	Handsworth White
	tall	The Bride
May 1 to June 1	dwarf	Countess of Sefton
	medium	Beauty of Littleworth
		Fragrantissimum
		Loder's White
	tall	(Loderi g.) King George
		White Pearl

Dwarf, less than 5 feet; medium, 5–8 feet; tall, more than 8 feet.

White

After June 1	medium	Mother of Pearl
		Sweet Simplicity
	tall	Sappho

Seattle–Portland Region

Red

Before May 1	dwarf	Carmen
		Treasure
	medium	Nobleanum Coccineum
		Daphne
		Gill's Crimson
	tall	Unknown Warrior
		Queen Wilhelmina
May 1 to June 1	dwarf	Elizabeth
		May Day
	medium	David
		Jean Marie Montague
	tall	Grenadier
		Day Dream (red form)
		Bibiani
		Cynthia
After June 1	dwarf	Carmen
		Rubina
		Arthur Osborn
	medium	Britannia
		Fusilier
	tall	Romany Chal

Blue and Lavender

Before May 1	dwarf	Blue Diamond
		Impeanum
		Blue Tit
		Augfast
	medium	Praecox
	tall	Electra
May 1 to June 1	dwarf	Sapphire
	medium	Susan
		Blue Peter
	tall	Purple Splendour
		A. Bedford

Pink

Before May 1	dwarf	Racil
		Jacksonii
		Tessa
		Harlequin
	medium	Carex Blush
		Christmas Cheer
		Nobleanum Venustum
	tall	Cornish Cross
May 1 to June 1	dwarf	Bow Bells
		Goblin, B form
		Humming Bird
	medium	Naomi hybrid group
		Goldsworth Pink
	tall	Pink Loderi hybrids
		Mrs. Horace Fogg
After June 1	dwarf	Corona
	medium	Azor hybrid group
		Jean
	tall	Aladdin

Cream to Yellow

Before May 1	dwarf	Devonshire Cream
		Bo-peep
		Shot Silk
	medium	Cunningham's Sulphur
		Letty Edwards
		Unique
	tall	Diane
	dwarf	Souv. of W. C. Slocock
		Buttercup
May 1 to June 1	medium	Broughtonii Aureum
		Zuider Zee
		Carita
		Hawk
		Damaris

Cream to Yellow

After June 1	dwarf	Jasper
	medium	Virginia Scott
	tall	Lady Bessborough
		Inamorata

Shades of Orange

Before May 1	dwarf	Golden Horn
	tall	(Lady Chamberlain g.) Chelsea
May 1 to June 1	dwarf	Nereid
		Fabia hybrid group (Berryrose g.)
		Belvedere
	medium	Margaret Dunn
	tall	(Naomi g.)
		Nautilus
		Lady Chamberlain hybrid group
After June 1	tall	King of Shrubs

White

Before May 1	dwarf	Bric-a-Brac
		Cilpinense
	medium	Carex White
		Handsworth White
		Sir Charles Lemon
	tall	Dr. Stocker
		Avalanche
May 1 to June 1	medium	Loder's White
		Mrs. P. D. Williams
	tall	(Loderi g.) King George
		(Loderi g.) White Diamond
		Beauty of Littleworth
		White Swan
After June 1	medium	Bonito
	tall	Lodauric

Dwarf, less than 5 feet; medium, 5 to 8 feet; tall, more than 8 feet.

Britain have become established over there. Now, there is a wealth of fine material for hybridization purposes and breeders are making great use of it. I fear that in this talk I can give you only the slightest of impressions of some of the newer American hybrids.

In the yellow shades there is a selection from the British bred 'Margaret Dunn' (*discolor* × 'Fabia') raised by Mr. John Henry and known as 'Golden Belle'*; it is not unlike 'Margaret Dunn' of course but has larger flowers, deeper yellow, almost apricot, in the throat. There is a selection of 'Dream Girl', raised by Mr. Lester Brandt of Tacoma, known as 'Gold Mohur'* with flowers of pale barium yellow; 'Margaret Dunn' is one parent and the Exbury 'Day Dream' the other. 'Sarita Loder' has been used in hybridization by Mr. Del James; with the Exbury raised 'Idealist' as the other parent he has raised two clones, 'Yellow Creek'*, to which the American Rhododendron Society has given a P.A., and

'Penny'*; and 'Sarita Loder' and Mr. James's salmon-pink 'Fawn' are the parents of a very pleasant and as yet unnamed seedling* of Mr. James's with pale-yellow flowers flushed with pink. Mr. James crossed his 'Fawn'*, which is a seedling of *fortunei* × 'Fabia' parentage, with his 'Penny' and one of the seedlings he has named 'Skipper'*; it is a very sturdy plant and carries a big truss of pale primrose-yellow flowers. Mr. James's 'Sweetie Pie'*, the Bodnant raised 'Cowslip' crossed with *forrestii* var. *repens*, and carrying an abundance of funnel-shaped pale-cream flowers flushed with pink, should prove a very useful plant for the small garden. And so, too, should 'Tidbit'*. This is one of Mr. Rudolph Henny's numerous hybrids of *dichroanthum* and *wardii* parentage to which the American Rhododendron Society gave a P.A. in 1957. It is a low growing densely foliaged plant with good habit of growth; there are six to seven fleshy campanulate flowers to the truss, each flower opening straw-yellow from a reddish bud and later changing to a more intense yellow. 'Ella'* is a seedling from the same cross. Another of Mr. R. Henny's *wardii* crosses is 'Ming'*; the other parent is the wonderful Exbury-raised 'Albatross'. *R. wardii* has been much used by other breeders as well; from this species Mr. George Grace has bred 'Carolyn Grace'* an A.E. hybrid† and from *wardii* × 'Moonstone' Mr. Whitney has raised a very floriferous seedling* which is not yet named.

Mr. Rudolph Henny's 'Cis'* impressed all who saw it in full flower last May as an outstanding hybrid. When shown at the Portland Show in 1952 it received the American Rhododendron Society's Goodman Gold Cup as the best American raised hybrid. 'Loder's White' and 'Fabia' are the parents of 'Cis'* and the remarkably coloured flowers are crimson to creamy-yellow on the inside eventually fading to deep cream with the outside of the flower often remaining crimson. In the devastating freeze of 1955 'Cis' was hardly injured. Mr. R. Henny has used 'Fabia' in several of his crosses. For instance 'Goldbug'* ('Fabia' × *wardii*) is a dwarf plant with crimson flowers changing to straw-yellow, and 'Jade'* ('Fabia' × 'Corona') has flowers which change in colour from pinkish-orange to greenish-yellow. Two 'Fabia' hybrids have received the P.A. from the American Rhododendron Society; 'Little Pudding' ('Fabia' × *decorum*) with coral-pink to tan flowers and 'Little Sheba' ('Fabia' × 'Earl of Athlone' × *forrestii* var. *repens*) a dwarf prostrate plant with blood-red flowers.

Mr. R. Henny believes that his finest red-flowered hybrid is

† American Rhododendron Society's Award of Excellence.

'Captain Jack'* of 'Mars'-*eriogynum* parentage. It is a greatly improved 'Mars' which in Britain has received the A.M. and the F.C.C. with a wonderful compact truss of twenty-one to twenty-four currant-red flowers; the foliage is fine and the plant very hardy. Out of the same seed-pod as 'Captain Jack' and the last of nearly a hundred seedlings to bloom, was 'Last Chance'*, with larger individual flowers than 'Captain Jack', though fewer to the truss; the colour is claret-rose shading in the centre to delft rose. Both seedlings have been awarded the P.A. by the American Rhododendron Society as have 'Captain Kid'* ('May Day' × 'Princess Elizabeth') with a rather flat truss of up to fifteen turkey-red flowers, 'Lake Labish'* ('Lady Bligh' × 'Loderi Venus') with flowers of neyron rose, 'Red Cloud'* ('Tally Ho' × 'Corona') with a fine truss of up to sixteen flowers and 'Red Wax'* (*haematodes* × 'May Day'). All these are hybrids of Mr. Rudolph Henny's raising.

Of other red-flowered hybrids, Mr. Del James's 'Jiminy Cricket' (*euchaites* × *gymnocarpum*) in early April carries a fine truss of twelve to fourteen funnel-campanulate turkey-red flowers; Mr. Lester Brandt's 'Black Prince'* ('Romany Chal' × *thomsonii*) has a compact truss of usually a dozen oxblood-red flowers; whilst Mr. R. Bovee's 'Glow'* is of the parentage *griersonianum* crossed with 'Armistice Day'. Mr. Bovee's 'Exotic'* has 'Loderi King George' as one parent and an unnamed seedling raised by the late Endre Ostbo out of 'King of Shrubs' as the other; the big truss of wide open flowers is very striking and the seedling gained the P.A. in 1961. 'King of Shrubs'*, by the way, was raised from seeds sent from Britain to Mr. Ostbo by the late Mr. Fred Rose, seeds of the parentage 'Fabia' × *discolor* (that is the parentage of 'Margaret Dunn'). From Mr. Rose's seeds Mr. Del James also raised a most interesting seedling which he calls 'Tomeka'*. From the same cross as 'Exotic' Mr. Bovee raised 'Mary Mayo'*, which also has received the P.A. and which has large flowers of an unusual blend of pinks and orange. Another P.A. plant is 'Geneva'*, Mr. John Bacher's 'Fabia' × 'Unknown Warrior' hybrid with a good truss of camellia-rose flowers. The well-known 'Moser's Maroon' has been used at least twice as a parent by Mr. Halfdan Lem of Seattle. Crossed with 'C. P. Raffill', the dense trussed, chrysanthemum crimson-flowered 'Jay McMartin'* was bred; and crossed with 'Burgundy', which is Mr. Lem's hybrid from 'Britannia' × 'Purple Splendour', 'Mobur'* with dahlia-purple flowers was bred.

It is only because I saw more hybrids raised by Mr. Rudolph Henny than by anyone else, when I was on the Pacific Coast last

May, that I am showing you so many plants of his raising to-day. Mr. Henny has raised several pink-flowered hybrids. He considers that 'Leona'* is his best—the old Waterer hybrid 'Corona'—an A.M. plant—crossed with 'Dondis', a *discolor* hybrid raised at Kew; 'Leona' normally blooms in the first week of June and was quite undamaged during the severe winters of 1950 and 1955. But also extremely good are Mr. Henny's 'Wink'*, Slocock's old *campylocarpum* hybrid 'Mrs. Mary Ashley' crossed with a Loderi seedling; 'Doris Caroline'*, C. B. van Nes's *griffithianum* hybrid 'Lady Bligh' crossed with another Loderi seedling; and 'George Grace'*, another C. B. van Nes hybrid 'Borde Hill' crossed with still another Loderi seedling. All these Rudolph Henny hybrids have received the P.A.

The Exbury hybrid 'Bowbells' is a very popular plant for the small gardens on the Pacific West Coast, with its neat habit, rich cerise flowers and striking young growths. Rather naturally therefore it has been used in hybridization as with *R. souliei*, giving the very attractive 'Whimsey'*, still another R. Henny plant. Gable's 'Conemaugh'* is another excellent plant for the small garden, being of *mucronulatum–racemosum* parentage—and very floriferous. For the same reason—good low habit and lots of flower—*R. yakusimanum* is becoming much in vogue as a parent (as in Britain of course) and Mr. Cecil Smith has two seedlings which seem to be most promising. One of them, 'Nestucea'*, has *R. forrestii* as the other parent, ten to fifteen flowers to the truss and is a P.A. plant; the other*, as yet unnamed apparently, has 'Norman Gill' as the other parent, and flowers which are rather deeply stained with pink.

Of white hybrids, two which have received the P.A. are Mr. Del James's 'Tumalo'*, a *decorum*–'Loderi King George' cross, and Mr. R. Henny's lovely 'Moontide'*, the ever popular 'Loder's White' crossed with the equally popular *R. wardii*.

What of future hybridization? I fear I cannot speak with any authority on this matter though I am certain that breeders, at any rate in the Pacific North-West, will continue to breed for types resistant to cold, heat and drought, types suitable not only for the Pacific Coast but for the Atlantic Coast as well, suitable for Britain, Europe, Australia, New Zealand. I am certain also that they will continue to breed for smaller low growing types of good compact habit for these are the types most in demand by most people, plants such as the Slocock *campylocarpum* hybrids, plants such as J. C. William's 'Moonstone'*, still just about the best

dwarf yellow and now nearly thirty years old; plants such as 'Blue Tit'*, which I saw bedded out quite frequently around State Buildings; plants with fine foliage such as the Bodnant bred 'Wilbar'*—fine specimens of which I saw in Portland. I have no doubt that an effort will be made to extend the flowering season, for when you're a rhododendromaniac you want rhododendron flowers all the year round. I have no doubt that an effort will be made to produce low-growing compact types, with flowers of good substance and keeping quality, which will flower at the same time as *R. auriculatum* and thus replace this species in the small garden. And of course an effort will be made to produce more true colours in these low-growing types; better yellows which, as Mr. R. Henny suggests, may well come out of *R. dichroanthum*; and better blues, for though there are already good blues among the dwarf rhododendrons, there are none among the rhododendrons we call azaleas. The only rhododendron with anything like a double flower is *R.* 'Fastuosum Flore Pleno'; but there are a good many doubles among the azaleas and it may be that an effort will be made to breed double-flowered rhododendrons.

As for azaleas, it seemed to me that on the Pacific West Coast, as in Britain, there were far too many of them and many of them far too much alike. It was clear that in the past many *Mollis* and *Ghent* types had been grown, but that now the emphasis was much more on the deciduous Knap Hill types—particularly the Exbury strain of the Knap Hills—and on the evergreen Gable Hybrids and the partially evergreen (at any rate on the Pacific Coast) Glenn Dale Hybrids. It is now about ten years since certain enlightened nurserymen, recognizing the superior quality of the Knap Hill types over the Mollis types, imported from Britain some fifty clonal forms of the Exbury strain, propagated them, and put them for sale in 1957. Since then commercial growers have been using these clones as seed parents. They have crossed whites with whites, pinks with pinks, and so on, and the resulting progeny are offered in various colour groups, i.e. shades of pink, shades of orange, etc. Some growers apparently are naming the seedlings and placing them on the market as new cultivars. The evergreen Gable hybrids, with *R. poukhanense*, *kaempferi*, various named cultivars of *R. obtusum* and other species in the parentage, appear to be very popular in the North-West, and if the Glenn Dales, of extremely complex parentage, with their large flowers are not quite in such demand it is probably on account of the semi-deciduous habit of some of them. I have no doubt that these Glenn Dales will give

a far better account of themselves on the Pacific Coast than they are likely to in Britain. Out of some 400 named clones there must surely be some fine cultivars. Needless to say there are many Kurume and Kaempferi hybrids also—and that these too are in great demand.

Of azaleodendrons, crosses between the evergreen and deciduous species of rhododendron, three seemed to be outstanding garden plants: 'Broughtonii Aureum'*, bred not so far away from Edinburgh in the village of Broughton in Peeblesshire, with orange-yellow flowers and with foliage which is neither truly evergreen nor truly deciduous and which in the North-West is inclined to be leggy but which in California seems to be much more stocky; 'Galloper Light'*, one of the Knap Hill introductions, a fairly tall grower and with very striking apricot-pink flowers; and perhaps best of all 'Oregon Queen', a natural hybrid between the two native species, *R. macrophyllum* and *R. occidentale*, found many years ago in the mountains of Oregon; the foliage is unusually fine for an azaleodendron and the pink and yellow flowers quite beautiful.

RHODODENDRON AND AZALEA TRIALS AT WISLEY*

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

ALTHOUGH the title of my contribution to the International Rhododendron Conference is "Rhododendron and Azalea Trials at Wisley" I feel that I should commence with the Trials which started originally at Exbury in the early 1930's.

To quote from the Year Book of The Rhododendron Association, 1934, "Some four years ago requests were sent to all the leading nursery gardeners who had raised rhododendrons of their own to enter one plant of each of their hybrids introduced since 1918 for Trial at Exbury. The Royal Horticultural Society and the Rhododendron Association jointly appointed judges to consider these rhododendrons and to make suitable recommendations."

The purpose of the Trial is to assess the merits for general garden use of the different varieties entered.

Exbury, as is well known, is the estate in Hampshire owned at the time of the Trial by the late Mr. Lionel de Rothschild, and he kindly placed land at the disposal of The Royal Horticultural Society and Rhododendron Association in which to plant the rhododendrons entered for Trial. Exbury is about 70 miles from Wisley and nearly 100 miles from London, and although the judging committee paid many visits to the Trial it was found that the number of visits by members of the public to see the Trial was disappointing.

It was therefore decided to move the plants in the Exbury Trial to Wisley Gardens and a suitable position to accommodate them was found on Battleston Hill. The transplanting from Exbury to Wisley was carried out in the autumn of 1938.

The Trials are made up of three sections, (1) Hardy Hybrid Rhododendrons, (2) Deciduous Azaleas and (3) Evergreen Azaleas.

The hardy hybrid rhododendrons are planted on land sloping to the north and at the highest point the land is about 130 feet above sea level. The pH of the soil is 5·5 and this is also the same for that

* Reproduced from the Proceedings of the International Rhododendron Conference 1961, held under the auspices of the American Rhododendron Society by kind permission of their President.

occupied by the Azaleas. The site is sheltered from the north and east but fully open to the sun. There are some thirty trees, mainly Quercus, Sorbus, Acer, Magnolia and Prunus, scattered over the area but in the main these do not shade any of the plants unduly.

The individual plants are spaced so that they have room for development and normal methods of cultivation are employed to maintain the plants in good health. They are sprayed regularly each year in June and July with DDT Wettable to keep them free from attacks of the Rhododendron Bug (*Stephanitis rhododendri*) and Leaf Hopper (*Graphocephala coccinea*) and they are remarkably free from Bud Blast (*Pycnostysanus azaleae*) which is prevalent in some gardens in Surrey. Any infected buds are removed immediately they are seen and burned. The flower trusses are removed as soon as these fade. The average annual rainfall at Wisley is 24·15 inches and this is reasonably well distributed throughout the year, the wettest months being October and November. When necessary the plants are watered and a mulching of bracken fern is given to them each autumn.

The highest temperature recorded since the Wisley Trials started in 1938 was 92° F. on June 29, 1957, and the lowest was 8° F. on February 25, 1947. Spring frosts during April and May are frequently experienced but fortunately because of the lie of the land have not caused serious damage.

The deciduous azaleas occupy a portion of land some two hundred yards to the south-east of the hardy hybrid rhododendrons. Until recently the plants were subjected to too much shade cast by the surrounding tall trees, mainly Scots Pine, *Pinus sylvestris*, Sweet Chestnut, *Castanea sativa* and one large beech tree, *Fagus sylvatica*. There is no doubt that the growth of the azaleas suffered from the shade and the plants were inclined to become "drawn" and the flowers not quite typical. The beech tree was removed in January 1961 and some of the branches removed from the Chestnuts. This has greatly improved the access for light and it is expected that the azaleas will soon respond to this.

The evergreen azaleas on trial occupy land to the west of the hybrid rhododendrons and are separated from these by a broad grass walk. For several years they were protected by a five-foot high hedge of *Rhododendron luteum*, but this prevented the plants being seen to the best advantage and after careful consideration it was decided to transplant the hedge to new positions. The protection thus lost to the azaleas has, in part, been restored by the erection each year in January of a temporary fence of chestnut paling which

keeps out the worst of the north and east winds to which the plants are exposed. The evergreen azaleas in the Trial are merged into a much larger planting of other evergreen azaleas which are not on trial and together this arrangement provides, during the flowering period, one of the most spectacular features at Wisley.

The method of selecting plants for acceptance in the Trials is that plants in flower, or cut sprays, are shown before the full Rhododendron and Camellia Committee which meets once a fortnight from late February to the end of July at Vincent Square in London, and once in April at Edinburgh, and such plants considered to be worthy are selected for Trial at Wisley. It then remains for the exhibitor to send to the Gardens a suitable plant of each of those selected. No rule is laid down regarding the size or age of the plants to be planted.

The Committee which attends at Wisley for the purpose of inspecting the Trials consists of a sub-committee elected from the full Committee and in addition all members of The Royal Horticultural Society's Council are members of this Committee. The members meet at Wisley on an average four times a year and the method of judging is that of inspecting the plants which are eligible for recommendations to be made for The Royal Horticultural Society's First Class Certificate, Award of Merit or Highly Commended Certificate. The First Class Certificate is the highest award given to plants by the Royal Horticultural Society and is for great excellence. The Award of Merit is given to plants which show a sufficiently distinct advance on their predecessors. Highly Commended is given to noteworthy plants after trial. The recommendations are made on the spot by voting by a show of hands. A recommendation for a First Class Certificate is made when the number of votes cast in favour of the recommendation is at least three times the number cast against it. No other award is recommended unless the number of votes in favour is at least double the number cast against it. Every plant in the Trials is labelled with a number and any labels bearing the name of the plants being judged are removed by the Trials Recorder beforehand, except for those which have received a previous award and which may rank for upgrading. The Committee has the power to delete from the Trial such plants as they deem no longer worthy of being included, and as a general rule plants which have been in the Trial for ten years without receiving an award are subject to removal.

All plants entered in the Trials remain the property of the sender and any plants deleted can be claimed by him, but in practice it is

found that sometimes these are kindly offered to The Royal Horticultural Society for planting in other parts of the Gardens. The total number of different hardy hybrid rhododendrons entered in the Trials since the commencement of these (including Exbury) is 313 and of these 16 have been awarded the First Class Certificate,* and 68 the Award of Merit,* while at the present time 7 remain Highly Commended and 126 have been deleted from the Trial. The total number of different Deciduous Azaleas is 340, of which one has been awarded the First Class Certificate, 37 the Award of Merit, 9 remain Highly Commended and 192 have been deleted from the Trial.

The total number of evergreen azaleas entered in the Trial is 168, and of these 3 were awarded the First Class Certificate, 20 the Award of Merit, 7 remain Highly Commended and 51 have been deleted from the Trial.

All recommendations made by the Trials Committee have first to be confirmed by the Rhododendron and Camellia Committee and finally by the Council of The Royal Horticultural Society. The plants receiving awards are described in the Society's annual *Rhododendron and Camellia Year Book* and The Royal Horticultural Society's Journal,† and the colour descriptions are in accordance with The Royal Horticultural Society's Horticultural Colour Chart.

The Trials Recorder is called upon to keep records of all the plants in the Trials and to note the date of opening of the first flowers. This information is available since the commencement of the Wisley Trials and it is interesting to note the variations which have taken place in the times of flowering according to seasonal weather conditions.

The number of visitors to Wisley Gardens during Rhododendron time, say from April 1 to July 1, has increased from 15,044 in 1946 to 121,717 in 1960, with the consequence that the grass paths separating the Trial beds soon show severe signs of wear.

Groups of daffodils are interplanted to give colour before the flowers appear on the hardy hybrid rhododendrons and after these

* In addition Rhododendron Gladys grex 'Letty Edwards' was recommended for a F.C.C. as a hardy flowering shrub after trial at Wisley at a meeting of the Rhododendron Committee in London on April 20, 1948, and Rhododendron 'Diane' was recommended for an A.M. as a hardy flowering shrub after trial at Wisley, at a meeting of the Rhododendron Committee in London on April 6, 1948. These awards were confirmed by Council and published in the Journal.

† Subsequent to the 1961 Trial Reports, the descriptions of plants receiving awards after trial at Wisley will be published in the Proceedings of the Society rather than in the Journal.

have flowered colour is provided from groups of Lilies, mainly the Bellingham hybrids.

The following is a list of the rhododendrons and azaleas which have received the main awards since the Trials were first judged at Exbury in 1934. I have not considered it necessary to give colour descriptions here as these can be found in The Royal Horticultural Society's Journals, the *Rhododendron Year Book* and the International Register of Rhododendron Names.

A schedule is included giving the dimensions of several of the most noteworthy specimens when these were measured in March 1961.

HARDY HYBRID RHODODENDRONS

First Class Certificate

A. Bedford	1958
Azor Sister	1960
Beauty of Littleworth	1953
Blue Peter	1958
Earl of Athlone	1933
Marinus Koster	1948
Mars	1935
Mrs. A. M. Williams	1954
Mrs. Charles Pearson	1954
Mrs. Furnival	1948
Mrs. G. W. Leak	1934
Mrs. Philip Martineau	1936
Mt. Everest	1958
Sir John Ramsden	1955
Susan	1954
White Swan	1957

Award of Merit

Adriaan Koster	1935
Betty Stewart	1936
Betty Wormald	1935
Blue Ensign	1959
Borde Hill	1948
Britannia	1948
Butterfly	1940
Cetewayo	1958
China	1948
Dairymaid	1934
David	1957
Dawn	1950
Edith Mackworth Praed	1934
Elspeth	1937
Faggetter's Favourite	1954
Frank Galsworthy	1960
Furnivall's Daughter	1958
Gladys var. Snow Queen	1946
Goldsworth Crimson	1960
Goldsworth Orange	1959
Goldsworth Pink	1958
Handel	1937
Harvest Moon	1948
Hugh Koster	1933
Ice Cream	1960
James Burchett	1960
J. J. de Vink	1946
Koster's Cream	1940
Lady Bligh	1934
Lady Primrose	1933
Lady Stuart of Wortley	1933
Lavender Girl	1950
Letty Edwards	1946
Lord Swaythling	1954
Madame Albert Moser	1954
Madame Fr. J. Chauvin	1933
Marion	1955
Marion Koster	1948
Molière	1953
Moonshine Crescent	1960
Mrs. A. T. de la Mare	1958
Mrs. Davies Evans	1958
Mrs. H. Stocker	1948
Mrs. Harold Terry	1948
Mrs. J. C. Williams	1960
Mrs. Lindsay Smith	1933
Mrs. P. D. Williams	1936
Nanette	1933
Netty Koster	1945
New Moon	1953
Norman Gill	1936
Pauline	1957

Peggy	1940
Peter Koster	1946
Princess Elizabeth	1933
Pygmalion	1933
Queen Souriya	1957
Red Star	1940
Rosamund Millais	1933
Rose Newcome	1957
Scandinavia	1950
St. George	1946
Thunderstorm	1955
Unique	1934
Valewood Pink	1934
Vulcan	1957
Wonderland	1958
Zuyder Zee	1936

The following are the dimensions of noteworthy plants in the Trials:

	Height in feet	*Spread in feet*
Azor Sister	12	14
Beauty of Littleworth	15	17
Britannia	8	15
Elspeth	11	13
Faggetter's Favourite	6	10
James Burchett	10	18
Lady Primrose	7	9
Lavender Girl	9	15
Letty Edwards	10	15
Lord Swaythling	10	12
Marinus Koster	8	14
Mount Everest	12	15
Mrs. A. M. Williams	6	17
Mrs. Charles Pearson	9	10
Mrs. G. W. Leak	9	14
Mrs. Furnival	11	16
Mrs. Philip Martineau	16	15
Pygmalion	8	17
Rose Newcome	13	17
Sir John Ramsden	15	12
Susan	10	15
Unique	8	13
White Swan	14	13

Deciduous Azaleas

First Class Certificate

Spek's Orange	1953

Award of Merit

Albatross	1953
Alice de Stuers	1959
Altaclarense Sunbeam	1952
Avon	1958
Byron	1953
Cam	1959
Cinderella	1952
Corneille	1958
Devon	1952
Dr. M. Oostboek	1940
Exquisita	1950
Farall Yellow	1957
Freya	1953
Frome	1958
Goldcrest	1953
Hamlet	1936
Harvest Moon	1953
Homebush	1950
Knap Hill Pink	1950
Koster's Brilliant Red	1956
Lapwing	1953
Marion Merriman	1950
Medway	1959
Mrs. Peter Koster	1953
Mustard	1950
Narcissiflora plena	1954
Norma	1939
Princess	1953
Purple Emperor	1953
Red Shank	1953
Ribera	1953
Stour	1958
Sylphides	1957
Tay	1959
Thames	1958
Trent	1958
Unique	1952

Evergreen Azaleas

First Class Certificate

Fedora	1960
Hinomayo	1945
Orange Beauty	1958

Award of Merit

Addy Wery 1950
Akebonar Ruykin . . . 1948
Anny. 1948
Apple Blossom 1950
Betty 1940
Colyer 1959
Hatsugiri 1956
Ima-shojo 1959
Jeannette. 1958
John Cairns 1940
Lady Elphinstone . . . 1952
Maxwellii 1960
Mother's Day 1959
mucronatum 1958
Port Knap 1958
Prins Bernhard 1960
Purple Triumph. . . . 1960
Ryde Heron 1958
Vulcan 1957
Vuyk's Scarlet 1959

RHODODENDRONS IN NORTH-EASTERN TURKEY

By PETER COX and PETER HUTCHISON

THE two of us and John Apold made a short trip this summer of 1962 to north-east Turkey during the months of June and July. We had no special purpose in mind but hoped to collect rhododendron seed, if not all shed, and possibly plants, along with various bulbs and other plants of interest.

The Pontus mountains of north-eastern Turkey, unlike the rest of the country, have a heavy rainfall on their Black Sea side. They reach their greatest height of over 12,000 feet inland from Rize, some 50 miles west of the Russian frontier. With a humidity of 90% + the climate along the coast is suitable for growing tea, and quite a flourishing industry is building up. Enough is now produced nearly to meet Turkey's own needs, and they hope soon to have sufficient for export.

So with its heavy rainfall and high humidity it is not surprising that a population of native rhododendrons flourishes. The coast itself is too hot for the maximum growth of a plant that likes cool conditions, but *R. ponticum* and *R. luteum* both grow right down to sea level where there can be little or no frost. It would be interesting to see how hardy these would be in Britain compared to those taken from their maximum elevation at over 6,000 feet inland.

The first rhododendron we saw was *R. ponticum*, growing in beech forest about midway between Istanbul and Ankara at only about 3,000 feet. These were nearly past flowering in early June and had not been nearly as well covered with flower as we get in a corresponding amount of shade here. The next meeting with a member of the genus was between Sebin Karahisar and Giresun on the dry south side of the divide just before the start of the forest belt. This was *R. luteum* in a pure stand on an open hillside and was also past its best. Later, on the top of the pass at 6,000 feet, *R. ponticum* (A.C. & H. 53–54) became very plentiful, growing in clearings among *Picea orientalis*. A few good trusses still remained here, and we were at once struck with the enormous variation in colour, shape of truss, and size and shape of leaf. The colour varied

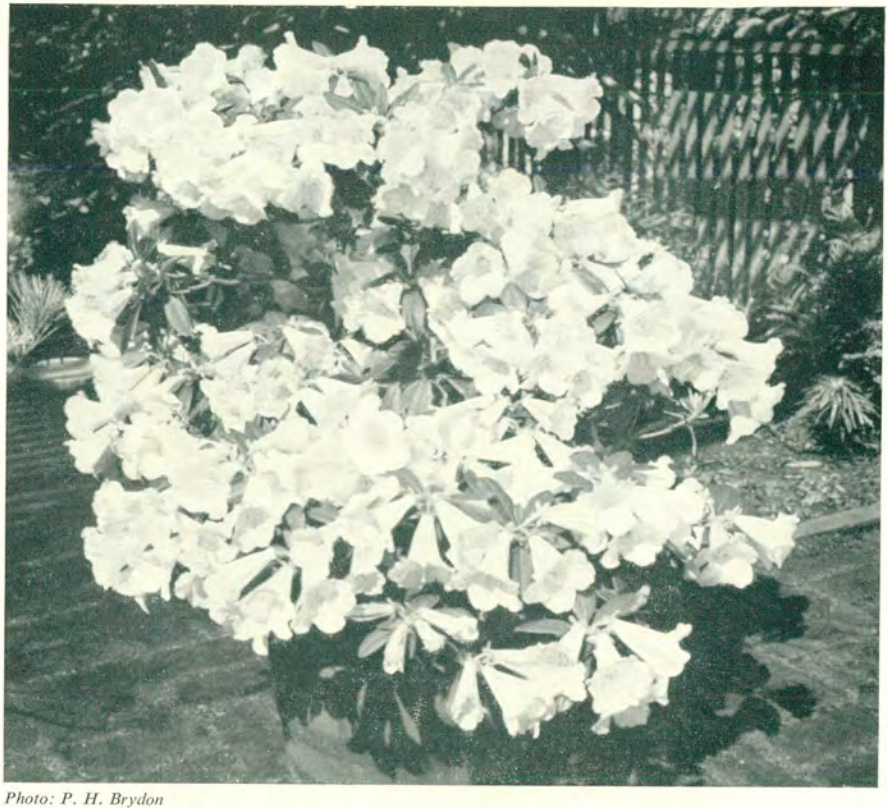


Photo: P. H. Brydon

FIG. 11—Magnificent tub of Rhododendron 'Countess of Haddington' in San Francisco (see p. 47)

Photo: J. E. Downward

FIG. 12—Rhododendron 'Lady Bowes Lyon'. A hybrid between R. 'Pilgrim' and *R. yakusimanum*. A.M. May 21, 1962, when exhibited by the Director, R.H.S. Gardens, Wisley (see p. 225)

Photo: J. E. Downward

FIG. 13—Rhododendron 'Akatsuki'. Hybrid between *R. kaempferi* and *R. simsii* var. *eriocarpum*. A.M. June 5, 1962, when exhibited by Crown Estate Commissioners, Windsor Great Park, Berks (see p. 224)

Photo: P. A. Cox

FIG. 14—*Rhododendron ponticum*. A fine white form. Found by P. A. Cox and Peter Hutchison in the Pontic Range of north-eastern Turkey (see p. 66)

from pale mauve to deep rosy magenta, the latter being a shade never seen in *R. ponticum* in cultivation to our knowledge.

But the most important point we noticed was that all the *R. ponticum* seen in Turkey in many localities did not agree at all in foliage with what is regarded as typical in Britain. The flat dark green, shiny leaf and red stems are just not seen among the native plants. In them the leaf tends to be harder, less shiny, with recurved margins, and is often of a paler green. The last two distinctions tend to be more marked in open situations. The red stems are usually entirely absent and the growth is altogether firmer. In dense shade the leaves grow to a larger size than is normally seen here. There is little doubt that most of our plants here are hybrids of *R. ponticum* and the American *R. catawbiense*, with other influences here and there.

Another striking thing seen in Turkey were the very severe attacks of the rhododendron bug, or lace-wing fly, *Stephanitis rhododendri*, or anyway what we took this to be. The undersides of some leaves were black with the insects and bad discoloration of the leaf was much in evidence. This was to be found only in open situations. Later we found similar attacks on *R. ungernii* and what we presumed was the aftermath of the attacks on *R. caucasicum*, showing black areas under the leaves no doubt due to mould growing on the insects' secretion.

From Giresun we travelled east along the coast, stopping at Trabzon and district for a few days. Then we went on to Hopa where we went inland to Artvin. Here the steep-sided mountains rise up to 6,000 feet above the very hot and dry valley with its large dirty river. On the dry valley sides such shrubs as *Rhus cotinus*, *Buxus*, *Punica granatum* and figs grow. The town of Artvin itself is about 1,000 feet above the river and above the flora soon changes passing through Juniper scrub, mixed deciduous copse, and then up into *Picea orientalis* forest. Soon rhododendrons begin to appear, firstly *R. luteum* and *R. ponticum*, both over in early July, then *R. ungernii* (A.C. & H. 119), just coming into bloom with its handsome foliage up to nearly a foot long. The truss is small and compact, with about twenty flowers, white or cream, sometimes with a pink tinge and with green spots. It grows to 10 feet in shade. This grows quite commonly at about 5,000 to 6,000 feet with the first of *R. smirnowii* (A.C. & H. 118) and the last of *R. ponticum* true to type. The undersides of the leaves of *R. ungernii* are covered with a pale brownish indumentum, not quite as dense as that of *R. smirnowii*. This latter species is more common and widespread in

the area we visited as it grows to above the tree line at 7,000 feet. It has wider, more frilly-edged flowers than *R. ungernii*, whose corolla is funnel-campanulate, and it has smaller, narrower leaves.

In little bays in the spruce, near our camp called Mercivan, occurred various groups of plants, each different from the other and inhabiting their own little glade. These we took to be natural hybrids between *R. ungernii* and *R. smirnowii* as they varied from near the typical rose-purple (A.C. & H. 120) of *R. smirnowii* to the cream of *R. ungernii*. The leaves also lay between the typical species, as did the various parts of the flower. These points were verified by Mr. Davidian who very kindly checked all our rhododendron specimens. One particular group had darker lines down the corolla and was really very attractive (A.C. & H. 121).

As one approached the edge of the tree line at about 7,000 feet the last species in this area became common. This was *R. caucasicum* (A.C. & H. 114), a parent of many of our hybrids but very rare in cultivation in its true form. Unfortunately it was mostly over but an odd truss or two remained. It was a pale yellow, sometimes with a pink tinge, and appeared to be quite pretty in its yellow forms. The truss is compact and shows itself well on top of the very dense mats of growth which are usually not more than two to three feet high. One can walk through this, somewhat as one would walk through Heather in Scotland, but with rather more difficulty owing to the branches which always grow downhill for several feet. In any shady corner it tends to grow ranker with leaves larger than the normal 2–4 inches, so it would probably be advisable to grow the type in full sun in Britain. The leaves are obovate with a thin matted tomentum underneath, a rusty colour on mature leaves. The foliage is near to that of 'Christmas Cheer' and Nobleanum, especially with regards to the indumentum. The habit and flowers are not unlike those of 'Cunningham's Sulphur', sometimes regarded as a form of *R. caucasicum*, but the foliage is quite different, as the former has much narrower leaves with recurved margins and lacks the indumentum of the true species.

Growing among *R. caucasicum* near its lower limit grow some curious plants which are apparently forms or hybrids of *R. ponticum*. They varied from pure white—really a nice plant (A.C. & H. 102) with characters very near those of true *R. ponticum* (Fig. 14)—through a pale pink which was growing next to it (A.C. & H. 103), to two clumps of a dirty pinkish cream, and a pale yellow with a hint of pink growing a few miles away. The leaf was always longer than that of *R. caucasicum* and no indumentum was present. In

this area no true *R. ponticum* could be found, so it is strange how what would appear to be hybrids got there.

Around the whitish *R. ponticum* were clumps of *R. caucasicum* with every flower head eaten off, presumably by the cattle we saw nearby. All the upland pastures of Turkey are very heavily grazed by vast herds of sheep, goats and cattle which eat up every green leaf or shoot that tries to grow more than an inch above ground level. But surprisingly enough *R. caucasicum* still manages to seed itself in a soil which has little humus or anything which would be likely to encourage rhododendrons. In the woodland the soil is usually very shallow and where the ground is logged off erosion becomes serious, particularly if it is heavily grazed.

The surrounding mountains rise to over 12,000 feet to the west and 11,000 feet to the east. Much of this high country has been poorly or totally unbotanized so other forms and hybrids could well exist.

On Kuru Kurun two colour forms of *R. smirnowii* occur (A.C. & H. 129), one a deep rosy-mauve and the other a pale mauve-pink. Both were pretty but should obviously not be grown near bright coloured modern hybrids. Big sheets of the paler form not more than 5 feet high occur above the tree line and looked lovely with sheets of a campanula nearby. Higher huge mats of *R. caucasicum* covered the hillsides.

From Artvin we drove inland to a drier area and up to a pass of over 8,000 feet. Here above the trees on cliff ledges and steep slopes facing north grows *R. caucasicum*, this time in full flower. Two forms occurred, one a pale yellow (A.C. & H. 147), the other a yellowish pink. No other rhododendrons were seen in this area.

Then back we went along the coast to Of, then inland in the direction of Bayburt and Erzerum. Near the top of the pass at about 7,000 feet among lilies and veratrum were many small seedlings of *R. caucasicum*. Few mature plants were visible, so it is strange that these seedlings came to be growing in fairly rank herbage often a long way from a source of seed. From this it is obvious how well certain rhododendron seeds are suited to wind dispersal.

SYMPOSIUM ON THE MOST POPULAR RHODODENDRON HYBRIDS

THE undermentioned nurserymen were asked to contribute to a Symposium on the most popular hybrids of rhododendrons based on those varieties of which there are the highest sales or which the particular nurseryman recommends as outstanding. The contributions are printed as received. A summary is printed at the end.

Messrs. Hillier and Sons, Messrs. Knap Hill Nursery Ltd., Messrs. W. C. Slocock Ltd., Mr. Frederick Street and Messrs. John Waterer, Sons and Crisp Ltd.

18 OF THE MOST POPULAR HYBRID RHODODENDRONS

H. G. HILLIER for MESSRS. HILLIER & SONS, WINCHESTER

'Britannia'	being of very good foliage and colour, and flowering at a very early age, also compact and hardy. Glowing crimson scarlet.
'Pink Pearl'	strong growing, hardy and of good colour and foliage. Large rose-pink flowers fading to blush.
'Earl of Athlone'	of very good colour and foliage with large trusses of flower. Richest blood-red.
'Purple Splendour'	with fine dark green foliage and of good colour. Deep purple with black markings.
'Goldsworth Yellow'	flowering at an early age, compact and of good colour. Apricot, passing to primrose-yellow.
'Betty Wormald'	with large trusses of flower and strong growth. Lilac-pink with a broad pattern of deeper markings.
'Cynthia'	of very good colour and large trusses and flowering at an early age. Rosy-crimson.
'Mrs. G. W. Leak'	very good colour and habit of growth. Pink with a brown-purple blotch.
'Bagshot Ruby'	strong growth, good colour. Ruby-red.

'Souvenir de Dr. S. Endtz'	compact and of good colour, with fine foliage. Similar to 'Pink Pearl' but rather deeper in colour.
'Fastuosum Flore Pleno'	large trusses, good foliage and habit of growth. Semi-double blue-mauve flowers.
'Loder's White'	Mauve-pink, passing to pure white, with large trusses, but shy flowering when young, compact.
'Sappho'	of good foliage and colour. Pure white with a black-purple blotch.
Nobleanum	early, compact, good colour. Rosy-scarlet flowers.
'Doncaster'	slow growing, dome shaped with leathery dark green leaves. Flowers brilliant scarlet-crimson.
'Professor Hugo de Vries'	Rose-pink flowers in tall, pyramidal trusses.
'Alice'	Rose-pink with a light centre; tall, conical trusses.
'Lavender Girl'	pale lavender flowers opening in the latter half of May.

POPULAR HYBRID RHODODENDRONS

G. DONALD WATERER for MESSRS. KNAP HILL NURSERY LTD.

THE word "popular" in terms of hybrid rhododendrons never fails to bring to my mind a vision of my father, Gomer Waterer, standing in an Edwardian attitude beside a monstrously burgeoning specimen of 'Pink Pearl'. In a bubble above his head I see the words, "There, boy, beat that if you can!" In his old age he would chuckle with great satisfaction, saying that after many years it was still the most popular rhododendron. I, rather nastily, delighted in dangling 'Loderi King George' in front of him as a dangerous rival. The ensuing explosion was always a great pleasure to me.

It is a curious fact that the truly marvellous 'Loderi King George' will attract admiring glances but the look of avid devotion will be bestowed more often on a variety with a strong personality rather than a high aggregate of exam marks. The most popular rhododendron in our Nursery is 'Mrs. T. H. Lowinsky', a remarkably vigorous and hardy plant which seldom fails to produce an astonishing abundance of flowers of the type conveniently known as "orchidaceous". I find this a very useful word. People have

often asked me, with pencil poised, to help them describe the lush and heavily spotted flowers. "Orchidaceous?" I have murmured. "Yes, that's it exactly. What a relief!" The searching look has been instantly replaced by a beam of contentment, the useful word safely noted. Perhaps the most important reasons for 'Mrs. T. H. Lowinsky's' popularity are strength of growth, handsome foliage and the fact that the flowers open early in June and are very seldom damaged by spring frost.

'Pink Pearl' and 'Cynthia' are equal second in popularity. They are fine plants and thoroughly deserve the lasting affection which has been given them. When a fastidious critic looks disapprovingly at a popular plant and mutters that he would not have the damned thing in his own garden but that it is a wonderful plant for someone else, the nurseryman should make a mental note to step up production immediately.

For many years 'Britannia' has been a money-maker for the grower who can do it justice. When it is struggling for existence the leaves are more yellow than green and it looks even more sad than a good many other rhododendrons in similar circumstances. On the other hand a healthy plant in vigorous growth and with rich green foliage gladdens the eye at all times of the year. These remarks apply also to Koster's 'Earl of Donoughmore'. A few years ago Knap Hill showed this variety well at Chelsea and presented it to this country. Its success was immediate. The dark foliage and rich cerise-red flowers appealed strongly and left us in no doubt of the popularity it now enjoys.

Visitors to our nursery are divided into two categories. One declares that 'Fastuosum Flore Pleno' is one of the loveliest of all rhododendrons, the other gives it a too-much-like-ponticum look and stalks off in search of something more exciting. Nevertheless there is a steady demand for it as well as for the gorgeous 'Susan' which to most people is irresistible.

We grow a splendid form of 'China'. On the whole large-leaved rhododendrons thrive only in the most favoured gardens. Where *falconeri* will struggle 'China' will often flourish. For me the foliage and unexpanded flower buds are a delight. I cannot walk past our stock plant without feasting my eyes on it.

As a rule popular rhododendrons are strong, easy growers. I can think of two exceptions, 'Corona' and 'Goldsworth Yellow' which are neither strong nor easy. It is sheer strength of personality which makes it almost impossible for the grower to have too many of them in stock. A glance at the *Rhododendron Hand-*

book will reveal that 'Corona' has qualities which several breeders have wished to infuse into their hybrids. There is nothing like it and there are few rhododendrons of which that can be said to-day.

Four varieties derived from *griersonianum* are sufficiently hardy at Knap Hill to be grown in open situations. Full light gives them the richness of colour which is so often and so sadly lacking in heavily shaded woodland gardens. The blood-red 'Empire Day' sprawls hopelessly in shade. In full light it is a shapely and vigorous bush. 'Day Dream', 'Azor' and 'Vanessa' are happy and infinitely beautiful with us in sunny places provided that the soil does not dry out too rapidly during periods of drought. These plants are all popular in that they are frequently bought when buyers see them. They are not yet well known.

'Furnivall's Daughter' is one of three varieties which are similar in flower but markedly different in foliage. 'Chintz' is not generally satisfactory. Large bushes can give a good account of themselves but young plants look miserable when the flowers have fallen. 'Mrs. Furnival' was thought to have everything that a good rhododendron should have until 'Furnivall's Daughter' came along and caused her to totter on her pedestal. The two plants are growing within a few yards of one another in our Nursery. Madam is growing in the most conspicuous situation but the daughter, hidden in the back row, has the most admirers. At the end of the flowering season paths and footmarks on the clean soil of our borders show clearly which plants have attracted most attention.

The word blotch must be one of the ugliest in the English language. To describe the flower of 'Sappho' as white with a dark blotch is enough to make one shudder, but in spite of that unfortunate word 'Sappho' is always a best seller. There are several fine varieties with yellow blotches. I am convinced that one of them, 'Snowflake', which at the moment is not well known, is a variety of particular merit. The flowers are white and speckled on the upper petal with clear yellow. They are usually at their best in the first and second weeks of June. Foliage is good and growth rapid.

At the end of each flowering season I remember with particular pleasure a mass of white flowers of alpine purity against a blue sky. Each flower is speckled with red. This is 'Mrs. J. C. Williams' raised here many years ago. I like to think that I have helped to make this wonderful plant more widely known.

O. C. A. SLOCOCK FOR MESSRS. W. C. SLOCOCK LTD.

To pick out just twenty-four varieties of rhododendrons is a difficult task, but this I am told to do.

To begin with, let us pretend that azaleas are not rhododendrons—let them have another twenty-four as they deserve.

First let us choose the tall, back-row plants, then the medium growers and finally some lower or outside plants.

Range of colour and time of flowering to give reasonable continuity is also a "must".

For the tall-growing plants I would choose:—

'Azor'	for its late salmon colour
'Countess of Derby'	The largest of the 'Pink Pearl' types
fortunei	for its scent
'Iceberg'	for its pure white July flowers
'Lavender Girl'	for its colour when they yellow
'Letty Edwards'	for its grace and primrose flowers
'Susan'	for its fine habit and early blue flowers.

For those of medium height that can also furnish themselves to the ground:

'Betty Wormald'	for its gay buds and large flowers
'China'	for its foliage and yellowish colour
'Cornubia'	for a chance of early brilliance
'Goldfort'	for its cream and pink effect
'Hugh Koster'	an ever-trustworthy scarlet
'Lady Clementine Mitford'	a late Peach colour
'Mrs. Charles Pearson'	a true bush that always gives a display
'Scandinavia'	to give some deep crimson
lutescens	to give contrast in foliage and early yellow flowers
yunnanense	for its almost Plum-tree effect of thick clusters of flowers.

For the shorter and therefore outside plants I would choose:

'Blue Diamond'	One of the best of the blues
'Britannia'	for its foliage and colour
'Cilpinense'	for its early flowering
'Praecox'	for planting in front of *lutescens*
'Purple Splendour'	for its rich colour
'Souvenir of W. C. Slocock'	for its Apricot tints
'Unique'	for its shapely bush and ivory colour

A detailed description of these plants is given below.

***'Azor' (B) Stephenson A.M.1933 (*griersonianum* × *discolor*): June/July. Tall growing, large soft salmon-pink with deeper throat, one of the best of later flowering Rhododendrons.

***'Betty Wormald' (B) A.M. 1935: Tall growing 'Pink Pearl' hybrid with large trusses of coral-pink flowers fading in the centre and spotted on upper petals.

****'Blue Diamond' (B) F.C.C. 1939 (*intrifast* × *augustinii*): Taller than either 'Blue Bird' or 'Blue Tit', similar in foliage, the flowers are deeper in colour.

****'Britannia' (B) van Nes F.C.C. 1937 ('Stanley Davis' × 'Queen Wilhelmina'): Medium height, forms a dense bush, gloxinia shaped, scarlet-crimson flowers, large leaves.

***'China' (B) Slocock A. M. 1940 and 1948 (*wightii* × *fortunei*): a spreading bush with large leaves and large trusses of cream-coloured flowers with red throats. Variety "A" is taller growing with slightly smaller but deeper yellow flowers.

***'Cilpinense' (C) Aberconway A.M. 1927 (*ciliatum* × *moupinense*): March. A low-growing very free-flowering shrub with small leaves and blush-pink flowers fading to white. Can be easily brought into flower by Christmas indoors.

***'Countess of Derby' (B) White A.M. 1930 ('Pink Pearl' × 'Cynthia'): May/June. Very tall growing. Very large trusses of rose-pink flowers.

***'Cornubia' (C) Barclay Fox A.M. 1913 (*arboreum* × *shilsonii*): March/April. Large bell-shaped waxy scarlet flowers.

***'Goldfort' (B) Slocock ('Goldsworth Yellow' × *fortunei*): April/May. Medium tall growing.Creamy-yellow flowers tinted with Apricot. Pink buds.

**'Hugh Koster' (B) Koster A.M. 1933: May. Medium height, fine scarlet flowers, good truss.

***'Iceberg' (B) Slocock A.M. 1950 (*auriculatum* × *loderi*): July. Tall growing, long leaves, large trusses of large, sweet scented, white flowers with green centres.

**'Lady Clementine Mitford' (A) Waterer: June. Medium to tall, very hardy Rhododendron with peach-coloured flowers.

**'Lavender Girl' (B) Slocock A.M. 1950 (*fortunei* × 'Lady G. Egerton'): May. Vigorous but compact grower, sweet scented, Fortunei-shaped flowers of pale lavender with green eye.

****'Letty Edwards' (B) Slocock F.C.C. 1948 (*campylocarpum* × *fortunei*): May. Tall-growing vigorous bush, pale-pink buds opening to primrose-coloured flowers in large trusses.

****'Mrs. Charles Pearson' (B) A.M. 1933; F.C.C. 1955: May. Tall, handsome bush with large trusses of blush-mauve flowers spotted burnt sienna.

***'Praecox' (B) Davies 1860 A.G.M. 1926 (*ciliatum* × *dauricum*): February/March. Moderate height, small leaved, very hardy and early shrub with lilac flowers.

****'Purple Splendour' (A) A. Waterer A.M. 1931: June. Moderate growth and very hardy. This fine dark purple Rhododendron with black eye is a prince among plants.

***'Scandinavia' (B) Koster A.M. 1950: May/June. Medium height, large trusses of deep crimson flowers.

***'Souvenir of W. C. Slocock' (B) Slocock A.M. 1935: May. (*campylocarpum* × Hardy Hybrid). Moderate height, close growing bush with deep apricot buds opening to pale yellow. The general habit of this plant makes it of outstanding garden merit.

****'Susan' (B) Williams A.M. 1938; F.C.C. 1954 (*campanulatum* Hybrid): April/May. Tall bushy Rhododendron with large trusses of near-blue flowers.

***'Unique' (B) Slocock F.C.C. 1935 (*campylocarpum* × Hardy Hybrid): April/May. A compact growing shrub of medium height. Ochre-coloured flowers that open peach pink.

RHODODENDRON SPECIES

****fortunei* (B) Series Fortunei: May. A small tree of some 25/35 ft. with large fragrant blush or lilac flowers.

****lutescens* (B) F.C.C. 1938. Series Triflorum: March. A handsome, medium-height shrub with clear yellow flowers, the young shoots and leaves are bronze-coloured.

****yunnanense* (B) A.M. 1903; A.G.M. 1934. Series Triflorum: April/May. A free-growing small-leaved very free-flowering shrub with blush to white flowers with dark red spots.

THE MOST POPULAR HARDY HYBRID RHODODENDRONS

By FREDERICK STREET

THERE is no rhododendron more popular than 'Pink Pearl'. It has all the honours—Award of Merit, First Class Certificate and Award of Garden Merit—and it has been a best seller since the day that it was first exhibited by the late Mr. Gomer Waterer at one of the Temple Flower Shows towards the end of the last century.

There are only a few that begin to approach it in general popularity. 'Britannia', the nearest to scarlet, is a hardy hybrid rhododendron and 'Purple Splendour', 'Cynthia', 'Fastuosum Flore Pleno' and 'Goldsworth Yellow'. There is little doubt that

these six are asked for more often by name than any other rhododendrons.

