R.H.S. RHODODENDRON AND CAMELLIA YEAR BOOK 1957

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THE RHODODENDRON AND CAMELLIA

YEAR BOOK—1957

THE ROYAL HORTICULTURAL SOCIETY

ONE of the main attractions of this volume is the symposium on "My five favourite camellias" with contributions by well-known camellia experts from many parts of the world. Dr. H. Skinner's article "In Search of Native Azaleas" throws new light on some of the American species. Sir Edward Bolitho's famous garden at Trengwainton is described, and there is a valuable survey of plants damaged during the hard winter of *1955–56*. Other articles include notes on growing rhododendrons from seed by Mr. F. Hanger, an article on growing small rhododendron species in pots by Dr. J. Davidson, and a record from America of a rhododendron growing on an alkaline soil. A reprint of the description of the new genus Yunnanea, allied to Camellia, appears by permission of Dr. H. H. Hu, and a new camellia classification is also included.

COVER ILLUSTRATION

Rhododendron (*Moonshine g.*) '*Bright*'

Colour photograph by

J. E. Downward

Acknowledgements

TO THIS ONLINE EDITION

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Colour photo, J. E. Downward

Rhododendron (Moonshine *g.*) 'Bright'. A fine new yellow hybrid raised at Wisley (See p. 45)

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1957

NUMBER
ELEVEN

LONDON
THE ROYAL HORTICULTURAL SOCIETY
VINCENT SQUARE, S.W.1
1956

PUBLISHED DECEMBER 1956

PRINTED IN GREAT BRITAIN BY
SPOTTISWOODE, BALLANTYNE AND CO. LTD.
LONDON AND COLCHESTER

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ILLUSTRATIONS

FOREWORD

IT is a great privilege for us to be able to print DR. HENRY SKINNER'S interesting account of his recent journeys in the southern and eastern states of the U.S.A. DR. SKINNER, who is the Director of the U.S. National Arboretum at Washington, D.C., recently covered 25,000 miles in collecting and studying his native species of azalea, and his account adds much to our knowledge of a group of plants not nearly so widely grown in this country as their merits would justify. One of the most interesting points in his paper is the occurrence of numerous hybrid groups in the wild, some containing clear hybrids between several species. These signs of hybridization in the wild have never been recorded by either the Chinese or Himalayan collectors. The article from MR. LEISER on *Rhododendron occidentale* growing on an alkaline soil is of special interest, as it may be possible to grow this species successfully under similar conditions in this country. DR. HU'S description of the new genus *Yunnanea* closely allied to the camellias, is most interesting, and we look forward to the time when we are able to grow it in this country together with some of the other new plants mentioned in his letter. The many seeds collected by DR. HU in 1938 and 1939 unfortunately arrived in this country at a time when we were unable to reap full benefit from this very varied collection owing to the war-time conditions which later prevailed.

It is a pleasure this year to include a description of SIR EDWARD BOLITHO'S Cornish garden, at Trengwainton, near Penzance. Some of the finest plants of *R. macabeanum* to be seen in this country are to be found in this garden, as well as many other notable varieties. Rhododendron growers in the more favoured districts, where growth can be very lanky, will be interested in SIR EDWARD'S methods of pruning, by which he has produced compact and very free-flowering bushes.

A symposium on "My five favourite camellias" forms one of the attractions this year and should prove a useful and fascinating guide to camellia enthusiasts. It shows how strong is the preference for many of the older varieties in spite of the welcome influx of new ones from America and Australia. We are particularly grateful to the overseas contributors to this article, especially to MR. RALPH PEER and DR. HAROLD HUME, of California, PROF. E. G. WATERHOUSE, of Australia, and CAPT. NEIL MCEACHARN, of the Villa

Taranto, Italy, all of whose contributions add an international interest to our 1957 *Year Book.*

The survey of plants damaged in last winter's frosts should also be a help to many gardeners, although we hope that the exceptional weather of last February, which was particularly and unexpectedly severe in the south of England, will not be repeated. It is worth noting how comparatively well the camellia genus survived.

The *Rhododendron Handbook* has been revised extensively and will be published later this year. This time it has been divided into two volumes, one of which will be devoted to species and the other to hybrids.

On behalf of the Rhododendron Committee I would like particularly to thank MR. H. H. DAVIDIAN, of the Edinburgh Botanic Garden, DR. HENRY SKINNER, of the U.S. National Arboretum, Washington, and many others, for the generous help they have given in the preparation of the species volume of the Handbooks, which, as small reference volumes, are now both useful and complete.