If it were required to include a white among this short list of well-known hybrids then Rhododendron 'Sappho', that tall growing white with the prominent dark eye, would be the choice. Whenever it is seen it is wanted. And it is always this variety that is asked for, although there are many more of similar colouring which could be equally good alternatives. R. 'F. B. Hayes' is one with the advantage of being rather more compact in habit and with a more interesting leaf. R. 'Mrs. R. G. Shaw' is another with an even more prominent eye but, unfortunately, a still more straggly habit of growth. Perhaps one of the best of recent introduction is the Knap Hill Hybrid 'Hyperion' which has the same striking contrast in the colour although it is rather more pink when it first comes into flower.

All these are good reliable hardy hybrids which may be planted with safety in all parts of the British Isles and which have become well-known to a wide public. There are others which have been planted nearly as much and which, as a result, have become known by name to many gardeners. These are the varieties which are grown on a large scale on the continent and have been imported in quantity into this country over the years. A typical example of this group is R. 'John Walter', a red with a frilly edge to the petal.

It is very difficult to know which rhododendrons will become popular in the future. The reason for this is that there are many which seem to be in demand although this may be illusory. For example, there is a great interest in R. 'Mrs. Furnival'. If one were to be guided by the apparent discrepancy between the present supply and demand it might seem that this variety will one day be as popular as R. 'Pink Pearl'. And this might well have been true until the introduction of 'Furnivall's Daughter' which seems to be even better. It has the same pink colouring with a dark eye but with rather more interesting foliage. Only the problem for the grower is to decide whether the fine specimen of 'Mrs. Furnival' at Wisley will outshine the beauty of the younger plant by the strength of its maturity.

Another plant that is wanted by many people is R. 'Earl of Donoughmore'. This is one of the most successful of all of the *griersonianum* hybrids. It was raised by Mr. Peter Koster in Boskoop and it appears to be both hardy and free flowering. The colour is difficult to describe because it is an intense red which does have, it must be admitted, a slight suggestion of blue (no

doubt inherited from its other parent, a hardy hybrid) but this does not seem to detract from the beauty of the flower. Again, all the winter-flowering varieties—Nobleanum, 'Nobleanum Coccineum', 'Christmas Cheer', and 'Handsworth Scarlet', etc.—always seem to be scarce. But this is probably due to the fact that they are not grown on the continent and cannot, therefore, be imported easily by general nurserymen. Whether or not there would be a demand for these, equal to that for 'Pink Pearl' and the other best sellers, if there were unlimited supplies is a question that it may take years to answer.

There are many hardy hybrid rhododendrons which are grown by specialist rhododendron nurserymen but which are not in great demand and are generally sold only when seen at flower shows. There is little doubt that these would be as popular as the better known varieties if they were to be seen more often. There is an unfortunate dichotomy in rhododendrons, both in the literal sense as applied to the genus as a whole and in the mental approach to them by those who grow them. It is assumed by the enthusiasts for the species and first crosses that all hardy hybrids are of the category of the old "ironclads" and should all be classified as "X" or "Y": and many of the gardeners who plant rhododendrons solely for garden decoration buy what is easily available and are unaware of the quality of flower that is obtainable in the more hardy varieties.

A typical example of a neglected rhododendron which has a singular charm is the hybrid 'Eileen'. Raised by the late Mr. Gomer Waterer, it has a good habit and foliage, a conical truss of flowers in softest pink with a deeper edge. I remember when the late Mr. Francis Hanger visited my nursery shortly after the war he saw this in flower for the first time and he was very struck by its beauty. Another plant which is so strong in its constitution that it even managed to produce a show of flower, although somewhat battered, after the spring frost of May 27, 1961, is R. 'Diphole Pink'. The colour is difficult to describe but, like 'Earl of Donoughmore', it has a touch of the "blue" that comes from *catawbiense*, yet, odd though it may seem, it is all the better for it.

To those who like it, it would be very difficult indeed to find an improvement for R. 'Pink Pearl'. The effect of the deeper buds and the pale blossoms when they are fully expanded is a large part of its charm. Even so, R. 'Betty Wormald' and R. 'Marinus Koster' (the two are almost identical) are as good, and better, as hardy pinks.

R. 'Jacksonii', which is a cross between R. Nobleanum and *R. caucasicum* thus giving it two-thirds of caucasian blood, is a hardy rhododendron that flowers at the same time as the daffodils but which suffers from being exhibited at flower shows. It is often seen at the early fortnightly shows having been forced into flower —and out of recognition. When it flowers naturally it is an attractive shade of pink with a deeper red stripe down the back of the petal. Then there are some rhododendrons which are so late flowering that they, too, are seldom seen at their best. R. 'Goldsworth Orange', a remarkably tough hybrid, is not at its best until the early part of June in a normal season. Even the brief fortnight of extra forcing that is needed for the Chelsea Show seems to take something from the quality of the flower.

One of the best reds that has been seen on Battleston Hill for some years is R. 'Mrs. A. M. Williams'. This is one of the early *griffithianum* crosses made in Berlin and bought by the firm of C. B. van Nes towards the end of the last century. It has a vivid colour but, unfortunately, is not generally available owing to the fact that the firm has long since gone out of business. There is another which is very similar called 'The Hon. Jean Marie de Montague' and it seems possible that these two are synonymous. A plant of the latter has now been sent to Wisley to be grown beside R. 'Mrs. A. M. Williams' for comparison.

With 'Sappho' as the outstanding example, the whites with darker markings are always admired. But there are two which are still only being grown by a few people who are fortunate enough to see them on the rare occasions when they are exhibited. R. 'Mrs. P. D. Williams' has a delicate ivory white flower with an orange centre and R. 'Mrs. T. H. Lowinsky' has a white flower which opens with a slight tinge of mauve and, when fully expanded, has a most interesting shape with a heavy orange blotch.

R. 'Moser's Maroon' is a valuable late-flowering red with interesting foliage but with the rather unfortunate habit of being leggy. R. 'Scandinavia' has a similar quality in the colour of the flower; it is a bronzy red of great character, and it is also much more bushy in its habit.

Another popular colour combination is pink with a yellow eye. 'Lady Clementine Mitford' is probably the best known of these but there is a singular appeal in the rather more delicate colouring of 'Lord Fairhaven', now on trial at Wisley; and if a rhododendron were required to form a screen or a hedge, then R. 'Mrs. W.

Agnew' is an old variety in the same colour and of particularly strong growth.

These are only a few of the hardy hybrid rhododendrons which ought to be popular. But it is very difficult to-day to create a demand for them and it is becoming expensive to maintain stocks of plants that may not be in general demand. It is unfortunately true that no amount of advertising, publicity or showing will make a plant popular. It is the word of mouth recommendation from one gardener to another that makes a plant wanted, which means that no plant will become really popular until it is already widely grown—an almost impossible situation.

18 MOST POPULAR RHODODENDRONS BY VOLUME OF SALES

MESSRS. JOHN WATERER, SONS & CRISP, LTD.

In Red, Pink and Rose, Mauve, Purple, Yellow, and White shades. Varieties given in their order of popularity in the various colour groups.

RED SHADES

'Cynthia' — A bush with fairly large handsome dark-green foliage, and bold full trusses of rosy-crimson flowers. It makes a fairly compact spreading bush some 8–10 ft. high by 10–14 ft. through, flowering from about the third week in May onwards.

'Britannia' — This is a fairly slow growing variety, with comparatively large, pale, almost yellow-green, foliage. The flowers are waxy in texture, of a bright scarlet crimson colour, in somewhat dumpy trusses. Grows into a fairly compact bush 7–8 ft. by 6–7 ft. through. Flowering end of May onwards.

'Bonfire' — A hybrid with *R. griersonianum* as one of its parents. It has medium sized rather narrow mid-green foliage, and fair sized conical trusses of bright red flowers. Makes a rather open bush some 6 ft. high by 6–7 ft. through. Flowering fourth week in May onwards.

'Doncaster' — A somewhat slow growing variety, compact when young, with conical trusses of intense red flowers, each flower having a group of black dots on the upper petal. The foliage is a dark

lustrous green, and the plant will attain approximately 6–7 ft. in height by 8 ft. through. It flowers from the end of May onwards.

'Madame De Bruin' This variety has light-green foliage with a slightly wavy appearance. The flowers, which are a light almost cherry red colour, are borne in compact rounded trusses. Slightly open in growth it will attain some 7–8 ft. by 8 ft. through. Flowering towards the end of May onwards.

PINK AND ROSE SHADES

'Pink Pearl' This is the most popular of all hardy hybrid Rhododendrons, and has been planted more extensively than any other variety. It has handsome rather light-green foliage, and bold upstanding trusses of comparatively large open flowers, pink in colour fading to a pale shade with age. Mature plants can attain some 10 ft. in height with 8–10 ft. spread. Flowering period is from mid May onwards.

'Mrs. G. W. Leak' A very distinct variety. The flowers are borne in a fairly conical compact truss. They are light pink in colour with a heavy conspicuous brown blotch in each flower. Can attain 7–8 ft. in height and 6–8 ft. through, flowering from mid May onwards. R. 'Mrs. Furnival' is somewhat similar but flowers some fourteen days later.

'Corona' A compact slow growing variety with rather light-green smallish foliage. The flowers are borne in a narrow conical truss and are varying shades of pink in each truss, changing with age. It flowers from the third week in May onwards, and can attain some 6–7 ft. in height by 6–8 ft. through.

'Betty Wormald' This and 'Marinus Koster' are very similar if not identical. 'Betty Wormald' has the same good foliage and bold upstanding truss as R. 'Pink Pearl' (one of its parents). The individual blooms have a fairly well defined pale pink to white band down the centre of each petal, the edge of the petals being a rich pink, the upper petal is heavily spotted with brown dots. Flowering from the fourth week in May onwards it makes a fine bush some 8–10 ft. by 7–8 ft.

Mauve and Purple Shades

'Fastuosum Flore Pleno' — Though an old variety this still holds its place as one of the best mauves. The flowers have the anthers as petaloids giving them a somewhat doubled appearance. In colour they are a lilac mauve. The individual flowers were once popular for "buttonholes". The plant will attain approximately 10 ft. × 10 ft.

'Blue Peter' — A moderate grower with medium sized conical trusses of blue-mauve flowers enhanced by a deep-reddish brown "eye". Will attain some 6–7 ft. by 8 ft. spread.

'Purple Splendour' — This is undoubtedly the best of its colour. The flowers are in tight trusses and are a rich purple enhanced with a very dark brown blotch on the upper petal.

Yellow Shades

'Letty Edwards' — (*campylocarpum* × *fortunei*). A good plant for general garden purposes. The flowers are a soft primrose yellow and are borne in rather loose trusses. The habit of the plant is good and it will attain some 6–7 ft. by 7 ft.

'Goldsworth Yellow' — Makes a rather loose bush some 7 ft. high by 6 ft. through. The flowers have pink buds opening a pale yellow. It holds its colour well and the rather small flowers are in neat trusses.

White Shades

'Mother of Pearl' — This variety is a true branch sport of R. 'Pink Pearl'. It has all the qualities of 'Pink Pearl', differing only in the contour of the flowers. These are pale pink in bud, opening to a delicate blush shade reminiscent of 'Mother of Pearl', passing to white as the flowers fade.

'Mrs. A. T. de la Mare' — A strong growing variety with fine foliage, and a big upright conical truss with large white flowers with a green tinge in their centres. Makes a compact bush some 8–10 ft. high and as much through.

'Sappho' — A rather loose growing variety of somewhat sprawling habit. The flowers are borne in a bold conical truss, mauve in bud, white with a slight mauve tint when open, and a very conspicuous deep reddish brown "eye".

Photo: J. E. Downward

FIG. 15—*Rhododendron cubittii* 'Ashcombe'. F.C.C. on February 20, 1962, as a greenhouse plant, shown by the Crown Estate Commissioners, Windsor Great Park, Berks (see p. 224)

Photo: J. E. Downward

FIG. 16—Camellia (Donation Hybrid) 'Glenn's Orbit'. A.M. February 20, 1962, when exhibited by Mrs. G. H. Johnstone, Trewithen, Grampound Road, Cornwall (see p. 223)

FIG. 17—Tens of thousands of young camellia plants in containers at Flowerwood Nurseries (see p. 87)

FIG. 18—Young camellia plants in containers (1 gal. cans) with coloured flower labels, ready for the shops (see p. 87)

Photos: Sir Giles Loder

FIG. 19—Camellia scions under plastic bags grafted on understock out of doors (see p. 86)

FIG. 20—Mr. Les Richards showing how the scions are grafted on large understocks and then covered with milk cartons for protection out of doors. Note plants in containers in the background (see p. 86)

Photos: Sir Giles Loder

'White Swan' ('Pink Pearl' × *decorum*). This is a handsome variety with fine foliage and a bold upright conical truss. The flowers are pink in bud and white lightly suffused with pink when open, becoming almost dead white with age. Makes a rather open bush some 8 ft. high.

SUMMARY

The following rhododendron is mentioned in all five contributions:

'Britannia'

The following rhododendrons are recommended in four contributions:

'Betty Wormald'
'Cynthia'
'Fastuosum Flore Pleno'
'Goldsworth Yellow'
'Pink Pearl'
'Purple Splendour'
'Sappho'

The following rhododendrons are recommended in two contributions:

'Azor'
'China'
'Corona'
'Doncaster'
'Earl of Donoughmore'
'Furnivall's Daughter'
'Letty Edwards'
'Mrs. Furnival'
'Mrs. G. W. Leak'
'Mrs. T. H. Lowinsky'
'Lady Clementine Mitford'
Nobleanum
'Scandinavia'
'Susan'

The following rhododendrons are recommended once each in the contributions:

'Bagshot Ruby'
'Blue Diamond'
'Blue Peter'
'Bonfire'
'Chintz'
'Christmas Cheer'
'Cilpinense'
'Cornubia'
'Countess of Derby'
'Day Dream'
'Diphole Pink'
'Earl of Athlone'
'Eileen'
'Empire Day'
'F. B. Hayes'
fortunei
'Goldfort'
'Goldsworth Orange'
'Handsworth Scarlet'
'The Hon. Jean Marie de Montague'
'Hugh Koster'
'Hyperion'
'Iceberg'
'Jacksonii'
'John Walter'
'Lavender Girl'
'Loderi King George'
'Loder's White'
'Lord Fairhaven'
lutescens
'Madame de Bruin'
'Marinus Koster'
'Moser's Maroon'
'Mother of Pearl'
'Mrs. A. T. de la Mare'
'Mrs. A. M. Williams'
'Mrs. Charles Pearson'
'Mrs. J. C. Williams'
'Mrs. P. D. Williams'
'Mrs. R. G. Shaw'
'Mrs. William Agnew'
'Nobleanum Coccineum'

'Praecox'
'Professor Hugo de Vries'
'Souvenir de Dr. S. Endtz'
'Souvenir of W. C. Slocock'
'Unique'
'Vanessa'
'White Swan'
yunnanense

CAMELLIAS ON THE GULF COAST OF AMERICA

By SIR GILES LODER, Bt.

OUR trip to the Deep South was preceded by the severest frost for fifty years. In parts along the coast of the Gulf of Mexico 20° F. of frost was recorded and it remained below freezing for sixty-four hours, with the result that when we arrived in New Orleans some two weeks after the cold spell, we found that the countless camellias used in street planting, as well as in numerous gardens around the city, were scorched as if a flame of fire had passed over them, affecting foliage as well as flower bud. This undoubtedly was intensified by the plants being in a soft condition due to the mild winter weather normally experienced there, and the general humidity which encourages rapid growth with no toughening-up period in between.

Large gardens in the city of New Orleans are few despite the antiquity of some of the houses. One of the finest is owned by Mrs. Edgar Stern, who has many large camellias growing among other plants of interest. However, small gardens manage to grow a surprising number of varieties, and Mr. and Mrs. David Wirth have packed more camellia bushes into a back yard of about thirty yards square than I thought possible, and all well cultivated too. Although most of the plants had not suffered too badly from the frost, we were unable to see many blooms. Besides their namesakes, 'David Wirth', a big red semi-double with prominent stamens, and 'Tillie Wirth', a pink and white marked semi- to paeony form double sport of 'Pink Beauty', 'Sadie Mancill' had a few flowers of pink and white striped semi-double, also 'Wildwood', a good pink semi-double which we were to see continually throughout the trip and note as a particularly striking variety. The Wirths proudly showed us their array of silver trophies, a testimony to their camellia successes.

We left New Orleans by the 24-mile-long road bridge across Lake Pontchartrain on our way to Slidell, passing through mile after mile of the Bayou country where streams wander down through the cypress groves, the trees draped with long trailing

Spanish moss. Alligators and turtles inhabit the swampy areas whilst the native live oaks and *Magnolia grandiflora* make magnificent trees on the drier stretches of land. The country is too flat to have much scenic beauty.

At Slidell we were looked after by Sam and Ferol Zerkowsky. They own the Tammia Nursery and this proved to be a most interesting place, for, besides raising many azaleas and other plants for trade purposes, they have two extensive greenhouses devoted to camellias. Here are to be found a collection of specially selected camellias and stock plants. Many notable seedlings have been originated by Mrs. Zerkowsky. We saw and admired 'Juanita Smith', Mrs. Smith's seedling of 'Dr. Tinsley' and an improvement on it; 'Donna Buono' with silver-pink rabbit ears in complete contrast to 'Purple Swirl', a smaller very formal flower with five complete swirls emanating from the centre. 'Funny Face Betty', yet another sport of the already well-loved 'Betty Sheffield' family, and a seedling of 'White Empress' × 'Ville de Nantes', named 'Tickled Pink', were two more noteworthy introductions. Some interesting foliage next attracted our attention; a 'Shishi-gashiri' from Mrs. Sigmund with variegated holly-like leaves; a 'Ville de Nantes' × *reticulata* 'Buddha' with a large leaf with prominent serrated edges, and a 'Ville de Nantes' × 'White Empress' with the most leathery camellia leaf I have ever seen. Here, as elsewhere, we saw the extensive use of *sasanqua* understock for grafting, one of the most popular being 'Day Dream', this variety providing very rapid growth and an excellent upright habit. A plant with an inch diameter stem and larger is frequently sawn off and used for understock for the tiniest scion of some precious new variety which results in a plant of 2 to 3 feet high in the first year, and 4 to 5 feet in the second year, aided by the vigorous root system of the stock, humid climate, and, no doubt, heavy feeding. It is noteworthy what good bushy plants with upright habits are produced by these means. In cases where extreme speed is not so important, the grafting is carried on out of doors, using a jar like a fruit bottle or even a milk carton, which is placed over the scion and bedded down into the earth to maintain an airtight atmosphere.

The Mayor of Slidell, Homer Fritchie, a camellia enthusiast, was the Chairman of the Ozone Camellia Show staged in Slidell. Despite the weather several thousand blooms were staged, many having been brought in from other areas. The staging was in alphabetical order, each variety having a separate class and placed on trestle tables with the flowers put in individual squat glass jars. After the

initial judging, any particularly outstanding blue ribbon flower was taken to the top table where the panel of judges voted for the most outstanding bloom in the show. In this case, 'Katie Smith', shown by Gus Menard, won the coveted award. The opening of the show was preceded by the presentation of beautiful girls and their escorts, who then processed round the hall to the accompaniment of a loud band! In the evening a dinner dance was attended by several hundred people connected with the show, and these functions gave us the opportunity to get acquainted with the people. Among many others, the President of the American Camellia Society, C. W. Farmer, was there with his wife; L. C. Wannamaker, the past President, and his wife; Joe Pyron, their cheerful Secretary, and several of the State Directors. Camellia corsages were worn by the majority of the ladies, adding a touch of colour.

The evening preceding the show, Ernest Judice, the Club President and State Director of the A.C.S., gave a supper party for the judges and their wives at his home, and we walked through his camellia collection, although unfortunately most of the blooms had been blasted by the frost.

The following day Gus Menard showed us his large collection of camellias. The outdoor ones, under pine trees, had only a few unspoilt blooms, but in his greenhouses we were able to see some magnificent flowers, including his namesake, a chance seedling raised by Ernest Judice; the picture on the cover of a recent *Camellian* does not do justice to this lovely flower and the colour rendering is far from correct. Later that day we drove out to Picayune to visit Mr. Crosby's garden. He took us round in small electric cars as used on the golf course. Again all the camellias were badly affected by the frost, although we were able to admire the general landscaping effects and the many other shrubs well tended by Mr. Iddendon, an English gardener who had been trained at Kew.

Leaving Slidell we drove eastwards along the Gulf Coast to Mobile where we were entertained and shown the camellia highspots by Charles Butler, the A.C.S. Director for Alabama. The camellias were brought to this region a hundred years ago when Mobile was the old capital. The Azalea Trail is a feature of the town and the majority of houses have azaleas planted around them, chiefly *indicum* and Kurume, with the 'Pride of Mobile' featuring predominantly, especially in the long beds down the centre of the wide streets. At the appropriate time of year the streets are signposted as to the most colourful tour of the city and outskirts, to

see the thousands of plants in flower. Unfortunately we were a month too early for this display and the outdoor camellias had again been spoilt.

We were taken to Mr. B. A. Carlin's garden some way out of the town towards Point Clear. Here, almost overlooking the sea, is a good collection of outside camellias, well landscaped under a canopy of pine trees, and we could note those which had best withstood the cold weather, although the big camphor trees nearby had all succumbed. 'Imura', a good white, had been relatively untouched, likewise 'Melody Lane', a semi-double resembling in colour 'Countess Lavinia Maggi'. He has a good pink 'Magnoliaeflora', also 'Frances McLanahan', a light pink sport of 'Lady Vansittart' showing the same twisted foliage. We were told 'Emmet Pfingstl', the variegated form of 'Joseph Pfingstl', first flowered in this garden.

The Bellingarth Gardens were our next port of call. Founded by the late Mr. Bellingarth, who had made his fortune bottling Coco-Cola in the area, it is now run by a Trust and we were taken round by the curator, Mr. Green. We visited the extensive new planting devoted entirely to camellias. In all there are about 1,200 camellia plants, comprising 800 varieties, all growing under pine trees and given plenty of room to develop, also all clearly labelled. In a few years this should be an outstanding plantation; however, now the beauty of the garden lies in its massed azaleas and shrub planting, bedded out with lilies, cinerarias, calendulas and salvias, according to the season, with a background of huge oaks and magnolias. The house is now a museum and displays the contents exactly as it was at the time of the owner's death.

Les Richards' nursery was nearby with some lovely views over the river. Here hundreds of stock varieties are planted out under trees; occasionally, one no longer considered of merit is ruthlessly cut down and one sees plastic bags over the stem protecting the new scions grafted on (Figs. 19 and 20). In his greenhouse we particularly noted both 'Bessie Bowman' and 'K. Bowman'; 'Edward Lofving', a pale-pink semi-double with prominent stamens; 'Charlotte Bradford', a variegated phlox pink sport of 'Thelma Dale', and 'Ruth Royer', a variegated pink sport of the 'Duchess of Sutherland'. 'Cara Mia' and 'Carter's Sunburst' are two more we admired there, together with the wonderful collection of Saintpaulias belonging to Mrs. Richards.

We then visited the Flowerwood Nurseries in the vicinity where Gregory Smith kindly drove us round this huge enterprise, cover-

ing over 2,000 acres. A million azaleas and probably a quarter million camellias are involved. Rooted first in ground charcoal on greenhouse benches, the next stage takes them into small plastic pots, and seeing 30,000 such camellias in but one house is quite impressive and there are several houses thus filled. The next step is even more unbelievable, seeing large fields of camellias planted out in rows a quarter of a mile long. The *indicum* azaleas are likewise in vast fields, but the Kurumes are given the shelter of a lath house. Some of the azaleas are sold as liners but the remainder, and all the camellias, are replanted into cans, usually 1 or 3 gallons size. Large trucks loaded with many tiers of these cans then haul them away to the retail shops all over the States. Although dealing in such numbers, over seventy well-tried varieties are raised and listed in an excellent wholesale catalogue and the individual plants are often ticketed with a 'cut-out' coloured picture of the variety, having the name and cultural hints on the reverse. Despite their high labour costs, their camellia plants were less expensive than in this country (Figs. 17 and 18).

Leaving the coastal area, we then flew to Montgomery and were entertained by Dr. and Mrs. Gilbert Fisher of Union Springs. In their greenhouse we saw some of the excellent seedlings raised by him. 'Red Elephant' is the apt name of one describing the size and colour of this paeony flower, whilst his later 'Maverick' is another fine pink and white. Seedlings—sixty-one pink and seventy-five white—are still to be named, but among the other well-known ones we noted 'Guilio Nuccio' and the variegated form, also 'Drama Girl' and 'Coral Pink Lotus', two good pinks, with 'Mamselle', a very pale-pink blush, whilst 'Simeon', another pink, and 'S. Peter Nyce' prove good out of doors, the latter corresponding to the flower we know as 'Nagasaki' or 'Lady Audrey Buller'. 'Tick Tock', with cherry-red flecks on white, always stands out, together with 'Susan Stone', a formal double. Here it must be mentioned that the true formal double flower is not so common in the States as in our country. Whether this is due to public taste or the fact that they are inclined to bull-nose instead of opening, owing to climatic conditions, I could not discover.

The Birmingham Show, 150 miles to the north, was next on our itinerary. Around this area there are many enthusiasts with greenhouses, and we were promised a spectacular show whatever the weather. Held in a large Auditorium, it was the finest Camellia Show I have seen and was organized most efficiently. The competitors hand in their blooms on arrival to the classification committee,

who, in their turn, place the bloom in the appropriate class ready for judging. After we had finished judging we were able to have a preview of the show before the public were admitted (free). Very long rows of trestle tables held the classes, arranged alphabetically according to name, as is customary here, a separate class for each variety. The blooms—and there were 4,040 of them—were each placed in a small sundae glass and this slight height above the table displayed them to advantage. However, four tables towards the centre of the hall attracted our attention. One entire table was devoted to the 'Tomorrow' family and comprised 127 blooms, of which at least half must have measured 6 inches diameter and over; the majority was of 'Tomorrow', some 'Tomorrow Variegated' and a few 'Tomorrow's Dawn'. The second table was for 'Mathotiana' and here were 172 huge blooms. 'Mathotiana Supreme', with seventy-six flowers, made a beautiful sight but a difficult problem for the judges. 'Mathotiana Rosea Superba' had two dozen examples, whilst the variegated forms and 'Mathotiana' itself had even more.

The 'Betty Sheffield' family occupied the third table. 'Betty Sheffield' was represented by forty blooms of a very level size; 'Betty Sheffield Pink' had about twenty, the 'Blush' about two dozen, with a few 'Betty Sheffield Supreme' and variegated to make the total number up to almost a hundred. I happened to be judging this class and noted that the flowers of this family seem to be easily damaged.

The fourth table had a mixture of 'Donckelarii', both the typical and the Special, and the sports, 'Ville de Nantes', all heavily variegated and rabbit-eared, and 'Lady Kay', more paeony in form. Here and there on the other trestle tables one saw huge splashes of colour where the particularly hot classes were staged. 'Guilio Nuccio' had sixty-five fine blooms and the variegated form almost half the number. 'Mrs. D. W. Davis' ' large pale-pink flower made a spectacular show with fifty examples, but was eclipsed by 'R. L. Wheeler' with sixty-four vast red blooms, 'Wildwood' with forty-three and 'Masterpiece' with about the same number.

The supreme *japonica* of the Show was won by George Wheeler's 'Tomorrow's Dawn', with 'Tomorrow Variegated', shown by G. W. Moughan, the runner-up. Mr. Moughan also won the A.C.S. Gold Certificate for the exhibitor with the most Blue Ribbons, followed by Dr. Turlington. The best *reticulata* award went to 'Crimson Robe', exhibited by Major Nordan.

My wife performed the opening ceremony by cutting a ribbon

to let the waiting crowds into the Hall. In the two days over 40,000 people visited the Show.

Frank Lynch, the hard-working Chairman of the Show, kindly spared time to show us his collection, housed for the most part in greenhouses. He has some good examples of 'Faith', which featured well at the show, also 'Pink Clouds'; 'Kyoko', a striped variety, 'Tillie Rice' and the large 'Mercury Variegated'. He then took us on to see another prominent competitor, G. W. Moughan, who has built in the last few years four greenhouses to contain his rapidly growing collection. Here we saw some enormous flowers—one a 'Drama Girl' almost 7 inches across. Other large blooms were 'Mathotiana Supreme', 'Guest of Honor' and 'Faith'. 'Rosea Superba', the rose pink sport of the American 'Mathotiana', was flowering well. Also 'Glenn 40', the truly formal which corresponds to what we know in this country as 'Mathotiana'. We noticed 'Gigantea' here heavily variegated but otherwise similar to our 'Kelvingtoniana'; also a pink variety of 'Betty Sheffield', another of that large family.

The following day, in company with many other enthusiasts, we visited George Wheeler's greenhouse, as he had jokingly remarked that there would be more room after the show blooms had been cut. Besides being a most successful competitor, he had won the Best Flower in the Show with 'Tomorrow's Dawn'. The house is packed with young plants, many measuring between 6 and 8 feet tall and all in containers, sometimes piled two deep, and they comprise all the bigger and better varieties. Although many hundreds of blooms had just been cut for the show the house seemed a mass of flower. During the summer the containers are all moved out and stood beneath the trees, a herculean task.

The next greenhouse we visited belonged to Dr. Turlington, another keen exhibitor. Many of his larger plants are growing in the ground with a very large plant of 'Mathotiana' in the middle of the house providing a fine centrepiece. We noticed some interesting pink varieties, 'Sweetie Vera' with speckles, 'Grace Bunton' with deeper pink margins and 'Cho-Cho-San' of anemone form. A particularly pleasing flower was 'Florence Stratton', a rose centre formal white with pink blotches.

From Birmingham we flew to Atlanta—some 140 miles east. Here Carl Good, who had been a successful competitor at the Birmingham show, kindly showed us round. Though there were many outdoor camellias in the district these had been hit by the recent freeze, so it was again under glass that we were able to see

the best blooms. In his own greenhouse he had concentrated on trying to obtain the better varieties, ruthlessly discarding those that did not come up to his high standard. 'Tomorrow Variegated' was probably the most outstanding bloom, although its sport, 'Dawn', has recently rather overshadowed it, due to the novelty of a new introduction. 'Don Mac', a solid red, again stood out, and a lovely plant of 'Florence Stratton' was conspicuous with its white flowers, together with 'Sieur de Bienville', its pink sport. We also saw the 'Supreme' sport of 'Mrs. Baldwin Wood' showing white edges to its petals, contrasting with 'Carter's Sunburst' with red stripes on vivid pink background. 'Lady Macon', 'Simeon' and 'Faith' were three more whole-coloured pinks.

Another large collection is to be found in Alton Costley's greenhouse. Here the white varieties are well represented by 'Edelweiss', 'Angel' and 'Diddy Mealing'. Variegated forms of 'Reg Ragland', 'Tomorrow', and 'Guilio Nuccio' provide an interesting study one with another. A plant of 'Dr. Knapp' showed the most serrated leaf edge I have seen on a camellia. 'Sol de Oro', a single red with a mass of yellow stamens, was a change to the more numerous semi-doubles. In the valley below the house, in the shade of pines, we saw some rhododendrons, which are quite rare in these localities. This concluded our visit and the following day we flew back to New York, and thence home.

The genuine keenness of the many camellia enthusiasts we met on our trip was most noticeable; they are very skilled with the technique of grafting and speedy reproduction of the continual flow of new varieties, and have reached a high standard of growing the plants despite the difficulties of climate and disease, both more severe than we have to contend with in England. The American Camellia Society is strongly represented throughout the camellia belt, and, with its journals and year books, together with strong local clubs, keeps interest in camellias flourishing.

THE RELATIVE FROST RESISTANCE OF CAMELLIAS GROWN AT WISLEY

By A. TURNER
(Superintendent, Battleston Hill, R.H.S. Gardens, Wisley.)

THE past winter has, in many parts of the British Isles, provided a severe test of the hardiness of the many camellias which have been introduced into our gardens in recent years. The frosts of December, 1961, coming as they did before many plants were dormant and giving screen temperatures as low as 17° F. at Wisley, did far more damage than lower temperatures have done in some previous winters.

Almost all specimens of *Camellia saluenensis* were badly defoliated and many of the leaves remaining on the plants were scorched, although flower buds were unaffected and the plants bloomed reasonably well in the milder periods between the frosts of March and through April.

In the *williamsii* group the most disappointing variety was *C. williamsii* 'Francis Hanger'. There are many plants of this delightful, free-flowering camellia in various parts of the Woodland Garden at Wisley and all looked a sorry sight this spring, almost completely defoliated and with much one-year-old wood and in some cases whole branches killed. The variegated leafed *C. williamsii* 'Golden Spangles' suffered much more severely than its sister plant 'Mary Christian', losing a high percentage of its foliage.

On the credit side the *williamsii* section provided us with what proved this year to be our toughest camellia, C. 'Donation'. Virtually unaffected in foliage or bud by earlier frosts it had fully open blooms seared by the frost of March 25, when the screen temperature fell to 21° F., but was flowering bravely and cheerfully again four days later and ignoring the slight frosts we were getting at that time. These early blooms were not of good size or quality but became more typical of the variety as the season progressed. Of the other varieties of *Camellia williamsii* grown at Wisley 'J. C. Williams' and 'Bartley Pink' were outstanding; most of the remaining forms suffered moderate leaf damage but all proved their worth as hardy flowering plants.

Among the forms of *Camellia japonica* there was wide variation in the apparent hardiness of flower bud and foliage. Resistance of half or fully open flowers to damage by frost was only noticeable in a few varieties and the star performers in this respect were 'Gloire de Nantes', 'Marjorie Carlyon' and 'Nobilissima'. C. 'Gloire de Nantes' was showing colour when the December frosts came and opened a few blooms in every mild spell from January to May, only open blooms being destroyed by frosts. C. 'Marjorie Carlyon', although somewhat later in beginning to bloom, displayed remarkable resistance to damage by frost, even partly open blooms were little affected by 12° F. of frost as registered in the screen on Weather Hill. It is true that the plant concerned occupies a favoured position on the steep bank of the large-leafed Rhododendron Dell but this can only have contributed in a small degree to what was an outstanding performance and the bright splash of red in this area of the garden was appreciated by many during the cold days of early March when colour was scarce. C. 'Nobilissima' kept up the high standard of previous years, only open blooms were frosted, partly open buds lived to flower when frosts ended and leaf scorch was slight.

With most varieties of *C. japonica* bud-drop was noticeable following the December frosts and it was found that the least mature buds were most susceptible to injury. The percentage of bud-drop was highest on those plants which had been late in forming buds and in the majority of cases very few of the larger buds fell.

Several varieties have an unfortunate habit of showing a little petal colour between the bud scales during winter months. This accounted for the loss of mature buds on some varieties whilst in other cases, and C. 'Haku Rakuten' comes immediately to mind, this exposure only caused discoloration of the outer petals, to the detriment of the bloom when this eventually opened.

It could well be argued that any test of hardiness is completely unfair with plants dotted through woodland and at varying heights on such steep slopes as those of Battleston Hill. In practice it was found that where several plants of one variety were growing in various parts of the garden, including the wild garden and against the walls of the laboratory, the noticeable damage from the cold was remarkably consistent within that variety no matter where the plants were growing. The exception to this finding was the planting against the eastern wall of the Student Gardeners' Hostel where, although having a warm wall at their backs, the plants growing there suffered more than their counterparts in the open garden.

In keeping a record of the effect of the frosts, leaf-scorch was classified as slight, moderate or severe whilst bud-drop was estimated on a percentage basis. The data obtained are listed below and where varieties were flowering on April 7 and 8, when the final observations were made, comment on the quality of the bloom is given in column 3.

The last frost worthy of note was on March 28, when the screen temperature fell to 28° F. Only twice during April was frost registered in the screen. This was on the mornings of April 13 and 14, when the minimum reading was 32° F.

Effect of frost on varieties of Camellia japonica Winter, 1961–2

Variety	(1) *Leaf Scorch*	(2) *Bud-Drop*	(3) *Condition of Flowers where present on 7.4.1962*
		%	
Adolphe Audusson	Slight	5	
Akisanzan	Slight	Nil	
Alba Plena	Moderate	5	Outer petals marked
Alexander Hunter	Slight	Nil	Only fully open blooms showed damage
Altheaflora	Slight	5	Good and plentiful
Ama-no-Kawa	Slight	5	
Anemoniflora	Slight	90	
Apollo	Slight	Nil	Outer petals marked
Apple Blossom	Slight	Nil	Only fully open flowers damaged
Arejishi	Nil	Nil	Opening blooms marked
Armedia Rosea	Nil	Nil	Blooms of good quality
Aspasia McArthur	Slight	Nil	
Beatrice Burns	Severe	Nil	Opening blooms unmarked
Beauté de Nantes	Severe	25	
Blood of China	Slight	100	
Bush Hill Beauty	Slight	5	
Campbelli	Nil	Nil	
Candidissima	Nil	Nil	
Clyne Anemone	Slight	5	
C. M. Hovey	Slight	5	
Contessa Lavinia Maggi	Slight	10	
Crimson Sunset	Slight	Nil	
Daimio	Slight	5	
Dearie Mealing	Moderate	50	Outer petals marked
Donckelarii	Slight	10	

Variety	(1) *Leaf Scorch*	(2) *Bud-Drop*	(3) *Condition of Flowers where present on 7.4.1962*
		%	
Duchesse de Montpensier	Nil	Nil	Opening blooms unmarked
Edith Linton	Nil	Nil	Opening blooms unmarked
Elegans	Moderate	15	Outer petals marked
Elizabeth	Slight	5	Outer petals marked
Elizabeth le Bey	Moderate	5	
Ella Hearn	Nil	5	
Enrico Bettoni	Slight	25	
Eugenie de Massena	Nil	25	
Eximea	Slight	5	Outer petals marked
Formosa	Moderate	Nil	
Frau Minna Seidel	Slight	Nil	Outer petals marked
Fred Sander	Slight	100	
Furoan	Slight	5	
Gauntletti	Slight	50	Outer petals marked
Gigantea	Slight	5	
Gloire de Nantes	Slight	Nil	Bloomed throughout winter's mild spells. Only fully open blooms marked by frosts
Gosho-Guruma	Slight	25	
Haku Rakuten	Moderate	Nil	Tips of all petals browned
Hearns Pink Dawn	Slight	Nil	Opening blooms unmarked
High Hat	Moderate	75	
Hikaru Genji	Slight	Nil	
Imbricata Alba	Moderate	50	
Imbricata Rosea	Nil	Nil	
Imperator	Slight	Nil	Opening blooms unmarked
Jarvis Red	Severe	50	
Jenny Lind	Nil	25	
Jupiter	Slight	5	Blooms of good quality
Lady Clare	Slight	10	Blooms of good quality
Lady de Saumarez	Slight	50	Blooms of poor quality
Lady Mary Cromartie	Slight	50	
La Pace	Slight	5	Opening blooms unmarked
Latifolia	Slight	5	
L'Avenire	Slight	5	Opening blooms unmarked
Lorraine	Slight	Nil	Blooms of good quality
Lt. William Hearn	Slight	10	Blooms of good quality
Madame Cavallo	Moderate	10	Outer petals marked
Madame Cavallo (Pink Form)	Moderate	10	Outer petals marked
Madame de Strekaloff	Moderate	50	
Madame le Bois	Slight	5	

Variety	(1) *Leaf Scorch*	(2) *Bud-Drop*	(3) *Condition of Flowers where present on 7.4.1962*
		%	
Magnoliaeflora	Slight	Nil	Outer petals marked
Marguerite	Slight	Nil	Blooms of good quality
Marguerite Gouillon	Slight	Nil	Outer petals marked
Mariana	Slight	5	
Marjorie Carlyon	Nil	Nil	Very frost resistant. Blooms of good quality
Mary Charlotte	Moderate	5	
Mary Jo	Moderate	100	
Mathotiana	Moderate	5	
Mathotiana Alba	Moderate	5	
Mathotiana Rosea	Slight	5	
Mrs. Bell	Slight	Nil	Outer petals marked
Mrs. J. Brockhouse	Nil	Nil	
Mrs. Tingley	Moderate	100	
Myrtifolia Alba	Moderate	Nil	
Nagasaki	Slight	5	
Nobilissima	Slight	Nil	Opening buds unmarked. Only open blooms marked by frosts
Otome	Nil	Nil	
Paul Howards White	Moderate	Nil	Half-open flowers lost to March frosts
Peach Blossom	Slight	Nil	Half-open blooms unmarked
Pink Pearl	Moderate	25	
Pink Shadows	Slight	5	Outer petals marked
Platipetala	Slight	75	Blooms poor
Preston Rose	Slight	5	Most blooms marked
Prince Eugene Napoleon	Nil	5	
Prince Frederick William	Slight	25	Blooms badly marked
Princess Charlotte	Slight	Nil	Opening buds clean. Only open blooms marked
Professor Charles S. Sargent	Slight	5	
Rainy Sun	Slight	50	
Red Hibiscus	Nil	Nil	
Reg Ragland	Slight	5	
Sacco Nova	Moderate	Nil	Opening buds unmarked
Sarah C. Hastie	Moderate	50	Blooms poor
Sarah Frost	Slight	25	
Sergeant Barrios	Slight	Nil	Very frost resistant. Blooms of good quality

Variety	(1) *Leaf Scorch*	(2) *Bud-drop*	(3) *Condition of Flowers where present on 7.4.1962*
		%	
Shiragiku	Moderate	5	
Souvenir	Slight	5	Blooms good
Splendens	Slight	25	
Taro-An	Nil	100	
The Czar	Slight	25	
The Mikado	Moderate	50	
Triumphans	Moderate	50	Some blooms marked
Waterloo	Moderate	5	
White Swan	Nil	25	Blooms unmarked
Yohei-Haku	Moderate	25	

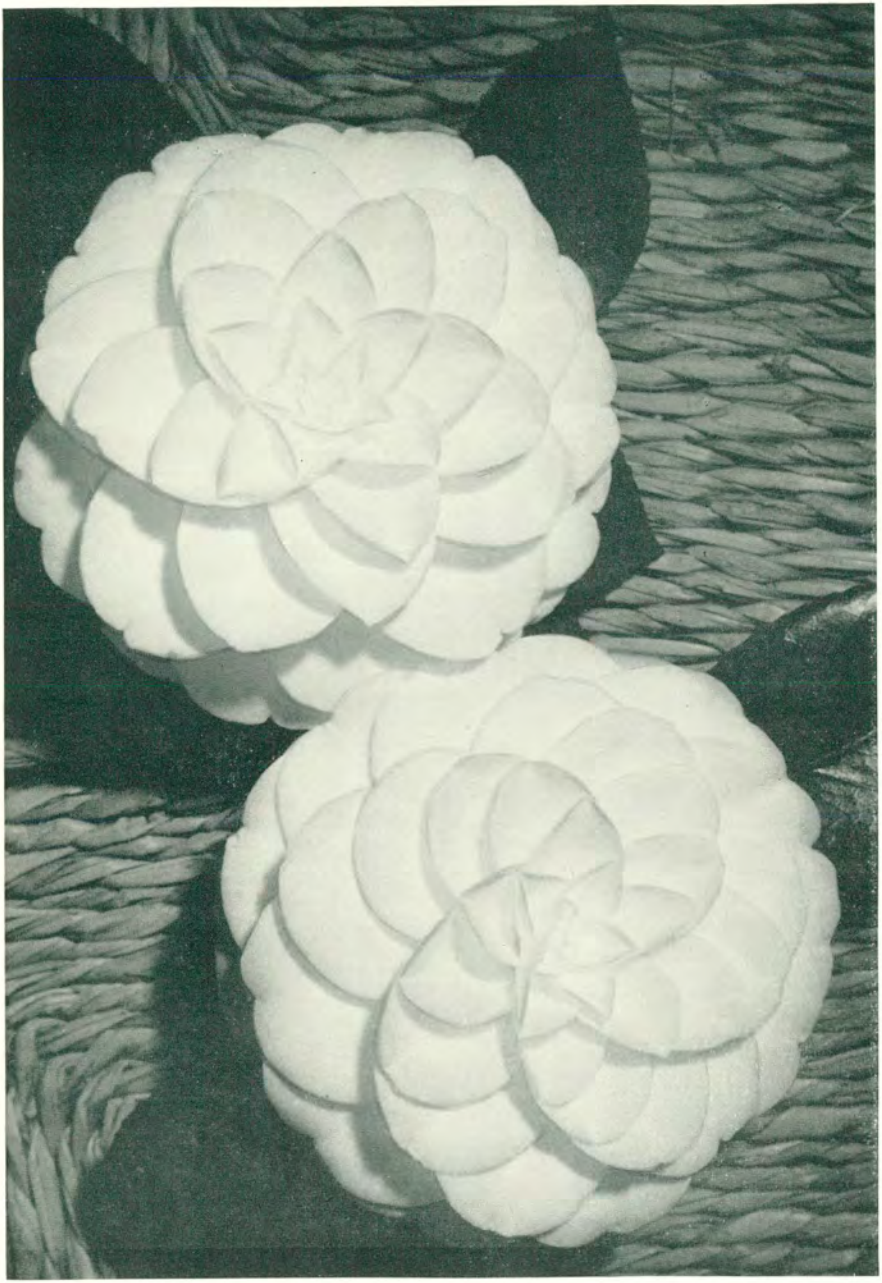


Photo: T. Durrant

FIG. 21—White spiral camellia, possibly *Camellia japonica* 'Virgine di Colle Beato'
(see p. 105)

FIG. 22—*Camellia japonica* 'Virgine di Colle Beato', a reproduction of the plate from "Flores des Serres" (see p. 105)

FIG. 23—*Camellia japonica* 'Purple Swirl' (see p. 107)

Photos: Tammin Nursery

SOME HISTORICAL CAMELLIAS OF NEW ZEALAND

By COLONEL T. DURRANT, D.S.O., M.B.E., T.D.

THE main European settlement of New Zealand occurred in the middle decades of the nineteenth century, a period which coincided with the peak of popularity of the genus camellia in Europe. Early settlers soon discovered that trees and plants, familiar in their homeland, would flourish in the new country, and it was not long before a great range of them were being planted here. By 1860 an astonishing variety of exotic plants and trees had been imported and were being propagated for distribution throughout the country.

When Edwards H. Metcalf, of San Marino, California, himself an eminent camellia authority and collector, visited us in 1959, he made the startling suggestion that research in New Zealand might reveal many old camellias, long lost sight of in the rest of the world.

Almost all the indigenous flora is evergreen in character, the mild oceanic climate, with its relatively high humidity, being particularly suited to this kind of plant. So the early camellia arrivals found conditions to their liking and many remain as monuments to the people who brought them across the world. Many of the old houses and gardens have long since disappeared or been swept away by the need of close development but, throughout both islands, there remain large numbers of camellias, sometimes the sole survivors of a home and garden.

The task of tracing, investigating, recording, photographing and re-propagating the old camellias obviously presents formidable difficulties and will last for many years before anything like nation-wide coverage is achieved.

Professor Waterhouse's visit in 1960 provided important initial information in the form of groups of old camellias, for most of which he was able to make positive identifications, and these have been of great value for reference purposes. Mr. T. J. Savige, of Victoria, devoted ten days in August 1961 to field research with us and is making available continuously his own considerable fund of information on the old camellias known in Australia, as well as

undertaking research into nineteenth-century horticultural literature in libraries in Melbourne and Sidney. Ralph Philbrick, who visited New Zealand in 1960, has given great assistance from his files of information at the Bailey Hortorium, Cornell University. Charles Puddle, a recognized British authority, gave valuable help, while a more or less continuous stream of correspondence and exchange of information is kept up on a world-wide basis, as evidence obtained here is sifted and evaluated.

It was not possible to study historical plantings without finding it necessary to study also the history of New Zealand, as the background in time of the subject being investigated. This involved much reading and research into records of early settlers, but it gave us the points at which to start, told us something of the people of those days and of the struggle they had to establish themselves in the strange environment and profound isolation of the South Pacific.

Many fascinating and intimate stories were discovered, of which space will not permit the telling here in any detail, but since New Zealand's earliest European settlement is so closely associated with the efforts of Christian missionaries, it was with them and their mission stations that our search began.

When Captain James Cook rediscovered New Zealand in 1769 (it had been sighted and briefly visited by Abel Tasman in 1642) the Maori people found here were not, as first thought, native aborigines of the country but themselves colonists and settlers who, probably in the thirteenth and fourteenth centuries, travelled from Polynesia in great, ocean-going canoes. They were intelligent people with highly developed art forms and elaborate social customs who, when not occupied fishing or in simple agriculture, engaged in fierce and frequent tribal fighting. Even when fighting they had formalities and quaint chivalries to observe, but the slain and some of their prisoners were eaten by the victors, the Maoris being cannibals, as were most people of the Pacific in those days.

In 1814 Samuel Marsden established the first Anglican Mission for the Church Missionary Society in the Bay of Islands. He was followed in 1822 by the Wesleyan, Samuel Leigh, and in 1838, by Bishop Pompallier who founded a Roman Catholic mission, also in Northland. As opportunity offered, mission stations were established in various places, always with gardens of European trees and plants.

In 1960 we made our first important discovery on a mission station when, with the kind assistance of Mr. H. A. Swarbrick, we

looked round the early settlement sites in the Te Awamutu district. Here, at Mangapouri on the banks of the Puniu River, was established in 1834 the first inland mission south of Auckland. The missionaries concerned were W. Williams, later Bishop Williams, and A. N. Brown, who subsequently set up the mission at Tauranga, where his fine garden still remains lovingly attended. They were troubled times and the Waikato Maoris had been pinned back against the Puniu River by attacks from tribes from the North, armed with muskets. Across the river the fierce King Country tribes held their frontier against the Waikatos and fighting was bloody and frequent. The garden was planted, the Gospel was preached and the missionaries wandered about unarmed and unprotected. One of them records meeting a successful war party coming back from a raid with forty backloads of human flesh for the inevitable cannibal feast. Imagine gardening and planting trees under such conditions! Imagine the thrill for us to discover in 1960 a magnificent *C. japonica* 'Triumphans', almost the sole survivor of that garden, still flourishing. The branches were cleared to about 7 feet by grazing animals, the venerable tree splendid with pink flowers, providing shade and shelter for sheep and cattle and being fertilized and fed by their droppings. There were no fallen flowers under the tree—they were being eaten as fast as they fell by some prosperous-looking Southdown rams.

The correct 'Triumphans' is a large, paeony-formed double with prominent guard petals, soft pink in colour and occasionally marked with white. It has local synonyms as 'Allen's Pink' and 'Lady Parker's Paeony'.

The Mangapouri Mission only existed for two or three years, when it was moved into what is now Te Awamutu, but there are records of subsequent travellers remarking on the flowering trees flourishing in the wilderness there. The Church of St. John, in Te Awamutu, was built in 1854 and in Selwyn Park, once mission property and opposite the church, is a group of fine old camellias, among them C. j. 'Cleopatra'; 'Pilida', a deep red semi-double with anemone to paeony form centre; a 'Lemichezi', red formal striped with white, and in the churchyard, the fine white roseform double, having bright golden anthers, now identified as 'Bronachia'. The Maori War, commencing in 1863, raged around this area. St. John's Church has its bullet holes and St. Paul's, at Rangiahoia, was the scene of a fierce engagement between Maoris and British troops. This churchyard has a plant of C. j. 'Contessa Calini', a formal white double found very frequently in earlier

plantings. This example of it has been cut to the ground and re-grown at least twice and may well have been a witness of the battle.

When the War was over, much closer European settlement occurred and many camellias were planted in the period 1865–1900. We used the latter date as a time boundary of our research. Two very fine groups of camellias occur on Mr. C. S. Storey's property known as 'Woodstock'. These are of immense size and include C. j. 'Anemoneflora Alba', 'Aspasia McArthur', 'Albertii', 'Optima', 'Helenor', 'Contessa Calini', 'Hendersoni', 'Countess of Derby' and several for the "unidentified" list. Huge plants of 'Aspasia McArthur' are common all over New Zealand, usually bearing large areas of the two common sports, 'Lady Loch' and 'Otahuhu Beauty'. When time allows it is fun searching old trees for the less common sports and many of them can be found.

Motoring away from the Storeys' we were brought to an abrupt halt by the sight of a large and obviously ancient camellia over 20 feet in height and covered with showy, bright pink flowers. Nearby was the brick chimney marking the site of an old homestead and some ancient fruit trees covered with moss. The camellia was 'Otahuhu Beauty' and must have been much older than the first listing of this name, 1904. There was no sign of any of the other sports or of a reversion to its parent.

The old plantings in the Cambridge area were reported on in the November 1960 issue of the *New Zealand Camellia Bulletin*. They are important since the one in the cemetery at Hautapu can be dated from records at 1874 and a wide range of interesting camellias is included. Among them are C. j. 'Variegata', the only one we have so far seen (it is the 'Old Striped' camellia taken from China to Britain in 1792); 'Fanny Sanchioli', 'Grunelli', 'Dride', 'Dido', 'Bronachia', 'Cleopatra', 'Contessa Calini' and 'Lowii'. The Anglican Church has 'Paolina Maggi', showing the pale-pink sport, 'Mrs. H. Boyce', and a huge 'Pilida' which could be contemporary with the one in Selwyn Park.

John Sharp's nursery, established at Cambridge in 1874, may well be the source of some of the later plantings in the district. On the site of his nursery we were fortunate to discover C. j. 'Benten', a simple, single pink camellia but having beautiful, naturally variegated foliage. Mrs. M. S. James, a daughter of John Sharp, graciously gave us very valuable assistance, including an old catalogue and some useful information about the origins of some of his plants.

Early in August 1961 we set out to visit Northland and inspect the area in the Bay of Islands which was the scene of the first settlement. It is impossible to stay long in the North without feeling sensitive to its past. The beautiful little mission churches, so lovingly made from handsawn kauri; the great, island-studded harbours with sub-tropical vegetation around; the memories of the missionaries in their struggles to establish Christianity and all the violence and bloodshed by both Europeans and Maoris—all these make an unmistakable atmosphere.

At Whangaroa the little church of St. Paul is perched on a hillside overlooking the harbour. In the delightful simplicity of the interior of the church stands a font made from a giant clam shell. Under it, as a ewer for the baptismal water, stands a large stoneware jug with floral decoration, such as once stood on every washstand in the bedrooms of Victorian England. In the steep churchyard wild ginger plants have run riot, so that it is hard to get a foothold, but two large plants of C. j. 'Paolina Maggi', and one of unknown origin, struggle for existence in all the root competition. Close by is the scene of the grisly end of the crew and passengers of the ship *Boyd* in 1808. Here they were lured ashore, massacred and eaten in revenge for some ill-treatment of the Maoris.

Across Whangaroa Harbour, now a peaceful yacht anchorage, we found at Totara North a fine large example of 'Pilida', the dark red, informal double already seen at Cambridge and Te Awamutu. At the head of the harbour were some plants of 'Lemichezi' and a huge 'Paolina Maggi', carrying large areas of both the light and deep pink sports—'Mrs. H. Boyce' and 'Mrs. H. Boyce Rosea', syn., 'Kallista'. These were dated at 1870. Mrs. Freer's 'Lemichezi', standing at the corner of the house, had splendid flowers and much vigorous growth after having been cut down. Mrs. Freer made the comment that she had her husband cut the bush down because rats used it as a ladder to climb on to the roof of her house!

At Russell and Paihia, where old pictures had given us high hopes of interesting discoveries, disappointment awaited. In recent years both churchyards had been cleared right out and all the old plants and trees removed. No doubt they were overgrown, but it is a tragedy that no attempts were made to preserve at least some of the trees planted by the early pioneers. Some could have proved a more enduring monument than the buildings.

Much the same had happened at the famous church at Waimate North, though a few camellias had survived here, planted actually

on graves. C. j. 'Anemoniflora Alba' and 'Paolina Maggi' appeared on graves carrying headstones dated 1876–8. Camellias often occur in New Zealand churchyards and cemeteries, either lining entrance drives or boundaries or, as at Waimate, on the graves themselves. In the latter case it seems reasonable to assume that the date of planting may be two or three years after that on the headstone.

At Matangirau, a Maori village way back up a long narrow track, we came across a very fine, bright red, paeony form camellia of name unknown. It was shining and beautiful on a wet and stormy afternoon, and was said to have been brought there many years ago from a mission garden. It had become a local custom for the grave, of any one dying there during the winter, to be lined with its flowers. The frequent cutting back had kept it fresh and vigorous. Good red camellias are scarce, and this looks a better one than many of the new introductions.

The Treaty House at Waitangi, scene of the proclamation of British Sovereignty on February 6, 1840, was visited on a wild, stormy morning and so we missed seeing an old camellia said to have been planted by James Busby, the first British Resident (1833). If this can be substantiated, it must be one of the oldest surviving camellias in New Zealand.

In 1850 Archdeacon Henry Williams had a severe disagreement with the C.M.S. and, leaving its service, built a house and church at Pakaraka. He was joined by his brother, William. A large garden was planted with exotic trees and, among them, there still survive seven large camellias. We saw C. j. 'Dido', 'Cleopatra', 'Thompsoni' with its pink sport and what looked like 'Albertii'. Henry Williams' house has been restored by Mrs. Poor, an English lady who has brought her beautiful eighteenth-century furniture, and a fine library of early books, to Pakaraka. It must be an odd sort of coincidence that, having found a probable 'Albertii' in the garden, we were then able to consult the original colour plate and description of that variety, in her copy of Joseph Paxton's *Magazine of Botany* dated 1834.

Numerous other gardens were visited but there remains a great deal more exploration of other parts of Northland to be done, especially on its West Coast. The work done so far confirms that camellias were included in the earliest garden plantings, while the range of cultivars discovered seems to indicate Australia as the probable source of supply. Since the missions were organized from there, this seems very likely. Unfortunately, wild weather and a

damaged spool of film left us with no photographic records of the work in Northland.

At the end of August 1961 we were joined by Tom Savige, who has made an exhaustive study of earlier camellia plantings in Australia and built up a large file of photographic and other information about them. Most overseas camellia people who visit New Zealand are staggered at the numbers and size of the camellias to be seen and we noticed that Tom Savige frequently insisted on including the car, or a group of people, in his pictures, presumably to convince his Australian friends of his veracity. We began our joint efforts by confirmatory work on the plantings in Cambridge, Te Awamutu and Rotorua and, while doing this, we were accused of having classified camellias in miles per hour! The 'Aspasia McArthurs', 'Lady Lochs' and 'Odoratissimas' being recognized without slowing the car below 50 m.p.h.; the 'Speciocissimas', 'Emperors of Russia' and 'Marianas' at 30 m.p.h. and so on. There was some element of truth in this since, in some districts, large old camellias peer over every garden fence.

In starting work in the Bay of Plenty on the East Coast of the North Island, a quite different pattern is observable. Most of the settlement occurred after the 1870's, including many well-to-do people who were looking for a comfortable life "in the Colonies" and who brought gardeners and household servants with them. Plants were imported from England and from many other parts of the world. A much wider range of camellia cultivars can be found, including a substantial group which are not recognizable from any records or experience in Australia.

With a few notable exceptions, most of the gardens have gone out of cultivation and only the strongly growing trees and shrubs have survived the subsequent neglect or grazing by stock. Certain trees occur with such regularity that one almost suspects that an enterprising nurseryman may have sold them under the heading "Collection of popular and desirable trees for a Colonial Garden". Most are dominated by huge specimens of Norfolk Island Pines, *Araucaria excelsa*, often well over 100 feet high, and the mere sight of these striking trees, with the strange, geometrical exactitude of their branches, was sufficient to divert us to look for another garden. Associated with *A. excelsa* were almost always *A. bidwilli*, *Magnolia grandiflora*, *Cedrus libani*, *Laurus nobilis*, *Cinnamomum camphora*, all of immense size. One plant of rhododendron, 'Sir Robert Peel', proved to be 75 feet across the spread of its branches.

In some cases, where camellias had obviously been planted at

the same time as the trees and no attempt made to thin them out or prune back, the camellias had gone up for light and now flower away out of sight among the tree branches. In Yatton Park at Tauranga are some for which one needs strong binoculars, in order to be able to recognize the flowers.

There is again a fascinating story involved in these settlements. That at Katikati, made by George Vesey Stewart from Northern Ireland, is described so well by Mrs. Adela Stewart in her book *My Simple Life in New Zealand*, published by Nelson about 1910. She makes many references to her camellias, including the fact that she sold red, white and pink flowers at 5*s*. a box for ballroom decorations. Some of her trees still survive at Athenree, though the fine house and garden are derelict.

Castlegrace is the delightful name of a homestead on the edge of Tauranga Harbour at Katikati, once occupied by a mildly eccentric retired naval captain, named McMillan. Tradition has it that he dressed his five sons in midshipman's uniform, formed them into a boat crew and taught them to toss their oars smartly in salute as their father went ashore at Tauranga Wharf. One of the boat crew later became Minister of Agriculture in a New Zealand Government. At Castlegrace, a beautiful and unusual camellia still grows in the garden.

An important group of camellias occurs on Omokoroa Point which can be accurately dated from a diary entry, as having been planted in August 1877 by a Mr. Gellibrand, a retired missionary. Here we found an enormous tree of 'Paeoniflora Pallida' with its several sports known in the old literature as the 'Pompone' camellias. This is the only old plant of this variety we have seen, as is the one of 'Grand Sultan', nearby. The 'Grand Sultan' suffers from lack of light and heavy root competition but has a spread of about 30 feet. It is completely bare of leaves or twigs except at the periphery, where it bears numerous splendid flowers of great size. Also at Omokoroa are 'Jubilee', 'Contessa Calini', 'Lemichezi' and a fine plant of 'Madam Pepin'. The last is a smallish, deep pink, formal double with a group of almost white petals in the centre.

There was an odd coincidence connecting our visit to Northland with the Bay of Plenty. We received a message that a Mr. Stapleton, now living in Northland, could remember having seen a group of about ten camellias in the Tauranga district, as long ago as 1886. He remembered the approximate position and that the property was called "Gardenhirst". Seventy-five years later this seemed a

long, long chance but, at our next visit to Tauranga, a few minutes on the telephone located them. We found nine fine camellias: C. j. 'Alba Compacta', 'Hendersoni', 'Virginia Franco' with its sports, another "first time seen"; 'Cleopatra'; a pink formal with several interesting sports, probably 'Targioni'; 'Odoratissima' variegated and three examples of 'Anemoniflora Alba'. The present owner told us that, some thirty years ago, the camellias had been cut down, the stumps dug out and replanted in their present position along the drive. One had not survived the treatment, which accounts for Mr. Stapleton's ten. A truly remarkable feat of memory.

In 1838 Archdeacon A. N. Brown, whose presence at Mangapouri is mentioned in this article, laid out the gardens and built the mission at Tauranga. To-day it is remarkable, not only for a fine collection of trees and plants, but for being the oldest substantial New Zealand garden of that period, which has been under constant care and cultivation ever since. It is still owned by the same family and Mr. D. H. Maxwell, with only one generation between him and its founder, now lavishes loving and skilful care upon it. Here are several interesting camellias, including a very large and flourishing plant of C. j. 'Leviathan'.

As a result of the work to date we now have a large group of very interesting camellias of which the identity is obscure or unknown. Among them are some very fine ones, capable of holding their own against most recent introductions. It may be a very long time before their identities can be established and some may never be.

Fig. 21 illustrates what is, undoubtedly, the most exciting of the discoveries: a pure white, formal double with the petals arranged in five spirals of geometrical precision. The plant is large, has been cut down and regrown, stands in full sun and carries large numbers of flowers, blooming rather late in the season. We saw it first on a hot, sunny and rather windy day, and there were no signs of wilt or weather damage. Careful examination showed no flowers of any other formation.

There are nine or ten petals in each spiral, some flowers having a clockwise or right-handed arrangement and others an anti-clockwise or left-handed. One of each is illustrated in the plate.

The earliest known reference to a white camellia of spiral formation is in *Flore des Serres* 1857 as 'Virgine di Colle Beato'. The illustration from this work (Fig. 22) is on page 123 of that volume. Verschaffelt in 1858 illustrated and described the same

variety under the name 'Virgine Calubini', claiming that the illustration was made by the daguerreotype process to guarantee its accuracy. He refers to the "flower's irreproachable form, its rare elegance and the centrifugal spiral arrangements of the petals; equal, round, mathematically imbricated at distances marked by a geometrician's compass and, finally, to their immaculate snowy whiteness". There seems to be no doubt that both the camellias described were the same, and that 'Virgine di Colle Beato' is the priority name.

While the verbal description fits our discovery, both the old illustrations show flowers with seven spirals. It is well known that floral illustrators of the nineteenth century took considerable liberties with the truth, that few, if any, of them worked exclusively with live material and that they copied each other's work quite shamelessly. It seems unlikely, however, that a daguerreotype picture would have been made from an illustration and not from nature.

'Virgine di Colle Beato' (it means Virgin of the Blessed Hill) was listed in Belgium in 1857, in Portugal by da Silva in 1880, in Australia by Wyatt in 1886 and in Italy by Marriotti as late as 1924. It was not listed in New Zealand and no known example of it now exists in Australia, Britain or the United States. The name does not occur in the 1962 edition of the *Camellia Nomenclature List.*

Next season our tree will be carefully examined for flowers of more than five spirals and, in the meantime, attempts will be made to trace a living example of 'Virgine di Colle Beato' in Italy, its country of origin. If the identity of this discovery cannot be established as 'Virgine di Colle Beato', it will be given the name 'James Lockington', after the early New Zealand settler in whose garden it grew.

In view of the extreme rarity of the spiral form, it is little short of amazing that we also discovered another, this time Neyron Rose (HCC 623) and having five spirals of eight or nine petals each. The flower is a little larger than the white one, does not have quite as exact petal arrangement but the spirals are present in all the flowers seen and occur both clockwise and anti-clockwise.

We are indebted to Ralph Philbrick for turning up what appears to be the only reference to such a camellia, this time in *The Horticulturalist and Journal of Rural Art & Rural Taste*, Volume 17, 1861. "We present for a frontispiece this month a remarkable Camellia raised by the late Noel J. Becar, in his day one of the first camellia amateurs in this country. The flower now presented has never been

named, but by some has been vulgarly called the Screw, a name more expressive than elegant. We now give it the name of 'Spiralis Rubra'. The form, as now given, is constant and not a mere variation. It will be noticed that the spirals are remarkably symmetrical, and we have never seen them otherwise. The colour and substance are unexceptionable and the habit good; and among those who admire a departure from the ordinary forms, it will become a popular plant. Our drawing was taken from a plant grown by Mr. Humphreys, of Brooklyn, who has the original stock." The camellia shown has five spirals of about nine petals each but the illustration is uncoloured and shows foliage more acutely tapered and twisted than that of our example. However, the flower illustrators seem to exaggerate leaf forms considerably and this may not be reliable.

The suggestion has been made that our pink spiral could be a new sport of 'Elegans' and, to support this, the foliage and habit seem similar. The suggestions that the pink could be a sport of the white one has been discarded. Foliage, colour of new growth, habit and buds are all different and there is no sign of any pink markings to suggest that the white might have a tendency to sport. If 'Spiralis Rubra' cannot be established as the correct name of this camellia, it will be named 'Archdeacon Brown', after one of New Zealand's most worthy and famous missionaries.

It is of some interest that recently a chance seedling, grown by one of our American members, Mrs. Ferol Zerkowsky of Tammia Nursery, Slidell, Louisiana, has produced another spiral form flower. It is named 'Purple Swirl' and is illustrated (Fig. 23). The colour is described as "ashes of roses pink, changing to purple in cold weather". There are five spirals and about seventy-five petals. Mrs. Zerkowsky also reports that a plant of 'Alba Plena' has sported a white spiral form flower which has been propagated off successfully. We are most grateful for this information and permission to publish the photograph. This enables us to complete all the known references to spiral forms.

A most lovely formal double, soft and unusual shade of pink camellia is well worthy of mention. The plant has a low, spreading habit, flowers very freely indeed over a long period and is an exceptionally good and fine camellia. The petals have a distinctive, silky texture and some incurve slightly in the centre. Some flowers shade to a paler colour in the centre. This is the only example found so far and no clues as to its identity have been found. It is at present under label as Bell/1.

Good, clear reds are unusual in *Camellia japonica* and a fine, paeony form of excellent colour, substance and habit would be a valuable addition to most gardens. One of this class has been discovered and is at present under label TM/1. No clues have yet been found as to its identity.

The last camellia for discussion is another quite unusual one. It is a pink, paeony form which shows a large range of variation. Some are soft, clear pink; some the same colour but marked with deeper shades; some marked with white and others red, occasionally marked with white. Though this considerable variation may sound rather startling, the general effect is beautiful and harmonious. As with the two previous camellias, it is the only example found. If its identity cannot be established it will be named 'Castlegrace'.

A vast amount of field work and travelling is involved in this research, which we sometimes call Operation Verschaffelt. It would not be possible at all without the help, courtesy and hospitality of many people, particularly those who have welcomed us to their gardens and homes. Very sincere thanks are due to them all.

Note. The author would be grateful for any information about existing plants of the white spiral form camellia or help as to the identity of the other camellias illustrated. His address is, Mayhills Farm, Tirau, New Zealand.

RHODODENDRON COMPETITION

March 20 and 21, 1962

By JAMES PLATT

IT would not have come as a surprise had the early flowering rhododendron competition been cancelled. The country from Cornwall to Scotland had been subjected to snow before Christmas, frost, more snow and devastating and unexpected gales, the frost persisting at the time of the competition. One was therefore grateful to the four exhibitors, some of whom must have taken the precaution to pick their entries in bud, for making the competition possible. There were, however, entries in only twelve classes out of twenty-two and the twenty-six entries were not all up to the usual high standard of the competition.

The Countess of Rosse and the National Trust were the largest competitors with sixteen entries from Nymans, taking five first prizes, eight second prizes and three third prizes. Their *R. maccabeanum*, the only entry in class 9 for any species of the Grande Series, was the finest truss cut in the open in the Competition, with large, clear yellow flowers. In class 10 for any species of the Neriiflorum Series they were first with a neat truss of the crimson *R. pocophorum*, an attractive species with good foliage which is too early-flowering for many gardens. Their third first was for a well-flowered branch of R. 'Christmas Cheer' which, one might say, was flowering well out of season. Among their second prizes was an interesting *R. stewartianum* in class 11 for any species of the Thomsonii Series, in which the waxy-white lobes were flushed pink on the interior, and an attractive truss of the crimson-flowered *R. peramoenum* in class 5 for any species of the Arboreum Series other than *arboreum*.

Mr. R. Strauss of Stonehurst, who made only two entries, was first with both of them. His *R. calophytum* in class 3 for any species was of a good even pink, while his entry of the same species for any species of the Fortunei Series in class 8 was of a softer pink with a crimson blotch in the throat. It was pleasant to see rhododendrons from Lamellen again, for Major E. W. M. Magor had

four entries. His best entry in class 15 for a spray or branch of any hybrid had trusses of speckled pink flowers, deeper in the bud, with a rich brown indumentum to the undersides of the leaves. It was thought to be *R.* Aztec which is a cross between *R. arboreum* and *R. irroratum* and gained him a second prize. His other entries, *R. meddianum*, *R. calophytum* and *R. macabeanum*, were only half open and showed that the weather had been as difficult in Cornwall as elsewhere.

Class 21 is for any tender species or hybrid grown under glass. On this occasion the Crown Estate Commissioners made the only entries. They were first as they were in the Competition in 1961 with the lovely 'Harry Tagg'. Their second prizewinner was an attractive *R. inaequale* whose creamy petals were flushed green, the green being denser in the throat. They received a third prize for a curiosity of the Glaucum Series, *R. genestierianum*, whose small, bell-shaped flowers are maroon with plum-purple buds, but the flowers which would be admirable on a dwarf species with small leaves, seemed too small for a bush which can grow up to 12 feet in height.

THE RHODODENDRON SHOW

May 1 and 2, 1962

By ALAN HARDY and PATRICK M. SYNGE

THE year 1961 was undoubtedly an exceptional one for rhododendrons and we could hardly expect another season of equal floriferousness to follow. The winter 1961–2 was unusually rough in gales and hard frost in many areas, particularly in the west of the country; in fact in many areas it was probably the worst since 1947–8 and did much damage where the gales had blown gaps in the tree shelter and so let in the cold. Before the Show there had been little warm weather to bring on the flowers. In particular there were few exhibits from Scotland probably for this reason; nevertheless the New Hall was well filled with a show containing plenty of colour, although one missed from the classes many of the trusses of the larger-leaved species which we had seen in the previous year, but as usual there were a few specimens which probably had never been seen better in our halls. There is nearly always something exceptional to repay a visit to a specialist show like this. This year it included Lord Aberconway's wonderful deep pink form 'Michael McLaren' of *R. albrechtii* which deservedly received an F.C.C. General Harrison's deep violet-blue 'St. Breward' was another F.C.C. plant. This seemed to us the strongest colour in that range, that we had yet seen in any rhododendron hybrid and probably also in any species, and with an unusually large truss for that group. His deep pink *davidsonianum* in class 54 was another highlight, while the sumptuous truss of seven large lily-like blooms of a deep creamy-yellow form of *R. nuttallii* which won class 21 for Mr. M. Cripps should have satisfied any connoisseur of these tender species of the Megacalyx series. One wishes that more of them could be seen at the Show since they have such waxy perfection in the substance and the form of flower.

Two Gold Medals were deservedly awarded for nurserymen's groups—to the Knap Hill Nursery and to Messrs. Slocock. The Knap Hill Nursery had a beautifully balanced group of deciduous and evergreen azaleas with a few rhododendrons, all well-shaped

and well-flowered plants. Among the azaleas we noted particularly the brilliant orange-red 'Bengal Fire' and 'Gold Ball', the pale-mauve 'Amethystina' form of *R. mucronatum*, the brilliant 'Vuyk's Scarlet', always a striking plant at a show but one difficult to place in the garden. The old mauve hybrid rhododendron 'Fastuosum Flore Pleno' has hardly been excelled yet in its colour and looked particularly well in the group. The white evergreen azalea 'Palestrina' is another plant which always looks well both in show and in the garden.

Messrs. W. C. Slocock had a fine mixed group under the clock in which the general standard of cultivation and floriferousness was very high. Along the back were standards of the older hybrids while two standards of the crimson 'Brittania' brought forward near the ends of the group helped to provide height and frame the lower plants nearer the centre. Among these we particularly noted a very fine 'Elizabeth', 'Golden Dream', one of the Carita grex of *campylocarpum* × 'Naomi', nearly all of which are good plants. Among the deciduous azaleas 'Gog' and the older 'Dr. Oosthoek' provided splashes of very brilliant colour. Immediately in front of the dais Messrs. Hillier had an attractive exhibit of dwarf and low-growing rhododendrons and evergreen azaleas. On one corner was an unusually good deep carmine form of *calostrotum*, while others we noted were the blue 'Sapphire', the pink 'Fittra', *pumilum* and *imperator*. No garden off the chalk could be too small to find space for a few of these.

Messrs. John Waterer Sons and Crisp had a very colourful mixed group of azaleas and rhododendrons among which some of the old favourites, hybrids such as 'David', 'Mrs. G. W. Leak' and 'Susan', were conspicuous. Among the deciduous azaleas 'Mrs. A. W. Endtz', primrose, and 'Shakespeare', deeper yellow, made a good foil for the evergreen 'Bluebird'. In general the azaleas in this group were very well shown.

Frederick Street had a small group of young plants of well-flowered hardy hybrids such as 'Betty Wormald', 'Mrs. Davies Evans' and 'Pink Pearl' while Messrs. G. Reuthe had an interesting mixed collection of tender and hardy rhododendron species and hybrids. An unusual cross was *nuttallii* × 'Countess of Haddington', a pale blush-pink flower, delicately scented. Another was *lindleyi* × *ciliatum*, which we were told had had no buds destroyed outside even during this winter. The Exbury pink form of *davidsonianum* looked well as did 'Peace', a very pretty pale apricot-flushed flower from *concatenans* × *caeruleum album*.

FIG. 24—Rhododendron 'Brookside', a cross between 'Goshawk' and *R. griersonianum*. A.M. May 21, 1962. Exhibited by Crown Estate Commissioners, Windsor Great Park, Berks (see p. 225)

FIG. 25—Rhododendron 'Petia', a cross between R. 'Albatross' and R. 'Sarita Loder'. A.M. June 5, 1962, when exhibited by the Director of R.H.S. Gardens, Wisley (see p. 226)

Photos: J. E. Downward

We also noted the tender *taggianum*, surely one of the most lovely of all the species, the old white 'Dr. Stocker' which has a fine upright truss, *degronianum* and a dark mauve *russatum* hybrid.

COMPETITIVE CLASSES: SPECIES

In class 1 for trusses of eight species we missed the displays of the larger-leaved ones, and many had undoubtedly been affected by the weather. The first prize was awarded to Sir Henry Price of Wakehurst and among his flowers was a nice truss of *lacteum*, a good pink *arboreum*, and a fine *fictolacteum* with dark indumentum. The others shown were *falconeri*, *thomsonii*, *campanulatum*, *chaetomallum* and *niveum*. Mr. E. de Rothschild of Exbury was second, and notable in his group was a pale creamy-coloured *arizelum*. The Crown Estate Commissioners, Windsor, were third and included in their group a nice creamy-coloured *basilicum*.

Class 2, for one truss each of three species, was won by Mr. de Rothschild with three good trusses of *calophytum*, *pseudochrysanthum* and *wasonii* (Rock 59106?). *R. pseudochrysanthum* is a very pleasant plant and one which could with advantage be grown more widely since it is quite hardy, does not grow very large in most gardens and also has attractive young growth covered with creamy farina. Lord Aberconway and the National Trust were second with three fine specimens from Bodnant of *arboreum*, *cinnamomeum* and *vernicosum*, the last of which was notable. Major A. E. Hardy of Sandling Park, Hythe, was third with three good trusses of *campylocarpum*, *neriiflorum* and *thomsonii*.

Class 3 also required three species but is restricted to exhibitors who have not won a prize in the previous two classes since 1957. The first prize was won by Major E. W. M. Magor of Lamellen in N. Cornwall, who showed a very heavily spotted form of *irroratum*, a small *neriiflorum* truss of good colour and a deep coloured form of *macabeanum*, though with rather smaller foliage than is sometimes seen. Flowers from this famous garden, where so many good hybrids have been raised, were particularly welcome to the Show. The second prize went to Mrs. G. M. Gosney of Kingswood, Surrey, for *euchaites*, *schlippenbachii* and *lutescens*.

The McLaren Challenge Cup in class 4 for one truss of any species was won by the Crown Estate Commissioners, with a very good and heavily freckled form of *rex*. Sir Henry Price was second with his *lacteum*, a nice one although a little paler than some which

have been seen. Mr. W. F. Carpenter of Warlingham, Surrey, was third with the rare *alutaceum* from the Taliense Series. This had lilac-mauve flowers with widely opened bells, slightly freckled with dark crimson inside and flushed purplish-crimson on the outside.

In class 5 for a spray of any one species the first two prizes were won by Lord Aberconway with a pleasing rather pale form of *vernicosum* with a very fine, wide-open truss standing well upright for first place and for second his 'Michael McLaren', the outstanding deep-pink form of *albrechtii*, which for us was one of the outstanding exhibits of the Show and rather surprisingly was only found in second place here. The Crown Estate Commissioners were third with a three-flowered spray of *rex* and fourth was Mr. de Rothschild with *pseudochrysanthum*, which showed an attractive pink flush on the outside of the flowers as well as on the long petioles.

Class 6 for a truss of *arboreum* or one of its sub-species was won by Sir Giles Loder with the very nice pink form called 'Apple Blossom' of which he showed a good full truss with nice silvery underneath to the leaf. The second prize went to Mrs. L. J. David of Narbeth, Pembs., for *cinnamomeum* and the third prize to Mr. de Rothschild for a typical white *arboreum*.

In class 7 for other species of the Arboreum series Sir Henry Price won the first prize with a very well coloured *niveum* and the second and third prizes went to the Crown Estate Commissioners for *floribundum* and *niveum* respectively. For a truss of the Barbatum series in class 8, the first prize was given to the Crown Estate Commissioners for *crinigerum*. A very rarely seen species, shown in this class by Lord Aberconway, was *diphrocalyx*, which had a small truss of deep pink flowers.

In class 9 for a species of the Boothii series a very good, unusually deep pink form of *tephropeplum*, but with rather small flowers, won first prize for the Crown Estate Commissioners and the third prize went to Sir Giles Loder for a larger-flowered form also with deep pink flowers of the same species, but this was not quite fully out. Second prize went to the Countess of Rosse and the National Trust for a spray of *leucaspis* from Nymans. Also notable in this class was a small truss of a very good deep yellow *sulfureum* from Mr. W. F. Carpenter of Warlingham, Surrey.

The Knap Hill form of *campanulatum* won first prize for the Crown Estate Commissioners in class 10 and they also were successful in class 11 for a spray of the *cinnabarinum* series where they showed 'Mt. Everest', a form with unusual colour, pale

apricot and with rather small flowers, not so tubular as with some forms and a little more widely open but flowering very freely. Second and third prizes were given to the Countess of Rosse and Crown Estate Commissioners for *concatenans*. In class 12 it was very unusual to see only one truss of *falconeri* and the second prize was given to Sir Henry Price for this. In class 13 for *fictolacteum* there were more entries and Sir Henry Price again won first prize. Although it is so close to *fictolacteum*, *rex* was shown in the next class for any species of the *falconeri* series where it won third prize for the Crown Estate Commissioners. It seemed that this species might well be considered for inclusion in the previous class as an alternative for *fictolacteum* in the future.

The first prize was won by the Countess of Rosse who showed from Nymans *arizelum* with a lovely rusty indumentum below the leaf. She was also Highly Commended for a rather pretty, but small-flowered form of *eximium* which had a pale lilac-pink rim to the petal.

Specimens of *griffithianum* were unfortunately rather rare in class 15. The first prize was given to Mrs. J. L. David, the second to the Earl of Stair. Exhibits were also sparse in the next class for other members of the *fortunei* series, Lord Aberconway's *vernicosum* winning first prize. The Fulvum series was shown in class 17; it is one which might be more widely grown in gardens since its members have lovely indumentum below the leaves. First prize was won by the rarely seen *uvarifolium* shown by the Crown Estate Commissioners. This is an attractive shrub with small, pale pink flowers.

In class 18 for the Grande series first prize went to the Countess of Rosse for a nice yellow form of *macabeanum*, and the second to Major Magor for the same species. He also won class 19 for species of the Irroratum series with a very heavily lined and spotted form of the species. The second prize went to Major-Gen. E. G. W. W. Harrison for a larger, looser truss of pure white and with no spots. The Crown Estate Commissioners showed for third place an even larger form with more open flowers and medium spotting.

Sir Henry Price won class 20 with another specimen of his fine *lacteum*. The second prize went to Major A. E. Hardy for the unusual *phaeochrysum*, a rarely seen member of this series. The foliage stood stiffly round a tight compact posy-like truss; it was in splendid form with rusty indumentum underneath and made a good contrast between the dark green foliage and the tight truss of flower.

Class 21 was for species of the Megacalyx sub-series which may be grown in the open or otherwise; Mr. M. Cripps of Ewhurst, Surrey, won first prize with a most unusual creamy, almost pale yellow form of *nuttallii*. This truss had seven very large flowers and was one of the best we have seen in the hall for a long time. Sir Giles Loder was second with a good truss of *lindleyi* with nine flowers and with the foliage in good condition also and the Crown Estate Commissioners third with *sino nuttallii*, a truss with five large flowers and a good form. As usual this was one of the most interesting classes in the Show.

Class 22 for other species of the Maddenii series other than from the Megacalyx sub-series was won by the Crown Estate Commissioners with a very nice truss of *polyandrum*, white with a creamy base. Lord Aberconway showed the same species for second prize, the third prize went to Mr. W. F. Carpenter for a rather small *burmanicum* which was not quite fully out, yet showing a good colour. We also noted in this class a lovely form of the double *johnstoneanum*, like a gardenia.

A good red form of *chaetomallum* won first prize for the Haematodes sub-series for Sir Henry Price. Lord Aberconway was second with a small truss of good colour of *beanianum*, the Crown Estate Commissioners third with *catacosmum*, an interesting plant but which showed slight signs of damage.

Class 24 was one of the better filled classes and among these members of the Neriiflorum sub-series the first and second prizes went to *euchaites*, shown respectively by the Crown Estate Commissioners and Mrs. J. L. David. The Earl of Stair won third place with a rather large flower although pale, of *neriiflorum*.

It is sad that *aperantum* is not more free flowering in this country as it appears to be covered with flower in the wild, according to the many collectors' accounts, and there were few entries of a spray of this species. First prize went to the Crown Estate Commissioners for a nice cherry-coloured form F.26936 which contrasted with a paler pink, rather tubular form from Mr. G. A. Judson which won second prize.

In the Taliense series class 27, Mr. E. F. Carpenter won first prize with his mauve *alutaceum* and Mr. de Rothschild second with his *wasonii*. Third prize went to the Earl of Stair for the true *roxieanum*, large white flowers a little speckled with crimson which contrasted well with the narrower-leaved, small-flowered variety *oreonastes* which was shown by the Crown Estate Commissioners. This had a very compact truss and was more heavily speckled in-

side. The unusual yellow *wasonii* from Bodnant was also notable in this class. In classes 28 and 29 the Campylocarpum series were not very well supported and the best exhibit was a nice pale yellow form of *caloxanthum* shown by Sir Henry Price.

In the Azalea series we nearly always find beautiful sprays and Lord Aberconway's good pink form of *schlippenbachii,* which won first prize in class 34, was no exception. He also showed his deep cerise-pink *albrechtii* in class 35 but this ran second to a good deep form of *reticulatum* from the Crown Estate Commissioners.

First prize in class 36 again went to Lord Aberconway for three sprays of a very fine *albrechtii*, a large flowered and deep coloured *schlippenbachii* and *reticulatum.*

A contrast was *cephalanthum* var. *crebreflorum*, a nice pink form with large flowers of this compact little plant which won first prize for the Crown Estate Commissioners in class 37. Lord Aberconway's *primulaeflorum* was second. Also notable was the Countess of Rosse's *campylogynum* var. *charopoeum* which has larger flowers than the type and won first prize in class 38.

Class 39 requires a spray of the species of Edgworthii series but this may be grown in the open or otherwise; the first prize went to Sir Giles Loder with an outstanding spray of *bullatum* which had six well-flowered branches very regularly arranged. The flowers had a good strong pink flush on the outside and a deep pink calyx. The rather strong foliage was markedly bullate.

Lord Aberconway's *glaucophyllum* in class 40 was an unusually deep pink form, while in the next class for the Heliolepis series, first prize was given to the Countess of Rosse for an almost white form of *rubiginosum.* A notable exhibit was a very deep violet-coloured form of *russatum* shown by Sir Henry Price for first prize in class 42, where the Crown Estate Commissioners won second prize with a pretty primrose-yellow *chryseum.*

Among the other classes for species we noticed the Crown Estate Commissioners, pretty pink *spiciferum* which won first prize in class 46 and their unusually deep pink *racemosum* in class 47.

Among the *augustinii*, the Crown Estate Commissioners were first with a good deep mauve form with a green eye, but perhaps the bluest of all was Major Hardy's which won third prize but it was much paler and not quite so free flowering.

In class 51 Major-Gen. Harrison won first prize with an unusually tight form of *oreotrephes* with small flowers but more outstanding was his deep pink form of *davidsonianum* which was shown in perfect condition and won first prize in class 54 for the

Yunnanense sub-series. This we thought one of the outstanding specimens in the Show, especially among the plants grown outside. The prominent whitish stamens and pink style and stigma made it very attractive.

Class 55 for any species from a series not included in the above classes generally brings an unusual medley. The first prize was won by the Crown Estate Commissioners for a freely flowered form of *fittianum*, while second went to Major-Gen. Harrison for a nice pale pink *metternichii* which had streaks of deeper pink on the outside of the flowers. Third prize was given for a fine large spray of *uniflorum* from the Crown Estate Commissioners.

In class 56 for a truss or spray of any species from an exhibitor who has not won a first prize since 1957, Major Magor's *haemaleum* with very deep maroon flowers won first place.

HYBRIDS

In the class for eight hybrids, usually one of the best supported in the Show, first prize was given to Mr. de Rothschild of Exbury who showed 'Lionel's Triumph', 'Kiev', 'Janet', 'Carita', 'Golden Dawn', 'Fortune', 'Queen of Hearts', 'Naomi', 'Mariloo'. Outstanding among these were the pale lemon-yellow 'Golden Dawn' and dark blood-red 'Kiev'. The second prize went to Major Magor of Lamellen and in his group we noted 'Gilian' and an interesting cross of 'Daphne' × *detonsum* which had a very large coloured calyx. In Messrs. Waterer's third-prize group the white 'Dawn' stood up well and also notable was the hybrid of 'Danae' × 'Citronella'.

In the next class for three hybrids, Messrs. Waterer's 'Matador' × 'Armistice Day', a very good bright red flower, was the most notable in their first prize exhibit. Second prize went to Mr. de Rothschild, among whose flowers we noted an unusually large truss of 'Avalanche'. In the next class for an exhibitor who had not won a prize in the last two previous classes in the last five years, Major Magor was first and showed 'Lacsino' which had a wide open truss with a dark crimson blotch and also a deep cream 'Hermione' with large waxy bells, his third was 'Damaris' × *detonsum*. The second prize was awarded to Mrs. G. M. Gosney and the third to Mr. W. F. Carpenter among whose flowers we noticed a good yellow 'Logan Damaris' and also 'Lindcil', a fine white flower with an unusual freak in that it had two stigmas.

For sprays of three hybrids in class 64, Mr. de Rothschild won

first prize with a good creamy-yellow Carita 'Golden Dream' and also showed 'Eleanore', a well flowered good mauve form, and 'Luscombei'. The second prize went to Major Hardy who included a good form of 'Jacksonii' with deeper pink flowers than usual and a well shown spray of the white 'Boddaertianum'.

The first prize for class 65, one truss of any hybrid, is the Loder Challenge Cup and most appropriately this was won by Sir Giles Loder with a full truss of 'White Glory' whose flowers had a good crimson blotch at the base. This was undoubtedly one of the finest hybrids shown. The second prize went to Mr. de Rothschild for 'Lionel's Triumph', an interesting *lacteum* hybrid with 'Naomi' which the Committee desired to see at a future meeting. Third prize was given to 'Gladys Rose' shown by the Crown Estate Commissioners, an attractive blush-pink flower with a red blotch at the base. All the forms of 'Gladys' seem to be good garden plants.

Class 66 for six hybrids raised by or in the garden of the exhibitor, the Crosfield Challenge Cup was awarded to Mr. de Rothschild whose six flowers were 'Janet', 'Ibex', 'Fortune', 'Lionel's Triumph', 'Naomi', and 'Queen of Hearts'. The two outstanding ones here were 'Lionel's Triumph' and 'Ibex'. Lord Aberconway won second prize and among his flowers was a very fine 'Elizabeth', while 'May Morn' was an attractive flower with a nice indumentum underneath the leaf and in the third prize group Major Magor's 'Gilian' stood out, it was like 'Cornish Cross' but had a deeper colour.

In class 67 for three hybrids again raised by or in the garden of the exhibitor, Mr. de Rothschild also won first prize and an unusually fine spray of 'Naomi' dominated his scarlet 'Gaul' and a mauve 'Eleanore'. Major Magor was second and showed a very free-flowered spray of a scarlet 'Hermione' which had a full truss and third was Lord Aberconway whose group included the strongly coloured 'Bluebird'. In Messrs. Waterer's trio in this class a well-flowered spray of the creamy-white 'Diane' × 'Phryne' stood up well and attracted attention.

Six hardy hybrids in class 68 brought forward a number of the old favourites and the first prize was won by Messrs. Waterer, among whose flowers were noted 'Mrs. G. W. Leak' and 'Matador'. Every year in the Trials at Wisley 'Mrs. G. W. Leak' seems to flower magnificently and always attracts attention owing to the striking dark blotch. Messrs. Slocock were second and among their group we noted the beautiful 'Countess of Derby'. For the hybrids

of which one parent is a species of the Arboreum series, Mr. Haworth-Booth's tall truss of the old 'Ivery's Scarlet' was successful. The second prize was won by Major Hardy with 'Boddaertianum'. We also noted in this class an unusually attractive 'Werei' from Major-Gen. Harrison with a compact truss of pale-pink-flushed flowers overlying a white base. In the next group, usually one of the most popular, the Loderis were conspicuous by their absence but the first prize was won by Messrs. Waterer. In few gardens in this very late season, were the Loderis yet in flower. Lord Aberconway's 'Cornish Cross' in the next class was a pale form which contrasted with the second prize won by Mr. de Rothschild who also showed a darker form of the same hybrid.

For a *griffithianum* hybrid in class 72, Sir Giles Loder's 'Gay Lady' was a large well-filled truss of good pink flowers and was one of the finest of hybrids in the Show. A cross between 'Cornubia' and *griffithianum*, it received an Award of Merit as long ago as 1938.

Among the other flowers which were noted in the hybrid classes was Major Magor's 'Mrs. Randall Davidson' which was the yellowest form shown. The name 'Mrs. Kingsmill' is generally regarded as a synonym of this and it has the same parentage as 'Penjerrick', although there is no record as to which form of *campylocarpum* Mr. Mangles used for it.

Mr. de Rothschild's 'Carita' again stood out in class 74 and the Windsor 'Damaris' was a good second, being a lovely primrose form.

Major Magor's 'Daphne' in class 75 was a fine scarlet with prominent petaloid calyx and among the hybrids of *thomsonii*, an unusually fine 'Luscombei' won first prize for the Crown Estate Commissioners in a large class of 15 entries. It had wide open very large flowers, a good clear pink.

In class 77 Mr. de Rothschild's 'Joanita' was a beautiful cowslip-coloured flower flushed with slight crimson on the outside, the flowers being carried in a lax truss. Major-Gen. Harrison's 'Pink Pebble' in the same class was an attractive *williamsianum* hybrid true to the form of both its parents, the other being *callimorphum*. Notable also was Major-Gen. Harrison's very pretty pale-apricot 'Alison Johnstone' which won first prize in class 80. One of the striking features of this hybrid from *concatenans* × *yunnanense* is its prominent stamens and stigma. Another attractive hybrid in this class was a deep buff-yellow *concatenans* × *ciliicalyx* shown by the Crown Estate Commissioners.

Class 81 for any hybrid of which one of the parents is a species of the Maddenii or Edgworthii series grown in the open or otherwise, was notable for the enormous spray from Lord Aberconway of 'Tyermannii' whose flowers are certainly among the largest of any hybrid rhododendron yet raised. Sir Giles Loder's 'White Wings', which won second prize, was a beautiful white *bullatum* hybrid raised by the late Mr. Scrase-Dickens and an interesting truss of 'Lady Chamberlain' × *maddenii* with blush-pink flowers with rusty-orange on the throat won third prize for the Crown Estate Commissioners.

Mr. Haworth-Booth's specimen of 'Bluebird' won first prize in the hybrids between the Triflorums and Lapponicums, it was undoubtedly the bluest flower in this class.

Among the *forrestii* hybrids Sir Giles Loder had an unusually fine vase of 'Elizabeth' and the second prize in this class went to the attractive and diminutive 'Little Bert' shown by the Earl of Stair. As a complete contrast to this, Mr. de Rothschild won the next class 86 with a good yellow 'Fortune' and this was opposed for second prize by the small-flowered 'Yellow Hammer' from Lord Aberconway. Mr. de Rothschild's 'Quaker Girl', a new hybrid from *hyperythrum* × 'Avalanche', was a good white with slightly better foliage than its parents and larger more open flowers and won first prize in class 87.

For a spray or branch of any hybrid Major-Gen. Harrison's 'St. Breward' easily won first prize in class 89; it was exceptionally fine, while Mr. de Rothschild was in second place with a fine large vase of 'Eleanore'.

The class for plants in bloom of dwarf rhododendrons attracted some unusually fine specimens. First prize went to Messrs. Slocock who showed a very dense *microleucum*, which was 15 inches in height × 2 feet 9 inches × 2 feet 7 inches. Messrs. Waterer showed the F.C.C. form of *russatum* for second prize, and third prize went to Messrs. Reuthe for a *ciliatum* hybrid 'Puck', a compact dome-shaped plant with blush pale-pink flowers on the outside. Also notable in this class was a fine dome-shaped plant from Windsor of *imperator* 1 foot 8 inches high × 3 feet 4 inches × 3 feet. There is probably still much confusion between this species and *uniflorum*.

In the evergreen rhododendrons in bloom, class 105, the Crown Estate Commissioners won first prize for a really magnificent plant of 'Blue Tit' covered in flower, 3 feet in height, 4 feet across × 3 feet 6 inches. Second prize went to Messrs. Slocock for 'Leo' and

the third to Messrs. Waterer for 'Dawn'. Also notable was *racemosum delicatum*, a nice pink form from Mr. C. F. Wray.

Again unfortunately, there were no entries for the group of plants on a table, class 100, or for the Javanese rhododendrons, class 103, but an unusually amusing entry was the collection of leaves shown by Mr. W. F. Carpenter, first prize in class 107. These demonstrated markedly the great diversity in the genus since they ranged from the giant *sinogrande* with a leaf 2 feet 11 inches to the minute *yakuinsulare* whose leaves were only ½ inch × 6/10 inch. Others included were *giganteum*, *basilicum*, *tsariense* and *semibarbatum*. In the final class 109 for species or hybrids grown under glass a very fine *polyandrum* from Windsor won first prize and the second went to Sir Giles Loder for a beautiful creamy-white 'Parisienne' × 'White Wings'.

18th ANNUAL MEETING—AMERICAN RHODODENDRON SOCIETY

By C. GORDON TYRRELL

THE first annual meeting of the American Rhododendron Society was held at Winterthur, Delaware, May 6, at the invitation of Mr. Henry F. du Pont. This was the first time that this meeting had been held here in the East, and because of this, arrangements were made to make this a really worthwhile meeting.

The meeting convened on Sunday evening for dinner as guests of Mr. and Mrs. Henry F. du Pont. Following dinner the annual meeting took place, at which Dr. J. Harold Clarke, President of the American Rhododendron Society, presided.

Mrs. Ruth Hansen, Secretary-Treasurer of the Society, gave a brief history of the organization telling how, that with less than 400 members in 1949, the Society had grown to over 2,500 to-day.

Among the other business carried out was the presentation of their charters to two of our newest chapters, namely, to the Mid-West and Tappan Zee Chapters.

At this time also the Society's Gold Medal was presented to Dr. John C. Wister by Dr. Clarke with the following citation:

'Tonight at the Annual Meeting of the American Rhododendron Society we grant our highest honor, "The Gold Medal", to a man who by his writing, traveling, and speaking in the interests of rhododendrons has informed and encouraged amateur and professional growers of these plants. His work and journeys for the purposes of locating, identifying, and propagating the finest Dexter hybrid rhododendrons are well known. Whenever possible he has through personal contact passed on to his fellow members in the Society his great enthusiasm for rhododendrons. Additionally, he has capably served in various official capacities in his chapter where he is most affectionately regarded.

'He is presently serving as Director both of the Arthur Hoyt Scott Horticultural Foundation at Swarthmore, Pennsylvania, and of the John J. Tyler Arboretum at Lima, Pennsylvania, where he has assembled large collections of rhododendrons for testing, study, hybridizing, and display. In the vicinity of Swarthmore and

Lima, and in the general area of the East, he is known as "Mister Rhododendron".

'In recognition of his contributions to the Society, both nationally and locally, we are pleased to grant the American Rhododendron Society Gold Medal to Dr. John C. Wister of Swarthmore, Pennsylvania.'

Also presented at this time by Henry D. Mirick, President of the Pennsylvania Horticultural Society, was a citation to David G. Leach 'for his contributions to the knowledge of rhododendrons and, in particular, for his comprehensive work, *Rhododendrons of the World and How to Grow Them*'.

Following this part of the meeting Edward Dunn, Vice-President of the Society, spoke to us of the growing of rhododendrons on the West Coast—this being illustrated with slides showing the better hybrids that had now come out of work carried on on the West Coast.

The next day the group had the pleasure of being taken on a conducted tour of the gardens at Winterthur by Henry F. du Pont and staff. This took most of the morning. They arrived back in time for lunch at the new garden pavilion, at which the meeting was held.

Following lunch there was a panel discussion with eminent rhododendron specialists. The topic being "Rhododendron Growing East and West".

After this discussion group the delegates then moved to the Longwood Gardens where a tour of gardens and greenhouses took place. These gardens and greenhouses were in full bloom with rhododendrons and azaleas, many of which had been forced or retarded to meet this specific occasion. It really was a wonderful display of material gathered in one spot.

Following dinner, which was held in the ballroom, Dr. Russell J. Seibert, Director of Longwood Gardens, presented the medal of the Massachusetts Horticultural Society to Dr. John C. Wister, Swarthmore, Pennsylvania, Director of the Arthur Hoyt Scott Foundation, "for his work as a landscape architect, author and for his development of the Swarthmore campus, considered one of the finest in America, and as a leader in the field working tirelessly with specialized plant groups".

Succeeding this citation Dr. John Creech, Assistant Chief New Crops Research Branch of the United States Department of Agriculture, showed pictures and spoke of his latest trip through the

islands of Japan, from the southernmost to the northern extreme. It was particularly interesting to see the differences in the growth and colour range of the *Rhododendron japonicum*, from pale-yellow and orange where it grows on the hot, baked grassy plains, to salmon-red in the extreme north on the higher elevation and in the cooler climate.

Following this talk a fountain display was given out in the garden, which I am sure everybody who experienced it had a thrill they will never forget.

The next day visits were made to local arboreta to see the rhododendrons they were growing. Among the places visited was the Tyler Arboretum, the Swarthmore campus, the garden of Mrs. George Wilson in Narberth, and the Morris Arboretum at Chestnut Hill.

RHODODENDRON NOTES

Notes from Glenarn, Rhu

The season 1961/62 opened with no bud promise here, because all our big-leaved rhododendrons had nothing to show, in advance of the horrible winter of gales and continued frost (14° F was our worst I think). We must have had 16° F in 1947. Anyway, the so-called spring opened again with a succession of gales.

Some biggish trees were blown down and did remarkably little damage when they fell (we say such is the will of the Almighty who can fell a tree and cause no disaster underneath)! If we had used ropes and ladders and cut branch by branch, and lowered down offending branches, we should have made a worse muddle below surely! But our spring 1962 was a shocking affair. The snowdrops were very late, owing to a succession of gales, but they were in good form, though tattered and lashed by wind. Daffodils were *non est* with us. A poorer year for daffodils we have not seen for twenty years or more.

And, then, to the rhododendrons. A very poor flowering year was in prospect. Very few buds on promise last autumn. Almost *all* the big-leaved species or hybrids were taking a year off. Perhaps we here cannot remember such a poor year since notes began.

A few, but very few, species did well and escaped wind damage; some dwarfs of course, one or two blue-blooded hybrids which did not do too badly (the Loderi tribe were not too bad), a few first-raters such as *R. rude*, *R. baileyi*, and a few others, showed their form. But the big-leaved plants had no flower buds even on promise. They were taking a year off for "rest and be thankful". Our growth this 1962 year is very good, and so it should be after a couple of years of nil flower on rhododendron species. We feel that people who have the privilege of living with them, ought to appreciate the fact that the grander rhododendrons have a duty to themselves to take a year or two off, and not to attempt to flower every year, or even every second year, and in abundance. When one gets up to 30 feet and more, dead heading is quite impossible, and the only thing to do with such old friendly plants as I attempt to describe, is to give them all comfort by way of grass mowings and

other leaf-fall rakings. And, may I suggest, cut out all dead wood, so far as you can reach it by ladder and so on.

A few exceptions. R. lindleyi in many positions was not much damaged, and flowered fairly well in all situations. A Ludlow & Sherriff Collecting number—trusses smaller than usual and pips shorter.

R. bullatum. Very badly smitten both in flower and growth, though the growth is beginning to revive. Some got on better than others. Many are making good new growth.

R. dalhousiae and *R. taggianum.* Rather smitten to the ground, but rejuvenating.

R. supranubium. Alive and working.

R. chrysodoron. Also alive and working.

The Maddeni series were not happy. Practically none flowered this year. *Crassum*, *manipurense* and so on lost their flowering buds, and a few in very odd places were cut back to near skeletons. But these also are breaking away again and, with some secateur pruning in July, will again make good after a year of frustration.

Incidentally that Glaucum tribe needs a new description in the next year book. The plants are described as suitable for the rock garden. We, here, find that in thirty years or so they grow to 6 feet or more, even in windswept conditions, and forbye, they do not resent a hard cutting back down to the rootstock. They spring away from that brutal cut-back, from the base, and in a few years refurbish, and sprout away from the original rootstock and again make something like a tidy plant (or, if you want it, something which will flower in a few years in a small garden). So also for plants of the same series, *pruniflorum* and so on. The new growth at this time (July 1962) is wonderful, and we can detect a lot of bud promise for 1963 flowering. And about good time, too, after two years of disaster.

Camellias. May I add that our resident population of roe deer have a positive passion for the leaves of our camellias—including *C. sinensis* (the tea plant in the East—India, Ceylon and so on). The leaves, I would think, would be as uninteresting to eat as corrugated iron or tin foil. Rather like the leaves of *R. insigne* which our roe deer leave well alone. The bucks clean their short spiky horns on a good many of our plants when they are in velvet in December/January. One plant the roe deer either haven't spotted or if they have they have left it alone is *C. cuspidata*, which is so near to the commercial plant in India and Ceylon, with its narrow leaves and small flowers. They also enjoyed a night going round

our only big flowering plant of *Magnolia campbellii*, and systematically nipping off all the flowering points round the perimeter, and growth points also, just about a fortnight before the flowering buds around the low spreading branches were due to open. Some keen colour photographers were disappointed in consequence because the next range of flowering points were some 10 feet higher up.

A. C. GIBSON

Rhododendron hirsutum album

APART from *Rhododendron lapponicum* from the arctic regions, which is very rarely seen in cultivation in this country, the only *Rhododendron* species to be found in Europe are *R. ferrugineum* and *R. hirsutum*. Both occur in great quantity in the central alpine districts at altitudes around 6,000–8,000 feet. To the casual observer they are very similar to each other with regard to flower, the difference being in the foliage. In the former the leaves are somewhat narrow and pointed, with an under-covering of rust colour, which gives the plant its name. In *R. hirsutum*, however, the leaves are shorter and wider, and of a paler shade of green without the rusty undercoat, and carry a ridge of fine hairs along the margins, to which the name applies. Both flower in the mountains towards the end of June and throughout July, and are similar in colour—carmine rose. The white-flowered forms of each are very rare in the wild.

R. ferrugineum is always credited to the granitic formations and *R. hirsutum* is only to be found where the rock formation is of limestone. This statement must be taken cautiously for I have found both types growing side by side in several districts where primary and secondary formations meet, notably in the Arlberg Pass in Austria, the Rolle Pass in the Dolomites and Arosa in Switzerland. But it is always *R. ferrugineum* which has trespassed onto the limestone and never *R. hirsutum* on to the granitic. It always makes me wonder why this should be, for both types are to be found growing in rich peaty compost which is definitely acid, and even though the underlying rock is of limestone, it is difficult to believe that it can influence the pH of the overlying humus soil. In fact, quite often it has been the discovery of *R. hirsutum* which has brought to one's notice that we have come upon a change of rock from granite to limestone.

Since *R. hirsutum* is only to be found where underlying limestone is present, one would expect that it would thrive in one's garden

Photo: J. E. Downward

FIG. 26—Rhododendron 'Chikor' (*R. chryseum* × *R. ludlowii*). A.M. May 21, 1962. A very interesting dwarf hybrid raised and exhibited by E. H. M. Cox and P. Cox, Glendoick, Perth (see p. 225)

Photo: H. Stewart Wacher

FIG. 27—*Rhododendron hirsutum album.* An unusual variant of the alpine rhododendron. Grown by Dr. H. Stewart Wacher at Canterbury (see p. 129)

where lime is present in the soil—in contrast to all other known *Rhododendron* species. But in my experience this is not so, for even small plants when collected in the mountains are much more difficult to establish at home than those of *R. ferrugineum*, and always refuse to tolerate soil which contains any suggestion of lime.

The plant shown (Fig. 27) is growing happily and flowering freely on a raised bank of lime-free loam and sandy leaf-mould, on a site with partial shade around midday. It increases in size very slowly and at the end of ten years is only some 15 inches in height and width. In nature it never appears to grow much higher, although it may increase in spread to a yard or so. I have also grown a double-flowered form of this species, in which the flowers were a pale rose as against the normal colour. It was curious but not particularly attractive.