DIGBY

IN SEARCH OF NATIVE AZALEAS*

By Dr. HENRY T. SKINNER

(*Director, U.S. National Arboretum, Washington 25, D.C.*)

THE following notes are set down as an abbreviated record of a rather extensive collecting trip in search of native American azaleas. Collection of herbarium specimens and living plants has been an essential part of a research project which was organized a few years ago as a rather detailed study of the native members of subseries Luteum, in progress at the Morris Arboretum of the University of Pennsylvania and at the U.S. National Arboretum, Washington, D.C. Towards securing botanical and cytological information at present lacking, it has involved a detailed examination of many thousands of herbarium specimens from several botanical institutions, as well as the field study, here described, to determine more accurately the nature and distribution of individuals comprising the taxonomic units as we now know them.

The project was initiated in 1950. Field collections were made by the writer in 1951. Travel was by road and foot, with use of a closed motor van well stocked with plant presses, packing materials, cameras and all necessary equipment of the collector's stock-in-trade, including a map which showed by letter and colour key the geographic distribution, as previously recorded, of wild azaleas likely to be in flower during each week from mid-March to mid-August and where they occur in twenty-seven states from Canada to central Florida and from Illinois to Texas.

To determine variation within each species, collections were to be made from twenty-five to thirty different plants at intervals of approximately sixty miles with sufficient intervening "county" collections to establish geographic distribution, necessary records to be kept of flower measurements and colouration, habit, ecological relationships and so on.

A FLORIDA START

Leaving Philadelphia on March 17, the goal was Florida, for the first azalea on the time schedule of our map. The first azaleas, or

* Abridged by permission from the original article of the same title in the *Morris Arboretum Bulletin*, Vol. 6, Nos. 1 & 2, 1955.

"Pink Honeysuckles" as a native of the South will always call them, were found with no little excitement along the edges of damp woods on the Florida side of the St. Mary's River. They were plants whose flowers had deep pink tubes and pale to medium pink petals. The corolla tubes and often their supporting pedicels were covered with numerous little pin-head glands and the bud scales and unfolding leaves were hairy with a matted, silky pubescence. The only southern azalea with these several characters is *Rhododendron canescens*, the Florida Pinxter or Hoary azalea, and this, indeed, was it—as we (the Chevrolet and I) were destined to follow it for several weeks and over enormous distances (Fig. 1*a*).

Quest of this early azalea led south as far as Putnam and Alachua Counties in the general vicinity of Gainesville, Florida, but apparently no farther. Skipping the coastal counties it reappeared in fine quantity on the banks of the Suwannee River near White Springs (Fig. 3), where on a warm day it was being worked by honey-bees, bumble-bees and butterflies. It reappeared very conspicuously with dogwood on crossing the Fall Line in Madison County and it became evident that southward occurrences in this region are only, in fact, in very localized pockets, often widely separated. Still travelling west, this azalea reached perhaps a peak in quantity on the banks of the Yellow River in Okaloosa County where bushes became small trees of 15 feet or more with heavy branching trunks. Beyond Georgia, Alabama, Mississippi and Louisiana, it reached a second peak across the Sabine River, in east Texas where the flowers seemed somewhat larger, their tubes longer and the leaves less hairy than in Florida and Georgia. Pure white forms and deep purple-red ones, those with large flowers and small ones with yellow blotches or with delightful scent—all were found during the next six weeks which eventually revealed a distribution of this species from the South Carolina coast around the Gulf of Mexico to the Trinity River in Texas and north across Arkansas and Mississippi to southern Tennessee and southern North Carolina. It clearly covers an enormous area whose only major gaps are the neutral soils of the Mississippi Valley, the Red Hills of Mississippi and Alabama and a few regions not generally suited to ericaceous plants.

A YELLOW AZALEA

The first westward trip with *R. canescens* brought my introduction to the yellow Florida azalea, *R. austrinum*, on March 26, near Geneva, Alabama, and in enormous quantity a few hours later

along a woodland edge just south of the Florida-Alabama border (Fig. 1*b*). Apart from flower colour, the general characters of this azalea are rather similar to those of *R. canescens*, but it is more glandular. The little glistening red, pin-head glands cover pedicels and often vegetative shoots, as well as flower tubes. The flower may be wholly a clear, golden yellow or, more often, the petals may be yellow and tubes a variable strawberry red, giving one the impression that this red tube belongs more properly with *R. canescens* and has perhaps been acquired by *R. austrinum* after flowering at the same time along the same streamsides and producing a proportion of those unmistakably anaemic buff-coloured hybrids for many years past. As the banks of the Yellow River grow luxuriant *R. canescens*, so elsewhere they are appropriately covered with masses of the yellow "Florida" azalea which was subsequently found to occupy a sizeable portion of western Florida, south-east Mississippi, southern Alabama, and south-west Georgia —about as much territory outside of Florida as in.