H. STEWART WACHER

97, *St. Stephen's Road,*
Canterbury

LATE-FLOWERING DECIDUOUS AZALEAS

FOR some years we have been interested at the Knap Hill Nursery in breeding azaleas which will flower late enough to escape normal spring frosts. This year at Chelsea we showed 'Sahara', a good yellow which was much admired. This variety usually flowers with us in the second week of June. Late yellows are very scarce. Flowering at the same time, 'Tyrol' is an icy white and a very vigorous grower. 'Flarepath' is a useful red for early June, followed by a very fine blood-red under the number 5321. We have others which flower still later and are under numbers. The flowers are smaller and more like those of Ghent Azaleas.

A few years ago we acquired plants raised by the late E. H. Wilding, Esq., from a cross between *Rhododendron prunifolium* and *Rhododendron occidentale*. These flower normally in July and sometimes in August. They resemble Ghent Azaleas and the flowers are various shades of soft pink. Seedlings from crosses between these and large-flowered Knap Hill Azaleas are growing well and we trust the results will be interesting.

G. DONALD WATERER

Knap Hill

Late-flowering Evergreen Azaleas

It is not generally realized that among the evergreen azaleas there are at least as many as two dozen varieties which flower from late June to the second week in July.

I have listed below the varieties which I feel are the most outstanding, all of which are best grown in a sheltered, sunny position, but will do quite well even in exposed sites.

Rhododendron indicum is a low spreading species with large single salmon-red flowers opening in June, and this year continuing into July.

R. indicum f. balsaminaeflorum is a beautiful late June and early July flowering dwarf shrub with double salmon-red flowers, but as with most dwarf evergreen azaleas it is rather shy to flower unless given sufficient sun to ripen growth and to produce flower buds.

R. indicum 'Kokinshita', a very dwarf, small-leaved, spreading variety with salmon-orange flowers.

R. indicum 'Misomogiri' is a very dwarf spreading variety with semi-double rose-salmon flowers.

R. 'Eriocarpum' has large flowers a pleasing shade of pale purple.

R. 'Satsuki' of low compact habit, flowering in late June and early July, has bright deep pink flowers with a dark blotch.

R. 'Gumpo' (Satsuki Hybrid*), compact in habit with very large pure white flowers often as much as four to five inches across.

R. 'Gumpo Pink' (Satsuki Hybrid). This most lovely variety should be found a place in everyone's garden, having very large single salmon-pink flowers as late as the second week of July.

R. 'Hakatashiro' (Satsuki Hybrid) is one of the few late whites, a very compact variety with large ivory-white flowers.

R. 'Hexe' with its bright carmine-red rose flowers is rather tender and will only do well in a very sheltered position.

R. 'Optima' is also tender, flowering in late June, its single scarlet-red flowers having a darker blotch.

R. 'Alba Grandiflora' has large pure white flowers appearing in late June similar in habit to 'Gumpo'.

R. 'Izayoi', with its beautiful large pink-red spotted flowers, requires a fairly sheltered position, again compact in habit.

R. pulchrum 'Tebotan' is one of the most beautiful of the late

* Satsuki Hybrids. These hybrids have *indicum* as one parent and *simsii*, or the Belgian Hybrids, as the other.

flowering evergreen azaleas, having double pale rosy-purple, red spotted flowers making a shrub up to 6 ft. in height.

R. kaempferi. This delightful deciduous or semi-evergreen species has two outstandingly late flowering forms: 'Daimio' with orange-salmon flowers, and the variety 'Mikado' with pale apricot-salmon flowers; these both attain about 7 ft. and are elegant shrubs of comparatively lax habit if allowed to develop without pruning.

S. J. DOLDING

Messrs. Hillier and Sons
Winchester

THE RHODODENDRON AND CAMELLIA GROUP

A Change in Title: For a number of years rhododendron enthusiasts have had a small Group within the formation of the Royal Horticultural Society. This helped in catering for their particular interests and a member of the Society's staff was its secretary. During 1961 it was decided to widen the scope of the Group a little. To this end the Council of the Society decided that henceforth it will be known as the Rhododendron and Camellia Group and, in future, that it will come under the auspices of the Rhododendron and Camellia Committee, the Chairman of which is Sir Eric H. Savill, K.C.V.O., C.B.E., M.C., M.A., V.M.H. Its secretary will continue to be *Mr. R. E. Adams, R.H.S. Gardens, Wisley, Ripley, Surrey.*

The Group's Visit to East Anglia

May 31, 1962

R. E. Adams

In continuance of the idea that members would like the opportunity of seeing collections of rhododendrons outside the environs of London, an excursion was arranged to Norfolk. Although the journey was a considerable one, by careful planning it was possible to see two gardens at leisure.

The first of these was that of Mr. Thomas Upcher at Sheringham Hall, Sheringham. Upon meeting the party our host explained that the site might be deemed unsuitable for rhododendrons, being exposed to bitterly cold, north and east winds and having, moreover, an average rainfall of only 22 inches a year. Experience had proved any such supposition quite wrong and evidence was soon found of long established rhododendrons growing in the greatest profusion.

As the property had been in Mr. Upcher's family since 1812 many species from original collections in the wild were seen and, in particular, there were fine specimens of *R. galactinum* and *R. lutescens.* Also in full flower was Mr. Upcher's collection of *R. decorum,* the sweetly scented species, in its range of pink- and white-flowered forms. Subsequently many hybrids have been added

and a particular attraction was a magnificent plant of R. 'Queen Souriya' raised by Messrs. Slocock of Woking. Of the hybrids to appear in recent years members of the Group were interested to see that both R. Loderi and the progeny of *R. griersonianum* as a parent all did well. Of the latter plants perhaps no collection is complete without them and Mr. Upcher might be justly proud of the selection which included large specimens of 'Fabia', 'Fire Bird', 'May Day', 'Sarita Loder' and 'Sunrise'.

After a picnic lunch, the party drove to Blickling Hall some 12 miles away where they were received by Mr. N. de Bazille Corbin, M.A., F.L.A.S., A.R.I.C.S., the Area Agent for the National Trust, Mr. Graham S. Thomas, the Trust's Garden Adviser, and Mr. Arthur Willey, the Head Gardener. Originally the manor of Blickling had belonged to Harold, King of England, in 1045 and subsequently was given by William the Conqueror to his chaplain, Herfast. Prior to passing to the National Trust, Blickling was owned by Lord Lothian who died in Washington in 1940 while Ambassador to the United States.

The setting of the mansion and its grounds has been appropriately described as *satisfying the most romantic conception of an historic English house*. Of all country homes this must be one of the most lovely for it is beautifully proportioned and set in some 4,000 acres of farm and woodland. Details about it with a good map are set out in a well illustrated guide book available from the Agent, price 3*s*. (post free). From the house a main, broad walk leads to a temple. On either side of the avenue are mature trees under-planted with rhododendrons, azaleas, berrying shrubs and carpets of bluebells. From the main vista run many interesting rides planted in a pleasing, informal manner. All of these terminate on a unique and delightful, raised terrace walk which surrounds the garden while beyond, the garden is separated from far-stretching meadow land by a ha-ha.

Although not large the gardens have many attractive features and here is to be seen a fine example of the balance between house and garden nicely formed without one being dominated by the other. In his tour of the grounds Mr. Thomas explained this to the party together with many other points and from his wide knowledge of plants drew attention to a range of features which might otherwise have been passed unnoticed. Altogether the day was most enjoyable for the Group, due in no small measure to the kindnesses of our hosts, Mr. Upcher, Mr. Corbin and, of course, Mr. Thomas.

CAMELLIA COMPETITION
April 17–18, 1962

By REGINALD A. R. TRY

IT is indeed a pleasure to me to be invited once again to report the Camellia Competition. In the 1961 report I wrote: "The winter of 1960-1 in the Windsor area has been the mildest in my memory." How different this last winter, 1961–2. Indeed the opposite. The most severe frosts throughout January, my outside camellia shrubs surviving 10° F. and thereafter frost of varying severity almost every night until the show. These conditions were general throughout the country and the general topic of conversation amongst the competitors during the show was the controversial suggestion of a new section for unprotected outside grown camellia plants and flowers. Personally I believe such a new section could not be a success as it would be almost impossible to find the dividing line between protected and unprotected exhibits.

In spite of the severe weather my old shrubs, nearly 100 years old, growing in completely exposed and unprotected situations, bloomed throughout the winter and during April and May gave the finest show of flowers that I have seen during the past 30 years. Perfect blooms were gathered from these old shrubs where the blooms were protected by the density of the foliage. There are also plants against the wall of the house growing outside, yet protected by the warmth from the house. Again, sprays cut in bud from outside plants about 14 days before the competition and brought indoors to bloom have gained me many awards during the past ten years. An enthusiastic American friend has constructed some miniature "greenhouses" about 18 inches long complete with thermostatic electric heating which, fitted on an adjustable tripod and placed by a shrub, protects a spray and produces perfect blooms for competition which he claims are outdoor grown. But in the main the flowers exhibited for competition are very carefully brought to perfection well protected from frost, wind, rain, hail and birds in a greenhouse or similar shelter.

The staging of the Competition this year was a great improvement on past shows and the bright sunshine on the opening day illuminated the delicate colours of the flowers to perfection.

The Times reported the show as "certainly the best Camellia Competition we have seen". The *Daily Telegraph*: "The Aristocrats of the flower world take the stage."

Mr. O. A. S. Cutts, New Westbury, Garrards Road, S.W.16, again staged a magnificent variety of blooms, sprays and plants and topped the prize list with about 40 awards—12 firsts, 10 seconds, 15 thirds and some commended. Sir Giles Loder, Leonardslee, near Horsham, was second with about 32 awards—9 firsts, 8 seconds and 11 thirds. Again this year the sprays from Leonardslee were quite remarkable in their perfection. Last year, I suggested that Sir Giles had found a secret means of packing and transporting his exhibits, but he assured me that his only secret is taking infinite care and attention. I was gratified to secure third place with 25 awards, including nine first prizes. Other principal prize-winners were Messrs. John Waterer, Sons and Crisp, The Nurseries, Bagshot—20 awards; Mr. E. de Rothschild, Exbury, Southampton—16 awards; His Grace the Duke of Devonshire, M.C., Chatsworth, Bakewell, Derbyshire—15 awards. In all 21 exhibitors won awards. The first eight classes were devoted to single-flowered varieties of *Camellia japonica*. Class 1, 'Alba Simplex' or 'Devonia', attracted fifteen entries. R. Try, St. Leonards Hill, Windsor, 1st; The Duke of Devonshire, 2nd; Sir Giles Loder, 3rd. The majority of entries were of the highest standard. 'Alba Simplex', with its few smooth pure white petals and mass of golden stamens, is a most attractive camellia when seen fresh and untouched. Class 2, 'Jupiter' or 'Sylva', had a record 13 entries. Mr. O. Cutts, 1st, The Duke of Devonshire, 2nd, Waterer's, 3rd. All showed fine specimen blooms of 'Jupiter'. Class 3, 'Kimberley', brought only 5 entries—Sir Henry Price, Bt., Wakehurst Place, Ardingley, Sussex, was deservedly first with a fine fresh bloom of what is now accepted as the true form of 'Kimberley'. Mr. E. de Rothschild, 2nd, Waterer's, 3rd. First prize in Class 4 for any single-flowered variety not specified was awarded to R. Try for a new unnamed seedling, 2nd Major-Gen. E. Harrison, 3rd Mr. O. Cutts, both showing 'Donckelarii Fulgens'. In Class 5 for any single-flowered white variety not specified before, first and third prizes went to R. Try for new unnamed seedlings, with 2nd prize to Sir Henry Price, who entered a lovely fresh specimen of 'Swan'.

Class 6, with 13 entries of self-coloured varieties, made a very colourful show. Mr. G. Preston, Slougham Park, Handcross, Nr. Haywards Heath, Sussex, was away first with a lovely specimen of 'Apple Blossom', Mr. E. de Rothschild 2nd, and Mr. Riggall,

Titness Park, Sunningdale, 3rd. Each showed a fine bloom of 'Hatsu Zakura'. Paul Jones has captured the unusual formation of this attractive camellia in his lovely painting which he has titled 'Hatzu Sakura'.

All three prizewinners in Class 7 for any single-flowered self-coloured variety not specified before entered unnamed new seedlings—R. Try, 1st, O. Cutts, 2nd, and L. Riggall, 3rd. Each flower shown was of considerable interest and will no doubt appear in future competitions introducing new names to an already long list of named *Camellia japonica*. Fourteen entries in Class 8 created a fine display of single varieties. Mr. L. Riggall was outstanding first, showing 'Alba Simplex', 'Hatsu Zakura' and a new seedling; 2nd prize, The Crown Estate Commissioners, Windsor Forest, 'Jupiter', 'Furoan', 'Hatsu Zakura'; Mr. O. Cutts, 3rd.

In the section devoted to some double varieties *Camellia japonica*, Class 9, 'Adolphe Audusson', attracted a record 18 entries, proving the continued popularity of this old favourite of English gardens. Mr. F. D. B. Walker, The Mill House, Tewin, Welwyn, secured first prize, showing a bloom in excellent condition and nicely marked. The Misses E. & E. Godman, South Lodge, Horsham, came a very near second and Mr. O. Cutts, 3rd. The variations of this well-known variety were clearly seen in this fine display. Class 10, 'Donckelarii', attracted 13 entries, F. D. B. Walker again 1st, Mr. E. de Rothschild, 2nd, Sir Giles Loder, 3rd. Class 11, 'Gloire de Nantes', brought only 5 entries, Mr. O. Cutts taking first with an excellent specimen of good colour with slightly ruffled petals. This variety flowers early and so accounts for the low entry. First prizes in Classes 12, 'Latifolia', 13, 'Lady Clare', 14, 'Magnoliaeflora', went respectively to Mr. E. de Rothschild, Sir Giles Loder and Mr. F. Walker.

A splendid bloom of 'Guilio Nuccio', shown by Messrs. Waterer, was a worthy first in Class 15 for a semi-double variety not previously specified, 2nd, R. Try, 3rd, Mr. E. de Rothschild with 'Apollo'. Class 16, any semi-double white variety not specified before, provided another first for Sir Giles Loder with a particularly fine example of 'Gauntletti', with Mr. O. Cutts' lovely 'September Morn' a close second.

Class 17, for any semi-double self-coloured variety other than red or white and not specified before, gave Mr. E. de Rothschild a first showing 'Nagasaki'. Sir Giles Loder, 2nd, 'Reg. Ragland', Mr. O. Cutts, 3rd, 'Hana Fuki'. Messrs. Waterer's entry, 'Osoman', in Class 18, was a most interesting bloom and gained first prize,

Major-Gen. Harrison taking 2nd with 'Yours Truly', a sport of 'Lady Vansittart', a deep pink bloom bordered white and streaked pink. The 13 entries in Class 19 for 3 semi-double varieties provided a fine show and keen competition. Mr. E. de Rothschild, 1st prize, staged blooms of 'Adolphe Audusson', 'Lady Clare' and 'Mercury'. Sir Giles Loder, 2nd, with 'Lady Clare', 'Donckelarii', 'Gauntletti'. The Executors of the Late Lord Falmouth, Tregothnan, Truro, Cornwall, were placed 3rd with excellent specimens of 'Lady Clare', 'Adolphe Audusson' and 'Nagasaki'.

Sub-section C, calling for anemone and peony formed varieties of *Camellia japonica*, was well contested in the 8 classes.

In Class 20, 'Elegans', Messrs. Waterer were awarded first, showing a fine specimen of the old favourite. Mrs. M. E. Bainbridge, Sale, Cheshire, was a very close 2nd and R. Try, 3rd.

'Nobilissima', another early flowering white peony form old English favourite, attracted a good entry with R. Try, 1st, Viscount Falmouth, 2nd, and Mrs. Edwards, Penryn, Cornwall, 3rd. 'Preston Rose' attracted seven contestants—1st prize awarded to Mr. E. de Rothschild, 2nd, Viscount Falmouth and 3rd, Mrs. M. Edwards. First prizes in Classes 23, 24 and 25 were awarded respectively to Mr. O. Cutts, R. Try and Waterer's.

Class 26, calling for a variety not already specified, was won by Mr. E. de Rothschild, showing 'Kelvingtoniana', with R. Try 2nd. Particularly interesting was Mr. O. Cutts' entry 'Scented Treasure', placed 3rd. This is a medium-sized peony form rose-red to wine-red bloom with a mass of stamens and petaloids described as fragrant.

Four prizes were awarded in Class 27 for any three blooms in this section. Messrs. Waterer were undisputedly first, showing three fine blooms—'R. L. Wheeler', 'Drama Girl', 'Elegans'. The very deep salmon rose pink 'Drama Girl' certainly created a dramatic focal point to this quite spectacular display of anemone and peony formed camellias. Mr. E. de Rothschild secured 2nd place showing 'Kelvingtoniana', 'Preston Rose' and 'Hana-Tachibana', with Mr. O. Cutts taking 3rd and 4th. 'Sunset Glory', staged by Mr. O. Cutts, in his 3rd prize group, is a lovely delicate Coral Pink anemone form and is one of the really prize varieties recently introduced from the U.S.A. The sub-section for rose-formed and formal double varieties of *japonica* was divided into 13 classes. Miss C. A. M. Marsh, 26 Dulwich Wood Avenue, S.E.19, just missed first prize again this year for 'Contessa Lavinia Maggi', the exotic striped double pink favourite of generations of

camellia growers in England. Mr. O. Cutts was awarded first, Mr. R. Try, third.

Class 29, 'Rubescens', Major F. D. B. Walker, 1st, with a fine specimen of this rose-red veined crimson, large double to open this new class. Waterer, 2nd, Sir Ralph Clarke, Borde Hill, Sussex, 3rd. First prize in Class 30 for 'Mathotiana' was again won this year by The Duke of Devonshire. The fine shrub at Chatsworth consistently produces prize blooms. The Misses E. & E. Godman, 2nd, R. Try, 3rd.

Class 31, 'Mathotiana Rosea', gave a first to Mr. O. Cutts and in Class 32, 'Mathotiana Alba', Mrs. M. E. Bainbridge staged a perfect bloom to gain a well deserved first.

Class 33, 'Imbricata', and Class 34, 'Imbricata Alba', were awarded to R. Try and Miss C. A. M. Marsh respectively.

In the past four years Mrs. M. E. Bainbridge has been awarded first prize in the Class for 'Souvenir de Bahuaud Litou', the delightful blush pink sport of 'Mathotiana Alba'. Her champion shrub at Sale, Cheshire, never fails to produce an outstanding splendid bloom at the right time. The Misses Godman, 2nd, Duke of Devonshire, 3rd.

First prizes were awarded in Classes 36, 37, 38 and 39—Mr. O. Cutts, 'Coquetti'; The Duke of Devonshire, 'Alba Plena'; Mr. E. de Rothschild, 'Hana-Tachibana'; Mr. O. Cutts, 'Augusto. L. Gouveia Pinto'. These classes called for red–white self-coloured varieties and any variety not already specified in this section for rose formed or formal doubles.

Mr. E. de Rothschild's entry of 'Hana Tachibana', a very fine bloom indeed, and a certain prize-winner, appeared to be of peony form and suitable for entry in the preceding section where it was in fact staged in a group of three to take 2nd prize in Class 27.

The Misses Godman were again successful in the very competitive Class 40 for any three varieties with 'Alba Plena', 'Augusto Pinto', and an unnamed variety of fine form and colour. Mr. Cutts, 2nd, and R. Try, 3rd, showing three new unnamed seedlings.

Four prizes were awarded in the most spectacular Class 41 calling for any six varieties of *Camellia japonica*. First prize was awarded to an all-American half-dozen 'Guilio Nuccio', 'Masterpiece', 'Conrad Hilton', 'Laura Walker', 'Tomorrow', 'Mrs. D. W. Davis', staged by Mr. Cutts. The John Illjer Medal of the American Camellia Society was awarded for 'Mrs. D. W. Davis' 1955, 'Tomorrow' 1957 and 'Guilio Nuccio' 1959. The six lovely blooms gave a glowing display in the sunshine of the opening day. Messrs.

Waterer's entry, including American 'Dr. Tinsley' and 'Paulette Goddard', were a close 2nd. Mr. E. de Rothschild, 3rd, and Mr. Cutts's other six placed 4th.

The Special Class open to exhibitors who had not won a first prize since 1957 did not attract an entry. An appropriate note in the R.H.S. Journal could perhaps increase the list of Competitors in this show.

In the 11 Classes of the Miscellaneous Section The Duke of Devonshire and Mr. O. Cutts gained three firsts each, Sir Giles Loder two firsts, Mr. E. de Rothschild, Major-General Harrison and Messrs. Waterer one first each.

The Reticulatas did not quite reach the standard of last year but the blooms of lovely 'Donation' in Class 48 for that variety staged by the three prize-winners, The Duke of Devonshire, Mr. O. Cutts and The Countess of Rosse, were of excellent colour and form, undoubtedly giving the judges a problem to decide how to award those coveted small pieces of paper.

Sir Giles Loder's entry in Class 46 for any camellia species other than *cuspidata*, *japonica*, *reticulata* or *saluenensis* was a good bloom of the little known species *heterophylla*. So far as is known the only shrub of this species was found a few years ago growing in a Temple Garden in Southern China.

Class 51 for any camellia hybrid not specified showed a number of excellent blooms of 'Leonard Messel', the large semi-double rose-coloured *reticulata* × *williamsii* 'Mary Christian'.

Class 53, any six camellias, is the most difficult class of the Competition. To stage a winning six is indeed a triumph and the coveted first went to Mr. O. Cutts, showing 'Letitia Schrader', 'Adolphe Audusson', 'Donation', 'Contessa Lavinia Maggi', 'Mathotiana Rosea' and *williamsii*.

Sir Giles Loder exhibited a more varied collection—'Salutation', *reticulata* 'Crimson Robe', 'Donation', *reticulata* 'Capt. Rawes', 'Gauntletti', 'Pink Champagne'. The blooms were of the brightest quality and fully justified the 2nd prize. The Duke of Devonshire, awarded 3rd prize, included another superb bloom of 'Mathotiana' in his group.

The section for sprays was divided into 17 classes. Class 61—only 3 competitors entered a spray of *cuspidata*, first prize going to The Countess of Rosse and National Trust Nymans.

Mrs. G. Preston gained another first prize with 'Apple Blossom' (see Class 6) in Class 62 which called for any single flowered variety of *japonica*. This spray was as near perfect as possible. The foliage

gleamed and the blooms were fresh and bright to the end of the Show.

Sir Giles Loder was again this year supreme in this section taking five first prizes for the magnificent sprays from Leonardslee, but the standard was not quite that of last year, the reason undoubtedly being the continuous severe winter weather, as the sprays are taken from shrubs growing in the open.

Class 64, for any anemone or peony formed variety—R. Try, 1st, showing a new unnamed wine red seedling, Mrs. Marsh, 2nd, with a specimen spray from her fine old shrub of 'Bella Romana'. A very fine spray of 'Elegans' having excellent green foliage and well-formed flowers entered by Mrs. D. Buxton, Wallgrove House, High Beech, Loughton, Essex, went unrewarded. First prize in Class 65 for a spray of rose-formed or formal double went to Sir Giles Loder showing a fine specimen of 'Marguerite Gouillon' having many flowers and buds, good foliage and strong growth. The Misses Godman came 2nd and 3rd with 'Imbricata Alba' and 'Mathotiana'.

Class 66—a first for the Crown Estate Commissioners, Windsor Forest, staging 'Adolphe Audusson', 'Rogetsu', 'Hatsu Zakura', as their choice of any three varieties of *Camellia japonica*. No prize was awarded in Class 67, *Camellia reticulata* wild form.

A number of fine sprays of *Camellia reticulata* made a vivid splash of crimson in Class 68, first prize going to The Duke of Devonshire, 2nd and 3rd to Sir Giles Loder, showing 'Capt. Rawes' and 'Crimson Robe'. Sir Ralph Clarke is to be congratulated on his outstanding specimen of *saluenensis*, first in Class 69, and Sir Giles Loder, first in Classes 71 and 72, showing *williamsii* 'Mary Christian' and *williamsii* 'Donation', both sprays remaining very fresh to the close of show.

Sir George Jessel, Bt., Ladham House, Goudhurst, Kent, was awarded a third for an excellent specimen of 'Donation'.

Class 70 for a camellia species other than *cuspidata*, *japonica*, *reticulata* or *saluenensis*, did not attract one entry. Why? No prize was awarded in Class 73, calling for *Camellia* × *williamsii*, any variety other than a single variety or 'Donation', and a 2nd only to Messrs. Waterer's in Class 75 any other hybrid of *Camellia saluenensis*. A medium spray of 'Leonard Messel' was submitted by Messrs. Waterer's.

The Crown Estate Commissioners were awarded first prize in the Class 'Cornish Snow'.

The final 2 classes in this section for groups of 3 and 6 of any

camellias gave a fine display, although not quite up to the exceptionally high standard set last year. These are the most difficult classes to enter. The Duke of Devonshire was awarded first for his trio 'Alba Plena', 'Mathotiana', *reticulata*, and Sir Giles Loder repeated his success of last year for a group of six with first prize for 'Altheaeflora', 'Donckelarii', *reticulata* 'Capt. Rawes', 'Elegans', 'Donation', 'Alba Plena'.

Waterer's received an award H.C. for what I thought was quite an outstanding half-dozen showing 'Marguerite Gouillon,' 'Nagasaki', 'Monjishu', 'Swan', 'Arienteni', 'Bartley Pink'.

In Section III two natural eleven-year-old seedlings gained for me a first and second prize in Class 81 for a camellia plant in bloom. I cannot claim all the credit for the exceptionally fine bushy shape of the plants. They were planted out in a woodland site from pots at two years old and within a few days to my dismay were nibbled to the ground by rabbits. The following spring I noticed fine young shoots growing from the short stumps and I enclosed the site with wire. This experience taught me that severe pruning does not injure a camellia plant—to the contrary it induces a fine shapely plant. The plant awarded the first prize I have named 'Windsor Princess'. The bloom is large, semi-double, three rows of dainty delicate pink petals with centre of yellow stamens. Mr. Cutts' fine plant of 'Donckelarii' and Waterer's entry of 'Fanny Bolis' received 3rd and H.C.

Class 82 presents the most problems to stage. To find three plants in full bloom and to transport them to the Hall without damage and shaking off the blooms, and to take a first prize, is indeed a triumph. Mr. Cutts fully deserved his reward with his splendid plants, 'Souvenir de Bahuaud Litou', 'Rubescens Major' and 'Donckelarii'. Messrs. Waterer showing plants of 'Swan', 'Campbellii' and 'Latifolia' were a very close 2nd. Two groups of three plants I entered were awarded 3rd and H.C. A new class for small plants could be attractive.

The final Class 83 for a vase or bowl of any species, variety, hybrid or mixture attracted a record number of entries. First prize was awarded to K. F. Butler, Beechhurst, Dormansland, Lingfield, Surrey, for a very distinctive arrangement. Sir Ralph Clarke gained 2nd and Mrs. R. Try with a display of long stemmed blooms of 'Salvator Rosa'. Mrs. Bainbridge fully deserved a Highly Commended card for a vase of 'Elegans'. Mrs. M. E. McDonald who had won this Class for the last three consecutive years, with a vase of her favourite 'Margherita Coleoni', was unrewarded but

we all hope to see her arrangement at the next Camellia Show, 1963.

It is July 31st and the pattern of next year's show is already set. Buds are forming on many plants and although we have been hard put to keep up the watering of pot plants through the record dry spring and early summer, we are looking forward to a bigger and better show than ever in 1963.

CAMELLIA NOTES

Japanese Nomenclature of Camellias

Exbury, like so many other English gardens, owes a great deal to Japan for the wealth of flora they have sent us over the years. In many spring gardens there is a profusion of plants from that country and the Camellia in particular is being planted more and more extensively. Quite a few of these are known under their Japanese names such as Hatsu Sakura and Hime-Otome, but by and large we use anglicized versions, and sometimes even give them a slightly latin tag such as *reticulata* or *sieboldii*.

The Japanese nomenclature is, however, more descriptive for they like to spell out into the names the meaning. For example, in their gardens they have Flat garden, Tea garden or Pond garden, minor classifications of Pond garden can be Boating pond garden, Stroll pond garden or Viewing pond garden. One can get from these descriptions a picture of what type of garden to expect.

Thus it was that when a collection of camellias arrived at Exbury from Japan there was great excitement, but it was somewhat difficult to know exactly what had been sent because the labels on the plants were all in Japanese writing. I was curious as to the meaning and so consulted the Japanese Embassy in London. The translations were most interesting and I give below a few examples.

八朔椿

This translated from Japanese script to English is '*Hassaku Tsubaki*'. Tsubaki means Camellia and Hassaku is originally the abbreviation of August 1st. The founder of the Tokugawa Shogunate, Lord Ieyasu, moved into his newly built Edo Castle on that date, and proclaimed the first of this month a public holiday. Since then various things are given the name of 'Hassaku' and this is an example. However, as the first part of the name has the meaning of 'eight' (after the eighth month) and as the flower of this kind of Camellia will only open partially, this name was given to this particular type to indicate 80 per cent opening.

黒紅白丁字入筒咲

Kuro-beni-Shiro-Choji-iri-tsutsu-zaki. This is really a description of the flower. The first two characters are black and red and the combination of these two means dark red.

The next one is white and the following two mean a kind of nut, and in this case the combination of these three characters and the sixth character denotes that the flower has white dots on its petals.

The seventh character means 'tube' or 'barrel' and the last character means 'bloom' and therefore this kind has a barrel-shaped bloom.

司獅子

Tsukasa-ji shi. Translated literally, this comes out as 'Chief Master of Lion'. To the Japanese people something with the name of Shishi (or in this case 'ji shi' means a gorgeous and flaring thing and with Tsukasa (namely 'Chief') on top of it, it could mean a Master: so it was probably meant to be the best of the Japonicas. This has not yet flowered but the plant looks vigorous and healthy in its pot in the greenhouse.

秋の山

Aki no Yama—'Mountain in autumn', and yet again described as 'Maple covered hill'. For our English Camellia what can equal the large bushes of C. 'Apollo' whose red enhanced by the yellow cluster of stamens can give one the picture of red and yellow maples in autumn.

乙女椿

Most of the seeds came in a packet marked *Otome Tsubaki*—translated as 'virgin' and this denotes the purity of this plant—perhaps just the beautiful but common 'Alba Simplex'.

脊戸の月

Seto no Tsuki—the moon as seen from the back door. What sort of view did the raiser of this plant have from his back door—perhaps the snows of Fujiyama or just a lovely garden scene illuminated by the silvery light of the full moon. Anyway, it will be a mystery plant for this seed, alas, failed to germinate.

How much more interesting is this naming than the practice which is growing in the western world of calling the most beautiful flowers after the raiser's wife or yacht or some other possession. Do we give naming sufficient thought?

EDMUND DE ROTHSCHILD

Exbury

Notes on some Newer Camellias

THE following newer and older camellia varieties have flowered in our nurseries over the past two or three seasons and brief descriptions of them may be of interest to some readers of the Year Book.

'Leonard Messel'

A first-class British raised variety (*reticulata* × *williamsii* 'Mary Christian'). Unlike *reticulata* and the Yunnan varieties, 'Leonard Messel' makes a fine-shaped vigorous sturdy bush, not needing to be trained on a wall. The flowers are large semi-double rose-pink, 6 inches and more in diameter. A plant in our nurseries growing in the open flowered for six to eight weeks after passing through the recent rather severe winter. The fine variety has received an Award of Merit from the R.H.S.

'C. M. Wilson'

Raised in U.S.A., a sport of that fine old variety 'Elegans'. Habit same as 'Elegans' and when not in flower is indistinguishable from that variety. Colour is a beautiful soft pink with none of the white blotching which is usually found in 'Elegans'. Also awarded an A.M., it is a first-class garden plant.

'Princess Murat'

A fine plant also raised in U.S.A. and also reputed to be a sport from 'Elegans'. Worth growing for its brilliantly coloured new spring foliage. Might be described as the '*Pieris forrestii*' among camellias. The flowers, which are rose-formed double, are a rich rosy-red.

'Blood of China'

An old variety re-introduced by the U.S.A. under the above name. Formerly known as 'Victor Emmanuel I'. A shapely and vigorous growing plant. Flowers large semi-double or paeony-formed with loose petals a deep salmon-red.

'Governor Earl Warren'

Those who like a fine-shaped formal double-flower will find this variety excellent. The beautiful rose-pink flowers are displayed to full advantage by the good habit and fine foliage of this variety. One of the best formal double varieties to come from the U.S.A.

'Edwin Folk'

Another fine introduction from America. Habit vigorous and upright. Flowers large loose paeony-formed. Bright red. The shape of the flowers is unique among camellias. Much admired when exhibited by us.

'Morning Glow'

A beautifully shaped formal double-white variety which was also raised in U.S.A. A good shaped bush, upright and compact. The flowers stand upright like a chrysanthemum, and are not pendulous like many formal doubles. One of the best new white varieties.

'Coquetti'

An old Continental variety which has come to the fore in recent years. Growth slow and compact, but it is one of the best formal double deep-red varieties in commerce. This variety is known as 'Glen 40' in America. Received an A.M. when exhibited by us a few years ago.

'R. L. Wheeler'

One of the best camellias to come from the U.S.A., where it has won most of the major awards. Received an A.M. from the R.H.S. when exhibited by us two or three years ago. Another sport of 'Elegans' and is more vigorous than that variety. The large anemone formed flowers are of a rich rose-pink.

'Mrs. D. W. Davis'

Probably the largest flowered camellia yet raised. The large semi-double blush-pink flowers often measure 7 to 8 inches in diameter. Foliage also enormous, whilst the habit of the plant is open and lax. Best grown on a wall to overcome buffeting from high winds which would damage both foliage and flowers. Raised in U.S.A., it received an A.M. when exhibited in this country by Her Majesty the Queen (Pl. 6).

'Flowerwood'

A sport of 'Mathotiana' raised in U.S.A. Habit vigorous and spreading. Flowers very large formal double and fimbriated. Colour is carmine red and the flowers are nicely veined.

'Apollo'

Not a new variety but one of the most hardy and popular of camellias. The flowers, which are semi-double and rich scarlet, display a prominent boss of yellow stamens and are borne in great profusion—from February to the end of April this year. Similar to 'Adolphe Audusson' but with less variegation. Excellent in habit and with fine foliage. We consider this to be one of the best garden varieties.

C. H. J. WILLIAMS

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

DESCRIPTIONS AND HISTORY OF A FURTHER FIFTEEN CAMELLIA JAPONICA CULTIVARS

By CHARLES PUDDLE

In response to requests, the descriptions of several of the more modern cultivars are included this year. The remarks on their behaviour outdoors are of a preliminary nature and a full assessment cannot be made until they have been cultivated for many years. Comments and further information on any of the cultivars described will be appreciated.

'Angela Cocchi'

SYNONYMS 'Angelo Cochi', 'Angelo Cocchi', 'Angela Cochi'.

BLOOM

Form: Formal Double, Class VI.

Petals: Numerous, 4 cm. long, 3–3·5 cm. wide, outer petals reflexed, retuse, inner recurved forming a depressed centre.

Stamens: Occasionally one or two visible amongst centre petals.

Diameter: 8·5 cm.

Colour: White to flushed pink base striped Carmine (H.C.C. 21/1).

FOLIAGE Narrowly ovate, 9 cm. long, 4–4 cm. wide, coarsely serrate, long acuminate, undulate and twisted, dark glossy green.

HABIT Upright and compact when young, spreading when older, well clothed with foliage.

HISTORY A seedling of 'Tricolor' raised in Brescia, Italy, and first illustrated and described in *I Giardini* 1856. Also illustrated and described in *Flore des Serres et des Jardins de L'Europe* 1861.

REMARKS This fine cultivar deserves greater popularity for it is very hardy and flowers freely. The amount of carmine striping varies considerably on flowers of the same plant. Its foliage has the same characteristic twist as 'Tricolor'. The self carmine form is known as 'Angela Cocchi Rouge'.

'Berenice Boddy'

BLOOM

Form: Semi-double, Class II.

Petals: 10–12, rotund, 5 cm. long, 4 cm. wide, retuse, edges slightly undulate and reflexed.

Stamens: Central cluster, filaments petal colour, anthers golden yellow.
Diameter: 9 cm.
Colour: Neyron Rose (H.C.C. 623/1).

FOLIAGE Elliptic, 9 cm. long, 4·5 cm. wide, finely serrulate almost entire, acuminate, dark glossy green, thick and leathery.

HABIT Upright, open, well clothed.

HISTORY Originated by the Rancho del Descanso and developed at Sierra Madre, California. Introduced in 1946. Listed in *The Camellia*, 1947.

REMARKS A cultivar which can be recommended for all districts. Very hardy and has blooms which are remarkably frost resistant. The delicate colouring of the flowers is well displayed by the very dark green glossy foliage.

'Drama Girl' (P.C. 1961)

BLOOM
Form: Semi-double, Class II.
Petals: 15, orbicular, 5·5 cm. long, 5 cm. wide, retuse or rounded, firm texture.
Stamens: Irregular ring of stamens and odd petalodes, filaments united up to half their length, yellow anthers.
Diameter: up to 13 cm.
Colour: Carmine Rose (H.C.C. 621).

FOLIAGE Broadly elliptic, 10 cm. long, 6 cm. wide, serrate, acuminate, decurved, dark glossy green with prominent venation.

HABIT Loose, upright, vigorous.

HISTORY A seedling raised by Mr. E. W. Miller at Escondido, California, and introduced in 1950 by Nuccio Bros., Altadena. Listed in 1951 edition of *The Camellia.*

REMARKS Excellent under glass with huge blooms. Disappointing outdoors, blooms small, easily damaged and subject to bud dropping. A blotched white form is known as 'Drama Girl Variegated'.

'Frosty Morn'

BLOOM
Form: Anemone Form, Class III.
Petals: 12–15 guard petals, broadly obovate, 6 cm. long, 5 cm. wide, emarginate, undulate, central mass of petalodes occasionally making the flower almost paeony form.
Stamens: Arranged in clusters amongst petalodes, large golden yellow anthers, on white filament.
Diameter: 12 cm.
Colour: White.

FOLIAGE Elliptic, 10 cm. long, 5 cm. wide, crenate, acuminate, undulate, dull green, thick.

HABIT Upright, open and vigorous.

HISTORY A seedling of 'Gauntletti' raised by Mr. Harvey Short, Ramona, California. Introduced in 1951 and listed in *The Camellia.* Described on p. 288 of 1951 edition of *The American Camellia Yearbook.*

REMARKS Although the petals are of poor texture this white stands the weather very well and with its good habit and foliage appears to be one of the best of its type in the open.

'Guilio Nuccio' (A.M. 1962)

BLOOM

Form: Semi-double, Class II.

Petals: 12 guard petals, obovate, 5 cm. long, 4·5 cm. wide, retuse, or rounded, undulate, 3–4 upright central petals and smaller petalodes.

Stamens: In central ring, broken by petalodes, filaments joined for a third of their length. Golden yellow anthers.

Diameter: 12 cm.

Colour: Carmine (H.C.C. 21/1).

FOLIAGE Broadly elliptic, 12 cm. long, 6 cm. wide, serrate, long acuminate, dark glossy green, occasionally showing fish-tail shape.

HABIT Upright, vigorous.

HISTORY A seedling raised and introduced by Nuccio Bros., Altadena, California. First flowered in 1953. Illustrated and described in July 1956 edition of *The Camellia Review.*

REMARKS An outstanding cultivar and one of the best of recent introductions for our climate. Good foliage, habit and flowers are all combined in this camellia which to date has shown few faults. 'Guilio Nuccio Variegated' is the name given to the carmine and white sport.

'Maria Morren'

SYNONYMS 'Ella Drayton', 'Climax', 'Festiva' (erroneously).

BLOOM

Form: Formal Double, Class VI.

Petals: Numerous, obovate, largest 4 cm. long, 3 cm. wide, mostly rounded but some retuse, outer guards strongly reflexed, central small, raised to give a somewhat tiered effect.

Stamens: None visible.

Diameter: 9 cm.

Colour: Spinel Pink (H.C.C. 625) deeper venation and often white streaks towards base of central petals.

FOLIAGE Elliptic, 8 cm. long, 4 cm. wide, serrulate, long acuminate, decurved, dull green, leathery.

HABIT Upright and loosely branched.

HISTORY First described in *Les Annales de la Société Botanique de Gand*

1847. Also illustrated and described by Verschaffelt in 1848. It was raised by H. Haquin of Leige.

REMARKS A distinctive double red. The tiered effect of the blooms is not always present but they are well displayed by the good foliage and habit. At its best under glass but fairly reliable outside although in cold seasons it is apt to loose its buds. Must not be confused with 'Festiva' which is a quite distinct cultivar.

'Marjorie Magnificent'

BLOOM

Form: Semi-double, Class II, to Anemone Form, Class III.

Petals: 12–15 guard petals, broadly obovate, 4·5 cm. long, 4 cm. wide, continuously notched, firm texture, numerous small central petalodes.

Stamens: In clusters amongst petalodes, white filaments, golden anthers.

Diameter: 8 cm.

Colour: Rose Pink (H.C.C. 427).

FOLIAGE Elliptic, 8–9 cm. long, 4–4·5 cm. wide, serrate, narrowly acuminate, dark glossy green, thick and leathery.

HABIT Upright, compact.

HISTORY Raised from seed imported from Japan by Mr. G. H. Wilkinson, Pensacola, Florida, and first flowered in 1944. Listed in 1949 edition of *The Camellia* and illustrated in colour opposite p. 209 of the 1955 edition of *Camellias* in *America.*

REMARKS Can be recommended for all districts, free-flowering, very hardy, buds not frost tender, and in all but the very worst seasons is reliable under our conditions.

'Masterpiece' (P.C. 1961)

BLOOM

Form: Formal Double, Class VI.

Petals: Numerous, rotund, 5 cm. long, 5 cm. wide, retuse or rounded, imbricated, smaller towards centre.

Stamens: None visible.

Diameter: up to 12 cm.

Colour: White.

FOLIAGE Broadly elliptic, 12 cm. long, 6–7 cm. wide, serrulate, long acuminate, decurved, dark glossy green, thick and leathery.

HABIT Upright, loose habit, very vigorous.

HISTORY A seedling of 'Gauntletti' raised by Mr. Harvey Short of Ramona, California. Introduced in 1950 and recorded in the March 1950 *Southern California Camellia Society Bulletin* and listed in *The Camellia* 1951.

REMARKS A very good double white under glass but outdoors the

blooms are easily damaged. It is hardier than 'Gauntletti' which it somewhat resembles and has better foliage. It is a very strong growing camellia.

'Mrs. D. W. Davis' (A.M. 1960) (Pl. 6)

BLOOM

Form: Semi-double, Class II.

Petals: About 15, orbicular, 6 cm. long, 5·5 cm. wide, entire or slightly notched, undulate, firm texture, tendency to form campanulate flower in the open. Often some small petalodes.

Stamens: Prominent central ring of golden anthers with white filaments joined for almost half their length.

Diameter: Up to 12 cm. when open.

Colour: Rose Pink (H.C.C. 523).

FOLIAGE Elliptic, 12 cm. long, 7 cm. wide, serrate, acuminate, thick, very dark green.

HABIT Upright, compact, well clothed.

HISTORY A seedling of 'Elizabeth Boardman' raised by Mr. D. W. Davis, Seffner, Florida, which first flowered in 1951. Illustrated in colour opposite p. 210 of 1954 edition of *The American Camellia Yearbook*. Described p. 339 of 1955 edition.

REMARKS Contrary to expectations this large semi-double pink is fairly frost resistant, for the petals are of very firm texture. It has good foliage and habit and is worthy of an extensive trial in this country. The flowers show a tendency to fade but under glass they are perfect and immediately attract attention. A paeony form mutation has been named 'Mrs. D. W. Davis Peony'.

'Pearl Maxwell' (P.C. 1960)

BLOOM

Form: Formal Double, Class VI.

Petals: Numerous, broadly obovate, largest 5 cm. long, 4·5 cm. wide, rounded or slightly notched, delicate texture, innermost folded and progressively smaller to give rosette effect.

Stamens: None visible.

Diameter: 10 cm.

Colour: Dawn Pink (H.C.C. 523/2).

FOLIAGE Ovate, 9 cm. long, 6–6·5 cm. wide, shallowly serrate, short acuminate, dull green, leathery.

HABIT Upright, dense foliage, vigorous.

HISTORY A seedling of the cultivar incorrectly known in the United States as 'Enrico Bettoni' raised by Mrs. C. O. Maxwell of Cairo, Georgia, and first listed in the *American Camellia Society Newsletter*, October 1949. Illustrated opposite p. 256 in Revised Edition (1955) of *Camellias in America*.

REMARKS A first-rate double pink camellia at its best under glass. It appears to be one of the hardiest of the newer Japonicas and makes a fine bush outdoors but under our climatic conditions the blooms are easily damaged. It has produced an equally fine white sport known as 'Blanche Maxwell'.

'Pink Champagne' (A.M. 1960)

BLOOM

Form: Paeony Form, Class IV.

Petals: 15 outer petals, orbicular, 5 cm. long, 5–5·5 cm. wide, retuse, up to 15 large central petals and smaller petalodes form the centre of the flower giving it a depth of 6–8 cm.

Stamens: A few present among the central petalodes.

Diameter: 12 cm.

Colour: Dawn Pink (H.C.C. 523).

FOLIAGE Elliptic, 10 cm. long, 5–6 cm. wide, serrate, long acuminate, leathery, dark glossy green.

HABIT Open, spreading, vigorous.

HISTORY A seedling of unknown parentage which originated in the garden of Mr. J. P. Illges, Columbus, Georgia, and first flowered in 1951. Listed in April 1952 *American Camellia Quarterly.*

REMARKS Appears to be very promising outdoors although slight bud dropping has occurred which might decrease its value in the colder regions. One of the best of the newer American camellias and excellent under glass. It is one that should be grown by every enthusiast. A pink and white sport is known as 'Pink Champagne Variegated'.

'R. L. Wheeler' (A.M. 1959)

BLOOM

Form: Anemone Form Class III (occasionally Semi-double, Class II).

Petals: 10–14 guard petals, orbicular, 6 cm. long, 5·5 cm. wide, retuse, firm texture, undulate margins, short petalodes numerous and tightly packed in rings often leaving a hollow centre to the flower.

Stamens: Mixed with petalodes, pink filaments united for at least quarter of their length, golden yellow anthers. A full ring of stamens sometimes present.

Diameter: Up to 12 cm.

Colour: Carmine (H.C.C. 621).

FOLIAGE Elliptic to broadly-elliptic, 10 cm. long, 6–7 cm. wide, serrate, narrowly acuminate, dark glossy green, thin.

HABIT Vigorous, upright, well clothed.

HISTORY A seedling of unknown parentage which originated in the garden of Dr. W. G. Lee but which first flowered in 1948 at the Central Georgia Nurseries, Macon, Georgia. First listed in the *American Camellia Society Newsletter*, October 1949.

REMARKS This very fine camellia has petals of firm texture which considering the size of the blooms stand up to our conditions remarkably well. It is certainly suitable for outdoor culture in favourable areas and although the blooms may be smaller it is worth a trial in other districts. In the cool greenhouse it is outstanding. 'R. L. Wheeler Variegated' is the name given to a sport with carmine and white flowers.

'Stella Polare'

SYNONYMS 'Etoile Polaire', 'Stella Polaris'.

BLOOM

Form: Formal Double, Class VI.

Petals: Numerous, obovate or rotund, 4·5 cm. long, 3–4 cm. wide, rounded or slightly notched, firm texture. Centre of flower often depressed.

Stamens: Usually none visible.

Diameter: 7–8 cm.

Colour: Claret Rose (H.C.C. 021) with central white or rosy-white band the full length of each petal.

FOLIAGE Elliptic, 8 cm. long, 3·5–4 cm. wide, serrulate, acuminate, deep glossy green upper surface.

HABIT Spreading, bushy.

HISTORY First listed in 1866 in *L'Illustration Horticole*, this cultivar was introduced from Italy by Messrs. E. G. Henderson. Subsequently listed by most leading English nurserymen until the end of the nineteenth century.

REMARKS Many free flowering specimens can still be found in the older English gardens. The size of bloom is small compared with many modern cultivars, yet in its colour range it has proved one of the most reliable for our climate. In some cases it is confused with 'Rubens' (see 1962 Year Book)

'Tomorrow' (A.M. 1960)

BLOOM

Form: Paeony-form, Class IV (occasionally semi-double Class II).

Petals: 12–15 outer petals, rotund, 6 cm. long, 5·5 cm. wide, undulate, rounded, central mass of incomplete petals and petalodes.

Stamens: Many scattered amongst petalodes, deep golden anthers and white filaments.

Diameter: 11–12 cm.

Colour: Neyron Rose (H.C.C. 623).

FOLIAGE Elliptic, 8 cm. long, 4 cm. wide, serrulate, acuminate, deep glossy dark green.

HABIT Loose, upright, vigorous.

HISTORY A seedling of unknown parentage, raised and introduced by

Tick Tock Camellia Nursery, Thomasville, Georgia. It first bloomed in 1950 and was introduced in 1953. Recorded in April 1953, *American Camellia Quarterly*.

REMARKS An excellent camellia for culture under glass. Limited experience outdoors has shown that the large blooms are not easily damaged and it is well worth growing in the milder counties. It is a rapid growing plant of good habit. It has produced the following mutations: 'Tomorrow Supreme', almost white; 'Tomorrow Variegated', rose and white; and 'Tomorrow's Dawn', which is pink with white edges to the petals and white petalodes.

'Yoibijin'

BLOOM

Form: Single, Class I.

Petals: 7–8, obovate, 4 cm. long, 3·5 cm. wide, rounded, firm texture, forming campanulate flower.

Stamens: Prominent central cylindrical cluster, filaments joined for almost half their length, golden anthers.

Diameter: 8 cm.

Colour: Rose Opal (H.C.C. 022/2).

FOLIAGE Elliptic, 8 cm. long, 4 cm. wide, serrulate but entire for lower half of blade, acuminate, dull dark green.

HABIT Spreading pendulous habit, slow growing.

HISTORY A Japanese cultivar listed by K. Wada, Hakoneya Nurseries, Yokohama, Japan, in 1937.

REMARKS A distinctive camellia with small foliage and attractive pendulous habit. The flowers are freely produced and are fairly frost resistant. Best planted on a bank so that the flowers can be viewed from below.

A REVIEW OF RHODODENDRONS IN THEIR SERIES

VII. The Triflorum Series

By H. H. DAVIDIAN, B.Sc.

THIS large Series is one of the more difficult groups of Rhododendrons. It is distributed in western Yunnan, north-eastern Upper Burma, western Szechuan, and south-eastern Tibet, with extensions into Kweichow, Assam, Bhutan, Sikkim, Nepal, Afghanistan and Japan.

The Series as it stands in *The Species of Rhododendron* is divided into six Subseries, for which no diagnoses or Keys have been provided. Four of these—Augustinii Subseries, Hanceanum Subseries, Triflorum Subseries and Yunnanense Subseries—can be distinguished by fairly well-defined diagnostic criteria. The remaining two Subseries, Oreotrephes Subseries and Polylepis Subseries, share common characteristics with the Yunnanense Subseries from which they are inseparable by any morphological character. Leaf shape is implied to be the main character of importance in separating the Oreotrephes Subseries from the Yunnanense Subseries. By this feature, which is very variable, it is impossible to distinguish between these two Subseries; in the former Subseries the leaves are oblong, elliptic, oval, ovate or almost orbicular, in the latter they are lanceolate, oblong-lanceolate, oblong-obovate, elliptic, oval or ovate. As to the Polylepis Subseries, the chief distinguishing feature of this Subseries would appear to be flower colour. This characteristic varies considerably, and as a diagnostic criterion cannot be relied upon. In this review, the Oreotrephes Subseries and Polylepis Subseries will now be merged into the Yunnanense Subseries.

A remarkable feature of this Series is the zygomorphic corolla, being widely funnel-shaped, usually with long-exserted stamens and style. The inflorescence is terminal, but in the majority of species there is a strong development of axillary inflorescence, the flowers arising in the axils of the uppermost few leaves. In some species, another characteristic of importance is the deciduous foliage.

The Series is not a completely homogeneous unit. As in other Series, some of the species do not conform to the characters of the group in which they have been placed. One of these is *R. bracteatum* Rehd. et Wils., with bell-shaped corolla and aromatic leaves with very large scales. In these respects and other features, it closely resembles *R. heliolepis* and its allies in the Heliolepis Series. In this review, it will now be transferred to that Series.

Another aberrant species is *R. caesium* Hutch. In height and habit of growth, in the shape and size of the leaves, in the shape, size and colour of the flowers, and particularly in the Vesicular type of scales on the under surfaces of the leaves, it shows a marked similarity to the species of the Trichocladum Series in which it will now be placed. It may be remarked that the Vesicular type of scale is one of the main diagnostic features of the latter Series. In the Triflorum Series, the scale is of the usual Entire type.

Further remarks on other aberrant species in this Series will be made in the notes following the descriptions of the species.

In addition to the above anomalies, three other plants which have been given specific status are in fact natural hybrids. These are *R. lochmium* Balf. f., *R. pallescens* Hutch., and *R. trichophorum* Balf. f. It may be of interest to give a brief note on each of these plants.

R. lochmium was described from a cultivated plant raised from Wilson's seed No. 1220. Wilson's herbarium specimen under this number from western Szechuan is *R. villosum* (now *R. trichanthum*). *R. lochmium* differs from the latter in that the branchlets, leaves and flowers are bristleless; the flowers are white tinged pink. In general appearance it closely resembles *R. davidsonianum*. Sir Isaac Bailey Balfour, who described this plant, points out that ". . . our plant may be a natural hybrid". No herbarium specimen has been collected in western China under the name *R. lochmium*. The available evidence suggests that the plant is a natural hybrid, possibly of *R. villosum* (*R. trichanthum*) and *R. davidsonianum*.

R. pallescens was founded on a cultivated plant which "appeared as a stray" raised from Rock's seed No. 59574, in part. In cultivation, plants under this number and the corresponding herbarium specimen under Rock No. 11257 are *R. eritimum*, a species in the Irroratum Series. In the original diagnosis it is associated with *R. davidsonianum*, *R. yunnanense*, *R. siderophyllum*, and *R. aechmophyllum*. It is also stated: "In fact, *R. pallescens* may quite well be a natural hybrid between *R. davidsonianum* and *R. racemosum* . . ." There is no doubt that the plant is a natural hybrid of the two last mentioned species.

R. trichophorum was described from a cultivated plant raised from Wilson's seed No. 4242. The original diagnosis states: "*R. trichophorum* has appeared in several individuals along with true *R. villosum* Hemsl. et Wils., in a sowing of Wilson's No. 4242. That number is cited in Plantae Wilsonianae for *R. villosum*. . . ." The plant is a natural hybrid of *R. villosum* (*R. trichanthum*) and possibly *R. augustinii*, being intermediate in general appearance between these two species.

As to the chromosome count, it has been shown that the Series contains diploids, tetraploids and hexaploids, with a greater number of polyploids than diploids.

Extreme variability is a natural feature in this Series. As in other Series there has been a strong tendency towards an undue multiplication of specific names. When the more adequate material now available and plants in cultivation are examined in detail, it becomes apparent that the distinctions upon which certain species were founded are inconstant and unreliable, and, moreover, the species are linked by numerous intermediate forms. In *The Species of Rhododendron* several species have already been relegated to synonymy, but it is necessary to make some further "reductions".

Some comments on the main characteristics of the species will be of interest.

HABIT. The species are usually medium or large shrubs or sometimes trees, up to 10·60 m. high, except *R. keiskei* which is often 60 cm. high, and *R. afghanicum* a creeping or low-growing shrub.

BRANCHLETS. Usually the branchlets are not bristly; in *R. trichanthum* they are densely or moderately bristly, in *R. amesiae* bristly or not bristly, in *R. vilmorinianum* and in *R. yunnanense* sometimes bristly.

LEAVES. The leaves are evergreen or semi-deciduous in *R. yunnanense*; semi-deciduous in *R. hirsuticostatum* and sometimes in *R. oreotrephes*. Completely deciduous leaves are a diagnostic feature of *R. hormophorum*. In all other species the leaves are evergreen. Leaf shape, although variable, is an aid in distinguishing between species or groups of species. The oblong-lanceolate, lanceolate or oblanceolate leaves, 3–4 times as long as broad, is a criterion of importance in separating *R. polylepis* from the closely allied species, *R. concinnum*, *R. amesiae*, and *R. concinnoides*. The long acutely acuminate leaf apex is a characteristic feature of *R. lutescens* and *R. bodinieri*. With regard to the presence of bristles, the lamina of the leaf is bristly in *R. trichanthum*, variable in *R. yunnanense*, *R. hormophorum*, *R. keiskei*, *R. vilmorinianum* and

R. zaleucum. The hairy midrib on the under surfaces of the leaves is the diagnostic feature in distinguishing the Augustinii Subseries from all the other Subseries. The distribution of the scales on the under surfaces of the leaves is a useful character in separating species or groups of species. In the majority of species, the petioles are not bristly.

INFLORESCENCE. The inflorescence is terminal, or terminal and axillary in the uppermost few leaves. It is shortly racemose or umbellate with 1–7 flowers, but in the Hanceanum Subseries it is markedly racemose with a rachis of 0·8–5 cm. in length, and 5–15 flowers.

PEDICELS. The pedicels vary from 0·3 cm. to 3 cm. in length. They are bristly in *R. trichanthum*; bristly or not bristly in *R. amesiae*. In all other species the pedicels are not bristly.

CALYX. Usually the calyx is a mere rim or 5-lobed, minute, 0·5–1 mm. long; in the Hanceanum Subseries it is distinctly 5-lobed, 2–4 mm. (rarely 1 mm.) long. The calyx lobes are not bristly outside except in *R. trichanthum* where they are moderately or rather densely bristly; in *R. amesiae* they are bristly or not bristly.

COROLLA. The corolla is usually widely funnel-shaped, zygomorphic in the Augustinii, Triflorum, and Yunnanense Subseries, campanulate or funnel-campanulate in the Hanceanum Subseries. The flower colour varies considerably in the Series. It is yellow in the Triflorum Subseries and often in the Hanceanum Subseries, variable in the Augustinii Subseries from white, pink, lavender to deep violet, and in the Yunnanense Subseries from white, pink to dark purple. The degree of scaliness is an aid in separating groups of species. The presence of bristles on the corolla tube is a diagnostic feature of *R. trichanthum*.

STAMENS. The number of stamens is 10; they are usually long-exserted. The filaments are usually pubescent towards the base.

OVARY. The ovary is oblong, conoid or sometimes oval, densely scaly. It is bristly in *R. trichanthum*; bristly at the apex or not bristly in *R. vilmorinianum*. In all other species the ovary is not bristly. The style is long, slender, variable in the Hanceanum Subseries.

CAPSULE. The capsule is usually oblong, ovoid or oblong-oval.

* * *

TRIFLORUM SERIES

GENERAL CHARACTERS: Shrubs or sometimes trees, 15 cm.–10·60 m. high, branchlets usually scaly, glabrous or pubescent or sometimes

bristly. Leaves evergreen, or sometimes semi-deciduous or completely deciduous, lanceolate, oblong-lanceolate, oblong, elliptic, obovate or almost orbicular; lamina 1·6–12·8 cm. long, 0·6–5·5 cm. broad, upper surface scaly or not scaly, glabrous, or sometimes pubescent or bristly; under surface scaly, the scales overlapping to 8 times their own diameter apart, glabrous, or sometimes pubescent or bristly, midrib glabrous or hairy ⅓ to its entire length; petiole 0·2–2 cm. long, scaly or rarely not scaly, puberulous or glabrous, bristly or not bristly. Inflorescence terminal, or terminal and axillary in the uppermost few leaves, shortly or distinctly racemose, 1–15-flowered; pedicels 0·3–3 cm. long, glabrous or puberulous or sometimes bristly. Calyx 0·5–1 mm. (sometimes up to 5 mm.) long. Corolla usually widely funnel-shaped, zygomorphic, 0·8–4·8 cm. long, white, pink, yellow, purple, lavender-blue to intense violet. Stamens 10. Ovary oblong, conoid or sometimes oval, 2–6 mm. long. Style long, slender (in *R. afghanicum* sharply bent or deflexed). Capsule usually oblong, ovoid or oblong-oval.

KEY TO THE SUBSERIES

A. Inflorescence distinctly racemose, 5–15-flowered, rachis 0·8–5 cm. long; calyx 5-lobed, 1–4 mm. long . . . . . Hanceanum subseries

A. Inflorescence shortly racemose or umbellate, 3–6- (rarely up to 10-) flowered, rachis 1–5 mm. (rarely up to 1 cm.) long; calyx a mere rim or 5-lobed, often 0·5–1 mm. long.

B. Flowers pale or deep yellow or greenish-yellow . . . Triflorum subseries

B. Flowers white, pink, purple, lavender to intense violet.

C. Midrib on the under surfaces of the leaves hairy . . Augustinii subseries

C. Midrib on the under surfaces of the leaves not hairy . Yunnanense subseries

AUGUSTINII SUBSERIES

GENERAL CHARACTERS: Shrubs, 1–7 m. high; branchlets scaly, pubescent or bristly or glabrous. Leaves lanceolate, oblong-lanceolate, oblong, elliptic or obovate; lamina 3·1–12 cm. long, 1·1–4·5 cm. broad, upper surface scaly or not scaly, glabrous or pubescent or bristly; under-surface scaly, the scales ½–5 times their own diameter apart, glabrous or pubescent or bristly, *midrib hairy ⅓ to its entire length.* Inflorescence usually terminal, shortly racemose, 2–6-flowered; pedicels 0·4–2·7 cm. long, glabrous or puberulous or bristly. Calyx usually 0·5–1 mm. long, glabrous or puberulous or bristly outside. Corolla widely funnel-shaped, zygomorphic, 2–4·3 cm. long, white tinged pink, pale lavender-rose to intense

violet or dark purple. Stamens 10. Ovary oblong or conoid, 3–4 mm. long; style long, slender. Capsule oblong, 0·8–2 cm. long.

KEY TO THE SPECIES

A. Branchlets, petioles, upper surfaces of the leaves, pedicels, calyx, corolla tube and ovary pubescent or glabrous, not bristly (petiole rarely bristly-floccose in *R. augustinii*).
  B. Leaves evergreen.
    C. Corolla 2·2–4·3 cm. long; leaves usually lanceolate or oblong-lanceolate, apex acuminate or acute, lamina 3·3–12 cm. long; flowers pink, white, lilac-purple, pale or deep lavender-rose to intense violet; stamens hairy towards the base . . . . . *augustinii*
    C. Corolla 2 cm. long; leaves obovate or elliptic, apex obtuse, lamina 3·1–3·8 cm. long; flowers rose; stamens glabrous *bivelatum*
  B. Leaves semi-deciduous (flowers whitish-rose) . . . *hirsutico-statum*

A. Branchlets, petioles, upper surfaces of the leaves bristly and often pubescent, pedicels, calyx, corolla tube and ovary bristly . . *trichanthum*

Description of Species (Amp. et Em.)

R. augustinii Hemsl. in Journ. Linn. Soc., XXVI, 19 (1889); Flora and Sylva, III, 162 (1905); Rev. Horte, 19 (1909); Gard. Chron., ser. 3, LII, 4 (1912); ibid. XCVII, 217 (1935) pl. supplement; Bot. Mag., CXXXIX, t. 8497 (1913); Millais, Rhododendrons, 124 (1917); ibid., ser. 2, 88 (1924); Hutch. in The Sp. of Rhod., 764 (1930); Rehder, Manual Cult. Trees and Shrubs, 705 (1947); Bean, Trees and Shrubs, III, 26 (1951); R.H.S. Dict. Gard., IV, 1766 (1951); Rhod. Handb., 45 (1956); *R. augustinii* Hemsl. var. *yui* Fang in Contri. Biol. Lab. Soc. China, XII, 78 (1939); *R. augustinii* Hemsl. var. *azureus* Chen. ex Laum. in Rev. Horte, XXXI, 46, t. (1948).

HABIT: shrub, 1–7 m. high; branchlets scaly, rather densely pubescent or sometimes glabrous.

LEAVES: lanceolate, oblong-lanceolate, oblong or elliptic-obovate, lamina 3·3–12 cm. long, 1·1–4·5 cm. broad, apex acuminate, acute or obtuse, mucronate, obtuse or narrowed to the base; upper surface scaly or not scaly, pubescent or glabrous, midrib pubescent or sometimes minutely puberulous or glabrous; under surface scaly, the scales unequal, medium-sized and large, brown, ½–5 times their own diameter apart, glabrous or sometimes pubescent, *midrib hairy ⅓ to its entire length*; petiole 0·5–1·4 cm. long, scaly, moderately or rather densely pubescent and often with long hairs, or sometimes glabrous.

INFLORESCENCE: terminal, shortly racemose or umbellate, 2–6-flowered; rachis 2–8 mm. long, scaly or not scaly, pubescent or glabrous; pedicels 0·6–2·7 cm. long, scaly, puberulous or glabrous.

CALYX: 5-lobed or a mere rim, minute, 0·5–1 mm. (rarely 2–4 mm.) long, lobes rounded or pointed, outside sparsely to densely scaly, glabrous or pubescent, margin ciliate or rarely eciliate.

COROLLA: widely funnel-shaped, zygomorphic, 2–4·3 cm. long, 5-lobed, rose-pink, white tinged pink, pale lavender-rose to intense violet, with yellowish-green or olive-green or brownish spots, outside moderately or sparsely scaly, glabrous or pubescent on the tube.

STAMENS: 10, unequal, long-exserted, 1·3–4·5 cm. long; filaments villous towards the base.

OVARY: oblong or conoid, 3–4 mm. long, 5-celled, densely scaly, pubescent or glabrous; style slender, not scaly, puberulous at the base or glabrous.

CAPSULE: oblong, 0·8–2 cm. long, 3–5 mm. broad, moderately or rather densely scaly, calyx persistent.

HABITAT:

Hupeh. HENRY 5414. WILSON 302, 608, 3457.
Szechuan. FARGES 497. SCHNEIDER 1300. WANG 21036, 21775, 22977. WILSON 1207.
Tibet. FORREST 18906.
Yunnan. FORREST 25482. MCLAREN D 281. ROCK 9160, 9163.
Yunnan/Tibet Border. ROCK 23010, 23039.

This well-known species was described by HEMSLEY in 1889 from specimens collected by AUGUSTINE HENRY in Hupeh. Subsequent collections by various collectors show that the plant is distributed from Hupeh, east and south-east Tibet, through Szechuan to north-west Yunnan. It is found at the margins of woods, in thickets, amongst scrub, in spruce and pine forest, and on rocky slopes at elevations of 4,300–13,000 feet.

R. augustinii is a very variable plant in view of its wide geographical distribution, altitudinal range, and diverse habitats in which it is found. It grows from 3 to 25 feet high; the leaves are lanceolate, oblong-lanceolate or oblong-elliptic, 3·3–12 cm. long, 1·1–4·5 cm. broad, the upper surfaces being glabrous or pubescent; the corolla is 2–4·3 cm. long; the flower colour is pink, rose, purple, lilac-purple, deep lavender-purple, intense violet or white, with yellowish-green or olive-green or brownish spots.

A number of closely similar plants apparently differing in minor

details have been given distinctive names. In 1898, *R. augustinii* Hemsl. forma *grandifolia* Franch. (Soulié No. 1012) and forma *subglabra* Franch. (Soulié Nos. 1009, 1010) were described from specimens collected at Tsekou, north-west Yunnan. In 1912 *R. chasmanthum* Diels was founded on Forrest's No. 513, a plant which had been collected in the Mekong-Salwin divide to the north-west of Tsekou, and which had been named *R. augustinii* forma *grandifolia*. It is said to be "recognized by the very open corolla, the scaly calyx and corolla tube, and the narrow leaves".

On comparing the specimens of *R. chasmanthum* and *R. augustinii*, it will be seen that in height of growth, in leaf shape and size, in flower size and colour, the two species are very similar to each other. The recorded differences in the degree of scaliness of the calyx and corolla tube are unreliable and negligible. The relationships between these species have been discussed in the *Botanical Magazine*, t. 79 (1949). The only distinctions between them are that in *R. chasmanthum* the scales on the under surfaces of the leaves are 3–5 times their own diameter apart; the branchlets and petioles are glabrous or minutely puberulous; the pedicels and ovary are usually glabrous. In *R. augustinii* the scales are $\frac{1}{2}$–3 times their own diameter apart; the branchlets are often hairy; the petioles are moderately or rather densely hairy; the pedicels are minutely puberulous, rarely glabrous, and the ovary is more or less pubescent. But when a large number of plants in cultivation are examined, it is found that these distinctions are not constant. The species merge into each other, and it is impossible to distinguish between them.

Although the two species cannot be separated by any of the above characters, there would appear to be a distinction in the shape of the corolla. In some forms of *R. chasmanthum* (the name implies "with gaping flowers") the corolla lobes are markedly reflexed giving the compact inflorescence of 5–6 flowers a characteristic appearance. These extremes are so distinct in cultivation that they merit a varietal name, although intermediates link these with *R. augustinii*.

In 1922 another species *R. chasmanthoides* Balf. f. et Forrest was described, with Soulié's No. 1012 as type, and as already mentioned above, it had been described by Franchet in 1898 as *R. augustinii* Hemsl. forma *grandifolia* Franch. It is identical with *R. chasmanthum* in every respect, and in the *Botanical Magazine*, t. 79 (1949), it was placed in synonymy under the latter name.

Furthermore, in 1939 the name *R. augustinii* Hemsl. var. *yui*

Fang was given to plants collected in Szechuan in 1933. The variety is said to differ "in having the calyx and petiole fringed with long hairs". These characteristics, however, are shared by *R. augustinii*. In this species the petioles are usually moderately or rather densely hairy with long or short hairs, or sometimes puberulous or glabrous, while the calyx is fringed with long or short hairs, rarely glabrous. The stated diagnostic criteria are inconstant, and are insufficient distinctions on which to justify separate varietal status.

R. augustinii was first introduced into cultivation in 1901. It varies in hardiness, and to obtain the best results a sheltered position should be provided. Along the east coast and in gardens inland, some forms are susceptible to bark-splitting and injury by late spring frosts. The plant received the Award of Merit when exhibited by Miss Alice Godman in April 1926. It was given the Award of Garden Merit in May 1924.

R. augustinii Hemsl. var. **chasmanthum** (Diels) comb. nov. *R. chasmanthum* Diels in Notes R.B.G. Edin., V, 212 (1912); Journ. Roy. Hort. Soc., XLII, 46 (1916); ibid. LVI, xxx (1931); ibid. LVIII, xxxix (1933); Millais, Rhododendrons, 143 (1917); Hutch. in The Sp. of Rhod., 767 (1930); Bean, Trees and Shrubs, III, 46 (1951); R.H.S. Dict. Gard., IV, 1769 (1951); Rhod. Year Book, 29, 105 (1939); Rhod. Handb., 56 (1956); *R. augustinii*, Hemsl. f. *grandifolia* Franch. in Journ. de Bot., XII, 261 (1898). *R. augustinii* Hemsl. f. *subglabra* Franch. in Journ. de Bot., XII, 261 (1898). *R. chasmanthoides* Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 246 (1922); Millais, Rhododendrons, ser. 2, 108 (1924); Hutch. in The Sp. of Rhod., 766 (1930); Rhod. Year Book, 105 (1939); Rhod. Handb., 19 (1947); R.H.S. Dict. Gard., IV, 1769 (1951).

HABITAT:

Tibet. FORREST 513—holotype, 639, 15004, 16360, 16692, 18903, 20064. SOULIÉ 1009 and 1010—isotypes of *R. augustinii* f. *subglabra*, 1012—isotype of *R. chasmanthoides* and *R. augustinii f. grandifolia*.

Yunnan. FOREST 17342, 17449, 17456, 17476, 17479, 19698, 19814, 19825, 20063, 20973. MONBEIG 167. ROCK 8774, 8887, 10937. YÜ 7989.

Yunnan/Tibet Border. ROCK 23477.

The variety differs from the species in that the corolla lobes are markedly reflexed, and the inflorescence is compact, 5–6-flowered.

R. augustinii Hemsl. var. **rubrum** Davidian, var. nov.
A type floribus rubris, habitu compacto differt.

HABITAT:

Yunnan. FORREST 25914—holotype.

This plant was found by Forrest in October 1924 at Shui-lu Shan, north-west Yunnan, growing in thickets and amongst scrub in side valleys on rocky slopes at an elevation of 13,000 feet.

It has long been in cultivation under Forrest No. 25914—type number. It differs from the species in the red flowers and in the compact habit. Moreover, in cultivation it flowers in March or early April, three or four weeks before *R. augustinii* has opened its flowers.

R. bivelatum Balf. f. in Notes R.B.G. Edin., X, 85 (1917); Millais, Rhododendrons, ser. 2, 92 (1924); Hutch. in The Sp. of Rhod., 765 (1930); Rhod. Handb., 47 (1956).

HABIT: shrub; branchlets scaly, puberulous.

LEAVES: obovate or elliptic, lamina 3·1–3·8 cm. long, 1·5–2 cm. broad, apex broadly obtuse or rounded, mucronate, base obtuse; upper surface not scaly, midrib pubescent ½ of its length; under surface scaly, the scales medium-sized, brown, ½ to their own diameter apart, pubescent, *midrib pubescent*; petiole 3–5 mm. long, scaly, puberulous, sometimes slightly bristly.

INFLORESCENCE: terminal, shortly racemose, 2–3-flowered; rachis 2 mm. long, scaly, pubescent; pedicels 0·7–1 cm. long, scaly, puberulous.

CALYX: 5-lobed, minute, 1–1·5 mm. long, lobes rounded or triangular, outside scaly, glabrous or moderately or slightly puberulous, margin moderately or slightly ciliate.

COROLLA: funnel-shaped, 2 cm. long, 5-lobed, rose, scaly outside, glabrous.

STAMENS: 10, unequal, exserted, 1·6–2·1 cm. long; filaments glabrous.

OVARY: conoid, 3 mm. long, 5-celled, densely scaly, with a tuft of hairs at the apex; style slender, not scaly, glabrous.

CAPSULE: not seen.

HABITAT:

Yunnan. MAIRE 137—holotype.

This plant is known from a single collection made in 1913 by E. E. Maire in north-east Yunnan at an elevation of 2,800 feet.

The original diagnosis associates it with *R. siderophyllum*, in the Yunnanense Subseries. From this species it differs markedly in distinctive features. In *The Species of Rhododendron*, it has been placed in the Augustinii Subseries on account of the hairy midrib on the under surfaces of the leaves. Apart from this feature, *R. bivelatum* does not conform to the members of this Subseries.

It shows considerable resemblance to *R. tatsienense* in the Yunnanense Subseries, particularly in the shape and size of the leaves, and in the shape, size and colour of the flowers. In both plants the leaf epidermis is said to be two-layered. Although its closest relationship would appear to be with *R. tatsienense*, it may be allowed to remain in its present Subseries until more adequate material is available. There is no record of the species in culture.

R. hirsuticostatum Hand.-Mazz. in Wien Akad. Anzeig., No. 27 (1920); Hutch. in The Sp. of Rhod., 768 (1930); Rhod. Handb., 81 (1956).

HABIT: shrub, 1·50 m. high; branchlets scaly, puberulous or glabrous.

LEAVES: *semi-deciduous*, lanceolate or oblong-lanceolate, lamina 3·3–5·5 cm. long, 1·2–2 cm. broad, apex acuminate or acute, mucronate, base rounded or obtuse; upper surface not scaly or slightly scaly, midrib puberulous; under surface scaly, the scales large, brown, 2–4 times their own diameter apart, *midrib hairy ½ of its length*; petiole 4–5 mm. long, scaly, puberulous.

INFLORESCENCE: terminal and axillary in the uppermost 1 or 2 leaves, shortly racemose, 2–4-flowered; rachis 3–4 mm. long, scaly or not scaly, puberulous or glabrous; pedicels 0·4–1·2 cm. long, scaly, glabrous or puberulous.

CALYX: almost a mere rim, minute, 0·5–1 mm. long, outside densely scaly, margin scaly, eciliate.

COROLLA: widely funnel-shaped, zygomorphic, 2·3–2·5 cm. long, 5-lobed, whitish-rose, sparsely or moderately scaly outside, glabrous.

STAMENS: 10, unequal, 1·9–2·2 cm. long, exserted; filaments densely pubescent towards the base.

OVARY: oblong, 3 mm. long, 5-celled, densely scaly; style slender, not scaly, pubescent at the base.

CAPSULE: not seen.

HABITAT:

Szechuan. Handel-Mazzetti 1353—isotype.

R. hirsuticostatum is represented by a single gathering, Handel-Mazzetti No. 1353. It was found in Ningyüen region, south-west Szechuan, at elevations of 7,000–8,500 feet.

It is very similar to *R. yunnanense* in general characters and in minor details, differing only in the hairy midrib on the under surfaces of the leaves. In the original diagnosis it is associated with *R. stereophyllum*. From this plant it is readily distinguished by its general appearance. In *The Species of Rhododendron*, Hutchinson points out aptly that it is "very closely allied to *R. yunnanense*, but with a hairy midrib . . ." Whether this one distinction is of sufficient importance on which to regard *R. hirsuticostatum* as specifically distinct, is a matter of some doubt. Nevertheless, the name may be allowed to stand until more is known of this plant. There is no record of its occurrence in cultivation.

R. trichanthum Rehder in Journ. Arn. Arb., XXVI, 480 (1945). *R. villosum* Hemsl. et Wils. in Kew Bull. Misc. Inform., 119 (1910); Rehd. et Wils. in Pl. Wils., 524 (1913); Millais, Rhododendrons, 258 (1917); Hutch. in The Sp. of Rhod., 770 (1930); Bot. Mag., CXLVII, t. 8880 (1938); Rehder, Manual Cult. Trees and Shrubs, 705 (1937); Bean, Trees and Shrubs, III, 147 (1951); R.H.S. Dict. Gard., IV, 1785 (1951); Rhod. Handb., 136 (1956).

HABIT: shrub, 1–6 m. high, branchlets scaly, densely or moderately *bristly* and often pubescent.

LEAVES: oblong-lanceolate or lanceolate or ovate-lanceolate, lamina 4–11 cm. long, 1·5–3·7 cm. broad, apex acuminate or acutely acuminate, mucronate, base obtuse, rounded or cordulate; upper surface scaly, *bristly* and often pubescent, midrib pubescent; under surface scaly, the scales unequal, large or medium-sized, brown, 1–4 times their own diameter apart, bristly or pubescent, *midrib rather densely bristly or pubescent ½ to its entire length*; petiole 0·4–1 cm. long, scaly, moderately or rather densely *bristly* and often pubescent.

INFLORESCENCE: terminal, shortly racemose, 3–5-flowered; rachis 3–5 mm. long, scaly or not scaly, bristly or rarely not bristly; pedicels 1–1·5 cm. long, scaly, moderately or rather densely *bristly*.

CALYX: 5-lobed, minute, 0·5–1 mm. long, lobes rounded, outside moderately or slightly scaly, moderately or rather densely *bristly*, margin bristly.

COROLLA: widely funnel-shaped, zygomorphic, 2·8–3·8 cm. long, 5-lobed, light to dark purple or rose, outside scaly, *bristly* on the tube.

STAMENS: 10, unequal, long-exserted, 2–3·3 cm. long; filaments densely villous towards the base.

OVARY: oblong, 4 mm. long, 5-celled, densely scaly, moderately or densely *bristly*; style slender, not scaly, glabrous or rarely puberulous at the base.

CAPSULE: oblong, 1·4–1·9 cm. long, 4–5 mm. broad, densely scaly, hairy or rarely glabrous, calyx persistent.

HABITAT:

Szechuan. WILSON 1220, 1342, 3445. MCLAREN AD 94, AF 332, Z 13. ROCK 17599. CHU 2755.

R. trichanthum was discovered by WILSON in west Szechuan during his expedition of 1907–9. Subsequently it was found by McLaren's collectors and by ROCK in various localities in south-west Szechuan. It is said to be a very common plant, with flowers very variable in colour. It grows in thickets and in woodlands at elevations of 5,000–11,000 feet.

The species is unique in the Series in that the branchlets, leaves, pedicels, calyx, corolla tube and ovary are bristly. It is allied to *R. augustinii* which it resembles in leaf shape and size, but differs markedly in the bristly characters.

R. trichanthum was introduced into cultivation by WILSON in 1904. It is a late-flowerer, the flowers appearing in May or June. Although hardy, it should be given some shade and protection from wind.

This plant has been known under the name *R. villosum* Hemsl. et Wils., described in 1910. In the Journal of the Arnold Arboretum, XXVI, pp. 480, 481 (1945), Rehder has changed this name to *R. trichanthum*, pointing out that at an earlier date (1807) A. W. Roth had applied the name *R. villosum* to another plant, and that the same name is now a synonym of *Clerodendron fragrans* Jacquin. The change in nomenclature is regrettable, but is strictly in accordance with the International Rules of Nomenclature.

HANCEANUM SUBSERIES

GENERAL CHARACTERS: Shrubs, 15 cm.–1·50 m. high; branchlets scaly. Leaves lanceolate, oblong-lanceolate, ovate-lanceolate, obovate or ovate, lamina 3–12·8 cm. long, 1–5·5 cm. broad, upper surface scaly or not scaly; under surface scaly, the scales nearly

contiguous to 5 times their own diameter apart. Inflorescence terminal, *racemose*, 5–15-*flowered*, rachis 0·8–5 *cm. long*; pedicels 0·6–1·4 cm. long. Calyx 1–4 mm. long. Corolla campanulate or funnel-campanulate, 0·8–2·1 cm. long, *whitish-green* or *creamy-white* or *yellow*. Stamens 10. Ovary oblong or oval, 2–3 mm. long; style sharply bent or deflexed, or long, slender, straight. Capsule ovoid or oblong-oval, 6–8 mm. long.

KEY TO THE SPECIES

A. Style short, bent, shorter than the corolla; corolla 0·8–1·3 cm. long, campanulate; scales on the under surfaces of the leaves contiguous to their own diameter apart; leaves lanceolate or oblong-lanceolate; rachis 2–5 cm long . . . . . *afghanicum*

A. Style long, straight, longer than the corolla; corolla 1·3–2·1 cm. long, funnel-campanulate; scales on the under surfaces of the leaves 1½–5 times their own diameter apart; leaves ovate, obovate or ovate-lanceolate; rachis 0·8–2 cm. long . . . . . *hanceanum*

Description of Species (Amp. et Em).

R. afghanicum Aitch. et Hemsl. in Journ. Linn. Soc., XVIII, 75 (1881); ibid. XIX, 175, pl. XXI (1882); Hutch. in The Sp. of Rhod., 771 (1930); Bot. Mag., t. 8907 (1938); Bean, Trees and Shrubs, III, 51 (1951); Rhod. Handb., 39 (1956).

HABIT: a creeping or low-growing, poisonous shrub; branchlets scaly.

LEAVES: lanceolate or oblong-lanceolate, lamina 3–8 cm. long, 1–2 cm. broad, apex obtuse or acute, mucronate, obtuse or narrowed to the base, *slightly decurrent on the petiole*; upper surface sparsely scaly or not scaly; under surface scaly, the scales unequal, large and medium-sized, yellowish or pale brown, *nearly contiguous to their own diameter apart*; petiole 0·6–1·2 cm. long, scaly.

INFLORESCENCE: terminal, *distinctly racemose*, 8–15-*flowered*; rachis 2–5 cm. long, scaly, rather densely puberulous; pedicels 0·6–1·1 cm. long, moderately or densely scaly.

CALYX: 5-lobed, 1–4 mm. long, lobes rounded or oval, outside and margin moderately or densely scaly.

COROLLA: campanulate, 0·8–1·3 cm. long, 5-lobed, whitish-green, not scaly or slightly scaly outside.

STAMENS: 10, unequal, long-exserted, 1–1·5 cm. long; filaments villous towards the base.

OVARY: oblong or oval, 2–3 mm. long, 5-celled, densely scaly; *style sharply bent or deflexed*, not scaly.

CAPSULE: ovoid or oblong-oval, 6–8 mm. long, 4–5 mm. broad, scaly, calyx persistent.

HABITAT:

Afghanistan. AITCHISON 184.

This species is an outlier from the known area of distribution of its Series. It is a native of Afghanistan where it was discovered by Dr. J. E. T. AITCHISON in 1880. It is found abundantly, creeping on rocks at Shendtoi and Kaiwas, at elevations of 7,000–9,000 feet.

R. afghanicum has for long been confused with *R. collettianum* Aitch. et Hemsl., also from Afghanistan. In Millais, *Rhododendrons*, it has been regarded as a synonym of the latter name.

In the original diagnosis it is associated with *R. lepidotum*. With this species it has very little in common. In some respects, it resembles *R. hanceanum* from west Szechuan, but is readily distinguished by the shape and usually by the size of the corolla, by the bent style, by the shape of the leaves, by the distribution of the scales on the under surfaces of the leaves, and usually by the longer rachis.

R. afghanicum is an aberrant species in the Triflorum Series in its habit of growth, in its inflorescence with a long rachis up to 5 cm. long and up to 15 flowers, in the campanulate corolla, and in the bent style. It may be remarked that the species does not fit well into any known Series. It seems preferable to retain the species in its present Series than making a new Series for a single species.

R. hanceanum Hemsl. in Journ. Linn. Soc., XXVI, 24 (1889); Kew Bull., 115 (1910); Bot. Mag., CXLII, t. 8669 (1916); Millais, Rhododendrons, 184 (1917); Hutch. in The Sp. of Rhod., 772 (1930); Icones Plant. Omeiensium, I, No. 1, pl. 34 (1942); Rehder, Manual Cult. Trees and Shrubs, 705 (1947); Bean, Trees and Shrubs, III, 77 (1951); R.H.S. Dict. Gard., IV, 1774 (1951); Rhod. Handb., 79 (1956).

HABIT: shrub, 90 cm.–1·50 m. high; branchlets scaly.

LEAVES: ovate-lanceolate, ovate or obovate, lamina *rigid*, 3·5–12·8 cm. long, 1·6–5·5 cm. broad, apex acutely acuminate or acute, mucronate, base rounded or obtuse; upper surface moderately or slightly scaly; under surface scaly, the scales unequal, large and medium-sized, brown, 1½–5 *times their own diameter apart*; petiole 0·4–1·4 cm. long, scaly.

INFLORESCENCE: terminal, racemose, 5–11-flowered; rachis 0·8–2 cm. long, scaly, glabrous; pedicels 0·8–1·4 cm. long, scaly, glabrous or sometimes minutely puberulous.

CALYX: 5-lobed, 2–4 mm. long, lobes oblong or oval, outside scaly or not scaly, margin ciliate or eciliate.

COROLLA: funnel-campanulate, 1·3–2·1 cm. long, 5-lobed, creamy-white or pale yellow, scaly or not scaly outside.

STAMENS: 10, unequal, long-exserted, 1·4–2·6 cm. long; filaments pilose towards the base.

OVARY: ovoid, 2–3 mm. long, 5-celled, densely scaly; style slender, straight, not scaly, glabrous or rarely puberulous at the base.

CAPSULE: ovoid or oblong-oval, 6–8 mm. long, 4–5 mm. broad, densely scaly, calyx persistent.

HABITAT:

Szechuan. WILSON 882, 882A. HU 8863, 8866, 8868, 8870, 8872. WANG 23226.

The distribution of this species is restricted to south-west Szechuan. It was first found by the Rev. ERNEST FABER about 1886 on Mt. Omei. The plant grows on cliffs, in rocky places, and in thickets, at elevations of 5,000–13,000 feet. It is a small shrub, 2–4 or sometimes 5 feet high, but it is said to reach a height of 10 feet.

It is easily recognized by its compact habit of growth, by the rigid, ovate-lanceolate, ovate or obovate leaves, and by the distinctly racemose inflorescence. The leaf epidermis has been stated to consist of two cell layers.

WILSON introduced this plant into cultivation in 1909. An attractive feature is the young growths, bronzy-brown in colour. The plant is hardy in a sheltered position.

R. hanceanum 'Nanum'

This plant has long been known as *R. hanceanum* var. *nanum*. It appeared in cultivation, possibly raised from *R. hanceanum* seed collected by WILSON in south-west Szechuan. The plant will now be regarded as a cultivar.

It is a small compact shrub up to about 50 cm. high. The inflorescence is racemose with 5–10 yellow flowers.

TRIFLORUM SUBSERIES

GENERAL CHARACTERS: Shrubs or rarely trees, 60 cm.–6 m. high; branchlets scaly. Leaves lanceolate, oblong-lanceolate, ovate-

lanceolate or elliptic; lamina 2–9·3 cm. long, 0·8–3·7 cm. broad, upper surface scaly or not scaly; under surface glaucous or not glaucous, scaly, the scales ½–5 times their own diameter apart, rarely contiguous. Inflorescence terminal, or terminal and axillary in the uppermost few leaves, shortly racemose, 1–7-flowered; pedicels 0·4–2 cm. long. Calyx 0·5–1 mm. (rarely up to 4 mm.) long. Corolla widely funnel-shaped or sometimes flat saucer-shaped, zygomorphic, rarely tubular or tubular-campanulate, 1·3–3·4 cm. long, *pale or deep yellow* or *greenish-yellow*. Stamens 10. Ovary oblong or conoid, 2–5 mm. long; style long, slender. Capsule oblong or sometimes oblong-oval, 0·6–1·8 cm. long.

KEY TO THE SPECIES

A. Inflorescence axillary in the uppermost few leaves and terminal; corolla pubescent outside; leaves markedly acutely acuminate at the apex . . . . . *lutescens*

A. Inflorescence terminal (rarely axillary and terminal); corolla not pubescent outside (except sometimes in *R. triflorum* and *R. bauhiniiflorum*); leaves obtuse, acute or acuminate at the apex.

B. Corolla not scaly outside; leaves broadly obtuse at the apex, lamina up to 3 cm. long, and up to 1·5 cm. broad . . *wongii*

B. Corolla usually moderately or densely scaly outside; leaves acuminate or acute or obtuse at the apex, lamina up to 8 cm. long, and up to 3·2 cm. broad.

C. Scales on the under surfaces of the leaves contiguous to their own diameter apart.

D. Corolla flat, saucer-shaped, usually 3·8–4·3 cm. across *bauhinii-florum*

D. Corolla widely funnel-shaped, usually 1·5–3·6 cm. across.

E. Under surfaces of the leaves usually glaucous; petiole not bristly; large shrub up to 5·80 m. high; (Himalayan and Chinese species).

F. Scales on the under surfaces of the leaves minute, more or less equal in size, similar in colour, dark or pale brown; midrib on the upper surfaces of the leaves not hairy; bark of the stem and branchlets smooth, flaky . . . *triflorum*

F. Scales on the under surfaces of the leaves large, of different sizes, dissimilar in colour, yellowish-brown and blackish, or yellowish-brown and dark brown; midrib on the upper surfaces of the leaves hairy; bark of the stem and branchlets rough . . . . . *ambiguum*

E. Under surfaces of the leaves usually pale green, not glaucous; petiole bristly or not bristly; small shrub usually up to 60 cm. high, rarely more; (Japanese species) . . . . . *keiskei* (part)

C. Scales on the under surfaces of the leaves widely spaced, 2–5 times their own diameter apart.

D. Corolla widely funnel-shaped; under surfaces of the leaves usually pale green; midrib on the upper surfaces of the leaves puberulous; petiole bristly or not bristly; inflorescence 3–6-flowered; small shrub usually up to 60 cm. high, rarely more; (Japanese species) . . *keiskei* (part)

D. Corolla tubular-campanulate or tubular; under surfaces of the leaves pale glaucous green; midrib on the upper surfaces of the leaves not puberulous; petiole not bristly; inflorescence 2–3-flowered; large shrub 90 cm.-3 m. high; (Assam and Tibet species).
E. Calyx a mere rim or 5-lobed, 0·5 mm. long; corolla tubular-campanulate . . . . . *kasoense*
E. Calyx distinctly 5-lobed, 4 mm. long; corolla broadly tubular or tubular-campanulate . . . . *flavantherum*

Description of Species (Amp. et Em.)

R. ambiguum Hemsl. in Bot. Mag., CXXXVII, t. 8400 (1911); Schneider, Ill. Handb. Laubholzk, II, 1043, fig. 615 a–c (1912); Rehd. et Wils. in Pl. Wils., 518 (1913); Millais, Rhododendrons, 112 (1917); The Sp. of Rhod., 784 (1930); Rehder, Manual Cult. Trees and Shrubs, 705 (1947); Bean, Trees and Shrubs, III, 21 (1951); R.H.S. Dict. Gard., IV, 1766 (1951); Rhod. Handb., 41 (1956); *R. chengshienianum* Fang in Icones Plantarum Omeiensium, I, No. 1 (1942); Rhod. Handb., 57 (1956).

HABIT: shrub, 60 cm.–5·80 m. high; branchlets densely or moderately scaly.

LEAVES: lanceolate, oblong-lanceolate, ovate-lanceolate or elliptic, lamina 2·3–8 cm. long, 1·2–3·2 cm. broad, apex obtuse, acuminate or acute, mucronate, base rounded or obtuse; upper surface scaly, midrib hairy or rarely glabrous; under surface glaucous, scaly, the scales unequal, large and medium-sized, yellowish-brown, dark brown or blackish, contiguous to their own diameter apart; petiole 0·5–1·3 cm. long, scaly.

INFLORESCENCE: terminal, or rarely terminal and axillary in the uppermost leaf, shortly racemose, 2–7-flowered; rachis 2–4 mm. long, scaly, puberulous or glabrous; pedicels 0·6–2 cm. long, moderately or rarely densely scaly.

CALYX: 5-lobed, minute, 0·5–1 mm. long, lobes triangular or rounded, outside scaly, margin puberulous or bristly or glabrous.

COROLLA: widely funnel-shaped, zygomorphic, 2–3·4 cm. long, 5-lobed, yellow or greenish-yellow with green spots on the posterior side, scaly outside.

STAMENS: 10, unequal, long-exserted, 1·4–3·4 cm. long; filaments villous towards the base.

OVARY: conoid or oblong, 2–5 mm. long, 5-celled, densely scaly; style slender, not scaly.

CAPSULE: oblong or oblong-oval, 0·6–1·3 cm. long, 3–5 mm. broad, densely scaly, calyx persistent.

HABITAT:

Szechuan. WILSON 1324c, 1330. FANG 2975, 2982. HU 8203, 8280, 8287, 8290, 8292, 8298, 8301, 8307, 8324. MCLAREN AD 171, AH 290, Z 10. PRATT 848. ROCK 17428. SUN 2229—isotype of *R. chengshienianum.* Wang 23449.

R. ambiguum has been recorded as being very abundant in west Szechuan, where it was discovered by WILSON in 1908. It is found in rocky places, in thickets and woodlands, at 7,500–14,700 feet.

In 1942, *R. chengshienianum* Fang was described from a specimen (No. 229) collected by C. L. SUN on Mt. Omei, west Szechuan. The original diagnosis associates it with *R. wongii* and *R. triflorum.* The isotype and the ample material now available show that *R. chengshienianum* is identical with *R. ambiguum* in every respect.

R. ambiguum varies considerably in height of growth and in size of the leaves. It is related to *R. triflorum* and *R. bauhiniiflorum,* but is distinguished from both by the large, unequal, differently coloured scales on the under surfaces of the leaves and by the hairy midrib on the upper surfaces; it also differs from the latter species in the shape of the flowers. From *R. concinnum* in the Yunnanense Subseries, to which it shows a resemblance, it is readily distinguished by the yellow flowers.

It was introduced into cultivation by WILSON. The plant is quite hardy, and is easy to grow.

R. bauhiniiflorum Watt ex Hutch. in The Sp. of Rhod., 785 (1930); Rhod. Handb., 47 (1956).

HABIT: shrub or small tree, 1·50–1·80 m. high; branchlets scaly.

LEAVES: oblong-lanceolate or ovate-lanceolate, lamina 3·8–6 cm. long, 1·4–2·6 cm. broad, apex acuminate or acute, mucronate, base rounded, obtuse or cordulate; upper surface not scaly, glabrous; under surface glaucous or not glaucous, scaly, the scales very small, more or less equal, dark or pale brown, one-half their own diameter apart; petiole 0·6–1 cm. long, scaly.

INFLORESCENCE: terminal, shortly racemose, 2–3-flowered; rachis 2–3 mm. long, scaly; pedicels 0·6–1·2 cm. long, rather densely scaly, not hairy or rarely hairy.

CALYX: 5-lobed, 0·5–2 mm. long, lobes rounded, triangular or oblong, outside densely scaly, margin ciliate.

COROLLA: *flat, saucer-shaped,* zygomorphic, 2·2–2·8 cm. long, 3·8–

4·3 cm. across, 5-lobed, deep or pale yellow or greenish-yellow, with or without yellowish-green spots on the posterior side, outside rather densely scaly, glabrous or hairy on the tube.

STAMENS: 10, unequal, long-exserted, 1–2·3 cm. long; filaments villous towards the base.

OVARY: oblong or conoid, 3–4 mm. long, 5-celled, densely scaly; style slender, not scaly.

CAPSULE: oblong, 1–1·2 cm. long, 3–4 mm. broad, densely scaly, calyx persistent.

HABITAT:

Assam. WATT 6209—holotype, 6549, 6582, 6886, 11432.

R. bauhiniiflorum was first found by Sir GEORGE WATT at Japvo and Ching Sow, Manipur, Assam, during the Government Demarcation Survey of 1881–82. It grows at elevations of 8,000–9,500 feet, and is said to be exceedingly abundant on the Naga Hills, Assam.

It is closely allied to *R. triflorum*. The relationship between them is discussed under the latter species. *R. bauhiniiflorum* is distinguished from its ally by the flat, saucer-shaped corolla, 3·8–4·3 cm. across.

The plant has been in cultivation for a long time. It is hardy and free-flowering.

R. flavantherum Hutch. et Ward in Notes R.B.G. Edin., XVI, 181 (1931); Hutch. in The Sp. of Rhod., 786 (1930); Rhod. Handb., 73 (1956).

HABIT: shrub, 1·80–3 m. high; branchlets scaly.

LEAVES: oblong-elliptic, lamina 3–4 cm. long, 1·3–1·8 cm. broad, apex obtuse, mucronate, base rounded; upper surface scaly; under surface scaly, the scales unequal, medium-sized and large, pale brown, 2–3 times their own diameter apart; petiole 5–8 mm. long, scaly.

INFLORESCENCE: terminal, shortly racemose, 3-flowered; rachis 2 mm. long, scaly; pedicels 6–8 mm. long, scaly.

CALYX: 5-lobed, 4 *mm. long*, lobes rounded or oblong-ovate, outside scaly, margin eciliate.

COROLLA: broadly tubular or tubular-campanulate, 1·5–2 cm. long, 5-lobed, bright clear yellow, scaly outside.

STAMENS: 10, unequal, exserted, 1·3–1·8 cm. long; filaments densely pilose at the base.

OVARY: oblong, 3 mm. long, 5-celled, densely scaly; style slender, scaly in the lower half.

CAPSULE: oblong, 1 cm. long, 3–4 mm. broad, densely scaly, calyx persistent.

HABITAT:

Tibet. KINGDON-WARD 6313—isotype.

The only collection of this species was made by KINGDON-WARD in 1924 in the Tsangpo Gorge, south Tibet. It was found on vertical cliffs at elevations of 8,000–9,000 feet.

The species is aberrant in the Triflorum Series on account of its tubular-campanulate flowers. The original diagnosis makes no reference to its affinity. In the shape and size of the leaves, in the shape and colour of the corolla, and in the size of the calyx, *R. flavantherum* shows a strong resemblance to *R. xanthostephanum* in the Tephropeplum Subseries, Boothii Series. The herbarium material of this plant is scanty. Although the species would be better placed in the Tephropeplum Subseries, it may, meanwhile, be allowed to remain in its present Series until further material is available. The plant has not been in cultivation.

R. kasoense Hutch. et Ward in Notes R.B.G. Edin., XVI, 181 (1931); Hutch. in The Sp. of Rhod., 787 (1930); Rhod. Handb., 85 (1956).

HABIT: shrub, sometimes epiphytic, 90 cm.–1·50 m. high; branchlets scaly.

LEAVES: lanceolate or oblong-lanceolate, lamina 3–7·3 cm. long, 1–2·8 cm. broad, apex acute, acuminate or obtuse, mucronate, obtuse or narrowed to the base; upper surface scaly; under surface scaly, the scales unequal, large and medium-sized, pale brown, 1½–3 times their own diameter apart; petiole 0·5–1·5 cm. long, scaly.

INFLORESCENCE: terminal, shortly racemose, 2–3-flowered; rachis 1–2 mm. long, scaly; pedicels 4–6 mm. long, rather densely scaly.

CALYX: 5-lobed or a mere rim, minute, 0·5 *mm. long*, lobes triangular, outside densely scaly, margin densely scaly, eciliate.

COROLLA: tubular-campanulate, 1·6–1·8 cm. long, 5-lobed, yellow, scaly outside.

STAMENS: 10, unequal, exserted, 0·8–1·9 cm. long; filaments densely villous in the lower one-third or one-half their lengths.

OVARY: oblong, 3–4 mm. long, 5-celled, densely scaly; style slender, not scaly.

CAPSULE: oblong, 0·9–1·8 cm. long, 3–4 mm. broad, densely scaly, calyx persistent.

HABITAT:

Assam. KINGDON-WARD 8522—isotype.
Tibet. LUDLOW, SHERRIFF & TAYLOR 6583.

This species was described from a specimen (No. 8522) collected by KINGDON-WARD in August 1928 on Kaso Peak, Assam. It was later found by LUDLOW, SHERRIFF & TAYLOR in south-east Tibet. The plant grows in thickets, on rocks, and as an epiphyte in dense mixed forests at 7,000–9,000 feet.

In the original diagnosis its affinity is stated to be with *R. lutescens*. From this species it differs markedly in the nature of the inflorescence and in the shape of the flowers.

R. kasoense is very closely allied to *R. flavantherum*. The two species are very much alike in general features. The main distinction between them is that in *R. kasoense* the calyx is a mere rim or minutely 5-lobed, 0·5 mm. long, whereas in *R. flavantherum* it is distinctly 5-lobed, 4 mm. long. It is very doubtful whether this criterion will prove constant when more specimens are available. For the present the name *R. kasoense* may be retained until more is known of this plant. There is no record of its occurrence in culture.

R. keiskei Miq. in Ann. Mus. Bot. Lugd. Bat., 163 (1866); Maxim. in Mém. Acad. Imp. Sc. St. Petersb., ser vii, XVI, t. 4, f. 11–17 (1870); Bot. Mag., t. 8300 (1910); Millais, Rhododendrons, 198 (1917); Hutch. in The Sp. of Rhod., 788 (1930); Rehder, Manual Cult. Trees and Shrubs, 705 (1947); Bean, Trees and Shrubs, III, 86 (1951); R.H.S. Dict. Gard., IV, 1775 (1951); Rhod. Handb., 86 (1956).

HABIT: shrub, 60 cm. high or more; branchlets sparsely or moderately scaly, glabrous or puberulous.

LEAVES: lanceolate or oblong-lanceolate, lamina 2·3–7·3 cm. long, 0·8–2·6 cm. broad, apex acute, obtuse or shortly acuminate, mucronate, base obtuse; upper surface scaly or sometimes not scaly, rarely bristly, midrib puberulous; margins rarely bristly; under surface scaly, the scales large, more or less equal, brown or rarely dark brown, $\frac{1}{2}$–5 times their own diameter apart; petiole 0·2–1·2 cm. long, scaly, glabrous or sparsely bristly and sometimes puberulous.

INFLORESCENCE: terminal, shortly racemose, 3–6-flowered; rachis 2–4 mm. long, scaly; pedicels 0·5–1·1 cm. long, scaly.

CALYX: 5-lobed or a mere rim, minute, 0·5 mm. long, lobes rounded or triangular, outside densely scaly, margin puberulous or bristly or glabrous.

COROLLA: widely funnel-shaped, zygomorphic, 1·4–2·7 cm. long, 5-lobed, pale yellow or lemon-yellow, not spotted, scaly outside.

STAMENS: 10, unequal, long-exserted, 1–3·2 cm. long; filaments puberulous or rarely villous towards the base.

OVARY: oblong or conoid, 2–3 mm. long, 5-celled, densely scaly; style slender, not scaly.

CAPSULE: oblong, 0·6–1·3 cm. long, 3–4 mm. broad, densely scaly, calyx persistent.

HABITAT:

Japan. MOCHIZUKI in April and June 1910. SATOW 3643. TOGASI 1045. YOKOHAMA NURSERY CO. in August 1908, in June 1909.

R. keiskei is a native of Japan, and is said to be widely distributed in southern Honshu, Shikoku and Kyushu, growing on the hills and on rocks, sometimes as an epiphyte, at elevations of about 2,000–6,000 feet. The species was described by MIQUEL in 1866.

It is related to *R. triflorum* from which it is distinguished usually by the habit and height of growth, often by the green under surfaces of the leaves, and by the hairy midrib on the upper surfaces. Moreover, it differs markedly from its ally in that the scales on the under surfaces of the leaves are large, and are usually widely spaced. The bristly petiole which is given as a distinguishing criterion in the Key in *The Species of Rhododendron*, is not constant.

R. keiskei was introduced into cultivation in 1908. In some forms, a remarkable feature is the bronzy-brown young foliage. It is hardy, but requires some shade and protection from wind for the best results to be obtained.

It received the Award of Merit when shown by Mr. HARRY WHITE in April 1929.

R. lutescens Franch. in Bull. Soc. Bot. France, XXXIII, 235 (1886); in Nouv. Arch. Mus. Paris, sér. 2, X, 52 (1888); Hemsl. et Wils. in Kew Bull. Misc. Inform., 114 (1910); Rev. Hort., 324 (1914); Millais, Rhododendrons, 205 (1917); Bot. Mag., t. 8851 (1920); Hutch. in The Sp. of Rhod., 789 (1930); Icones Plantarum Omeiensium, I, No. 1, pl. 35 (1942); Rehder, Manual Cult. Trees and Shrubs, 705 (1947); Bean, Trees and Shrubs, III, 93 (1951); R.H.S. Dict. Gard., IV, 1777 (1951); Rhod. Handb., 92 (1956).

R. blinii Lévl. in Bull. Acad. Geogr. Bot., XXIV, 21 (1915); Hutch. in The Sp. of Rhod., 789 (1930); Rhod. Handb., 142 (1956). *R. costulatum* Franch. in Journ. de Bot., IX, 399 (1895); Hutch. in The Sp. of Rhod., 789 (1930); Rhod. Handb., 143 (1956). *R. lemeei* Lévl. in Fedde Repert., XIII, 339 (1914); Hutch. in The Sp. of Rhod., 789 (1930); Rhod. Handb., 145 (1956).

HABIT: shrub, 90 cm.–6 m. high; branchlets scaly.

LEAVES: lanceolate, oblong-lanceolate or ovate-lanceolate, lamina 4·8–9·3 cm. long, 1·3–3·7 cm. broad, apex *acutely acuminate*, mucronate, base rounded or obtuse; upper surface moderately or sparsely scaly, midrib glabrous or rarely puberulous; under surface scaly, the scales large, unequal, yellowish or brown, ½–5 times their own diameter apart; petiole 0·6–1·2 cm. long, scaly.

INFLORESCENCE: *terminal and axillary in the uppermost few leaves*, umbellate or shortly racemose, 1–3-flowered; rachis 1–2 mm. long, scaly; pedicels 0·4–1·5 cm. long, rather densely or moderately scaly, glabrous or rarely minutely puberulous.

CALYX: 5-lobed or a mere rim, minute, 0·5–1 mm. long, lobes rounded or triangular, outside densely scaly, margin ciliate or eciliate.

COROLLA: widely funnel-shaped, zygomorphic, 1·3–2·6 cm. long, 5-lobed, pale yellow (rarely white), with green spots, outside scaly or not scaly, *rather densely or sometimes moderately pubescent*, rarely slightly pubescent.

STAMENS: 10, unequal, long-exserted, 1–3·5 cm. long; filaments densely villous towards the base.

OVARY: oblong or sometimes conoid, 2–4 mm. long, 5-celled, densely scaly, glabrous or sometimes ciliate at the apex; style slender, not scaly.

CAPSULE: oblong, 0·8–1·1 cm. long, 3–4 mm. broad, densely scaly, calyx persistent.

HABITAT:

Yunnan. MAIRE in April 1911—holotype of *R. lemeei*, in May 1911—holotype of *R. blinii*, 18, 27, 31, 58. TSAI 50844.