Later collections of *R. austrinum* were made on the return from Texas on a more northerly swing. Spring was advancing and *R. canescens* was in collecting condition as far east as Georgia's Altamaha River, where it occurs in masses of rich pinks almost across from Old Fort Barrington and the former haunts of the long-lost *Franklinia.*

AND SOME VARIATIONS

Several curiosities had shown up; we had seen pure white *R. canescens*, but in southern Alabama there were whites and pale pinks with yellow blotches and with the lemon scent of *R. alabamense*, yet they could not be identified as this species (Fig. 2). At one point a woodland glade was surrounded by a bizarre display in yellow, orange, white-pink, salmon and every intermediate colour one might name. Several of these plants were sent back, earmarked as progeny from an apparent triple union between *R. canescens*, *austrinum*, and *alabamense*. On a quick return across central Georgia and Alabama a curious break in *R. canescens* was found on the hills of north-west Alabama and across into Mississippi in which the flowers were somewhat smaller, of uniform colour (lacking the red tube) and were often yellow-blotched and scented. Through later collections, this variable assortment, typical of nothing in particular, was traced as far north as Cumberland County on Tennessee's Cumberland plateau. Obviously they had points in common with the hybrid swarms above, but they are

widespread, much older and almost certainly contain a dash of *R. nudiflorum* rather than the *austrinum* of the last-mentioned mixture.

THE RED AZALEA OF GEORGIA

A few miles south-west of Atlanta, Georgia, our attention was momentarily caught by a splash of brilliant orange in a wood not far from the road. Brakes were promptly applied and subsequent investigation revealed an assortment of plants, 2–3 feet high, in oranges, orange-reds, salmons and strong pinks. Unlike our collections to this point, these flowers were distinct in being almost totally devoid of pin-head glands, just as the leaves seemed nearly hairless on their undersides. Only one Georgia azalea fits a description of this sort and that is "red-flowered" *R. speciosum*, the Oconee azalea, which during the next day or so was pursued from here to north of Atlanta, across central Georgia to Augusta, and down the Savannah River to Clyo in the vicinity of its original place of discovery by André Michaux at Two Sisters Ferry in 1787. Not particular as to habitats in central Georgia, the Oconee azalea is a rather confused species in this region. One can guess that it has been on too familiar terms with aggressive *R. canescens* for some time—with results becoming evident through individuals with large, salmon or strong pink flowers, with small red flowers with orange blotches or with variability in their possession of pin-head glands or leaf tomentum. Such variants thrive on level ground in warm sunny places. On the Savannah River a more uniform Oconee azalea remains an inhabitant of the fairly shady red clay bluffs of the west bank where specimens may be found in excellent deep Saturn red—a red of the Coastal Plain which is unlikely to fade under cultivation.

BY THE ATLANTIC TO VIRGINIA

Descent of the Savannah River in search of the Oconee azalea had also led by design towards Beaufort County, South Carolina, which lies across the river on the Atlantic coast, due east of Clyo. Beaufort County is the "type locality" for the Coast azalea, *R. atlanticum*, which according to our map should be in flower at the end of April. Our lead was correct, for, on April 27, the first plants were found in quantity not far from Burton where they held splendid pink blossoms knee-high above fern and inkberry (*Ilex glabra*) in the moist soils of cut-over oak woodland. From this point, and with sundry detours, the Coast azalea was followed in constant flower through the coastal counties of the

Carolinas and Virginia and, with a week or two's interval, to its most northerly distributional point on the Delmarva peninsula in Delaware. Here in Delaware it is still a low-growing azalea; it is generally white-flowered and often highly glandular with pin-head glands on leaves and shoots as well as on the flower parts; the leaves may be glaucous beneath. It would seem likely that such plants as these are more akin to the original form of this azalea and that the pink-flowered and less glandular representatives of South Carolina and Virginia may imply a measure of genic interchange with pink-flowered *Rhododendron canescens* and *nudiflorum* of these regions.