Szechuan. SOULIÉ 492—isotype of *R. costulatum*. WILSON 1195, 1197A, 1199, 1345. CHU 2306, 2389, 2903, 3668. CUNNINGHAM 540. HU 8398, 8400, 8706. MCLAREN AH 401. WANG 21076, 22768.

R. lutescens was described by FRANCHET in 1886 from a plant collected in mountain woods at Mupin, west Szechuan, about the

year 1870. It was later found by various collectors in other localities in west Szechuan and north-west Yunnan. WILSON records it as being very common in thickets and margins of woods. It grows at elevations ranging from 2,600 to 9,800 feet.

Other plants which were subsequently collected in the same region were described as *R. blinii* Lévl., *R. costulatum* Franch., and *R. lemeei* Lévl., and in *The Species of Rhododendron* the names appear under *R. lutescens* in synonymy.

R. lutescens is a distinct species, and is readily distinguished from all the other members of its Subseries by the axillary and terminal inflorescence, by the long acutely acuminate leaf apex, and usually by the corolla which is pubescent on the outside. The leaf epidermis is said to consist of one cell layer. The plant is allied to *R. triflorum*, *R. keiskei* and *R. ambiguum*, but differs markedly in distinctive features.

WILSON introduced this plant into cultivation in 1904. It was first raised by Messrs. VEITCH in their nursery at Coombe Wood. A prominent feature is the young growths of a bronzy-brown colour. The flowers are produced in February, March or April, and are apt to be destroyed by early spring frosts. The plant varies in hardiness, and to be able to grow it satisfactorily, particularly along the east coast and in gardens inland, protection from wind is essential.

R. lutescens was given the First Class Certificate when exhibited by Mr. L. de ROTHSCHILD in March 1938, and the Award of Merit for a form 'Bagshot Sands' when shown by Mrs. R. M. STEVENSON in March 1953.

R. triflorum Hook. f. Rhod. Sikkim Himal., t. XIX (1851); Clarke in Hook. f. Fl. Brit. Ind., III, 474 (1882); Millais, Rhododendrons, 256 (1917); Hutch. in The Sp. of Rhod., 791 (1930); Bean, Trees and Shrubs, III, 142 (1951); R.H.S. Dict. Gard., IV, 1785 (1951); Rhod. Handb., 132 (1956).

HABIT: shrub, 60 cm.–4·60 m. high; branchlets scaly.

LEAVES: ovate-lanceolate, oblong-lanceolate, lanceolate or elliptic, lamina 3–7·2 cm. long, 1·3–3 cm. broad, apex acuminate, acute or obtuse, mucronate, base rounded, obtuse or cordulate; upper surface not scaly, glabrous; under surface glaucous or pale green, scaly, the scales very small, more or less equal, dark or pale brown, one-half to their own diameter apart; petiole 0·5–1·3 cm. long, scaly.

INFLORESCENCE: terminal, shortly racemose, 2–4-flowered; rachis 3–5 mm. long, scaly; pedicels 0·6–1·6 cm. long, moderately or densely scaly.

CALYX: 5-lobed, 0·5–1 mm. long, lobes rounded, ovate or triangular, outside densely or sometimes moderately scaly, margin ciliate or puberulous or rarely glabrous.

COROLLA: widely funnel-shaped, zygomorphic, 2–3·3 cm. long, 5-lobed, pale yellow, greenish-yellow or yellow tinged pink, with yellowish-green spots, rather densely scaly outside, pubescent or glabrous.

STAMENS: 10, unequal, long-exserted, 1·2–2·8 cm. long; filaments villous towards the base.

OVARY: oblong or conoid, 3–5 mm. long, 5-celled, densely scaly; style slender, not scaly, rarely puberulous at the base.

CAPSULE: oblong, 1–1·3 cm. long, 3–4 mm. broad, densely scaly, calyx persistent.

HABITAT:

Sikkim. J. D. HOOKER, no number, no date. Lace 2252.
East Himalaya. Cave in 15/6/15, 2322, 6733. GRIFFITH 2228.
Bhutan. COOPER 3541, 3831. LUDLOW & SHERRIFF 15, 173, 3061. LUDLOW, SHERRIFF & HICKS 16062, 18881, 19849, 20615.
Tibet. LUDLOW & SHERRIFF 1353, 1675. LUDLOW, SHERRIFF & ELLIOT 12010, 12014, 12374, 12485, 15004. KINGDON-WARD 5648.
Assam. KINGDON-WARD 7121, 11549.
Burma/Tibet Frontier. KINGDON-WARD 9478.

R. triflorum is one of HOOKER's discoveries in Sikkim, Himalaya, in 1849. Further gatherings show that the area of distribution of this species extends from Sikkim through Bhutan to south and south-east Tibet. It is found in very varied habitats at elevations of 7,000–13,000 feet.

It is very closely allied to *R. bauhiniiflorum*. There is a definite resemblance between them in height and habit of growth, in the shape and size of the leaves, and in the size and colour of the flowers. The stated distinctions in the Key in *The Species of Rhododendron*, as to the size and colour of the scales on the under surfaces of the leaves, and the number of flowers in the inflorescences, are not constant. In both plants the leaf epidermis has been shown to be two-layered. There is only one fairly constant criterion to distinguish between them, namely, the fact that the corolla in *R. triflorum* is usually funnel-shaped, while in *R. bauhiniiflorum* it is flat, saucer-shaped.

The ample material now available and a large number of plants in cultivation show that *R. triflorum* is a very variable plant. *R. bauhiniiflorum* could well be regarded as a distinctive variant form. However, the extreme forms—the one with a small funnel-shaped corolla, 2 cm. across, and the other with a large, flat, saucer-shaped corolla, 4·3 cm. across—appear so different in cultivation, that the name *R. bauhiniiflorum* may be retained for the latter form, although intergrading forms link it with *R. triflorum*.

The species was first introduced into cultivation in 1850. An attractive feature is the smooth, reddish-brown, flaking bark. The plant is hardy but requires a sheltered position.

R. triflorum Hook. f. var. **mahogani** Hutch. in Gard. Chron., CI, 135 (1937); Ward in Gard. Chron., XCI, 396 (1932).

HABITAT:

Tibet. KINGDON-WARD 5687, 6263. LUDLOW & SHERRIFF 1863. LUDLOW, SHERRIFF & ELLIOT 12395, 12400, 13546, 15021.

This plant was first found by KINGDON-WARD in 1924 at Lusha, south-east Tibet. It grows in birch copse, beside streams, and in dry bracken covered moorland at elevations of 9,000–12,500 feet.

The variety differs from the species in that the flowers have a mahogany coloured blotch and spots, or are suffused mahogany, or they are of mahogany colour. These forms are now in cultivation.

R. wongii Hemsl. et Wils. in Kew Bull., 118 (1910); Millais, Rhododendrons, 263 (1917); Hutch. in The Sp. of Rhod., 792 (1930); Rhod. Handb., 139 (1956).

HABIT: shrub, 1–2 m. high; branchlets densely scaly.

LEAVES: oblong-elliptic, elliptic or oblong-lanceolate, lamina 2–3 cm. long, 1–1·5 cm. broad, apex broadly obtuse, mucronate, base broadly obtuse; upper surface scaly; under surface scaly, the scales unequal, large and medium-sized, pale or dark brown, one-half or their own diameter apart; petiole 3–4 mm. long, scaly.

INFLORESCENCE: terminal, shortly racemose, 3-flowered or more; rachis 2 mm. long; pedicels 0·6–1 cm. long, scaly.

CALYX: 5-lobed, minute, 1 mm. long, lobes rounded, outside scaly, margin ciliate.

COROLLA: widely funnel-shaped, 1·8–2·2 cm. long, 5-lobed, cream-coloured, not scaly outside.

STAMENS: 10, unequal, long-exserted, 1·5–2 cm. long; filaments villous towards the base.

OVARY: 3 mm. long, 5-celled, densely scaly; style slender, puberulous at the base.

CAPSULE: oblong, 0·8–1 cm. long, 3–4 mm. broad, scaly, calyx persistent.

HABITAT:

Szechuan. WILSON 3948—holotype, in Herb. Kew.

This species is known from a single collection made by Wilson near Tatsienlu, western Szechuan, at an elevation of 11,950 feet. In the original diagnosis it is associated with *R. flavidum* and *R. concinnum*. From these plants, particularly from the former, it differs in general characters.

R. wongii shows a strong resemblance to *R. ambiguum* in its appearance, but is distinguished by the corolla which is not scaly outside, usually by the smaller leaves broadly obtuse at both ends, and usually by the smaller flowers. The specific status of this plant may be allowed to stand, until more adequate material is available.

YUNNANENSE SUBSERIES

GENERAL CHARACTERS: Shrubs or sometimes trees, 26 cm.–10·60 m. high; branchlets moderately or rather densely scaly or sometimes not scaly, glabrous or puberulous or sometimes bristly. Leaves evergreen or sometimes semi-deciduous or completely deciduous, lanceolate, oblong-lanceolate, oblong, elliptic or almost orbicular; lamina 1·6–10·4 cm. long, 0·6–4·2 cm. broad, upper surface scaly or not scaly, glabrous or sometimes bristly, under surface scaly, the scales overlapping to 8 times their own diameter apart. Inflorescence terminal, or terminal and axillary in the uppermost one or two leaves, shortly racemose, 1–10-flowered; pedicels 0·3–3 cm. long, glabrous or sometimes puberulous, rarely bristly. Calyx 0·5–1 mm. (sometimes up to 5 mm.) long, glabrous or rarely bristly outside. Corolla usually widely funnel-shaped, zygomorphic, 1·2–4·8 cm. long, white, pink, rose-purple, lavender-blue to dark reddish-purple. Stamens 10. Ovary oblong or conoid, 2–6 mm. long; style long, slender. Capsule oblong or rarely conoid, 0·5–2 cm. long.

KEY TO THE SPECIES

A. Under surfaces of the leaves markedly glaucous.
  B. Scales on the under surfaces of the leaves widely spaced, 1½–4 times their own diameter apart; corolla moderately scaly outside; under surfaces of the leaves intensely glaucous . *zaleucum*

B. Scales on the under surfaces of the leaves closely spaced, one-half or rarely their own diameter apart; corolla not scaly or sometimes tube sparsely scaly outside; under surfaces of the leaves bluish-glaucous . . . . . *searsiae*

A. Under surfaces of the leaves pale green or brown or pale glaucous green.

B. Flowers purple, dark purple, reddish-purple or purplish-violet; corolla moderately or rather densely scaly outside (except in *R. apiculatum*).

C. Leaves lanceolate, oblong-lanceolate or oblanceolate, 3–4 times as long as broad; scales on the under surfaces of the leaves usually overlapping or contiguous; scales on the branchlets and usually on the under surfaces of the leaves flaky . . . . . *polylepis*

C. Leaves oval, ovate, elliptic, ovate-lanceolate or sometimes oblong-lanceolate, usually as long as broad or up to twice as long as broad; scales on the under surfaces of the leaves one-half to their own diameter apart or contiguous; scales on the branchlets and on the under surfaces of the leaves not flaky.

D. Petioles bristly; branchlets, pedicels and calyx bristly or not bristly . . . . . *amesiae*

D. Petioles, branchlets, pedicels and calyx not bristly.

E. Corolla widely funnel-shaped, 1·5–3·5 cm. long; (Szechuan and Yunnan species)

F. Upper surfaces of the leaves scaly; the scales on the under surfaces of the leaves contiguous to their own diameter apart; branchlets, petioles and pedicels rather densely or moderately scaly . . . . . *concinnum* (part)

F. Upper surfaces of the leaves not scaly; the scales on the under surfaces of the leaves 1½–2 times their own diameter apart; branchlets not scaly or sparsely scaly, petioles and pedicels sparsely scaly . . . . *apiculatum*

E. Corolla tubular-campanulate, 1·6–2·6 cm. long; (Assam species) . . . . . *concinnoides*

B. Flowers white, pink, rose or pale lavender; corolla not scaly or sparsely or moderately scaly outside.

C. Upper surfaces of the leaves and/or margins and/or petiole bristly.

D. Leaves completely deciduous . . . . *hormophorum* (part)

D. Leaves evergreen or semi-deciduous.

E. Scales on the under surfaces of the leaves widely spaced, usually 2–6 times their own diameter apart; leaves evergreen or semi-deciduous; corolla not scaly or sparsely or sometimes moderately scaly outside; pedicels not pubescent . *yunnanense* (part)

E. Scales on the under surfaces of the leaves closely spaced, usually ½–1½ times their own diameter apart; leaves evergreen; corolla moderately scaly outside; pedicels often pubescent . . . *vilmorinianum* (part)

C. Upper surfaces of the leaves and margins, and petioles not bristly.

D. Scales on the under surfaces of the leaves closely set, usually contiguous to their own diameter apart.

E. Leaves lanceolate, oblong-lanceolate or narrowly oblong.

F. Corolla small, usually 1·2–1·5 cm. long . *hypophaeum*
F. Corolla large, usually 1·8–3·5 cm. long.
G. Inflorescence terminal and axillary; flowers usually in several clusters towards the apex of the branchlets; pedicels usually densely scaly . . . . . *siderophyllum* (part)

G. Inflorescence terminal, or terminal and axillary; flowers often in only one or two clusters towards the apex of the branchlets; pedicels usually moderately scaly.
H. Lamina of leaf V-shaped or flat; pedicels not pubescent; calyx margin often eciliate; ovary not bristly . . *davidsonianum*
H. Lamina of leaf flat; pedicels often pubescent; calyx margin often ciliate or bristly; ovary bristly at the apex or not bristly . . . . . *vilmorinianum* (part)

E. Leaves orbicular, oval, ovate, elliptic, obovate or ovate-lanceolate.
F. Corolla scaly all over the tube and lobes outside . . . . . *concinnum* (part)

F. Corolla usually not scaly or sparsely scaly or sometimes only the lobes moderately scaly outside.
G. Inflorescence terminal and axillary; flowers usually in several clusters towards the apex of the branchlets; leaf apex often acuminate or acute . . . . *siderophyllum* (part)

G. Inflorescence terminal, or terminal and axillary; flowers often in only one or two clusters towards the apex of the branchlets; leaf apex usually rounded or obtuse.
H. Leaves not rigid; branchlets green or deep pink, often not scaly or sparsely scaly; upper surfaces of the leaves often not scaly or sparsely scaly; under surfaces of the leaves often pale glaucous green; corolla 1·8–4 cm. long . *oreotrephes* (part)

H. Leaves rigid; branchlets deep crimson, moderately or rather densely scaly; upper surfaces of the leaves moderately or rather densely scaly; under surfaces of the leaves usually pale green; corolla usually 1·4–2·3 cm. long *tatsienense*
D. Scales on the under surfaces of the leaves widely spaced, 2–8 times their own diameter apart.
E. Leaves completely deciduous . . . . *hormophorum* (part)

E. Leaves evergreen or semi-deciduous.
F. Leaves lanceolate, oblong-lanceolate or narrowly oblanceolate.
G. Leaf apex markedly long acuminate . *bodinieri*
G. Leaf apex acute, shortly acuminate or obtuse.
H. Corolla large, usually 1·8–3·4 cm. long; leaves 1–3 cm. broad; calyx a mere rim or 5-lobed, 0·5–1 mm. long.

I. Upper surfaces of the leaves usually green; leaves evergreen or semi-deciduous; branchlets, petioles and midrib on the upper surfaces of the leaves usually puberulous; branchlets moderately or sparsely scaly; pedicels moderately or sparsely scaly or not scaly; under surfaces of the leaves pale green or pale glaucous green . . . . *yunnanense* (part)

I. Upper surfaces of the leaves pale bluish-green; leaves evergreen; branchlets, petioles and midrib on the upper surfaces of the leaves usually not puberulous; branchlets usually not scaly or sparsely scaly; pedicels not scaly or rarely sparsely scaly; under surfaces of the leaves pale glaucous green . . . *rigidum* (part)

H. Corolla small, usually 1·3–1·6 cm. long; leaves 0·6–1·5 cm. broad; calyx 5-lobed, 1–3 mm. long . . . *longistylum*

F. Leaves orbicular, oval, ovate, elliptic or oblong.

G. Leaves green above; scales on the under surfaces of the leaves usually 2–3 times their own diameter apart . . . *oreotrephes* (part)

G. Leaves pale bluish-green above; scales on the under surfaces of the leaves usually 4–8 times their own diameter apart . *rigidum* (part)

Description of Species (Amp. et Em.)

R. amesiae Rehd. et Wils. in Pl. Wils., 523 (1913); Millais, Rhododendrons, 113 (1917); Bot. Mag., CLIV, t. 9221 (1928); Hutch. in The Sp. of Rhod., 779 (1930); Bean, Trees and Shrubs, III, 21 (1951); Rhod. Handb., 41 (1956).

HABIT: shrub, 2–4 m. high; branchlets moderately or rather densely scaly, bristly or not bristly.

LEAVES: ovate, ovate-elliptic, oblong-elliptic or elliptic, lamina 2·8–7 cm. long, 1·5–3·4 cm. broad, apex obtuse or acute, mucronate, base rounded or broadly obtuse; upper surface moderately or rather densely scaly, pubescent or glabrous, midrib pubescent; under surface pale green, scaly, the scales unequal, medium-sized and large, pale or dark brown or yellowish-brown, one-half to their own diameter apart; petiole 0·5–1·1 cm. long, moderately or rather densely scaly, *bristly*.

INFLORESCENCE: terminal, shortly racemose, 2–5-flowered; rachis

2–3 mm. long, scaly, puberulous or glabrous; pedicels 1·1–1·8 cm. long, scaly, bristly or not bristly, puberulous or glabrous.

CALYX: 5-lobed, minute, 0·5–1 mm. long, lobes rounded or triangular, outside scaly, bristly and pubescent, or glabrous, margin not scaly or scaly, bristly and pubescent, or glabrous.

COROLLA: widely funnel-shaped, zygomorphic, 3–4 cm. long, 5-lobed, purple or dark reddish-purple, with or without darker spots on the posterior side, scaly outside.

STAMENS: 10, unequal, 1·8–3·6 cm. long, exserted; filaments densely villous towards the base.

OVARY: oblong, 4 mm. long, 5-celled, densely scaly, glabrous or sparsely hairy at the apex; style slender, not scaly.

CAPSULE: oblong, 1·2–1·8 cm. long, 3–6 mm. broad, moderately or rather densely scaly, calyx persistent.

HABITAT:

Szechuan. WILSON 3444—isotype.

Wilson discovered this plant at Mupin in south-west Szechuan in 1908. He records it as being local in its distribution, growing in woods at elevations of 7,500–9,800 feet.

The original diagnosis associates it with *R. searsiae*, *R. villosum* and *R. augustinii*. From these plants it differs markedly in general characters. Its kinship is undoubtedly with *R. concinnum* which it resembles in the shape and size of the leaves, and in the shape, size and colour of the flowers. The leaf epidermis in both plants has been stated to consist of one layer of cells. In *R. amesiae*, the colour of the scales which has been given as a diagnostic criterion in the description and in the Key in *The Species of Rhododendron*, varies from dark brown to pale yellowish-brown. The species is distinguished from *R. concinnum* by the bristly petioles and sometimes by the bristly branchlets, pedicels and calyx margin. Moreover, in the former, the under surfaces of the leaves are pale green, in the latter they are usually glaucous or sometimes pale green. Whether *R. amesiae*, on these distinctions, merits specific rank is very doubtful. However, the extremes of these plants are so dissimilar that it may be desirable to retain the name *R. amesiae*.

The species was introduced into cultivation in 1910. It is hardy, a robust grower, and is free-flowering.

R. apiculatum Rehd. et Wils. in Pl. Wils., 520 (1913).

HABIT: shrub, 1·50 m. high; branchlets not scaly or sparsely scaly.

LEAVES: oval or broadly elliptic, lamina 2·8–5 cm. long, 1·8–3·2 cm. broad, apex rounded or broadly obtuse, mucronate, base rounded, truncate or cordulate; upper surface not scaly; under surface scaly, the scales more or less equal, large and medium-sized, brown, 1½–2 times their own diameter apart; petiole 6–8 mm. long, sparsely scaly.

INFLORESCENCE: terminal, shortly racemose, 2–3-flowered; rachis 2 mm. long; pedicels 0·7–1 cm. long, sparsely scaly at the apex.

CALYX: 5-lobed, minute, 1 mm. long, lobes triangular or rounded, scaly.

COROLLA: funnel-campanulate, 3–3·5 cm. long, 5-lobed, dark purple, not scaly or lobes sparsely scaly outside.

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

OVARY: conoid, 5 mm. long, 5-celled, densely scaly; style glabrous.

CAPSULE: not seen.

HABITAT:

Szechuan. WILSON 3422—holotype, in Herb. Kew.

R. apiculatum is represented by a single rather inadequate specimen. It was collected by Wilson in July 1908 near Wen-ch'uan Hsien, western Szechuan, growing in thickets and margins of woods at elevations of 8,200–9,800 feet.

In the original diagnosis it is associated with *R. yanthinum*. When this specimen under *R. apiculatum* is examined, it will be seen that it agrees with *R. oreotrephes* in general characters and in every morphological detail, differing only in the dark purple colour of the flowers. There would appear to be no significant difference between these two plants but the scanty material is insufficient as conclusive evidence.

R. bodinieri Franch. in Journ. de Bot., XII, 257 (1898); Millais, Rhododendrons, 128 (1917); Hutch. in The Sp. of Rhod., 794 (1930); Rehder, Manual Cult. Trees and Shrubs, 706 (1947); Rhod. Handb., 47 (1956).

HABIT: small shrub; branchlets sparsely scaly, glabrous.

LEAVES: evergreen, lanceolate, lamina 4·6–6 cm. long, 1–1·5 cm. broad, apex markedly *long acuminate*, mucronate, narrowed to the base; upper surface not scaly or sparsely scaly, glabrous, midrib glabrous, margins glabrous; under surface scaly, the

scales unequal, medium-sized, brown, 4–6 times their own diameter apart; petiole 0·5–1 cm. long, scaly, glabrous.

INFLORESCENCE: terminal and axillary in the uppermost one or two leaves, shortly racemose, 5–8-flowered; rachis 2–3 mm. long, slightly scaly or not scaly, glabrous; pedicels 0·8–1·3 cm. long, sparsely scaly or not scaly.

CALYX: a mere rim or 5-lobed, minute, 0·5 mm. long, lobes rounded or triangular, outside not scaly, margin scaly, glabrous.

COROLLA: widely funnel-shaped, zygomorphic, 2·3–3 cm. long, 5-lobed, rose with purple spots, not scaly or lobes slightly scaly outside.

STAMENS: 10, unequal, 1·6–2·5 cm. long, exserted; filaments glabrous or puberulous towards the base.

OVARY: oblong, 4 mm. long, 5-celled, densely scaly, glabrous; style slender, not scaly.

CAPSULE: not seen.

HABITAT:

Yunnan. R. P. BODINIER 1519—isotype.

This plant was found by R. P. Bodinier in April 1897 in east Yunnan, growing between Ma Kay and Se-Tsong-hien, and is known by a single collection.

It is very closely related to *R. yunnanense*. There is a strong similarity between them in general characters. In both plants, the leaf epidermis is two-layered. *R. bodinieri* differs from its ally in that the leaf apex is markedly long acuminate. Whether this one distinction justifies a separate specific rank is very doubtful. Meanwhile, the name *R. bodinieri* may be allowed to stand until further specimens are available.

R. concinnoides Hutch. et Ward in Notes R.B.G. Edin., XVI, 180 (1931); Hutch. in The Sp. of Rhod., 780 (1930); Rhod. Handb., 61 (1956).

HABIT: a small shrub, often epiphytic; branchlets rather densely or moderately scaly.

LEAVES: elliptic or obovate-elliptic, lamina 2·3–4·5 cm. long, 1–2·5 cm. broad, apex obtuse, mucronate, base obtuse; upper surface scaly, midrib glabrous; under surface scaly, the scales unequal, medium-sized and large, dark brown, one-half their own diameter apart or almost contiguous; petiole 3–6 mm. long, densely scaly.

INFLORESCENCE: terminal, shortly racemose, 3-flowered; rachis 1–2 mm. long, scaly; pedicels 0·5–1 cm. long, densely or moderately scaly.

CALYX: 5-lobed, minute, 1 mm. long, lobes rounded or triangular, outside scaly, margin scaly, eciliate or ciliate.

COROLLA: *tubular-campanulate*, 1·6–2·6 cm. long, 5-lobed, lobes and upper part of corolla pinkish-purple fading to white at the base, with darker spotting inside, rather densely scaly outside.

STAMENS: 10, unequal, 1·6–2·5 cm. long; filaments densely villous towards the base.

OVARY: oblong, 4 mm. long, 5-celled, densely scaly; style slender, not scaly.

CAPSULE: not seen.

HABITAT:

Assam. KINGDON-WARD 8578—isotype, 8168.

The type material of this species was collected by Kingdon-Ward in August 1928 in the Delei Valley, Assam. It grows as an epiphyte on conifers in rhododendron forest, on rocks and on tree stumps, at elevations of 8,000–11,000 feet.

It is an aberrant species in the Triflorum Series in view of its tubular-campanulate flowers. The original diagnosis associates it with *R. concinnum*. From this species it appears to be very remote. The corolla is slightly oblique, compressed laterally as in most members of the Maddenii Series. In some respects it approaches the species of the Tephropeplum Subseries, Boothii Series. Until more is known of this plant, it may be allowed to remain in its present Series.

R. concinnum Hemsl. in Journ. Linn. Soc., XXVI, 21 (1889); Hemsl. et Wils. in Kew Bull., 115 (1910); Rehd. et Wils. in Pl. Wils., 522; Gard. Chron., ser. 3, LIII, 341 (1913); Bot. Mag., CXLI, t. 8620 (1915); Millais, Rhododendrons, 148 (1917); Hutch. in The Sp. of Rhod., 781 (1930); Rehder, Manual Cult. Trees and Shrubs, 706 (1947); Bean, Trees and Shrubs, III, 51 (1951); R.H.S. Dict. Gard., IV, 1770 (1951); Rhod. Handb., 61 (1956). *R. atroviride* Dunn nomen, Journ. Linn. Soc., XXXIX, 484 (1911); The Sp. of Rhod., 851 (1930); Rhod. Handb., 141 (1956). *R. concinnum* Hemsl. f. *laetevirens* Cowan in Bot. Mag., CXLVII, t. 8912 (1938); Rehder, Manual Cult. Trees and Shrubs, 706 (1947). *R. concinnum* Hemsl. var. *lepidanthum* (Rehd. et Wils.) Rehd. in Journ. Arn. Arb., XX, No. 4, 424 (1939). Rehder, Manual Cult. Trees and Shrubs, 706

(1947). *R. coombense* Hemsl. in Bot. Mag., CXXXV, t. 8280 (1909); Kew Bull., 115 (1910); Schneider, Ill. Handb. Laubholzk, 11, 1044, fig. 614, f–g (1912); Hutch. in The Sp. of Rhod., 781 (1930); Rehder, Manual Cult. Trees and Shrubs, 706 (1947); Bean, Trees and Shrubs, III, 51 (1951); Rhod. Handb., 143 (1956). *R. hutchinsonianum* Fang in Acta Phytotax., II, 83 (1953). *R. laetevirens* Balf. f. nomen, Hutch. in The Sp. of Rhod., 781 (1930). *R. subcoombense* Balf. f. nomen. *R. yanthinum* Bur. et Franch. in Journ. de Bot., V, 94 (1891); Rehd. et Wils. in Pl. Wils., pt. III, 518, 519 (1914); Millais, Rhododendrons, 264 (1917); Hutch. in The Sp. of Rhod., 781 (1930); Rehder, Manual Cult. Trees and Shrubs, 706 (1947); Bean, Trees and Shrubs, III, 152 (1951); Rhod. Handb., 150 (1956). *R. yanthinum* Bur. et Franch. var. *lepidanthum* Rehd. et Wils. in Pl. Wils., I, 519 (1913); Millais, Rhododendrons, 264 (1917); Rehder in Journ. Arn. Arb., XX, No. 4, 424 (1939).

HABIT: shrub or small tree, 60 cm.–4·50 m. high; branchlets rather densely or moderately scaly.

LEAVES: oblong-lanceolate, oblong, elliptic, ovate or ovate-lanceolate, lamina 2·5–8·5 cm. long, 1·2–3·5 cm. broad, apex acute or obtuse or rarely shortly acuminate, mucronate, base obtuse or rounded; upper surface moderately or sometimes sparsely scaly, midrib rather densely or moderately puberulous; under surface pale glaucous green or green, scaly, the scales unequal, medium-sized and large, pale or dark brown or yellowish-brown, one-half their own diameter apart or contiguous or rarely their own diameter apart; petiole 0·5–1·3 cm. long, densely scaly.

INFLORESCENCE: terminal, or terminal and axillary in the uppermost one or two leaves, shortly racemose, 2–5-flowered; rachis 2–5 mm. long, scaly, glabrous or puberulous; pedicels 0·4–1·8 cm. long, rather densely or moderately scaly.

CALYX: 5-lobed or rarely a mere rim, minute, 0·5–1½ mm. (rarely 4–6 mm.) long, lobes rounded or triangular or rarely lanceolate, outside scaly or rarely not scaly, margin scaly, eciliate or ciliate.

COROLLA: widely funnel-shaped, zygomorphic, 1·5–3·2 cm. long, 5-lobed, pinkish-purple, pale or deep purple, deep rosy-purple, purplish-lavender or white, with or without brownish or crimson spots, outside *moderately or rather densely scaly* or rarely not scaly, glabrous or sometimes sparsely hairy towards the base.

STAMENS: 10, unequal, 1–3·1 cm. long, exserted; filaments densely villous towards the base.

OVARY: conoid or oblong, 2–5 mm. long, 5-celled, densely scaly; style slender, not scaly, glabrous or rarely puberulous at the base.

CAPSULE: oblong, 1–1·5 cm. long, 3–4 mm. broad, rather densely scaly, calyx persistent.

HABITAT:

Szechuan. BONVALOT and PRINCE HENRI D'ORLÉANS 141—isotype of *R. yanthinum.* FARGES 497. HENRY 9110. WILSON 1201, 3446, 3448. FANG 2972. ROCK 17559, 17566, 17588, 17594, 17727, 17735, 17736. WANG 21150.

R. concinnum is distributed in western Szechuan, growing in thickets, at the margins of woods, and by streams at elevations of 5,000–14,600 feet.

It was described in 1887 from a plant collected by the Rev. Ernest Faber in 1886 on Mount Omei. Subsequently, distinctive names were given to variant forms, namely, *R. yanthinum* Bur. et Franch., *R. benthamianum* Hemsl., *R. coombense* Hemsl., and *R. ioanthum* Balf. f. In *The Species of Rhododendron* 1930, pp. 781, 851, these names, also *R. laetevirens* Balf. f. nomen and *R. atroviride* Dunn nomen, have been regarded as synonyms of *R. concinnum.* It may be remarked that *R. ioanthum* from central Yunnan is identical with *R. siderophyllum* under which it will now be placed in synonymy. *R. subcoombense* Balf. f. nomen is synonymous with *R. concinnum.*

In 1913, *R. yanthinum* Bur. et Franch. var. *lepidanthum* Rehd. et Wils. was described from specimens collected by Wilson in western Szechuan. It is said to differ from the species in that the corolla is sparsely to densely villous towards the base, scaly, deep purple, and the calyx is densely scaly. These features are shared by *R. concinnum.*

In 1930, *R. pseudoyanthinum* Balf. f. ex Hutch. was described in *The Species of Rhododendron.* The type specimen has not been indicated, although the plant is said to occur at elevations of 7,500–12,000 feet in western Szechuan. *R. yanthinum* Bur. et Franch. var. *lepidanthum* Rehd. et Wils. has now been relegated to synonymy under this species. A plant with carmine flowers which had been described and figured as *R. concinnum* in the *Botanical Magazine,* Vol. 141, t. 8620 (1915), has also been referred to *R. pseudoyanthinum,* and plants in cultivation with deep ruby-red flowers have been given the same specific name. *R. pseudoyanthinum* is regarded

as "probably a distinct enough species which has been confused with *R. concinnum*. . . . Leaves considerably larger than that species. . . . The flowers are decidedly larger and darker than in *R. concinnum*". The ample material now available and plants in cultivation show that these distinctions are inconstant and unreliable. It will be noted that differences in leaf shape and size cannot be correlated with variations in flower size and colour, and many specimens and plants in cultivation may be given either name.

In 1939, the name *R. yanthinum* Bur. et Franch. var. *lepidanthum* Rehd. et Wils. was changed to *R. concinnum* Hemsl. var. *lepidanthum* (Rehd. et Wils.) Rehd. *R. pseudoyanthinum* Balf. f. ex Hutch. now appears under this variety in synonymy. The variety is said to differ from the species "chiefly in its larger and dark purple corolla more densely scaly and villous outside". The stated distinguishing characters are very variable, and are incapable of correlation.

In 1933, still another species, *R. hutchinsonianum* Fang, was described from specimens collected in Sikang, and is said to differ from *R. concinnum* "in the ciliate calyx, short pedicels and elliptical leaves". These characters are common to both species. In *R. concinnum* the leaves vary from oblong-lanceolate, elliptic to ovate, the pedicels are 0·4–1·8 cm. long, and the calyx is eciliate or ciliate.

Furthermore, in 1938, *R. concinnum* Hemsl. f. *laetevirens* Cowan was described from a cultivated plant, and is said to have been raised from Wilson's seed. It was distributed from Messrs. Veitch Nursery under the name *R. coombense*, and it is pointed out "that this is only one of at least three more or less distinct forms which were issued under the same name". The variety is said to be distinguished from the species by the deep crimson-purple flowers, by the larger leaves, and by the green under surfaces of the leaves. These distinctions are not constant and cannot be relied upon.

R. concinnum shows considerable variation, particularly in height of growth, in leaf shape and size, and in flower colour. Numerous variant forms occur in cultivation, although some of these, which have been named *R. concinnum*, would appear to be natural hybrids. In the Royal Botanic Garden, Edinburgh, and elsewhere, some forms, which are said to have been raised from seed of *R. concinnum*, have intermediate features which suggest that the plants are possibly natural hybrids between *R. concinnum* and *R. augustinii*, *R. davidsonianum* and *R. ambiguum*.

However, it must be emphasized that the diagnostic criteria which were used in separating species and varieties are not con-

stant. Apart from some plants which are possibly natural hybrids, the various forms represent different aspects of a single variable species. To attempt to give varietal names to the many intergrading variants would serve no useful purpose. Nevertheless, two of these forms are so distinct in cultivation that it would seem desirable to distinguish them as varieties.

The species was first introduced into cultivation by Wilson in 1904. It is hardy and a robust grower.

R. concinnum Hemsl. var. **benthamianum** (Hemsl.) comb. nov. *R. benthamianum* Hemsl. in Gard. Chron., ser. 3, XLVII, 4 (1910); Kew Bull., 319 (1907) pro parte; Kew Bull., 115 (1910); Millais, Rhododendrons, 128 (1917); Hutch. in The Sp. of Rhod., 781 (1930); Rehder, Manual Cult. Trees and Shrubs, 706 (1947); Bean, Trees and Shrubs, III, 152 (1951); Rhod. Handb., 141 (1956).

HABITAT:

Szechuan. WILSON 1878 (cult.)—holotype, in Herb Kew, 1766.

The variety differs from the species in that the flowers are lavender-purple, and the scales on the under surfaces of the leaves are dissimilar in colour, being dark brown and yellowish.

It was described from a plant raised from Wilson's seed No. 1878 which had been collected in Szechuan. The plant is hardy and is easy to grow.

R. concinnum Hemsl. var. **pseudoyanthinum** (Balf. f. ex Hutch.) comb. nov. *R. pseudoyanthinum* Balf. f. ex Hutch in The Sp. of Rhod., 783 (1930); Rehder in Journ. Arn. Arb., XX, No. 4, 424 (1939); Rehder, Manual Cult. Trees and Shrubs, 706 (1947); R.H.S. Dict. Gard., IV, 1780 (1951); Rhod. Handb., 113 (1956).

HABITAT:

Szechuan.

This variety is readily distinguished by its deep ruby-red flowers (R.H.S. Colour Chart Ruby Red 827/2), and often by its larger oblong-lanceolate leaves.

It has long been in cultivation under the name *R. pseudoyanthinum* Red Form. It is hardy, free-flowering, and is worthy of being widely grown.

R. davidsonianum Rehd. et Wils. in Pl. Wils., 515 (1913); Bot. Mag., CXLI, t. 8605 (1915); ibid. CXLIV, t. 8759 (1918); Millais, Rhododendrons, 152 (1917); Hutch. in The Sp. of Rhod., 797 (1930); Rehder, Manual Cult. Trees and Shrubs, 705 (1947); Bean, Trees and Shrubs, III, 55 (1951); R.H.S. Dict. Gard., IV, 1771 (1951); Rhod. Handb., 64 (1956). *R. charianthum* Hutch. in Bot. Mag., t. 8665 (1916); Millais, Rhododendrons, 142 (1917); ibid. ser. 2, 107 (1924); Bean, Trees and Shrubs, III, 45 (1951); Rhod. Handb., 56 (1956).

HABIT: shrub, 90 cm.–3 m. high; branchlets moderately or rarely rather densely scaly, minutely puberulous or glabrous.

LEAVES: lanceolate, or rarely oblong-lanceolate or oblong, lamina 2·3–7·8 cm. long, 0·8–2·6 cm. broad, apex acute or sometimes obtuse, mucronate; narrowed to the base or sometimes obtuse; often V-shaped; upper surface sparsely or moderately scaly, midrib puberulous or glabrous; under surface scaly, the scales unequal, medium-sized and large, pale or dark brown, nearly contiguous to their own diameter apart or rarely up to 4 times their own diameter apart; petiole 0·3–1 cm. long, moderately or densely scaly, minutely puberulous or glabrous.

INFLORESCENCE: terminal, or terminal and axillary in the uppermost one or two leaves, shortly racemose, 3–6- (rarely up to 10-) flowered; rachis 2–4 mm. long, scaly or not scaly, glabrous or sometimes puberulous; pedicels 0·6–1·8 cm. long, moderately or rarely rather densely scaly, glabrous or rarely minutely puberulous.

CALYX: 5-lobed or a mere rim, 0·5–1 mm. long, lobes rounded or triangular, outside moderately or densely scaly, margin eciliate or sometimes ciliate.

COROLLA: widely funnel-shaped, zygomorphic, 1·9–3·3 cm. long, 5-lobed, white tinged pink, pink, rose or pale lavender, with or without purple or red spots, scaly or not scaly outside.

STAMENS: 10, unequal, exserted, 1·3–3·6 cm. long; filaments puberulous towards the base.

OVARY: oblong or conoid, 2–4 mm. long, 5-celled, densely scaly; style slender, not scaly, glabrous or sometimes puberulous at the base.

CAPSULE: oblong, 0·6–1·8 cm. long, 3–6 mm. broad, rather densely scaly, calyx persistent.

HABITAT:

Szechuan. WILSON 1275—isotype, 1274, 1352, 3426. SOULIÉ 491.

CUNNINGHAM 35, 517. FANG 3599, 3647, 3730. ROCK 16136, 17570, 17595, 17600. MCLAREN AG392, AH281. CHU 2333. *Yunnan*. ROCK 24268.

R. davidsonianum was first found by Wilson in western Szechuan in the course of his expedition of 1903–4. He records it as being very common in the vicinity of Tatsienlu. Further gatherings by various collectors show that the species is distributed in western Szechuan and in north-west Yunnan. It is found in thickets and woodlands, in pine forest, amongst rock and scrub in dry situations, and on cliffs, at elevations of 6,500–11,700 feet.

In 1916, *R. charianthum* Hutch. was described from a plant raised from Wilson's seed No. 1274. The herbarium specimen under the same number is true *R. davidsonianum*. It will be seen that the plant which was figured as *R. charianthum* in the *Botanical Magazine*, Vol. XII, t. 8665 (1916), is very similar to *R. davidsonianum*. *R. charianthum* is said to differ in its densely red-spotted corolla and in the style pubescent near the base. These characteristics are shared by *R. davidsonianum*; in the latter the corolla is white, pink, rose or pale lavender, with or without purple or red spots, and the style is glabrous or sometimes puberulous at the base. It is clear that the retention of the specific name, *R. charianthum*, cannot be justified.

R. davidsonianum is allied to *R. yunnanense* which it resembles in general features, but differs usually in the glabrous leaves and branchlets; moreover, it is readily distinguished from that species by the closely spaced scales on the under surfaces of the leaves. A marked feature is the bending up of the two halves of the leaf, forming a V with the midrib in cross section, although this is not a constant character.

The species was first introduced by Wilson in 1908. Several forms are in cultivation; a form with deep pink flowers is generally considered to be the best. *R. davidsonianum* was given the Award of Merit and the First Class Certificate when exhibited by Lord Aberconway in April 1935 and May 1955 respectively.

R. hormophorum Balf. f. et Forrest in Notes R.B.G. Edin., XII, 117 (1920); Millais, Rhododendrons, ser. 2, 156 (1924); Hutch. in The Sp. of Rhod., 801 (1930); Rehder, Manual Cult. Trees and Shrubs, 706 (1947); Rhod. Handb., 81 (1956). *R. chartophyllum* Franch. f. *praecox* Diels in Notes R.B.G. Edin., 217 (1912); Millais, Rhododendrons, 142 (1917); Hutch. in The Sp. of Rhod., 796 (1930); Rhod. Handb., 56 (1956).

HABIT: shrub, 26 cm.–4·90 m. high; branchlets scaly, puberulous or rarely glabrous.

LEAVES: *completely deciduous*, lanceolate or oblanceolate, lamina 2·8–7·3 cm. long, 1–2·4 cm. broad, apex acute, mucronate, narrowed to the base; upper surface moderately or sparsely scaly, bristly or not bristly, puberulous or glabrous, midrib puberulous or glabrous, margins bristly or not bristly; under surface pale glaucous green or green, scaly, the scales unequal, medium-sized, brown or yellowish, 3–6 times (rarely twice) their own diameter apart; petiole 0·3–1 cm. long, scaly, bristly or not bristly, puberulous.

INFLORESCENCE: terminal, or terminal and axillary in the uppermost one or two leaves, shortly racemose, 3–6-flowered; rachis 2–4 mm. long, scaly or not scaly, puberulous or glabrous; pedicels 0·3–2·1 cm. long, scaly or not scaly.

CALYX: a mere rim or 5-lobed, minute, 0·5 mm. long, lobes rounded or triangular, outside densely or moderately scaly or not scaly, margin scaly or not scaly, glabrous or puberulous or ciliate.

COROLLA: widely funnel-shaped, zygomorphic, 1·6–3·1 cm. long, 1·8–4·5 cm. across, 5-lobed, rose, white, white tinged pink, rose-lilac or lavender, with or without crimson, olive-green, olive-brown, rose or orange spots, not scaly or sparsely scaly or sometimes lobes moderately scaly outside.

STAMENS: 10, unequal, 1–3·4 cm. long, exserted; filaments densely pubescent towards the base.

OVARY: oblong or rarely conoid, 2–4 mm. long, 5-celled, densely scaly, glabrous; style slender, not scaly.

CAPSULE: oblong, 0·8–1·3 cm. long, 3–5 mm. broad, rather densely scaly, calyx persistent.

HABITAT:

Szechuan. FORREST 16265—holotype, 16816. HANDEL-MAZZETTI 2153. ROCK 24151.

Yunnan. DELAVAY in April 1887, in April 1888. FORREST 2030—holotype of *R. chartophyllum* f. *praecox*, 5844, 5846, 5874, 9997, 10056, 15585, 16362, 19400, 19701. KINGDON-WARD 293. ROCK 3166, 3240, 3269, 3292, 3446, 4014, 5222, 8178, 8565, 11422, 22825, 23332, 24206, 24602, 24870, 24972, 25327, 25381. MCLAREN D30, P19. YÜ 15014.

R. hormophorum was discovered by Forrest in 1918 on the Muli mountains, south-west Szechuan. Subsequent collections show that the species is distributed in south-west Szechuan and north-west

Yunnan, growing in stony pasture, in spruce forest, in pine and oak forest, and amongst scrub at elevations of 8,000–12,000 feet.

R. chartophyllum Franch. f. *praecox* Diels, a plant from north-west Yunnan, is identical with *R. hormophorum* in every morphological detail.

R. hormophorum shows a strong resemblance to *R. yunnanense* in height and habit of growth, in the shape and size of the leaves, and in the shape, size and colour of the flowers. The only difference between them is that in *R. hormophorum* the leaves are completely deciduous, while in *R. yunnanense* they are evergreen or semi-deciduous.

R. hormophorum has long been in cultivation. It is hardy, and attractive when covered with a profusion of flowers in May. It was given the Award of Merit when shown by Lord Digby in May 1943.

R. hypophaeum Balf. f. et Forrest in Notes R.B.G. Edin., XII, 120 (1920); Millais, Rhododendrons, ser. 2, 158 (1924); Hutch. in The Sp. of Rhod., 802 (1930); Rhod. Handb., 82 (1956).

HABIT: shrub, 1·20–5 m. high; branchlets moderately or rather densely scaly, glabrous.

LEAVES: lanceolate or rarely oblong, lamina 2·4–6·2 cm. long, 0·8–2·4 cm. broad, apex acute or rarely obtuse, mucronate, obtuse or narrowed to the base; upper surface scaly, midrib puberulous or glabrous; under surface pale glaucous green, scaly, the scales unequal, medium-sized and small, brown, ½–1½ times their own diameter apart; petiole 0·5–1 cm. long, scaly, glabrous or rarely puberulous.

INFLORESCENCE: terminal, or terminal and axillary in the uppermost one or two leaves, shortly racemose, 3–5-flowered; rachis 2–3 mm. long, scaly, glabrous; pedicels 0·6–1·5 cm. long, scaly.

CALYX: 5-lobed or a mere rim, minute, 0·5–1 mm. long, lobes rounded or triangular, outside scaly or not scaly, margins scaly or not scaly, glabrous or puberulous.

COROLLA: widely funnel-shaped, zygomorphic, 1·2–1·9 cm. long, 5-lobed, white faintly tinged rose, or pink, purplish-blue, purple or pale lavender, not scaly or sparsely scaly outside.

STAMENS: 10, unequal, 0·8–2 cm. long, exserted; filaments puberulous towards the base.

OVARY: conoid, 2–3 mm. long, 5-celled, densely scaly; style slender, not scaly, glabrous or sparsely puberulous at the base.

CAPSULE: not seen.
HABITAT:

Szechuan. FORREST 16249—holotype. ROCK 17416, 17417, 17418, 17431, 17435.
Yunnan. ROCK 8434.

R. hypophaeum is one of the small-flowered members of its Series. The type material of this species was collected by Forrest in June 1918 on the mountains around Muli valley of the Litang river, south-west Szechuan. It was later found by Rock in north-west Yunnan in 1923, and in south-west Szechuan in 1929. The plant grows in pine forest and along streams at 10,000–11,000 feet.

In general appearance *R. hypophaeum* shows a resemblance to *R. davidsonianum* and *R. longistylum*. It is distinguished from the former mainly by the smaller flowers, and from the latter often by the broader leaves, by the closely spaced scales on the under surfaces of the leaves, usually by the smaller calyx, and by the glabrous branchlets and petioles. The species is rare in cultivation.

R. longistylum Rehd. et Wils. in Pl. Wils., 514 (1913); Rev. Horte, 232 (1914); Millais, Rhododendrons, 204 (1917); Hutch. in The Sp. of Rhod., 805 (1930); Rehder, Manual Cult. Trees and Shrubs, 706 (1947); Bean, Trees and Shrubs, III, 92 (1951); Rhod. Handb., 91 (1956).

HABIT: shrub, 50 cm.–2 m. high; branchlets not scaly or scaly, minutely puberulous or rarely glabrous.
LEAVES: evergreen, oblanceolate, lanceolate or oblong-lanceolate, lamina 1·6–6 cm. long, 0·6–1·5 cm. broad, apex acute, mucronate, narrowed to the base or obtuse; upper surface not scaly or scaly, midrib glabrous; under surface scaly, the scales unequal, medium-sized and small, brown, 2–4 times their own diameter apart; petiole 2–6 mm. long, scaly, minutely puberulous.
INFLORESCENCE: terminal, or terminal and axillary in the uppermost one or two leaves, shortly racemose, 3–10-flowered or more; rachis 0·3–1 cm. long, scaly, minutely puberulous; pedicels 0·6–1·5 cm. long, scaly, glabrous or minutely puberulous.
CALYX: 5-lobed, 2–3 mm. (rarely 1 mm.) long, lobes oblong, lanceolate or oval, outside sparsely scaly or not scaly, margin ciliate.

COROLLA: widely funnel-shaped, zygomorphic, 1·3–1·6 cm. (rarely up to 2 cm.) long, 5-lobed, white or white tinged pink, not scaly or rarely slightly scaly on the lobes outside.

STAMENS: 10, unequal, 0·9–2·3 cm. long, exserted; filaments pubescent towards the base.

OVARY: conoid, 2–3 mm. long, 5-celled, densely scaly, glabrous or rarely minutely puberulous; style slender, not scaly.

CAPSULE: conoid, 5–8 mm. long, 4–5 mm. broad, rather densely scaly, calyx persistent.

HABITAT:

Szechuan. WILSON 1204—isotype.

This species is a native of western Szechuan where it was discovered by Wilson in 1908. He found it again in the same region in 1910. It grows in thickets and on cliffs at 3,300–7,500 feet.

According to Rehder and Wilson, the inflorescence of this plant varies from 10 to 20 or more flowers, but in cultivation it consists of 3–10 flowers only.

In the original diagnosis, it is associated with *R. micranthum.* From this plant it differs markedly in distinctive features. It is related to *R. yunnanense* which it resembles in general appearance, but is distinguished usually by the smaller flowers, often by the bristleless leaves, and usually by the larger calyx. In some respects, it shows a resemblance to *R. hypophaeum*; the distinctions between them are discussed under the latter species.

Wilson introduced this plant into cultivation in 1908. Although it is hardy, a sheltered position should be provided.

R. oreotrephes W. W. Sm. in Notes R.B.G. Edin., VIII, 201 (1914); Journ. Roy. Hort. Soc., XIII, 33, t. 9 (1916); Garden, LXXXI, 557 (1917); Millais, Rhododendrons, 221 (1917); ibid., ser. 2, 203 (1924); Bot. Mag., CXLIV, t. 8784 (1918); Hutch. in The Sp. of Rhod., 776 (1930); Bean, Trees and Shrubs, III, 110 (1951); R.H.S. Dict. Gard., IV, 1779 (1951); Rhod. Handb., 105 (1956). *R. artosquameum* Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 234 (1922); Millais, Rhododendrons, ser. 2, 87 (1924); Hutch. in The Sp. of Rhod., 774 (1930); Bean, Trees and Shrubs, III, 110 (1951); R.H.S. Dict. Gard., IV, 1766 (1951); Rhod. Handb., 44 (1956). *R. cardioeides* Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 239 (1922); Millais, Rhododendrons, ser. 2, 102 (1924); Hutch. in The Sp. of Rhod., 774 (1930); Rhod. Handb., 142 (1956). *R. depile* Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 255 (1922);

Millais, Rhododendrons, ser. 2, 126 (1924); Hutch. in The Sp. of Rhod., 774 (1930); Bean, Trees and Shrubs, III, 110 (1951); Rhod. Handb., 143 (1956). *R. exquisetum* Hutch. in Gard. Chron., XCVIII, 98 (1932); Bot. Mag., CLXII, t. 9597 (1940); Bean, Trees and Shrubs, III, 63 (1951); R.H.S. Dict. Gard., IV, 1772 (1951); Rhod. Handb., 71 (1956). *R. hypotrichotum* Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 268 (1922); Millais, Rhododendrons, ser. 2, 159 (1924); Hutch. in The Sp. of Rhod., 776 (1930); Bean, Trees and Shrubs, III, 110 (1951); Rhod. Handb., 145 (1956). *R. oreotrephoides* Balf. f. nomen. *R. phaeochlorum* Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 284 (1922); Millais, Rhododendrons, ser. 2, 207 (1924); Hutch. in The Sp. of Rhod., 776 (1930); Bean, Trees and Shrubs, III, 110 (1951); Rhod. Handb., 147 (1956). *R. pubigerum* Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 289 (1922); Millais, Rhododendrons, ser. 2, 217 (1924); Hutch. in The Sp. of Rhod., 774 (1930); Rhod. Handb., 147 (1956). *R. sidero-phylloides* Hutch. in Journ. Roy. Hort. Soc., LX, 326 (1935). *R. timeteum* Balf. f. et Forrest in Notes R.B.G. Edin., XII, 166 (1920); Millais, Rhododendrons, ser. 2, 250 (1924); Hutch. in The Sp. of Rhod., 778 (1930); New Flora and Silva, V, f. 2 (1932); Bean, Trees and Shrubs, III, 110 (1951); R.H.S. Dict. Gard., IV, 1785 (1951); Rhod. Handb., 131 (1956). *R. trichopodum* Balf. f. et Forrest in Notes R.B.G. Edin., XII, 304 (1922); Millais, Rhododendrons, ser. 2, 253 (1924); Hutch. in The Sp. of Rhod., 774 (1930); Rhod. Handb., 150 (1956).

HABIT: shrub or tree 60 cm.–7·60 m. high; branchlets not scaly or sparsely or moderately (rarely densely) scaly, glabrous or puberulous.

LEAVES: evergreen or sometimes semi-deciduous, oblong-elliptic, elliptic, oblong, ovate or almost orbicular, lamina 1·8–8·9 cm. long, 1·2–4·2 cm. broad, apex obtuse or rounded or rarely acute, mucronate, base rounded or obtuse or cordulate; upper surface not scaly or sparsely or moderately (rarely densely) scaly, midrib glabrous or sometimes puberulous; under surface glaucous or pale glaucous-green or brown, scaly, the scales more or less equal, medium-sized, brown, contiguous to 3 (rarely 4) times their own diameter apart; petiole 0·5–2 cm. long, not scaly or scaly, glabrous or puberulous.

INFLORESCENCE: terminal, or sometimes terminal and axillary in the uppermost one or two leaves, shortly racemose, 3–10-flowered; rachis 1–8 mm. (rarely 1 cm.) long, scaly or not

scaly, glabrous or sometimes puberulous; pedicels 0·5–3 cm. long, scaly or not scaly.

CALYX: a mere rim or 5-lobed, minute, 0·5–1 mm. (rarely 2 mm.) long, lobes rounded, oblong or triangular, outside scaly or not scaly, margin scaly or not scaly, rarely ciliate.

COROLLA: widely or narrowly funnel-shaped or sometimes funnel-campanulate, usually zygomorphic, 1·8–4 cm. long, 5-lobed, whitish-pink, rose, deep rose, pale or deep lavender-rose, purple, grey-lavender or lavender-blue (rarely apricot yellow), with or without crimson or brownish-crimson spots, not scaly or sparsely scaly outside.

STAMENS: 10, unequal, 1–3·6 cm. long, exserted; filaments densely pubescent towards the base.

OVARY: conoid or oblong, 3–6 mm. long, 5-celled, densely scaly; style slender, not scaly.

CAPSULE: oblong, 0·8–1·6 cm. long, 3–5 mm. broad, rather densely or moderately scaly, calyx persistent.

HABITAT:

Yunnan. FORREST 5873—holotype, 10067, 10210, 10213, 10297, 12463, 13931—holotype of *R. cardioeides*, 13992—holotype of *R. depile*, 13544, 15397, 16121, 16543—holotype of *R. hypotrichotum*, 16584, 17018, 17305, 17363, 17430, 18649, 19500, 19544, 20629, 21006, 21994, 22348, 23312, 25557, 30910. ROCK 96, 165, 3511, 3583, 3978, 4213, 4260, 4273, 4416, 5122, 8418, 8532, 8598, 8599, 8603, 8610, 8789, 8866, 9114, 9154, 9158, 9186, 9352, 9511, 9572, 10550, 10954, 10986, 11000, 11014, 11128, 11132, 11141, 11258, 11262, 11298, 11300, 11387, 11429, 16982, 17131, 17133, 18351, 18456, 18457, 22760, 22762, 23366, 25084, 25099, 25429. KINGDON-WARD 365, 4309. MCLAREN P38, P69. Yü 7991, 10700.

Szechuan. FORREST 15222, 15418, 15465, 16285—holotype of *R. timeteum*, 16291, 20481—holotype of *R. siderophylloides*, 20489—holotype of *R. exquisetum*, 20507, 21257. ROCK 16037, 16043, 16194, 16225, 18140.

Tibet. FORREST 14347—holotype of *R. trichopodum*, 14535—holotype of *R. artosquameum*, 14796, 18677, 19200—holotype of *R. phaeochlorum*, 19206—holotype of *R. pubigerum*, 20840, 21822, 21835, 22661, 22662. KINGDON-WARD 587, 5790. ROCK 10197. LUDLOW, SHERRIFF AND ELLIOT 13110, 13163, 13613, 13614, 13622, 13705, 13722, 13761, 15013, 15039, 15059, 15321.

Yunnan/South-east Tibet Border. ROCK 23491.

Burma. KINGDON-WARD 3190, 3299.

Forrest discovered this plant on the western flank of the Lichiang

Range in June 1910. Further gatherings by him and by Rock, Kingdon-Ward, Ludlow and Sherriff, and Yü show that the species is distributed from mid-west and north-west Yunnan and north-east Upper Burma to south-west Szechuan and south-east Tibet. It is found in rhododendron, pine, Abies, and spruce forests, in open pastures, on cliffs and rocky slopes, in thickets, amongst scrub, and along streams, at elevations of 9,000–16,000 feet.

As would be expected from the wide distribution, different habitats and altitudinal range, *R. oreotrephes* varies considerably in several of its features. It is a shrub or tree, 60 cm.–7·60 m. high; the leaves are oblong, elliptic, ovate or almost orbicular, 2–8·9 cm. long, 1·2–4·2 cm. broad; the inflorescence is 3–10-flowered; and the corolla is 1·8–4 cm. long. In June 1918, Forrest collected a plant in south-west Szechuan, and it was given the specific name *R. timeteum* Balf. f. et Forrest. It agrees with *R. oreotrephes* in general characters and in morphological details. The only difference between them is that in *R. oreotrephes* the scales on the under surfaces of the leaves are contiguous to their own diameter apart, whereas in *R. timeteum* they are 1½–2½ (rarely 4) times their own diameter apart. On this distinction alone, which varies in cultivation, *R. timeteum* does not merit specific status.

During the years 1917–19, Forrest collected a number of closely similar plants in south-east Tibet and north-west Yunnan. In the *Notes Roy. Bot. Gard.*, Edin., Vol. 13, 1922, these were described as *R. depile* Balf. f. et Forrest, *R. hypotrichotum* Balf. f. et Forrest, *R. phaeochlorum* Balf. f. et Forrest, *R. artosquameum* Balf. f. et Forrest, *R. cardioeides* Balf. f. et Forrest, *R. pubigerum* Balf. f. et Forrest, and *R. trichopodum* Balf. f. et Forrest. It will be seen that in *The Species of Rhododendron*, 1930, the first three names and *R. oreotrephoides* Balf. f., a manuscript name, appear in synonymy under *R. oreotrephes*, and the last three names under *R. artosquameum*. *R. siderophylloides* Hutch., described in 1935, is also identical with *R. oreotrephes*.

R. artosquameum shows a strong resemblance to *R. oreotrephes* in general appearance. Its main distinguishing character is said to be the broadly ovate or almost rounded leaf, deeply cordate at the base. The difference in leaf shape is evident when the two type specimens are compared. The ample material now available and plants in cultivation show that this distinction is very variable, and no constant character can be found to distinguish between these two species.

Together with *R. oreotrephes*, one further specific name must be

considered, namely, *R. exquisetum* Hutch. This species was described from a plant raised from Forrest's seed No. 20489. The herbarium specimen under the same number was collected by Forrest in south-west Szechuan in July 1921 at 10,000–11,000 feet. The original diagnosis associates it with *R. artosquameum* and *R. timeteum*, but makes no reference to its affinity with *R. oreotrephes*. *R. exquisetum* is very similar to *R. oreotrephes* in leaf shape and size, in flower shape, size and colour, and in all other respects they agree. It may be remarked that in cultivation, plants with large leaves and large flowers have been named *R. exquisetum*, and those with small leaves and small flowers *R. oreotrephes*. Although it is possible to distinguish between extreme forms, many plants are intermediate in leaf and flower size, and these may be given either name. Moreover, variations in leaf size and flower size cannot always be correlated.

R. oreotrephes is related to *R. tatsienense*, but differs in that the leaves are not rigid, they are usually glaucous beneath, the corolla is usually larger, the upper surfaces of the leaves, the corolla, and the branchlets are often not scaly.

It was first introduced by Forrest in 1906. Several forms are in cultivation; in some forms a distinctive feature is the glaucous bluish-green young foliage. The species is hardy, free-flowering, and is easy to grow. It was given the Award of Merit when shown under the name *R. siderophylloides* by Mr. J. J. Crosfield in May 1935.

R. polylepis Franch. in Bull. Soc. Bot. France, XXXIII, 232 (1886); in Nouv. Arch. Mus. Paris, ser. 2, X, 50 (1887); Kew Bull., 115 (1910); Rev. Hort., 324 (1914); Rehd. et Wils. in Pl. Wils., 521 (1914); Millais, Rhododendrons, 226 (1917); Hutch. in The Sp. of Rhod., 782 (1930); Rehder, Manual Cult. Trees and Shrubs, 706 (1947); Bean, Trees and Shrubs, III, 114 (1951); Rhod. Handb., 110 (1956). *R. harrovianum* Hemsl. in Gard. Chron., XLVII, 4 (1910); Bot. Mag., CXXXVI, t. 8309 (1910); Kew Bull., 114 (1910); Schneider, Ill. Handb. Laubholzk. II, 1043, f. 615 h–i (1912); Millais, Rhododendrons, 226 (1917); Hutch. in The Sp. of Rhod., 782 (1930); Bean, Trees and Shrubs, III, 114 (1951); Rhod. Handb., 144 (1956).

HABIT: shrub, 90 cm.–5 m. high; branchlets densely scaly with *flaky scales*.

LEAVES: oblong-lanceolate, lanceolate or oblanceolate, lamina 4·5–

10·2 cm. long, 1·2–3·7 cm. broad, apex acute or shortly acuminate, mucronate, narrowed to the base; upper surface sparsely scaly or not scaly, midrib glabrous; under surface scaly, the scales unequal, large, dark brown or brown, dry *flaky*, overlapping or contiguous or rarely one-half their own diameter apart, usually with larger scattered *flaky scales*; petiole 0·5–1 cm. long, densely scaly.

INFLORESCENCE: terminal, or rarely terminal and axillary in the uppermost one or two leaves, shortly racemose, 3–5-flowered; rachis 2–6 mm. long, scaly, glabrous or rarely puberulous; pedicels 0·6–2 cm. long, moderately to densely scaly.

CALYX: 5-lobed, minute, 0·5–1 mm. long, lobes rounded or triangular, outside densely scaly, margin densely scaly and rarely ciliate.

COROLLA: widely funnel-shaped, zygomorphic, 2·1–3·5 cm. long, 5-lobed, pale or deep purple or purplish-violet, with or without yellowish spots on the posterior side, rather densely or moderately scaly outside.

STAMENS: 10, unequal, 1·8–3·8 cm. long, exserted; filaments densely villous towards the base.

OVARY: oblong or conoid, 3–4 mm. long, 5-celled, densely scaly, glabrous or puberulous at the apex; style slender, not scaly, glabrous or sometimes puberulous at the base.

CAPSULE: oblong, 1–1·6 cm. long, 3–4 mm. broad, rather densely scaly, calyx persistent.

HABITAT:

Szechuan. DAVID in 1870—isotype. WILSON 1207A, 1221A, 3420. FANG 2983. MCLAREN AF 473, AG 394, AG 396, AG 398, AH 279, AH 306, AH 312, Z 11. WANG 20871, 22941. CHU 2382, 2965.

R. polylepis was described by Franchet in 1886. It is distributed in south-west Szechuan, and is recorded as being an exceedingly common plant. It grows in thickets, in woods, and on cliffs at 7,200–11,300 feet.

In some respects, *R. polylepis* approaches *R. concinnum*, from which it is distinguished by the lanceolate, oblanceolate or oblong-lanceolate leaves, and usually by the overlapping scales with larger, scattered scales on the under surfaces of the leaves. It further differs in that the scales on the branchlets and on the under surfaces of the leaves are flaky. The leaf epidermis is said to be two-layered in *R. polylepis*, but one-layered in *R. concinnum*. The species was introduced into cultivation by Wilson about the year 1904.

R. rigidum Franch. in Bull. Soc. Bot. France, XXXIII, 233 (1886); Millais, Rhododendrons, 235 (1917); Hutch. in The Sp. of Rhod., 807 (1930); Rhod. Handb., 116 (1956). *R. caeruleum* Lévl. in Fedde Repert., XII, 284 (1913); Tagg in Rhod. Soc. Notes, III, 228 (1928); Rehder in Journ. Arn. Arb., XV, No. 4, 273 (1934); R.H.S. Dict. Gard., IV, 1768 (1951); Rhod. Handb., 50 (1956). *R. eriandrum* Lévl. MSS. Tagg in Rhod. Soc. Notes, III, 228 (1928). *R. eriandrum* Lévl. ex Hutch. in The Sp. of Rhod., 798, 851 (1930); Rehder in Journ. Arn. Arb., XV, No. 4, 273 (1934). *R. hesperium* Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 263 (1922); Millais, Rhododendrons, ser. 2, 155 (1924); Hutch. in The Sp. of Rhod., 800 (1930); Rhod. Handb., 80 (1956). *R. rarosquameum* Balf. f. in Notes R.B.G. Edin., X, 137 (1917); Millais, Rhododendrons, ser. 2, 218 (1924); Tagg in Rhod. Soc. Notes, III, 228 (1928); Hutch. in The Sp. of Rhod., 798 (1930); Rhod. Handb., 148 (1956). *R. sycnanthum* Balf. f. et W. W. Sm. in Notes R.B.G. Edin., X, 162 (1917); Millais, Rhododendrons, 250 (1917); Hutch. in The Sp. of Rhod., 777 (1930); Rhod. Handb., 129 (1956).

HABIT: shrub, 60 cm.–3 m. high; branchlets not scaly or sometimes scaly, glabrous or rarely puberulous.

LEAVES: evergreen, elliptic, oblong-elliptic, oblong-lanceolate, oblanceolate, oblong or lanceolate, lamina 2·5–6·8 cm. long, 1–3·2 cm. broad, apex obtuse, acute, shortly acuminate or rounded, mucronate, narrowed to the base, obtuse or rounded; upper surface *pale bluish-green*, not scaly or rarely scaly, midrib glabrous or rarely puberulous; under surface pale glaucous green, scaly, the scales unequal, large and medium-sized, brown, 4–8 (rarely 2–3) times their own diameter apart; petiole 0·2–1·2 cm. long, not scaly or sparsely or moderately scaly, glabrous or rarely puberulous.

INFLORESCENCE: terminal, or terminal and axillary in the uppermost one or two leaves, shortly racemose, 2–6-flowered; rachis 2–4 mm. long, scaly or not scaly, glabrous; pedicels 0·5–2 cm. long, not scaly or rarely sparsely or moderately scaly.

CALYX: 5-lobed or a mere rim, minute, 0·5–1 mm. long, lobes rounded or triangular, outside not scaly or scaly, margin not scaly or scaly, glabrous or rarely puberulous.

COROLLA: widely funnel-shaped, zygomorphic, 1·8–3·1 cm. long, 5-lobed, pink, deep rose-lavender or white, with olive-brown or purple spots, not scaly or rarely scaly outside.

STAMENS: 10, unequal, 1·2–3·8 cm. long, exserted; filaments densely pubescent towards the base.

OVARY: conoid or oblong, 2–5 mm. long, 5-celled, densely scaly, glabrous or rarely puberulous at the apex; style slender, not scaly.

CAPSULE: oblong, 0·8–1 cm. long, 3–4 mm. broad, scaly, calyx persistent.

HABITAT:

Yunnan. DELAVAY 837—isotype, in April 1887. MAIRE in May 1912—holotype of *R. caeruleum*, in May 1911—holotype of *R. eriandrum*, 29, 33, 34, 37, 42, 45, 49—holotype of *R. rarosquameum*, 54, 63, 139, 220. CAVALERIE 4629. DUCLOUX 1266. SIMÉON TEN 143. FORREST 6771—holotype of *R. sycnanthum*, 15576—holotype of *R. hesperium*, 15581, 15586, 15587, 15602, 19385, 19412, 21533, 23110, 23312, 28307. MCLAREN U 27A, U 63A, U 133, U 77A, U 189. ROCK 8407, 8429, 11267. TSAI 50904.

Szechuan. HANDEL-MAZZETTI 2403. WANG 23031.

R. rigidum was discovered by Delavay in April 1884 at Lan-kien-ho, near Mosoyn, Yunnan, and was described by Franchet in 1886. Subsequent collections show that the plant is distributed from east to north-west Yunnan and south-east Szechuan, growing on rocks, in mixed forests, on cliffs, amongst scrub, and in open thickets, at elevations of 2,600–11,000 feet.

In 1913, *R. caeruleum* Lévl. was founded on a specimen collected by E. E. Maire in May 1912 on the mountain of Mo-Tsou, north-east Yunnan. The species is identical with *R. rigidum* in the shape and size of the leaves, in the bristleless upper surfaces and margins of the leaves, and petioles, in the widely spaced scales on the under surfaces of the leaves, in the shape, size and colour of the flowers, and in all other respects they agree.

In 1917, *R. rarosquameum* Balf. f. was described from specimens collected by E. E. Maire in north-east Yunnan. It will be seen that in *The Rhododendron Society Notes*, 1928, this name has been referred to *R. caeruleum*, while in *The Species of Rhododendron*, 1930, the same name has been placed in synonymy under *R. eriandrum* Lévl. ex Hutch.

Again in 1917, and in 1922, two other species, *R. sycnanthum* Balf. f. et W. W. Sm. and *R. hesperium* Balf. f. et Forrest, were founded on Forrest's Nos. 6771 and 15576 respectively, which had been collected on the Tali Range, mid-west Yunnan, in May 1910 and June 1917. Further gatherings show that no constant character can be found to distinguish these species from *R. rigidum*.

Moreover, in 1911 E. E. Maire found a plant in north-east Yunnan, and it was named *R. eriandrum* Lévl. (a manuscript name). A description of this plant by Léveillé has not been published. In *The Rhododendron Society Notes*, 1928, this name has been regarded as a synonym of *R. caeruleum*. Later, in *The Species of Rhododendron*, 1930, p. 798, the same plant has been described as *R. eriandrum* Lévl. ex Hutch., but in the same work, p. 851, *R. caeruleum* which had been described at an earlier date (1913) has been referred to *R. eriandrum* as a doubtful synonym. *R. eriandrum* Lévl. ex Hutch. is identical with *R. rigidum*.

It is apparent that the whole material under these names represents a single variable unit. *R. rigidum*, being the oldest described species, is the valid name. *R. caeruleum*, a well-known name in cultivation, will now be relegated to synonymy. The change in nomenclature is to be greatly regretted, but is in accordance with the International Rules of Nomenclature.

R. rigidum is allied to *R. yunnanense*, but differs in the glabrous leaves and branchlets, in the bluish-green young foliage, and often in the shape of the leaves.

Several forms of *R. rigidum* are in cultivation. The species is hardy and free-flowering. A distinctive feature is the young foliage, bluish-green in colour. It received the Award of Merit when exhibited under the name *R. caeruleum* by Mr. L. de Rothschild in May 1939, and again for a white form, also under the same name, when shown by Lord Aberconway in 1946.

R. searsiae Rehd. et Wils. in Pl. Wils., 522 (1913); Millais, Rhododendrons, 240 (1917); Bot. Mag., t. 8993 (1924); Hutch. in The Sp. of Rhod., 808 (1930); Rehder, Manual Cult. Trees and Shrubs, 706 (1947); Bean, Trees and Shrubs, III, 129 (1951); R.H.S. Dict. Gard., IV, 1783 (1951); Rhod. Handb., 121 (1956).

HABIT: shrub, 2·50–5 m. high; branchlets moderately or rarely densely scaly.

LEAVES: lanceolate, oblong-lanceolate, oblanceolate or rarely oblong-elliptic, lamina 2·5–8 cm. long, 1–2·6 cm. broad, apex acuminate or acutely acuminate or acute, mucronate, narrowed to the base or obtuse; upper surface scaly, midrib puberulous or rarely glabrous; under surface *bluish-glaucous*, scaly, the scales unequal, medium-sized and large, pale or dark

brown, one-half their own diameter apart or rarely their own diameter apart; petiole 0·3–1 cm. long, rather densely or moderately scaly.

INFLORESCENCE: terminal, or rarely terminal and axillary in the uppermost leaf, shortly racemose, 3–8-flowered; rachis 3–6 mm. long, scaly or rarely not scaly, puberulous or glabrous; pedicels 0·5–1·6 cm. long, moderately or rarely densely scaly.

CALYX: 5-lobed, minute, 0·5–1 mm. or rarely 4–5 mm. long, lobes rounded or triangular or rarely oblong, outside scaly, margin scaly, eciliate or rarely ciliate.

COROLLA: widely funnel-shaped, zygomorphic, 2–3·4 cm. long, 5-lobed, white or pale rose-purple, with light green spots on the posterior side, not scaly or rarely tube scaly outside.

STAMENS: 10, unequal, 1·1–3·4 cm. long, exserted; filaments densely pubescent towards the base.

OVARY: oblong or conoid, 3–5 mm. long, 5-celled, densely scaly; style slender, not scaly, glabrous or rarely puberulous at the base.

CAPSULE: oblong, 1–1·4 cm. long, 3–4 mm. broad, rather densely scaly, calyx persistent.

HABITAT:

Szechuan. WILSON 1343—isotype, 3449.

This species is known from two collections made in 1908 by Wilson in western Szechuan. It is found in thickets at elevations of 7,500–9,800 feet.

A marked feature of this plant is the bluish-glaucous under surfaces of the leaves. The well-developed calyx fringed with long hairs, which has been regarded as of diagnostic significance in the description and in the Key in *The Species of Rhododendron*, is inconstant and unreliable. The calyx is 0·5–1 mm. or rarely 4–5 mm. long, and the margin is eciliate or ciliate.

R. searsiae is allied to *R. concinnum* from which it is distinguished by the bluish-glaucous under surfaces of the leaves, by the corolla which is not scaly or rarely scaly on the tube outside, and often by the lanceolate to oblong-lanceolate leaves. It is also akin to *R. zaleucum* which differs in that the under surfaces of the leaves are intensely glaucous, with widely spaced scales, and the corolla is moderately scaly outside.

Wilson introduced this plant into cultivation in 1908. It is hardy, but to grow it satisfactorily some protection from wind should be provided.

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R. siderophyllum Franch. in Journ. de Bot., XII, 262 (1898); Millais, Rhododendrons, 242 (1917); Hutch. in The Sp. of Rhod., 809 (1930); Rehder, Manual Cult. Trees and Shrubs, 706 (1947); Bean, Trees and Shrubs, III, 132 (1951); Rhod. Handb., 124 (1956). *R. ioanthum* Balf. f. in Notes R.B.G. Edin., XIII, 270 (1922); Millais, Rhododendrons, ser. 2, 162 (1924); Hutch. in The Sp. of Rhod., 781 (1930); Rhod. Handb., 145 (1956). *R. jahandiezii* Lévl. in Fedde Repert., XIII, 340 (1914); The Sp. of Rhod., 852 (1930); Rhod. Handb., 145 (1956). *R. leucandrum* Lévl. in Fedde Repert., XII, 103 (1913); The Sp. of Rhod., 852 (1930); Rhod. Handb., 145 (1956). *R. obscurum* Franch. ex Balf. f. in Notes R.B.G. Edin., XIII, 278 (1922); Millais, Rhododendrons, ser. 2, 197 (1924); Hutch. in The Sp. of Rhod., 809 (1930); Rhod. Handb., 147 (1956). *R. rubro-punctatum* Lévl. et Vant. in Fedde Repert., IX, 448 (1911); The Sp. of Rhod., 853 (1956); Rhod. Handb., 148 (1956).

HABIT: shrub, 90 cm.–3 m. high; branchlets rather densely or rarely moderately scaly, glabrous or rarely puberulous.

LEAVES: oblong-lanceolate, ovate-lanceolate, elliptic or lanceolate, lamina 3–9 cm. long, 1·5–4·1 cm. broad, apex acuminate, acute or obtuse, mucronate, narrowed to the base, rounded or obtuse; upper surface scaly, midrib puberulous or glabrous; under surface scaly, the scales unequal, medium-sized and large, or medium-sized and small, brown or dark brown, almost contiguous to 1½ times their own diameter apart; petiole 0·6–1·5 cm. long, densely scaly.

INFLORESCENCE: terminal and axillary in the uppermost one or two leaves, rarely terminal, shortly racemose, 3–6-flowered; rachis 2–4 mm. long, scaly, glabrous or sometimes puberulous; pedicels 0·4–1·5 cm. (rarely 2·1 cm.) long, densely or rarely moderately scaly, glabrous or rarely puberulous.

CALYX: a mere rim or sometimes 5-lobed, minute, 0·5–1 mm. (rarely 2 mm.) long, lobes rounded, triangular or lanceolate, outside and margin densely or moderately scaly, margin eciliate or rarely ciliate.

COROLLA: widely funnel-shaped, zygomorphic, 1·5–3 cm. long, 5-lobed, white, pink, rose, purple or pale lavender-blue, with or without yellow or rose spots, not scaly or lobes moderately or sparsely scaly outside, rarely tube and lobes scaly.

STAMENS: 10, unequal, 0·6–2·4 cm. long, exserted; filaments puberulous towards the base or sometimes glabrous.

OVARY: conoid or oblong, 3–4 mm. long, 5-celled, densely scaly;

style slender, not scaly, glabrous or rarely puberulous at the base.

CAPSULE: oblong, 1–1·5 cm. long, 4–6 mm. broad, rather densely scaly, calyx persistent.

HABITAT:

Yunnan. BODINIER and DUCLOUX 122, 123, no number, no date. MAIRE in May 1912—holotype of *R. jahandiezii*, 43, 44, 51—holotype of *R. ioanthum*, 53 part, 1105, 1329, 1946, 2696. HENRY 9110A—holotype of *R. obscurum*. HANDEL-MAZZETTI 494, 613. FORREST 507, 15129. ROCK 11738, 17381, 17383, 25216. MCLAREN AA6, AA11, AA16, AA19, AA23, AA40, AA46, L35, U136, Misc. Coll. 22, 33, 35.

Szechuan. HANDEL-MAZZETTI 1485. FORREST 20648.

Kweichow. CAVALERIE 1254 part—holotype of *R. leucandrum*, in July 1908—holotype of *R. rubro-punctatum*. TSIANG 7973, 7978, 7980.

The area of distribution of *R. siderophyllum* extends from Kweichow through central, south-west and north-west Yunnan to south-west Szechuan. It grows in mixed thickets by streams, in dry scrub on hills, and on dry wooded hills, at elevations of 6,000–10,500 feet.

This species was described by Franchet in 1898. Subsequently distinct specific names were given to similar plants, namely, *R. rubro-punctatum* Lévl. et Vant., *R. leucandrum* Lévl., *R. jahandiezii* Lévl., *R. ioanthum* Balf. f., and *R. obscurum* Franch. ex Balf. f. In *The Species of Rhododendron*, 1930, these names have been referred to *R. siderophyllum*, *R. bodinieri* and *R. concinnum*. They are identical with *R. siderophyllum* under which they will now appear in synonymy. The plant which was figured in the *Botanical Magazine*, Vol. 144, t. 8759 (1918), as *R. siderophyllum*, is correctly referred to *R. davidsonianum* in *The Species of Rhododendron*, 1930, p. 797.

R. siderophyllum shows a resemblance to *R. davidsonianum* and *R. yunnanense*. It is distinguished from the former usually by the shape and size of the leaves and by the terminal and axillary inflorescence; from the latter usually by the bristleless leaves, often by the shape and size of the leaves, and by the closely spaced scales on the under surfaces of the leaves.

It was introduced into cultivation by Wilson in 1904. The species is hardy and free-flowering. It received the Award of Merit when exhibited by Major Edmund de Rothschild in March 1945.

R. tatsienense Franch. in Journ. de Bot., IX, 394 (1895); Millais,

Rhododendrons, 251 (1917); Hutch. in The Sp. of Rhod., 812 (1930); Rhod. Handb., 130 (1956). *R. heishuiense* Fang in Acta Phytotax, II, 83, pl. IX (1933). *R. leilungense* Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 273 (1922); Millais, Rhododendrons, ser. 2, 171 (1924); Hutch. in The Sp. of Rhod., 803 (1930); Rhod. Handb., 88 (1956). *R. stereophyllum* Balf. f. et W. W. Sm. in Notes R.B.G. Edin., X, 159 (1916); Millais, Rhododendrons, 248 (1917); ibid., ser. 2, 243 (1924); Hutch. in The Sp. of Rhod., 810 (1930); Rhod. Handb., 127 (1956). *R. tapelouense* Lévl. in Bull. Geogr. Bot., XXV, 20 (1915); The Sp. of Rhod., 853 (1956); Rhod. Handb., 149 (1956).

HABIT: shrub, 30 cm.–2·70 m. high, branchlets *deep crimson*, moderately or rather densely scaly, glabrous or sometimes puberulous.

LEAVES: elliptic, obovate, oval, ovate, oblong or oblong-lanceolate, lamina *rigid*, 1·6–6 cm. long, 1–3·1 cm. broad, apex rounded, obtuse or rarely acute, mucronate, base obtuse, rounded or rarely truncate; upper surface moderately or rather densely scaly, or rarely not scaly, midrib puberulous or glabrous; under surface pale green or pale glaucous green, scaly, the scales unequal, medium-sized or small, brown or dark brown, one-half to their own diameter apart, rarely up to twice their own diameter apart; petiole 0·3–1·4 cm. long, moderately or densely scaly, glabrous or rarely puberulous.

INFLORESCENCE: terminal, or terminal and axillary in the uppermost one or two leaves, shortly racemose, 1–6-flowered; rachis 2–3 mm. long, scaly, glabrous or rarely puberulous; pedicels 0·4–1·9 cm. long, moderately or rarely densely scaly, glabrous or rarely minutely puberulous.

CALYX: 5-lobed or a mere rim, minute, 0·5–1 mm. long, lobes rounded or triangular, outside scaly, margin scaly or rarely not scaly, glabrous or rarely ciliate.

COROLLA: widely funnel-shaped, zygomorphic, 1·4–2·3 cm. (rarely 3 cm.) long, 5-lobed, purple, rose, pale rose, rose-lavender or rose-pink, with or without red spots, moderately or sparsely scaly or rarely not scaly outside.

STAMENS: 10, unequal, 0·5–2·5 cm. long, exserted; filaments densely pubescent towards the base.

OVARY: oblong or conoid, 2–4 mm. long, 5-celled, densely scaly; style, slender, not scaly, glabrous or sometimes puberulous at the base.

CAPSULE: oblong, 0·6–1·4 cm. long, 4–5 mm. broad, rather densely scaly, calyx persistent.

HABITAT:

Szechuan. SOULIÉ 741—isotype. FORREST 17042, 20486, 20490, 20630, 21442.

Yunnan. MAIRE in May 1911—holotype of *R. tapelouense*. FORREST 11299—holotype of *R. stereophyllum*, 12468B, 12500, 15204, 15208—holotype of *R. leilungense*, 15263, 15390, 15446, 15641, 21114, 21215, 21270, 21426, 22372, 22472, 23317. ROCK 3275, 3926, 4247, 8345, 8364, 10572, 10600.

R. tatsienense was described by Franchet in 1895. It is distributed in south-west Szechuan and north-west Yunnan, growing amongst scrub, in pine forests, in thickets, and in stony moist meadows at 7,000–12,000 feet. *R. tapelouense* Lévl., described in 1915 from a specimen collected by E. E. Maire in north-west Yunnan, has been correctly referred to *R. tatsienense* in *The Species of Rhododendron*, 1930, p. 853.

In 1913, *R. stereophyllum* Balf. f. et W. W. Sm. was founded on Forrest's No. 11299 from the mountains in the north-east of the Yangtze bend, north-west Yunnan, and in 1922 *R. leilungense* Balf. f. et Forrest was described from a specimen No. 15208 collected by Forrest at Lei-lung-shan, north-west Yunnan. These species agree with *R. tatsienense* in the shape and size of the leaves, in the shape, size and colour of the flowers, and in all other characters they are identical.

Moreover, in 1933 the name *R. heishuiense* Fang was given to a plant from Hei-shui-ho, Szechuan. In the original diagnosis it is associated with *R. stereophyllum* from which it is said to differ "in the deciduous flowering bud-scales and in the leaves which are not scaly on the upper surface and laxly scaly on the under surface". These features are common to both plants. *R. heishuiense* is merely a variant form of *R. tatsienense*, and the stated distinctions do not justify separate specific rank.

R. tatsienense shows a certain degree of resemblance to *R. oreotrephes*. The distinctions between them are discussed under the latter species.

Several forms of this plant are in cultivation. The species is hardy, but to obtain the best results it should be given a sheltered position.

R. vilmorinianum Balf. f. in Notes R.B.G. Edin., XII, 181 (1920);

Millais, Rhododendrons, ser. 2, 257 (1924); Hutch. in The Sp. of Rhod., 813 (1930); Bean, Trees and Shrubs, III, 147 (1951); Rhod. Handb., 136 (1956).

HABIT: shrub, 90 cm.–1·50 m. high; branchlets scaly, rather densely pubescent or glabrous, not bristly or sparsely bristly.

LEAVES: lanceolate, oblong, oblong-lanceolate or oblong-obovate, lamina 2·4–6·6 cm. long, 0·8–2·6 cm. broad, apex acute or obtuse, mucronate, narrowed to the base, obtuse or rounded; upper surface not scaly or scaly, midrib pubescent or rarely glabrous, margins bristly or not bristly; under surface scaly, the scales unequal, medium-sized and large, brown, one-half to their own diameter apart, or rarely twice their own diameter apart; petiole 3–9 mm. long, scaly, bristly or sometimes not bristly, pubescent or sometimes glabrous.

INFLORESCENCE: terminal, or terminal and axillary in the uppermost one or two leaves, shortly racemose, 2–4-flowered; rachis 2–3 mm. long, scaly, moderately or rather densely puberulous or sometimes glabrous; pedicels 0·8–1·8 cm. long, scaly, pubescent or sometimes glabrous.

CALYX: 5-lobed, minute, 0·5–2 mm. long, lobes rounded or triangular or oblong, outside scaly, margin scaly, ciliate or bristly or sometimes glabrous.

COROLLA: widely funnel-shaped, zygomorphic, 1·8–3·5 cm. long, 5-lobed, yellowish-white or pink, with or without brownish spots on the posterior side, scaly outside.

STAMENS: 10, unequal, 1·5–3·5 cm. long, exserted; filaments densely villous towards the base.

OVARY: oblong, 2–4 mm. long, 5-celled, densely scaly, bristly at the apex or not bristly; style slender, not scaly, puberulous at the base or glabrous.

CAPSULE: oblong, 0·8–1·1 cm. long, 2–4 mm. broad, densely scaly, calyx persistent.

HABITAT:

East Szechuan.

This species was described in 1920 from a plant raised by M. de Vilmorin from seed probably collected by Farges in east Szechuan. It has sometimes been known as the white-flowered form of *R. augustinii*. *R. vilmorinianum* should not be mistaken for *R. augustinii*; in the former, the midrib on the under surfaces of the leaves is glabrous, in the latter it is hairy.

R. vilmorinianum resembles *R. davidsonianum* in general features,

but is distinguished often by the flat lamina of the leaf, and often by the pubescent pedicels and ciliate or bristly calyx margin. It is also allied to *R. yunnanense* from which it differs in that the scales on the under surfaces of the leaves are closely spaced, the corolla is scaly all over the outside, and the pedicels are often pubescent.

The species is uncommon in cultivation. Although hardy, it should be given protection from wind.

R. yunnanense Franch. in Bull. Bot. Soc. France, XXXIII, 232 (1886); Journ. Linn. Soc., XXVI, 32 (1889); Bot. Mag., CXXIV, t. 7614 (1898); Gartenfl., LXVI, 70 (1917); Millais, Rhododendrons, 264 (1917); ibid., ser. 2, 262 (1924); Hutch. in The Sp. of Rhod., 815 (1930); Rehder, Manual Cult. Trees and Shrubs, 706 (1947); Bean, Trees and Shrubs, III, 153 (1951); R.H.S. Dict. Gard., IV, 1786 (1951); Proc. Roy. Hort. Soc., LXXIX (1954), 39; Rhod. Handb., 140 (1956). *R. aechmophyllum* Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 226 (1922); Millais, Rhododendrons, ser. 2, 76 (1924); Hutch. in The Sp. of Rhod., 793 (1930); Rhod. Handb., 39 (1956). *R. chartophyllum* Franch. in Journ. de Bot., IX, 398 (1895); Rev. Horte, 135 (1912); Garden, LXXVIII, 304 (1914); Millais, Rhododendrons, 142 (1917); Hutch. in The Sp. of Rhod., 796 (1930); Rhod. Handb., 56 (1956). *R. pleistanthum* Balf. f. ex Hutch. in The Sp. of Rhod., 806 (1930); Rhod. Handb., 109 (1956). *R. seguini* Lévl. in Fedde Repert., XIII, 148 (1914); The Sp. of Rhod., 853 (1930); Rhod. Handb., 148 (1956). *R. strictum* Lévl. nomen. *R. suberosum* Balf. f. et Forrest in Notes R.B.G. Edin., XIII, 301 (1922); Millais, Rhododendrons, ser. 2, 244 (1924); Hutch. in The Sp. of Rhod., 811 (1930); Bean, Trees and Shrubs, III, 138 (1951); Rhod. Handb., 128 (1956).

HABIT: shrub, 90 cm.–3·60 m. high; branchlets moderately or sparsely scaly, not bristly or sometimes bristly, puberulous or sometimes glabrous.

LEAVES: *evergreen or semi-deciduous*, oblanceolate, oblong-lanceolate or lanceolate, lamina 2·5–10·4 cm. long, 0·8–2·8 cm. broad, apex shortly acuminate, acute or obtuse, mucronate, narrowed to the base or obtuse; upper surface moderately or sparsely scaly or sometimes not scaly, bristly or not bristly, glabrous or sometimes puberulous, midrib puberulous or rarely glabrous, margins bristly or not bristly; under surface pale glaucous green or green, scaly, the scales unequal, medium-sized, brown, 2–6 times their own diameter apart,

rarely their own diameter apart; petiole 0·3–1·1 cm. long, moderately or sparsely or sometimes rather densely scaly, bristly or not bristly, puberulous or rarely glabrous.

INFLORESCENCE: terminal, or terminal and axillary in the uppermost one or two leaves, shortly racemose, 3–5-flowered; rachis 2–3 mm. long, scaly, puberulous or glabrous; pedicels 0·5–2 cm. long, moderately or sparsely scaly or not scaly.

CALYX: a mere rim or 5-lobed, minute, 0·5–1 mm. long, lobes rounded or triangular, outside scaly or not scaly, margin scaly or sometimes not scaly, glabrous or puberulous or ciliate.

COROLLA: widely funnel-shaped, zygomorphic, 1·8–3·4 cm. long, 5-lobed, pink, white, pale rose-lavender or lavender, with or rarely without deep crimson, brownish-crimson, deep rose or green spots, not scaly or scaly or sometimes only lobes moderately scaly outside.

STAMENS: 10, unequal, 1·4–4 cm. long, exserted; filaments densely or moderately pubescent towards the base.

OVARY: oblong, 3–5 mm. long, 5-celled, densely scaly, glabrous or rarely puberulous at the apex; style slender, not scaly.

CAPSULE: oblong, 0·6–2 cm. long, 3–5 mm. broad, rather densely scaly, calyx persistent.

HABITAT:

Yunnan. DELAVAY 293—isotype, 4393—isotype of *R. chartophyllum*. MAIRE, no number, no date, 141. FORREST 4163, 12420, 12468A, 13733, 13741, 15002, 15280, 15578, 16357—holotype of *R. pleistanthum*, 17414, 18000—holotype of *R. suberosum*, 18737, 19444, 20176, 20185, 20407, 20536, 20795, 20923, 20926, 21147, 22774, 23100, 23155, 25417, 26463, 26596, 26806, 27402, 27404, 27405, 27745, 28326, 29323. SIMÉON TEN 391. ROCK 3107, 6002, 6031, 6524, 6826, 8437, 8566, 8574, 8651, 9596, 11280, 11281, 17207, 24204, 25174, 25176. TSAI 50906. YÜ 7962, 10698, 10851, 14917.

Szechuan. FORREST 16790—holotype of *R. aechmophyllum*, 17038, 20430, 20434, 20657, 21358. KINGDON-WARD 4322, 4344, 4491, 4974. ROCK 16155, 23714, 24157, 24164, 24309, 24432, 24591, 24592.

Burma. FORREST 24618, 26486, 26529, 29687.

Tibet. FORREST 18904.

Kweichow. CAVALERIE 1254 part—holotype of *R. seguini*. TSIANG 8887.

R. yunnanense was first collected by Delavay in 1883 at Houang-li-pin, western Yunnan. Further gatherings by various collectors show that the species has a wide geographical distribution extend-

ing from west and north-west Yunnan and west Kweichow to east Upper Burma, south-west Szechuan and south-east Tibet. It is found in thickets, in pine forest, in spruce forest, on cliffs, amongst boulders by streams, in open moorland, in scrub, and on rocky slopes at elevations of 6,500–14,000 feet.

The species is very variable in general features due to the various environmental conditions in which it is found. Later in 1895, *R. chartophyllum* Franch. was described from specimens collected in north-west Yunnan and west Szechuan. In the original diagnosis it is associated with *R. yunnanense* from which it is said to be easily distinguished by the many flower-buds, by the narrower leaves which do not show any hairs at the margins, at least in the adult stage.

These species are very much alike in height and habit of growth, in leaf shape and size, in the terminal and axillary inflorescence, in flower shape, size and colour, and they agree in having evergreen or semi-deciduous leaves. In both plants the upper surfaces and margins of the leaves are moderately to very sparsely bristly or not bristly. The recorded diagnostic criteria are variable, and no constant character can be found to distinguish between these two species. *R. seguini* Lévl. which has been referred to *R. bodinieri* in *The Species of Rhododendron*, 1930, p. 853, will now appear under *R. yunnanense* in synonymy. *R. strictum* Lévl., a manuscript name, is also identical with *R. yunnanense*.

In 1922, two other species, *R. aechmophyllum* Balf. f. et Forrest and *R. suberosum* Balf. f. et Forrest, were founded on Forrest's Nos. 16790 and 18000, from south-west Szechuan and west Yunnan respectively, and in 1930 *R. pleistanthum* Balf. f. ex Hutch. was described from a specimen No. 16357 collected by Forrest in north-west Yunnan. The ample material now available shows that these plants agree with *R. yunnanense* in every respect, and this is confirmed by the additional evidence of plants in cultivation.

R. yunnanense is closely allied to *R. hormophorum* which, however, has completely deciduous leaves. It is also related to *R. davidsonianum* from which it differs in that the leaves are often bristly and semi-deciduous, and the scales on the under surfaces of the leaves are widely spaced.

The species was first introduced into cultivation by Delavay about the year 1889. It is hardy, free-flowering, and highly rated. The plant received the Award of Merit in May 1903 when exhibited by Mr. F. W. Moore from Glasnevin, Dublin. It was given the Award of Garden Merit in July 1934.

R. zaleucum Balf. f. et W. W. Sm. in Notes R.B.G. Edin., X, 163 (1917); Millais, Rhododendrons, 265 (1917); ibid. ser. 2, 262 (1924); Bot. Mag., CXLVII, t. 8878 (1938), Hutch. in The Sp. of Rhod., 816 (1930); Bean, Trees and Shrubs, III, 154 (1951); R.H.S. Dict. Gard., IV, 1786 (1951); Rhod. Handb., 140 (1956). *R. erileucum* Balf. f. et Forrest in Notes R.B.G. Edin., XII, 108 (1920); Millais, Rhododendrons, ser. 2, 135 (1924); Hutch. in The Sp. of Rhod., 799 (1930); Rhod. Handb., 69 (1956).

HABIT: shrub or tree, 60 cm.–10·60 m. high, branchlets scaly.

LEAVES: lanceolate, oblong-lanceolate, rarely oblong, elliptic or obovate, lamina 3·2–8·8 cm. long, 1–3 cm. broad, apex acuminate, acutely acuminate or acute, rarely broadly obtuse or rounded, mucronate, narrowed to the base, obtuse or rounded; upper surface not scaly or rarely scaly, midrib puberulous or sometimes glabrous, margins sparsely bristly or not bristly; under surface *markedly glaucous* or rarely not glaucous, scaly, the scales unequal, large, brown, 1½–4 times their own diameter apart, midrib glabrous or minutely puberulous; petiole 0·4–1·5 cm. long, scaly.

INFLORESCENCE: terminal, or terminal and axillary in the uppermost leaf, shortly racemose, 3–5-flowered; rachis 2–5 mm. long, scaly, glabrous or rarely puberulous; pedicels 0·8–2·8 cm. long, scaly.

CALYX: 5-lobed, minute, 0·5–1 mm. or rarely 2 mm. long, lobes rounded or triangular or rarely oblong, outside densely or moderately scaly, margin scaly or rarely not scaly, glabrous, or slightly or moderately bristly, or ciliate.

COROLLA: widely funnel-shaped, zygomorphic, 2–4·8 cm. long, 5-lobed, white, pink, rose, lavender-rose, pale purple or yellow, with or without crimson spots, scaly outside, tube hairy in the lower half outside or glabrous.

STAMENS: 10, unequal, 1·3–3·3 cm. long, exserted; filaments pubescent towards the base.

OVARY: conoid or oblong, 3–5 mm. long, 5-celled, densely scaly; style slender, glabrous or rarely pubescent at the base.

CAPSULE: oblong, 0·8–1·5 cm. long, 3–5 mm. broad, rather densely scaly, calyx persistent.

HABITAT:

Yunnan. FORREST 8923—holotype, 12064, 12065, 15688, 16076, 17589, 17593—holotype of *R. erileucum*, 17600, 17694, 17724, 17937, 18023, 18368, 18470, 18744, 18749, 24101, 24132, 24223,

25576, 25796, 27380, 29581, 29583. ROCK 17066, 18410, 18411, 18418.

Burma. FORREST 17586, 18042, 24562, 26979, 27103, 27603, 27803, 27817, 27818, 27820, 29651. FARRER 891, 980, 1607. KINGDON-WARD 1568, 3039, 3156.

This distinct species was discovered by Forrest on the western flank of the Shweli-Salwin divide, west Yunnan, in August 1912. It was later found by other collectors in mid-west, west and north-west Yunnan, and east Upper Burma. The plant grows in rhododendron, pine, and spruce forests, and in open deciduous forests, in thickets, amongst boulders in side valleys, and on rocky slopes at 6,000–13,000 feet.

A remarkable feature of this plant is the intensely glaucous under surfaces of the leaves, by which the species is readily distinguished from all other members of its Series. In 1920 *R. erileucum* Balf. f. et Forrest was described from a specimen No. 17593 collected by Forrest in June 1918 also on the Shweli-Salwin divide, west Yunnan. It is very similar to *R. zaleucum* in general features, particularly in the markedly glaucous under surfaces of the leaves. Leaf shape is said to be the main character of importance in distinguishing between them—elliptic or elliptic-obovate, abruptly acute at the apex in *R. erileucum*; lanceolate, long acuminate at the apex in *R. zaleucum*. This distinction is evident when the two type specimens are compared, but the adequate material now available shows that the species merge into each other, and no constant character can be found to separate them.

R. zaleucum resembles *R. searsiae* in general appearance, but differs in that the under surfaces of the leaves are intensely glaucous with widely spaced scales, and the corolla is moderately scaly outside.

It was first introduced into cultivation by Forrest in 1912. The species varies in hardiness, but to be able to grow it satisfactorily, particularly along the east coast, a well-sheltered position should be provided. It received the Award of Merit when exhibited by Col. Stevenson R. Clarke in May 1932.

LIST OF SPECIES AND SYNONYMS

aechmophyllum Balf. et Forrest=YUNNANENSE
AFGHANICUM Aitch. et Hemsl.
AMBIGUUM Hemsl.
AMESIAE Rehd. et Wils.

APICULATUM Rehd. et Wils.
artosquameum Balf. f. et Forrest=OREOTREPHES
atroviride Dunn nomen=CONCINNUM
AUGUSTINII Hemsl.
AUGUSTINII Hemsl. var. *azureus* Chen. ex Laum.=AUGUSTINII
AUGUSTINII Hemsl. var. CHASMANTHUM (Diels) Davidian comb. nov.
AUGUSTINII Hemsl. f. *grandifolia* Franch.=AUGUSTINII var. CHASMANTHUM
AUGUSTINII Hemsl. var. RUBRUM Davidian
AUGUSTINII Hemsl. f. *subglabra* Franch.=AUGUSTINII var. CHASMANTHUM
AUGUSTINII Hemsl. var. *yui* Fang=AUGUSTINII
BAUHINIIFLORUM Watt ex Hutch.
benthamianum Hemsl.=CONCINNUM var. BENTHAMIANUM
BIVELATUM Balf. f.
blinii Lévl.=LUTESCENS
BODINIERI Franch.
caeruleum Lévl.=RIGIDUM
cardioeides Balf. f. et Forrest=OREOTREPHES
charianthum Hutch.=DAVIDSONIANUM
chartophyllum Franch.=YUNNANENSE
chartophyllum Franch. f. *praecox* Diels=HORMOPHORUM
chasmanthoides Balf. f. et Forrest=AUGUSTINII var. CHASMANTHUM
chasmanthum Diels=AUGUSTINII var. CHASMANTHUM
chengshienianum Fang=AMBIGUUM
CONCINNOIDES Hutch. et Ward
CONCINNUM Hemsl.
CONCINNUM Hemsl. var. BENTHAMIANUM (Hemsl.) Davidian comb. nov.
CONCINNUM Hemsl. f. *laetevirens* Cowan=CONCINNUM
CONCINNUM Hemsl. var. *lepidanthum* (Rhed. et Wils.) Rehd=CONCINNUM
CONCINNUM Hemsl. var. PSEUDOYANTHINUM (Balf. f. ex Hutch.) Davidian comb. nov.
coombense Hemsl.=CONCINNUM
costulatum Franch.=LUTESCENS
DAVIDSONIANUM Rhed. et Wils.
depile Balf. f. et Forrest=OREOTREPHES
eriandrum Lévl. nomen=RIGIDUM
eriandrum Lévl. ex Hutch.=RIGIDUM
erileucum Balf. f. et Forrest=ZALEUCUM
exquisetum Hutch.=OREOTREPHES
FLAVANTHERUM Hutch. et Ward
HANCEANUM Hemsl.
HANCEANUM Hemsl. 'Nanum'
harrovianum Hemsl.=POLYLEPIS
heishuiense Fang=TATSIENENSE
hesperium Balf. f. et Forrest=RIGIDUM

HIRSUTICOSTATUM Hand.-Mazz.
HORMOPHORUM Balf. f. et Forrest
hutchinsonianum Fang=CONCINNUM
HYPOPHAEUM Balf. f. et Forrest
hypotrichotum Balf. f. et Forrest=OREOTREPHES
ioanthum Balf. f.=SIDEROPHYLLUM
jahandiezii Lévl.=SIDEROPHYLLUM
KASOENSE Hutch. et Ward
KEISKEI Miq.
laetevirens Balf. f. nomen=CONCINNUM
leilungense Balf. f. et Forrest=TATSIENENSE
lemeei Lévl.=LUTESCENS
leucandrum Lévl.=SIDEROPHYLLUM
LONGISTYLUM Rehd. et Wils.
LUTESCENS Franch.
obscurum Franch. ex Balf. f.=SIDEROPHYLLUM
OREOTREPHES W. W. Sm.
oreotrephoides Balf. f. nomen=OREOTREPHES
phaeochlorum Balf. f. et Forrest=OREOTREPHES
pleistanthum Balf. f. ex Hutch.=YUNNANENSE
POLYLEPIS Franch.
pseudoyanthinum Balf. f. ex Hutch.=CONCINNUM var. PSEUDOYANTHINUM
pubigerum Balf. f. et Forrest=OREOTREPHES
rarosquameum Balf. f.=RIGIDUM
RIGIDUM Franch.
rubro-punctatum Lévl. et Vant.=SIDEROPHYLLUM
SEARSIAE Rehd. et Wils.
seguini Lévl.=YUNNANENSE
siderophylloides Hutch.=OREOTREPHES
SIDEROPHYLLUM Franch.
stereophyllum Balf. f. et W. W. Sm.=TATSIENENSE
strictum Lévl. nomen=YUNNANENSE
subcoombense Balf. f. nomen.=CONCINNUM
suberosum Balf f. et Forrest.=YUNNANENSE
sycnanthum Balf. f. et W. W. Sm.=RIGIDUM
tapelouense Lévl.=TATSIENENSE
TATSIENENSE Franch.
timeteum Balf. f. et Forrest=OREOTREPHES
TRICHANTHUM Rehd.
trichopodum Balf. f. et Forrest=OREOTREPHES
TRIFLORUM Hook. f.
TRIFLORUM Hook f. var. MAHOGANI Hutch.
villosum Hemsl. et Wils.=TRICHANTHUM
VILMORINIANUM Balf. f.
WONGII Hemsl. et Wils.
yanthinum Bur. et Franch.=CONCINNUM

yanthinum Bur. et Franch. var. *lepidanthum* Rehd. et Wils.=CONCINNUM YUNNANENSE Franch.
ZALEUCUM Balf. f. et W. W. Sm.

Note: X *lochmium*; X *pallescens*; X *trichophorum*.

RHODODENDRONS AND CAMELLIAS WHICH HAVE RECEIVED AWARDS IN 1956, 1961 AND 1962

Camellia (Donation Hybrid) 'Glenn's Orbit', A.M. February 20, 1962. From a self-pollinated flower of *Camellia* 'Donation' this hybrid was raised from a cross made in 1950. The flowers are semi-double, measure 3½ inches across and contain some 20–25 petals. These vary sharply in colour between light and dark shades of Rhodamine Pink (H.C.C. 527–527/1). The stamens are in a small, central cluster and some of them are petaloid. Exhibited by Mrs. G. H. Johnstone, Trewithen, Grampound Road, Cornwall (Fig. 16).

Camellia japonica 'Gertrude Preston', A.M. April 17, 1962. This plant first flowered about 1940 and is thought to be a seedling from *C. japonica* 'Apple Blossom'. The single flowers are made up of 8 petals each coloured Neyron Rose (H.C.C. 623/2). When fully open the flowers measure 3½ inches across and in colour contrast pleasantly with the immature flowers which are a slightly darker shade. The stamens are in a well formed, central cluster. Exhibited by Mrs. G. Preston, Slaugham Park, Haywards Heath, Sussex.

Camellia japonica 'Guilio Nuccio', A.M. April 17, 1962. The origin of this cultivar was at Messrs. Nuccio's Nurseries, Altadena, California, and it first flowered with the exhibitor in 1961. The semi-double flowers measure 5 inches across, are coloured Carmine (H.C.C. 21/1–21) and are made up of 14 petals besides numerous petaloids which are variable in shape and size. The stamens are in a well defined, open cluster. Exhibited by Oliver Cutts, Esq., New Westbury, Garrards Road, Streatham, London, S.W.16.

Camellia japonica 'Satanella', A.M. March 27, 1956. This most attractive plant was exhibited under the erroneous cultivar name of 'Saturnia', and the name now used follows the ruling in Mrs. B. L. Urquhart's book *The Camellia*, Vol. 1, plate 3 (1956). Each flower shown was 4½ inches across, in shape Paeony Form and coloured Turkey Red (H.C.C. 721/3). The broad leaves were a dark, olive green, and the margins obtusely serrate. Exhibited by Mrs. Leslie Urquhart, Plaw Hatch Estate, Sharpthorne, East Grinstead, Sussex.

Camellia reticulata 'Buddha', A.M. March 6, 1961, as a shrub for the cool greenhouse. A particularly fine exhibit of this camellia was shown. The flowers were 6 in. across and composed of 13 petals and a tight central cluster of golden yellow stamens. In matching the colour of the flowers, the nearest shade was that of Neyron Rose (H.C.C. 623). Exhibited by the Crown Estate Commissioners, Windsor Great Park, Berks.

Rhododendron albrechtii 'Michael McLaren', F.C.C. May 1, 1962. This attractive azalea will reach a height of up to 10 feet but to be seen at its best it must be afforded a favourable position where there is light shade besides good protection from prevailing winds. On the plant shown the flowers were in threes. The central petal of five was spotted with limited yellowish-green markings and the remainder of the flower coloured Solferino Purple (H.C.C. 26/2). Exhibited by Lord Aberconway, V.M.H. and the National Trust, Bodnant, Tal-y-cafn, Denbighshire.

Rhododendron 'Saint Breward' F.C.C. May 1, 1962. Although one of the most attractive hybrids to be shown before the Society during the year, this one was of unknown parentage. Its flowers, of 5 large-lobed petals, are very shallow campanulate and coloured Sea Lavender Violet (H.C.C. 637/2) with darker shading towards the edges of the petals. The stamens are pale blue and the stigma very pale pink. Its truss is globular in shape and tightly packed with flowers. In cultivation it makes a compact, rounded bush about 4 feet high and has proved tolerant of exposure to wind and cold, as well as poor soil conditions: Exhibited by Major-General E. G. W. W. Harrison, C.B., C.B.E., M.C., M.A., J.P., Tremeer, St. Tudy, Bodmin, Cornwall.

Rhododendron (kaempferi × **simsii** var. **eriocarpum) 'Akatsuki', A.M.** June 5, 1962. Without question this plant has proved to be a rhododendron of remarkably free-flowering habit. In size the flowers are $2\frac{3}{4}$ inches across and are coloured Rhodamine Pink (H.C.C. 527) while the stamens are pale crimson. The flowers are borne in twos and both the pedicel and leafy calyx are covered with long pubescent hairs. Exhibited by Crown Estate Commissioners, Windsor Great Park, Berks (Fig. 13).

Rhododendron cubittii 'Ashcombe', F.C.C. February 20, 1962. This fine greenhouse shrub is a native of China and northern parts of Burma. The loose, flat-topped truss of flowers is made up of about five blooms. Each one of these is up to $4\frac{1}{2}$ inches across and, on the particular form exhibited, were white in colour with a large,

orange-yellow blotch in the throat. Over a few flowers there was a faint pinkish tinge and the plant had some scent. Exhibited by Crown Estate Commissioners, Windsor Great Park, Windsor, Berks (Fig. 15).

Rhododendron ('Goshawk' × griersonianum) 'Brookside', A.M. May 21, 1962. From its flat-topped lax, 11-flowered truss and unusual shading of colours this rhododendron has a flamboyant appearance which makes it stand out in any comprehensive planting. Its pedicel is 1¼ inches long, pubescent, red-stained; the calyx petaloid and the tubular corolla 2½ inches long and the same measurement across. The flowers are coloured Yellow Ochre (H.C.C. 07/3) shaded with Barium Yellow (H.C.C. 503/1) and some tinges of Delft Rose (H.C.C. 020/1); the buds are Blood Red (H.C.C. 820). Exhibited by Crown Estate Commissioners, Windsor Great Park, Berks (Fig. 24).

Rhododendron (chryseum × ludlowii) 'Chikor', A.M. May 21, 1962. This dwarf bush was the first hybrid of *R. ludlowii* to be shown to the Society. It formed a compact plant about 8 in. in height and 1 ft. across and was covered with pale creamy-yellow saucer-shaped blooms in trusses of 3–5. The leaves were broadly elliptic. It should represent a useful addition to dwarf rhododendrons for the rock garden and is described as hardy. Raised and exhibited by Messrs. E. H. M. and P. A. Cox, Glendoick, Perth (Fig. 26).

Rhododendron (Royal Flush Grex) 'Hethersett', A.M. May 21, 1962. In most gardens this plant should prove quite hardy but like all hybrids of *R. maddenii* it must be planted away from cold, prevailing winds. The truss is made up of 7 tubular flowers each hanging on a long, scaly pedicel. As for the flowers, these are coloured Naples Yellow (H.C.C. 403/1) and reverse tinged Nasturtium Orange (H.C.C. 610/2) which makes the hybrid a very attractive addition to collections of other plants already raised by crossing the same parents. Exhibited by Mrs. Douglas Gordon, Sandford House, West Street, Farnham, Surrey.

Rhododendron ('Pilgrim' × yakusimanum) 'Lady Bowes Lyon', A.M. May 21, 1962. On this hybrid about 20 flowers make up a large, well packed, globular truss. The corolla is flat campanulate in shape, 3½ inches across and coloured white although largely tinged Rose Pink (H.C.C. 427/3) darkening to Phlox Pink (H.C.C. 625/3). The buds are Phlox Pink (H.C.C. 625). Exhibited by the Director, the R.H.S. Gardens, Wisley, Ripley, Surrey (Fig. 12).

Rhododendron ('Albatross' × 'Sarita Loder') 'Petia', A.M. June 5, 1962. From the cross of two well tried parents this hybrid is proving itself to be a good woodland plant with a large truss of 12 flowers. The red-stained, glandular pedicel is 1½ inches long and the corolla 4 inches across. The flowers are white prominently flushed Amaranth Rose (H.C.C. 530/2) with the outside varying shades of Amaranth Rose (H.C.C. 530). Exhibited by the Director, the R.H.S. Gardens, Wisley, Ripley, Surrey (Fig. 25).

Rhododendron pulchrum var. calycinum A.M. February 6, 1962, as a flowering shrub for the cool greenhouse. A common garden plant in Japan, this variety was probably introduced into England by ROBERT FORTUNE and flowered at the Royal Horticultural Society's Gardens at Chiswick in 1851. It is closely related to *R. scabrum* and may, according to REHDER and WILSON, be a hybrid of this species with *R. mucronatum*; neither *R. pulchrum* nor its varieties are known in the wild state. It is a vigorous free-flowering plant with a compact habit of growth and dull green, strigose, narrowly elliptic leaves up to 3½ inches long and is usually considered superior to the type, having larger, more richly coloured flowers. The individual five-lobed flowers were up to 3½ inches across, rose-purple (H.C.C. Mallow Purple 630/1–630) in colour, with the upper three petals heavily blotched Rhodamine Purple (H.C.C. 29/1). Exhibited by The Director, The Royal Botanic Gardens, Kew, Richmond, Surrey (Fig. 10).

Rhododendron pulchrum 'Violet Cloud' (shown as R. pulchrum 'Tebotan'), A.M. May 21, 1962. For many years this plant has been referred to as a botanical variety of *R. pulchrum* and, indeed, as a species in its own right in one instance. Notwithstanding it is a form "of gardens" and as such should be treated as a garden variety or more correctly, in modern terminology, as a cultivar. The plant which received the award is a very old rhododendron in cultivation and originally was an introduction from Japan. In British gardens it has proved itself to be a plant tolerant of the cold and of free-flowering habit. The flowers appear in tight little bunches and the broad-funnel form corolla is composed of 11 petals and coloured Mallow Purple (H.C.C. 630) besides some crimson spotting. In the centre of each flower there is a tight cluster of small green leaves. Exhibited by the Crown Estate Commissioners, Windsor Great Park, Berks (Fig. 5).

Rhododendron xanthostephanum 'Yellow Garland', A.M. May 15, 1961. Sometimes this species will make a shrub up to 9 feet high with leaves silvery beneath and trusses of 4–8 flowers in clusters.

The corolla measures ¾ inch long and 1 inch across and although the flowers may vary to a considerable degree from one plant to another, on the specimen shown they were Aureolin (H.C.C. 3/1). Exhibited by the Crown Estate Commissioners, Windsor Great Park, Berks.

ADDITIONS TO THE INTERNATIONAL RHODODENDRON REGISTER, 1961–2

Alinta — cl. 'Sir John Waterer' ♀ × 'Vesuvius' (Standish & Noble) ♂; (V. J. Boulter, Olinda, Victoria, Australia); named 1962; spherical truss consisting of 14–16 florets, each Solferino Purple (H.C.C. 26).

Anna Hall — cl. *catawbiense* var. *album* × *yakusimanum*; (D. G. Leach, Brookville, Penn.); named 1961; compact plant 3½ ft. wide, 2 ft. high; leaves 1⅞ in. wide, 4⅝ in. long, convex, with faint brown indumentum beneath; new growth and flower buds conspicuously indumented; white flowers opening from fresh pink buds, resembling the inflorescence of *yakusimanum;* hardiness H-1, having bloomed after −32° in 1961.

Aola — cl. *valentinianum* seedling; (Ben Lancaster, Camas, Washington); named 1962; plant to 2½ ft. in 10 years, bushy, upright; leaves typical of *valentinianum*; flowers open to Canary Yellow (H.C.C. 2/3), changing to Chinese Yellow, double, fimbriated, 2½ to 3 in. wide, 3 to 5 to a truss; probably H3; early.

Apotrophia — cl. *apodectum* × *eriogynum*; (Magor, Lamellen, St. Tudy, Bodmin, Cornwall); named 1962; leaves oblong-elliptical 7–12 cm. long, mucronate, under surface clothed with a thin pale fawn indumentum easily rubbed off leaving a glabrous shiny surface; height 5 feet at 25 years; a small shrub; inflorescence a racemose umbel of 8–10 flowers; calyx and corolla fleshy shrimp pink (Repertoire de Couleurs, 1905, plate 75); calyx 1 cm. unequal; corolla tubular campanulate, marked within on the lobes with darker tinted areas.

Ashcombe — cl. Seedling of *cubittii*; (Crown Estate Commissioners, Windsor); named 1962; leaves 3¾ × 1¾ in. wide; truss 5-flowered, loose, flat topped; pedicel ¾ in. long, scaly; calyx rudimentary; corolla 3 × 4¼ in. across, white, large orange-yellow blotch in throat, on a few flowers faint pinkish tinge, some scent. F.C.C. (R.H.S.) 1962.

Barto Rose — cl. *fargesii* selection; (raised by James Barto, selected by D. W. James, named by Dr. C. H. Phetteplace, Eugene, Oregon); named 1962; plant 10 ft. × 7 ft., pyramidal; leaves elliptic, apiculate, 3 to 4 in. long, 1½ to 2 in. wide; flowers campanulate, 7-lobed, 2¼ in. across, truss flattened, about 14 flowers; flowers Nickerson 7·5 RP 6/12, close to Rose Madder (H.C.C.), deep purple spots in the upper half of the corolla; early, about mid-March.

a Bayou cl. [Glenn Dale]; unnamed forcing double pink Belgian Azalea × 'Treasure'; (U.S. Plant Introduction Station, Box 88, Glenn Dale, Maryland, U.S.A., who hold the stock); seedling from crosses made in 1947 by B. Y. Morrison; named 1962; tested at U.S. Plant Introduction Station at Glenn Dale, Maryland & Savannah, Georgia, U.S. National Arboretum and other locations; spreading Azalea with leaves narrow, elliptic, slightly hairy and dark green; flowers 2½ in. across, single but with occasional petaloid stamens, white with occasional scarlet flakes (H.C.C. 19/2) and stripes.

Bengal Rose cl. *discolor* × 'Tally Ho'; (Ben Lancaster, Camas, Washington); named 1961; vigorous upright plant to 4 ft. in 10 years; leaves 6 to 7 in. long, to 2 in. wide; flowers 6- to 7-lobed, open bell, 4 in. wide, 2½ in. deep, colour Bengal Rose (H.C.C. 25/2), 12 to 15 flowers in an upright truss; hardiness H3; late bloom; cuttings strike easily.

Betty Boulter cl. × Nobleanum ♀ × 'Unique' ♂; (V. J. Boulter, Olinda, Victoria, Australia); named 1962; spherical truss; colour Tyrian Purple (H.C.C. 727/2), slightly spotted.

Betty Hume cl. *fortunei* hybrid?; (raised by C. O. Dexter, introduced by Warren Baldsiefen, Rochelle Park, N.J., and William Efinger, Brewster, N.Y., propagated from a Dexter seedling growing in the New York Botanical Garden as No. 165); named 1961; plant large, spreading, compact; leaves to 7 in. by 2½ in., dark green; flowers pink, ruffled, fragrant, to 4 in. across; probably H2.

Brookside cl. 'Goshawk' × *griersonianum*; (Crown Estate Commissioners, Windsor); named 1962; leaves 7 in. long × 2 in. across, broad lanceolate; petiole 1 in. long; truss 11-flowered, lax, flat-topped; pedicel 1¼ in. long, pubescent, red-stained; calyx petaloid; corolla tubular, 2½ in. long and 2½ in. across, colour Yellow Ochre (H.C.C. 07/3) shaded with Barium Yellow (H.C.C. 503/1) and some tinges of Delft Rose (H.C.C. 020/1); buds Blood Red (H.C.C. 820); A.M. (R.H.S.) 1962.

Buchanan Simpson cl. possible *erubescens* hybrid; (Mr. & Mrs. Greig, Royston Nursery, Royston, Vancouver Island, B.C., Canada); named 1961; leaf bright green, glabrous, 5 in. long, 2 in. across; truss 8–10; corolla about 3½ in. across; Phlox Pink (H.C.C. 625/2/3), lobes 6, frilled; throat speckled reddish olive, base of corolla yellowish; calyx small, 6-lobed, 2 back lobes much larger than remainder, pale green; May.

Candy Floss cl. Hawk grex × Mrs. Randall Davidson grex; (Crown Estate Commissioners, Windsor); named 1962; leaves oblong-obovate, 4 in. long × 2 in. across, dark green above, pale beneath; petiole 1¾ in. long, prominently purple-stained; truss 10-flowered, lax; pedicel 1½ in. long. pruinose, prominently

purple-stained; calyx up to $\frac{3}{16}$ in. long, red-stained; corolla campanulate, $2\frac{1}{2}$ in. long × $3\frac{3}{4}$ in. across, colour cream, lobes suffused with pink darkening at margins to Magenta (H.C.C. 27/3); reverse pale yellow with streaks of the same shade of Magenta.

a Canterbury cl. 'Darkie' × 'Flashbrick'; (an Ilam hybrid raised and introduced by D. G. Leach, Brookville, Pennsylvania, from seeds received from J. S. Yeates, New Zealand); named 1961; plant $3\frac{1}{2}$ ft. high, 2 ft. wide; leaves $1\frac{3}{4}$ in. wide, $4\frac{1}{2}$ in. long, glaucous underneath, dark green above and leathery, the thick foliage remaining in good condition to the end of the season; flowers strong reddish orange (Nickerson 7.5R 5.5/13) with dorsal blotch strong orange (Nickerson 2.5YR 6/15), $4\frac{1}{4}$ in. in diameter, 5 or 6 very broad lobes, 8 or 9 florets to the truss; hardiness H-1, having bloomed after −32° in 1961.

Carioca cl. 'Loderi King George' × "Ostbo's Y3"; (Bovee, Portland, Oregon); named 1961; plant 4 ft., open; flowers to 4 in. wide, centre cream, blending into wide border of purplish pink (Nickerson 5RP 6/10) spotted upper petal dark reddish orange (7.5R 4/11); blooms in late May.

Cary Ann cl. 'Corona' × 'Vulcan'; (Arthur Wright, Milwaukie, Oregon); named 1961; flower colour coral red; P.A. (A.R.S.) 1961.

Century Twentyone cl. 'Cunningham's Sulphur' × *discolor*; (Halfdan Lem, Seattle, Washington); named 1962; plant to 6 ft. tall; leaves 6 in. long, 2 in. wide, very shiny; rounded truss of 15 flowers; pale sulphur-yellow buds fading to white, to 3 in. wide.

a Chamois cl. deciduous Azalea received from a collector as seeds labelled "*R. fainii*" but actually an advanced generation natural hybrid derived from *R. bakeri* and *R. arborescens*; (D. G. Leach, Brookville, Pennsylvania); named 1961; plant $2\frac{1}{2}$ ft. tall, $3\frac{1}{2}$ ft. wide; leaves $1\frac{1}{8}$ in. wide, $2\frac{3}{4}$ in. long, glaucous beneath; flowers brilliant yellow (Nickerson 5Y 12/6) with brilliant yellow (Nickerson 5Y 9/10) dorsal blotch, $1\frac{3}{4}$ in. in diameter, 5 to 7 to a truss, slightly fragrant; blooms late June.

a Chimes cl. [Knap Hill]; parentage unknown; (Bovee, Portland, Oregon); named 1961; plant 4 ft. open; flowers to 3 in. wide, strong pink (Nickerson 10RP 7/8), back of flower deep pink (10 RP 6/12) stripe on each petal.

Clara cl. *decorum* × 'Loderi King George'; (Howard Slonecker, Oak Grove, Oregon); named 1962; plant to 4 ft. in 10 years, bushy, leaves light green, to 5 in. in length and 2 in. wide; flowers white (no pink) open funnel-shaped with recurved lobes, to 5 in. wide; truss 10–12 flowered; early mid-season.

a Coloratura cl. deciduous Azalea received as seeds labelled "*R. fainii*" but introduced as an advanced generation natural hybrid derived from *R. bakeri* and *R. arbor-*

escens; (D. G. Leach, Brookville, Pennsylvania); named 1961; plant 2½ ft. high, 4 ft. wide; leaves ⅞ in. wide, 2½ in. long; flowers very bright rose (Nickerson 10RP 5/12) with strong orange (Nickerson 5YR 7.5/9) dorsal blotch, 2⅛ in. in diameter, 6 to a truss; blooms early July; hardiness H-1, having flowered in 1961 after −32°.

Constable cl. 'Jervis Bay' × litiense; (R.H.S. Wisley); named 1961; open truss of up to 20 flowers, each with open campanulate corolla of Chartreuse Green (H.C.C. 663/3) darkening on upper lobe and some reddish spotting in throat; A.M. (R.H.S.) 1961.

Cream Crest cl. *chryseum* × 'Cilpinense'; (Art Wright, Milwaukie, Oregon); named 1962; plant 2 ft. high, spreading; flowers yellow, cup-shaped, 1 in. in width, 6 to 8 in a tight truss; early.

a Cream Puff cl. deciduous Azalea, an advanced generation natural hybrid derived from *R. bakeri* and *R. arborescens*; (D. G. Leach, Brookville, Pennsylvania); named 1961; plant 2 ft. high, 3 ft. broad; leaves 1 in. wide, 2⅜ in. long, glossy, glaucous underneath, with red petioles; flowers brilliant yellow (Nickerson 2.5Y 10/8) with strong orange yellow (Nickerson 10YR 7.5/12) dorsal blotch, slightly fragrant, 2¼ in. in diameter, 6 to 7 to a truss; the lobes of the florets are conspicuously furrowed longitudinally; blooms late June and early July; hardiness H-1, having flowered in 1961 after −32°.

Crimson Queen cl. 'Harm's Azor' × 'Mosers Maroon'; (Ben Lancaster, Camas, Washington); named 1961; slow growing bushy plant to 2½ ft. in 10 years; narrow leaves 6 to 7 in. long, to 1½ in. wide, persistent; flowers open bell-shaped 3½ in. wide, 2 in. deep, colour crimson (H.C.C. 22), 12–14 flowered neat truss; hardiness H3; cuttings strike readily.

Damophyle cl. Damaris grex × *detonsum*; (Magor, Lamellen, St. Tudy, Bodmin, Cornwall); named 1962; a well shaped bush of 15 ft. at 25 years, with an inflorescence a racemose umbel of 10–12 white flowers; calyx small, corolla campanulate.

Daphne Magor cl. 'Daphne' × *detonsum*; (Magor, Lamellen, St. Tudy, Bodmin, Cornwall); named 1962; height 10 ft. at 25 years, habit arborescent; leaves oval 7–9 cm. long, apex blunt mucronulate, base slightly auriculate; undersurface yellowish-green, 4 cm. wide; calyx and corolla fleshy blood red; calyx 3 cm. unequal; corolla 5 cm. campanulate; inflorescence a loose corymb of 6–8 flowers, pedicels 3 cm.

Double Diamond cl. seedling of *johnstoneanum* (double form); (Crown Estate Commissioners, Windsor); named 1962; leaves obovate-elliptic, margins ciliate and the underside scaly; the petiole ciliate and scaly; each truss is made up of two or three flowers on long, stout, scaly pedicels; the corolla is 3 in. long by 4 in. across, completely double white with the

vestige of an orange tinge in the throat; A.M. (R.H.S.) 1956.

Doubloons — cl. 'Carolyn Grace' × 'Moonstone'; (Art Wright, Milwaukie, Oregon); named 1961; plant semi-dwarf, rounded, compact; flowers yellow, wide funnel-shaped, to 5 in. across, 10 to a loose truss; early.

Edith Berkeley — cl. *consanguineum* × 'Loderi King George'; (Mr. & Mrs. Greig, Royston Nursery, Royston, Vancouver Island, B.C., Canada); named 1961; corolla 6 lobed, unspotted, 3 in. across (H.C.C. 23/1–23), Rose Madder; stamens white; late May–June.

Edith Boulter — cl. 'Marion' ♀ × 'Unique' ♂; (V. J. Boulter, Olinda, Victoria, Australia); first flowered September 1956; named 1962; truss spherical 15–18 florets per truss, frilled on edge; colour lavender pink, darker on edging.

Edwin Beinecke — cl. *fortunei* seedling?; (seedling from C. O. Dexter, raised by Mr. Samuel Everitt, parent plant now owned by Mr. Edwin J. Beinecke, introduced by Howard Young, Chadd's Ford, Pa., and William Efinger, Brewster, New York); named 1962; plant 5 ft. high, well-shaped, compact; flowers yellowish apricot, to 4 in. across, fragrant; probably H3.

Else Frye — cl. *ciliicalyx* hybrid; (P. J. Bowman, 160 Brandon Way, Fort Bragg, California); raised 1947, first flowered 1950; named 1961; colour white flushed pink to rose outside, chrome yellow throat, very fragrant; bloom 4 in. wide, 3 in. long, flowers semi-erect, truss loose, 3 to 6 flowers per truss.

Ferelith — cl. parentage unknown; (Knap Hill Nursery Ltd., Woking, Surrey); named 1962; a "hardy hybrid" Rhododendron; flowers mauve; late May; the original plant is 10–12 feet high; selected for Trial Chelsea 1961; sent for Trial at Wisley January 1962.

Gene — cl. *ciliatum* × *spiciferum?*; (raised at the Univ. of Washington Arboretum from seed received from the Royal Botanic Garden, Edinburgh, named in 1962 by Mr. B. O. Mulligan, Seattle, Washington); plant to 2 ft. tall and 3 ft. across in 10 years; leaves to 2¼ in. long; flowers Cyclamen Purple, H.C.C. 30/3, deepening to 30/2 and 30/1 at the tip of the lobes, funnel-shaped, 1¼ in. long, in nearly spherical trusses; late March to early April; probably H3.

Golden Gift — cl. *chryseum* × *leucaspis*; (Art Wright, Milwaukie, Oregon); named 1962; plant low, spreading, 18 in. across; flowers yellow, saucer-shaped, 1 in. across, 4 to 5 in a truss; early.

a Goldflake — cl. [Knap Hill]; parentage unknown; (Bovee, Portland, Oregon); named 1961; flowers to 2½ in. wide, vivid yellow 2.5Y 8/12, strong orange blotch 7.5YR 7/11, 12 to 14 in a truss; mid-season.

a Green Mist — cl. [Glenn Dale]; unnamed forcing double pink Belgian Azalea × 'Treasure'; (raised and introduced by U.S. Plant Introduction Station, Box 88, Glenn Dale, Maryland, U.S.A.); seedling selected from crosses made in 1947 by B. Y. Morrison; stock held by U.S. Plant Introduction Station; named in 1962; tested at U.S. Plant Introduction Stations at Glenn Dale, Maryland, and Savannah, Georgia, U.S. National Arboretum and other locations; a somewhat upright Azalea with leaves glossy, narrow, elliptic, glabrous; flowers 2½ in. across, semi-double, white with a distinct greenish blotch, heavy texture.

Hethersett — cl. *cinnabarinum* × *maddenii*; (raised by the late Mr. H. Mangles, introduced by Mrs. Douglas Gordon, Sandford House, West Street, Farnham, Surrey); named 1962; free flowering, sweet scented, hardy in sheltered place; colour primrose yellow shading to buff; A.M. (R.H.S.) 1962.

Hilaria — cl. parentage unknown; (Magor, Lamellen, St. Tudy, Bodmin, Cornwall); named 25 years ago; a tree of 20 ft., calyx small, corolla tubular-campanulate, 4–5 cm. long, deep crimson; inflorescence a compact truss of 14–18 flowers; leaves oblong lanceolate 10–12 cm. long, 3–3·5 cm. wide, silvery below.

Honeydew — cl. 'Carolyn Grace' × 'Moonstone'; (Art Wright, Milwaukie, Oregon); named 1962; plant semi-dwarf, rounded, compact; flowers yellow, to 4 in. wide, 5 to 7 in a truss; early.

Inca Gold — cl. *chlorops* hybrid; (Ben Lancaster, Camas, Washington); named 1961; plant to 3 ft. in 10 years, sturdy slow growth; blooms when young; leaves oval elliptic, 3 to 4 in. long, to 2 in. wide, blue green; flowers 6 to 7 petalled, flat bell 3 in. wide, 1 in. deep, Barium Yellow (H.C.C. 503/1) slightly rayed mahogany; graceful truss of 10 to 12 flowers; blooms mid-season; cuttings strike readily; A.R.S. hardiness H2; P.A. (A.R.S.) 1961.

Jacob's Red — cl. *griersonianum* hybrid; (raised Knap Hill Nursery Ltd., Woking, Surrey, in 1935); named 1962; flowers bright scarlet.

Jan-Di-Lyn — cl. (*lacteum* × 'Mary Swaythling') × 'Ole Olson'; (Rollin G. Wyrens, Everett, Washington); named 1962; plant 5 ft. tall, leaves to 6 in. long, dark green; flowers light cream, shading deeper in throat, blush pink in throat, short trumpet-shaped, to 4 in. across, 9 in a compact truss; early May.

Joan Bye — cl. × Nobleanum ♀ × 'Unique' ♂; (V. J. Boulter, Olinda, Victoria, Australia); first flowered September 1959; named 1962; truss consisting of about 16 bell-shaped florets; colour Maize Yellow flushed pink (H.C.C. 607/3).

a Kentucky Minstrel cl. [Knap Hill]; 'Golden Eagle' × Knap Hill Azalea unnamed Orange seedling; (Knap Hill Nursery Ltd., Woking, Surrey); named 1962; flowers large, saffron-yellow and orange.

Kingsway cl. *discolor* × *zeylanicum*; (raised by Lionel de Rothschild and exhibited by Edmund L. de Rothschild, Exbury, Nr. Southampton); named 1961; white, flushed pink with large deep pink throat; P.C. (R.H.S.) 1960.

Lackamas Cream cl. *chlorops* selection; (Ben Lancaster, Camas, Washington); named 1961; sturdy slow growing plant to 3½ ft. and as wide in ten years; leaves broad elliptic, blue green, 3 to 4 in. long, to 2 in. wide; flowers 7 petalled, flat rotate, 3 to 3½ in. wide, 1 in. deep: colour primrose yellow in throat to rich cream, rayed mahogany on upper petals; 10 to 12 flowers of good substance in a graceful truss; blooms as a fairly young plant; mid-season, cuttings strike well.

Lackamas Gold cl. *chlorops* × *wardii*; (Ben Lancaster, Camas, Washington); named 1961; sturdy, bushy, rather dwarf, to 3 ft. in 10 years; leaves blue green, elliptic 3 to 4 in. long to 1½ in. wide, persistent to 4 years; flowers wide campanulate, 2½ to 3 in. wide, 1¼ in. deep, 5 to 7 petals, 12 to 15 in a graceful upright truss, colour Primrose Yellow (H.C.C. 601/1), mid-season bloom; hardiness H3, cuttings strike.

Lackamas Glory cl. 'Earl of Athlone' × *thomsonii*; (Ben Lancaster, Camas, Washington); named 1961; very sturdy slow growing plant, to 3 ft. and as broad in 10 years; leaves oval, dark green of thick substance, lustrous; 3½ to 4 in. long, 2 to 3 in. wide with dormant eyes in all leaf axils, persistent to 4 years; colour Cardinal Red (H.C.C. 822/1); thick substance, wax-like bells 2½ to 3 in. wide, 2 in. deep with pistil and no stamens; calyx persistent like *thomsonii*; round truss of 12 to 15 long-lasting flowers; blooms early mid-season; hardiness H3; cuttings strike well.

Lackamas Ruby cl. 'Earl of Athlone' × *thomsonii*; (Ben Lancaster, Camas, Washington); named 1962; leaves to 6 in. long and 2 in. wide, persistent; flowers Cardinal Red (H.C.C. 822 to 822/1), open bells, waxlike, to 3 in. wide, 15 to 17 in a rounded truss: early; probably H3.

Lackamas Sovereign cl. 'Purple Splendour' × 'Tally Ho'; (Ben Lancaster, Camas, Washington); named 1961; vigorous upright plant to 4 ft. in 10 years; leaves 5 to 6 in. long to 2 in. wide; flowers open bell 3½ in. wide, 2½ in. deep, Tyrian Purple (H.C.C. 727); 15 to 16 flowers in upright round truss; hardiness H3; late bloomer; cuttings strike readily.

Lackamas Spice cl. *chlorops* × *diaprepes*; (Ben Lancaster, Camas, Washington); named 1961; sturdy round plant to 3 ft. in 10 years; leaves elliptic, 6 to 7 in. long, to

2¼ in. wide, deep blue green persistent; flowers 6 petalled, flat rotate, 4 in. wide, 1 in. deep with spicy fragrance, colour pale yellow to creamy white, rayed mahogany; 10 to 12 flowers in a graceful truss; hardiness H3; cuttings strike.

Lambourn cl. 'Lady Chamberlain' × *maddenii*; (Crown Estate Commissioners, Windsor); named 1962; leaves 6 in. × 1½ in., oblanceolate; petiole ½ in. long; truss 6–7 flowered; lax; corolla tubular 2½ in. long × 3 in. across, Persian Rose (H.C.C. 628/3), reverse deeper shading (H.C.C. 628/2), upper lobe stained Amber; P.C. (R.H.S.) 1962.

Last Rose cl. *discolor* × 'Tally Ho'; (Mr. & Mrs. Greig, Royston Nursery, Royston, Vancouver Island, B.C., Canada); named 1961; height of plant 8 ft.; leaf 6–8 in. long 2¼ in. across; truss well rounded; 7–9 in truss; corolla 3½ in. across, 2½ in. long, Rose Madder (H.C.C. 23/2–1), upper lobes freckled orange staining throat with orange flush.

Limelight cl. *catawbiense* var. *album* × (*fortunei* × *wardii*); (D. G. Leach, Brookville, Pennsylvania); named 1961; plant 3½ ft. high, 4½ ft. wide; leaves 2¼ in. wide, 5 in. long; flowers pale yellow (Nickerson 10Y 11/7) with strong yellow-green dorsal blotch (Nickerson 25GY 7/10), 3¼ in. in diameter, 7-lobed, 12 to 15 florets to a full globular truss 5½ in. in diameter; the flower is open, saucer-shaped, resembling that of *wardii*; blooms about 10 days before the mid-season Catawba hybrids; hardiness H-1, having bloomed after −32° in 1961.

Mamie cl. 'Bow Bells' × *souliei*; (Rudolph Henny, Brooks, Oregon); named 1961; plant compact, to about 3½ ft. high; leaves elliptic, 3½ in. long, 2 in. wide; flowers Fuchsine Pink (H.C.C. 627/2), campanulate, 3 in. wide; upright truss with 7 to 11 flowers; blooms in May.

Michael McLaren cl. selected seedling of *albrechtii*; (Lord Aberconway and the National Trust, Bodnant Gardens, Tal-y-cafn); named 1962; similar to *albrechtii* except flowers in threes, Solferino Purple (H.C.C. 26/2), petals 5, central one spotted with limited yellowish-green; F.C.C. (R.H.S.) 1962.

Mrs. John Crawford cl. griersonianum × discolor; (Lt.-Col. Sir James Horlick, Bt., Isle of Gigha, Argyll); named 1962; a strong growing shrub of spreading habit; floriferous; trusses 14 blooms, 3½ in.; Rose Madder 23/2 with throat Crimson 22 and darker spots on upper lobes.

Muy Lindo cl. 'Isabella' × unnamed hybrid *decorum* × *souliei*; (Collingwood Ingram, The Grange, Benenden, Kent); cross made about 1952; named 1962; flowers of immense size, 5½ in. across, open funnel-shaped, slightly scented, pure white with 7 and 8 lobes. Promises to make a large shrub with *decorum*-like foliage.

Naranja cl. 'Margaret Dunn' × 'Tally Ho'; (Lester Brandt, Tacoma, Washington); named 1961; Vermilion (H.C.C. 18) to Jasper Red (H.C.C. 018).

Noele Boulter cl. 'Cornubia' ♂ × 'Dr. Stocker' ♀; (V. J. Boulter, Olinda, Victoria, Australia); first flowered 1958; named 1962; upright grower, florets 10–14 to a truss, Neyron Rose in bud (H.C.C. 623, 623/3) stained in the throat Ruby Red (H.C.C. 827).

Old Spice cl. 'Azor' × *decorum*; (Ben Lancaster, Camas, Washington); named 1961; plant to 4 ft. in 10 years, vigorous, upright; leaves to 7 in. long and 2 in. wide; flowers Phlox Pink (H.C.C. 625/1) blending to Apricot (H.C.C. 609/3), open bell-shaped, fragrant, to 3½ in. wide, 12 in a truss; mid-season; probably H3.

a Osprey cl. [Knap Hill]; parentage unknown; (Knap Hill Nursery Ltd., Woking, Surrey); named 1962; flowers large, broad-petalled, pure white.

a Petite cl. [Glenn Dale]; unnamed forcing double pink Belgian Azalea × 'Treasure'; (originated and introduced by U.S. Plant Introduction Station, Box 88, Glenn Dale, Maryland, U.S.A.); arose as a seedling selected from crosses made in 1947 by B. Y. Morrison; stock held by U.S. Plant Introduction Station; tested at U.S. Plant Introduction Station at Glenn Dale, Maryland, and Savannah, Georgia, U.S. National Arboretum and other locations; a broad spreading Azalea with leaves dark green, medium size, narrow elliptic, glabrous; flowers 3 in. across, Mallow Purple (H.C.C. 630/3), petals roundish, with wavy margins and overlapping.

a Pink Fire cl. a superior form of *R. bakeri*; (D. G. Leach, Brookville, Pennsylvania); named 1961; leaves ¾ in. wide, 3 in. long with undulate margins; flowers pink flushed orange (Nickerson 7.5R 5.5/13) with strong reddish orange (Nickerson 10R 6/12) dorsal blotch, 2⅛ in. in diameter, 5 or 6 to a truss; blooms late June; hardiness H-1, having bloomed in 1961 after −32°.

Pink Goliath cl. selected seedling of unknown parentage; (raised by Firma P. van Nes Az., Boskoop, Holland; distributed by The Old Farm Nurseries, H. den Ouden & Son, Boskoop, Holland); named 1961; spreading growing habit, sets buds regularly, hardy in normal winters, very good for forcing; firm truss with 15 flowers, diameter of fllowers 10 cm.; pure deep pink (Spiraea-red H.C.C. 025/1), blotch a little lighter with green-yellow stripes; flowers mid-season (May 15–25th); reward for the best new Rhododendron and Gold Medal at the show "Flora Nova 1958" at Boskoop, April 1958; Certificate 1st class of the "Vereniging voor Boskoopse Culturen", December 1959; Gold Medal at the Show "Floriade 1960" at Rotterdam April 1960; cultivar has been tested at Boskoop in the Trial Garden.

a Pink Ice cl. [Glenn Dale]; unnamed forcing double pink Belgian Azalea × 'Treasure'; (bred and introduced by U.S. Plant Introduction Station, Box 88, Glenn Dale, Maryland, U.S.A., who hold the stock); arose as a seedling selected from crosses made in 1947 by B. Y. Morrison; named in 1962; tested at U.S. Plant Introduction Stations at Glenn Dale, Maryland, and Savannah, Georgia, U.S. National Arboretum, and other locations; a broad spreading Azalea with leaves dull green, large, rather obovate, glabrous; flowers 3 in. across, double, Mallow Purple (H.C.C. 630/3) with occasional Purple (H.C.C. 630/1) flakes, smooth margins and crisp texture.

a Pink Parfait cl. an Azaleodendron of unknown parentage; (Joe Senko, Cornelius, Oregon); named 1961; flower colour pink; P.A. (A.R.S.) 1961.

a Pink Puff cl. deciduous and an advanced generation natural hybrid derived from *R. bakeri* and *R. arborescens*; (D. G. Leach, Brookville, Pennsylvania); named 1961; plant 2 ft. high, 3 ft. broad; leaves 1⅛ in. wide, 3⅝ in. long, glaucous beneath; flowers salmon pink (Nickerson 2.5R 7/10) with moderate orange yellow (Nickerson 6.3YR 7.5/7) dorsal blotch, 2 in. to 2¼ in. in diameter, 6 to 8 to a truss; blooms late June and early July; hardiness H-1, having flowered in 1961 after −32°.

Renoir cl. 'Pauline' × *yakusimanum*; (R.H.S. Wisley); rounded truss of about 11 flowers each, deep campanulate, Neyron Rose (H.C.C. 623), white in throat with some dark crimson spotting on upper lobe; dwarf and free flowering; A.M. (R.H.S.) 1961.

Revell's Red cl. *griersonianum* hybrid; (Knap Hill Nursery Ltd., Woking, Surrey); raised 1935; named 1962; flowers deep red.

Riplet cl. *forrestii* var. *repens* × 'Letty Edwards'; (Halfdan Lem, Seattle, Washington); named 1962; plant 18 in. high, spreading; leaves to 2½ in. long and 1½ in. wide, rounded both ends, dark green; flowers crimson, fading to salmon pink, wide open, to 4 in. wide, 5 to 7 in a truss; mid-May; P.A. (A.R.S.) 1961.

Saint Breward cl. parentage unknown; (originated and introduced by Major-General E. Harrison, Tremeer, St. Tudy, Cornwall, from a cutting taken from the original plant in garden of Lamellen and presumably raised by the late E. P. J. Magor; original plant dead); cutting taken 1949 is now a bush 4 ft. 8 in. high and 5 ft. 6 in. across; a dense bush in an exposed position; very hardy—it stood 26° of frost when a young plant in 1956; very floriferous every year; up to 26 flowers in a truss; flowers 2⅜ in. across in a globular truss, no spot; Sea Lavender Violet (H.C.C. 637/2)

with darker shading towards the edges of the petals; to be tried at Wisley; F.C.C. (R.H.S.) 1962.

Scarlet Salute cl. Clone of *R. bakeri*; (D. G. Leach, Brookville, Pa.); named 1962; plant 3½ ft. tall, 2 ft. across, leaves 3 in. long and 1⅛ in. wide; flowers brilliant red (Nickerson 6.8R 4.5/13) with bright reddish orange (Nickerson 10R 5.5/13) dorsal blotch, intensifying as they age, 1⅞ in. wide, 5 or 6 to a truss; late June; probably H-1.

a Sceptre cl. [Knap Hill]; Knap Hill Azalea Unnamed White × 'Mrs. A. Waterer'; (Knap Hill Nursery Ltd., Woking, Surrey); named 1962; flowers cream, tinged mauve.

Shirley Scott cl. × Nobleanum ♀ × 'Unique' ♂; (V. J. Boulter, Olinda, Victoria, Australia); first flowered September 1960; named 1962; truss consisting of about 16 florets; Saturn Red (H.C.C. 13/2, 13/3) in bud, opening to Barium Yellow (H.C.C. 503).

a Siskin cl. [Knap Hill]; believed to be *R. luteum* × *molle*; (Knap Hill Nursery Ltd., Woking, Surrey); named 1962; flowers yellow; this plant has the appearance of a very fine form of *R. luteum*; the flower buds are liable to damage by frost.

Smew cl. 'Hawk' × *souliei*; (Crown Estate Commissioners, Windsor); named 1962; buds pink, flowers white suffused with pink; truss 6–8 flowered; P.C. (R.H.S.) 1961.

a Stromboli cl. [Knap Hill]; Knap Hill Azalea unnamed Orange seedling × Knap Hill Azalea unnamed Vermilion seedling; (Knap Hill Nursery Ltd., Woking, Surrey); named 1962; flowers red.

Sweet Bay cl. seedling of *R. trichostomum* var. *radinum*; (Crown Estate Commissioners, Windsor); named 1962; leaves 1¼ in. long × ¼ in. wide, margin recurved, underside densely scaly; truss 25-flowered, globular; pedicel $\frac{1}{10}$ in. long; calyx $\frac{1}{10}$ in. long, deeply lobed, green; corolla narrowly tubular, tube $\frac{2}{3}$ in. long, lobes $\frac{1}{10}$ in. long, colour Tyrian Rose (H.C.C. 24/3) suffused with white to give a pleasing pink colour; A.M. (R.H.S.) 1960.

Tempest cl. 'Fabia' × 'Mars'; (Art Wright, Milwaukie, Oregon); named 1961; plant 6 ft., upright; flowers red, funnel-shaped, to 3 in. wide, 8 to 10 in a loose truss; late.

Thor cl. 'Felis' × *haematodes*; (Lester Brandt, Tacoma, Washington); named 1961; flowers geranium lake (20 to 20/1).

Tom Thumb cl. *didymum* × *thomsonii* (believed); (Magor, Lamellen, St. Tudy, Bodmin, Cornwall); named 1962; a small shrub, now 3 ft. at 25 years, inflorescence an umbel of about 4 flowers borne low down in the plant, below the leaves; corolla tubular campanulate, deep crimson, 4 cm. long; leaves obovate 6–7 cm. long, 3–3·5 cm. across, apex rounded, mucronate, base cuneate; undersurface pale green, glaucous, midrib prominent.

Tomyris — cl. 'Daphne' × *thomsonii*; (Magor, Lamellen, St. Tudy, Bodmin, Cornwall); named 1962; leaf lamina ovate, apex rounded, mucronate, 6–10 cm., petiole 3 cm., flat on top, grooved; underside of lamina with a thin fawn coloured indumentum; calyx and corolla fleshy claret (Repertoire de Couleurs, 1905, plate 167); calyx of 5 unequal lobes 1–1·5 cm.; corolla campanulate 4 cm. long, pedicels 3 cm. long red on one side, inflorescence a loose corymb of 5–7 flowers.

a Venetia — cl. [Knap Hill]; Knap Hill Azalea Orange Red seedling × Knap Hill Azalea Vermilion seedling; (Knap Hill Nursery Ltd., Woking, Surrey); named 1962; flowers intense mauve-salmon; late May–early June.

Violet Cloud — cl. *pulchrum* 'Tebotan' seedling; (Crown Estate Commissioners, Windsor); named 1962; leaves oblanceolate, 1¼ in. long × ¾ in. across, margins ciliate; petiole densely ciliate; truss 6-flowered, pedicel densely ciliate; calyx leafy, corolla 11-petalled, colour Mallow Purple (H.C.C. 630) limited crimson spotting; without stamens; A.M. (R.H.S.) 1962.

Viscount Linley — cl. ciliatum ♂ × racemosum ♀; (A. C. Bramley, Perrins Creek Road, Kallista, Victoria); first flowered September 1960; named 1962; similar to 'Racil' in colour and shape of truss.

a Whitehouse — cl. [Glenn Dale]; unnamed forcing double pink Belgian Azalea × 'Treasure'; (bred and introduced by U.S. Plant Introduction Station, Box 88, Glenn Dale, U.S.A., who hold the stock); seedling selected from crosses made in 1947 by B. Y. Morrison; named 1962; tested at U.S. Plant Introduction Stations at Glenn Dale, Maryland, and Savannah, Georgia, U.S. National Arboretum and other locations; broad spreading Azalea with leaves large, dull green, somewhat obovate and slightly hairy; flowers 3¾ in. across, single white with roundish petals with somewhat wavy margins and overlapping.

Captain Collingwood Ingram has discarded the following Rhododendrons, 'Sea Nymph', 'Satan's Breath' and 'Morning Mist', and wishes their deletion from the International Rhododendron Register.

The following are amplified descriptions of those already given in the International Rhododendron Register:

Frank Galsworthy — (Raised and introduced by the late A. Waterer; sent by Messrs. Walter C. Slocock Ltd., Goldsworth Nursery, Woking, Surrey.) Plant 5½ ft. high, 9 ft. spread, vigorous, fairly compact upright habit, very free-flowering; leaves 5½ to 6⅜ in. long, 1⅜ in. wide, medium to dark dull green. Flower truss 5 in. diameter, 4 in. deep, compact, globular-shaped, 15

to 20 flowers per truss; corolla 2 to 2½ in. diameter, 2 in. long, funnel-shaped, margins entire, a colour near Garnet Lake (H.C.C. 828), spotting on upper petal very pale olive. Flowering from May 28, 1960. A.M. (Wisley) June 2, 1960.

Goldsworth Crimson (Raised, introduced and sent by Messrs. Walter C. Slocock Ltd.) Plant 9 ft. high, 13 ft. spread, vigorous, compact slightly spreading habit, very free-flowering; leaves 5 to 8 in. long, 1⅝ to 2½ in. wide, medium dull green. Flower truss 7 in. diameter, 5 in. deep, compact, globular-shaped, 13 to 16 flowers per truss; corolla 3 to 3¾ in. diameter, 2 to 2⅛ in. long, funnel-shaped, margins entire, Crimson (H.C.C. 22/1), spotting on upper petal black. Flowering from April 25, 1960. A.M. (Wisley) May 10, 1960.

James Burchett (Raised, introduced and sent by Messrs. Walter C. Slocock Ltd.) Plant 10 ft. high, 15 ft. spread, vigorous, fairly spreading habit, very free-flowering; leaves 8 to 8⅞ in. long, 2 to 2½ in. wide, dark green. Flower truss 6 in. diameter, 4 in. deep, compact, globular-shaped, 15 to 17 flowers per truss; corolla 3½ in. diameter, 2 3/10 in. long, funnel-shaped, margins entire, white with a very pale touch of pink at margins, speckling on upper petal at throat yellowish green, buds Rhodamine Pink (H.C.C. between 527/2 and 527/3). Flowering from June 7, 1960. A.M. (Wisley) June 15, 1960.

Mrs. J. C. Williams (Raised by the late A. Waterer and sent by Messrs. Knap Hill Nursery Ltd., Lower Knaphill, Woking, Surrey). Plant 7½ ft. high, 12 ft. spread, vigorous, slightly spreading habit, very free-flowering; leaves 4½ to 5½ in. long, 1½ to 1⅝ in. wide, medium dull green. Flower truss 4½ to 5 in. diameter, 4½ in. deep, compact, globular-shaped, 16 to 19 flowers per truss; corolla 2 to 2½ in. diameter, 1 7/10 to 1⅝ in. long, funnel-shaped, margins entire, white, spotting on upper petal reddish brown. Flowering from May 22, 1960. A.M. (Wisley) June 2, 1960.

Langworth (Raised, introduced and sent by Messrs. Walter C. Slocock Ltd.) Plant 9½ ft. high, 15½ ft. spread, vigorous, spreading habit, very free-flowering; leaves 7 to 8 in. long, 2 8/10 to 3 in. wide, dark dull green. Flower truss 9 in. diameter, 7 in. deep, fairly lax, conical-shaped, 16 flowers per truss; corolla 4 in. diameter, 2½ to 3 in. long, funnel-shaped, margins slightly waved, white, streaked greenish brown at throat, spotting on upper petal green. Flowering from May 14, 1960. H.C. (Wisley) May 20, 1960.

a Golden Eagle (Raised, introduced and sent by Messrs. Knap Hill Nursery Ltd.) Plant 5½ ft. high, 7 ft. spread, vigorous, compact upright habit, very free-flowering; leaves 3½ to 4 in. long, 1⅜ to 2 in. wide, bright glossy green. Flower truss 6 in. diameter, 3½ in. deep, fairly compact, dome-shaped, 10 to 12 flowers per

truss; corolla 3 in. diameter, 2⅜ in. long, funnel-shaped, margins entire and dentate at apex, wide border of Nasturtium Red (H.C.C. 14/1) at margins, mid-rib a shade near Orpiment Orange (H.C.C. 10/2), blotch on upper petal Orpiment Orange (H.C.C. 10/1). Flowering from May 13, 1960. H.C. (Wisley) May 20, 1960.

a Mrs. Gomer Waterer (Raised, introduced and sent by Messrs. Knap Hill Nursery Ltd.) Plant 5 ft. high, 7½ ft. spread, vigorous, fairly spreading habit, very free-flowering; leaves 3 to 4 in. long, 1½ in. wide, medium glossy green. Flower truss 5½ to 6 in. diameter, 3½ in. deep, compact, dome-shaped, 16 to 17 flowers per truss; corolla 2½ to 2⅝ in. diameter, 2⅛ in. long, funnel-shaped, margins entire, white tinged Neyron Rose (H.C.C. 623/2), spotting on upper petal Lemon Yellow (H.C.C. 4), buds yellow tinged red. Flowering from May 4, 1960. H.C. (Wisley) May 10, 1960.

RECENT RHODODENDRON AND CAMELLIA LITERATURE

By PATRICK M. SYNGE

UNDOUBTEDLY the main contributions in Rhododendron literature have come this year from the U.S.A. and David G. Leach's magnificent *Rhododendrons of the World* must take the first place. The publishers claim that this is the most comprehensive book on rhododendrons ever to be published and it would be difficult to disagree; a large and heavy quarto volume of over 500 pages, it covers both species and hybrids and makes use of both the American and the British ratings for hardiness and quality and includes practically all the information given in our *Rhododendron Handbook* and not a little of that given in the *International Rhododendron Register* as well. It is quite right for any author to treat these as source books. The list of rhododendron hybrids with their parentage alone takes 74 pages. To cover the whole range of rhododendrons in one volume is certainly a mammoth task and Mr. Leach has taken four years over it, during which he has visited many gardens and has consulted an impressive list of authorities. Azaleas for the most part do not come within the range of the book. The saga of the introduction of rhododendron species from the Himalayas, China and Tibet during the last hundred and twenty years has been one of the most exciting and fascinating in all the history of plant introduction and also probably one of the most successful. The variation in the species of rhododendron seems almost endless and Mr. Leach shows himself well aware of the importance of obtaining the best forms of species and also the best clones of hybrids. He also lays due emphasis on the importance of foliage in rhododendrons. His chapter on rhododendrons in the garden gives a good digest of the main points to be considered and the best plants to use for particular situations, especially in his consideration of the woodland garden, almost the ideal site for many of the larger rhododendrons. In his chapter on propagation Mr. Leach firmly advocates plants on their own roots and would banish the grafted plant except for a few special cases such as *R. lacteum*. Recent advances in propagation by cuttings of many

of the older hardy hybrids make this a possibility and this is one of the most interesting chapters in the book. He advocates strongly a thorough soaking for eighteen hours of the stem of the cutting in a hormone solution. Another particularly interesting account is that relating to the use of the Fritted Trace elements to secure extra growth which is contained in the chapter on Planting and Caring for rhododendrons.

While written primarily for the American market there is just as much material in the book suitable for and of interest to English growers, and the book can certainly be recommended to them since their needs are considered throughout. The only disappointing feature in the book is the illustrations which in half tone are poorly printed and have lost much of the detail of the flowers; the line drawings of flower and leaf of the species by Mr. E. Amateis are better.

The *Proceedings of the International Rhododendron Conference* held in May 1961 at Portland, Oregon, is now available and contains many interesting papers. A striking contrast is provided by Dr. Brydon's paper on the wonderful growth, especially of tender rhododendrons, that can be attained on the West Coast of America, particularly in the Golden Gate Park at San Francisco, and Mr. David Leach's account of breeding hardy hybrids for the East Coast. Obviously it was a most successful and interesting Conference. A pleasant addition to the book is a series of portrait photographs of the main speakers and others attending the Conference.

Rhododendrons for Your Garden is the American complement of our *Rhododendron Handbook* but contains also a number of general articles on rhododendron growing in different areas of the U.S.A., on hybridizing and other aspects of rhododendrons. It is particularly interesting to note the variation in hardiness ratings between this country and the U.S.A. on some species. There are several useful additions to the list, such as notes on how long will a species take to bloom from seed or cuttings and whether the plant will do best in sun or shade. Separate merit ratings are given for flower and habit of plant and that is a distinct advantage; these are even expressed as fractions—thus a plant rated 4/4 would be the finest obtainable both for flower and habit. The size a plant will reach in 10 years is also given. Much constructive planning has obviously been put into these lists, which are well worth study by British growers as well as American ones.

Camellias by E. B. Anderson is a very useful small handbook on this genus and probably the first to appear in this country. While

it is intended primarily for the beginner, it should also be of interest to all Camellia growers and we hope will encourage a larger number of gardeners to grow this relatively easy and most rewarding plant. An interesting survey of the history is followed by a chapter dealing with the species which have been cultivated in this country. This was written before the last winter and I am not sure that all of us can now agree to *C. saluenensis* as "fairly hardy". In several Surrey gardens it was killed. I would disagree also with his statement that "there is nothing to beat a north wall" for *C. japonica*. It is true that this is advice often given and that they will grow and flower there, but I believe that they will flower much more freely with more sunlight, although they do not want this on their roots. Apart from this his chapter on cultivation is excellent. The section on camellias in alkaline soils may bring fresh hope to those so situated and this is written with the authority of a research chemist. A selection of popular varieties with descriptions is given and these would form an excellent collection. Probably 'Mrs. D. W. Davis' will need to be added in the next edition to the newer varieties of promise since it seems likely to be a really outstanding plant.

The book is well illustrated both in colour and black and white and represents very good value at the price.

Rhododendrons of the World by David G. Leach. Royal 4to, pp. 544. Illus. (Allen and Unwin) 5 gns.

Proceedings of the International Rhododendron Conference 1961 edited by J. Harold Clarke. 8vo, pp. 107. Illus. $2.50.

Rhododendrons for Your Garden edited by J. Harold Clarke. 8vo, pp. 224. Illus. $6.95.

Both obtainable from the Secretary, American Rhododendron Society, 3514 N. Russet St., Portland 17, Oregon, U.S.A.

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Figures in Clarendon type refer to illustrations
(a) *denotes Azalea*
An asterisk denotes award after trial at Wisley

In order to save space the *Camellia japonica* varieties in the list recording the effect of frost in the winter 1961–2 on pages 93–6 have not been included in the Index.