In late April and early May the Coast azalea makes truly a splendid sight as a multi-hued understory to the open pine woods of the coastal Carolinas. Since it is highly stoloniferous it recovers promptly in the wake of the brush fire or roadside trimming or grazing, so that the year following will again see hundreds of upright flower clusters on wiry, knee-high stems borne by one plant an acre or more in extent. A mass collection of separate clones may necessitate covering a considerable territory to be sure that the twenty-five or thirty specimens are, indeed, different.

The course from Savannah to Norfolk, Virginia, in search of *R. atlanticum* sounds very direct as just described. It is a distance of 500 road miles which was actually logged on the speedometer at a little more than twice this amount or 1,200 miles—a fair illustration of the difference between plant-collecting and just driving from one point to another! In this particular case the more inland pink azaleas of the Piedmont, *R. canescens* and *nudiflorum*, were also in flower so that the interior counties of the Carolinas were covered in a fairly thorough fashion on a zigzag route which hit back to the coast at intervals instead of merely following it.

These side excursions were productive of many specimens and several valuable pieces of information. In South Carolina they yielded material from hybrid swarms obviously involving both *R. canescens* and *atlanticum* which are interesting as an indication that a measure of gene exchange does occur between these species; also in South Carolina it was discovered that the inland red clay hills of the Piedmont, which lie roughly between Columbia and Greenville, support very few azaleas. These hills grow excellent red cedar (*Juniperus virginiana*) and have a soil pH often in the vicinity of 7.0, which is doubtless the explanation; and finally, in southern North Carolina, was discovered the interesting area of geographic overlap between southern *Rhododendron canescens* and northern

nudiflorum as represented by pink-flowered azaleas whose morphology might well test the patience of any precise taxonomist (and as they doubtless have).

A VIRGINIA TRANSECT

Saturday, May 5, dawned a soft, spring day amid the attractions of Colonial Williamsburg; but it was an unusual tourist who departed as early as he had arrived late, having spent time to enjoy no more than a bed and a passing view of the Palace Green in his hurry to catch as many as possible of the "honeysuckles" now blooming from here to Alabama and the mid-west.

Of immediate concern was a planned sampling of the Virginia population of *R. nudiflorum* as it extends from Chesapeake Bay and the habitat of *R. atlanticum* to the Blue Ridge and the mountain home of the northern Roseshell azalea, *R. roseum*. Variation in the Pinxterbloom azalea had already posed some questions upon which a transect sampling of this kind was expected to shed light. Mass collections of *R. nudiflorum* were made in Gloucester County at the mouth of the Chesapeake and were continued across the state at intervals of approximately forty miles to the base of the Blue Ridge near Sperryville. From this point collections were made at each 500-foot increase in elevation to the top of Pinnacle Peak in the Shenandoah National Park. One of the exciting finds was at the start of this run, not far from Gloucester, Virginia, where among some cut-back Pinxterblooms near the roadside was one with perhaps the most remarkable colouring I saw anywhere. It was a large blossom in an intense plum purple with strong yellow blotch. There was only one flower-head which I cut for a specimen and after measuring, recording and pressing the collection I returned to dig the plant for horticultural use. But unhappily my "find" was already a loss, for the small plant could nowhere be found in the heavy brush. Henceforth I learned to dig first and cut afterward—or mark the plant!

At the western end of this transect, azaleas were only just coming into flower at low elevations of the Blue Ridge on this first visit on May 7. On a return on May 21, similar azaleas were collectable to two-thirds up the mountain. Completion of the transect at the highest elevations was not possible until June 2, or, in other words, an elevation increase of approximately 2,400 feet delayed flowering by almost a month.

By this time (May 8) *R. alabamense*, an azalea on which more information is needed, was surely coming into flower in Alabama.

The route to find it kept to the western edge of Virginia and the Carolinas to secure one more coverage of *R. nudiflorum* and *canescens* before striking into Georgia where, in the mountains of Lumpkin County, early *R. calendulaceum* was full out in clear yellows to deep orange. It was also seen in exceptionally large-flowered specimens in a small ravine just north of Gainesville. One or two of these had such brilliant red colour that one instinctively thought of the Oconee azalea growing not too far south—and wondered whether this red in Georgia *calendulaceum* might have a rather special significance.

Again heading south-west, it was on May 12 that the first true *R. alabamense* (Fig. 1*c*) was found in full flower on the same hilltop in Marshall County of North Central Alabama where they had been seen in tight bud almost a month earlier. It was a real thrill to find this beautiful little white azalea with its dainty, thin-tubed flowers, yellow blotched and deliciously lemon-scented. In its "best" individuals this azalea of the Alabama hills is also low growing and quite stoloniferous; it bears foliage which is often glaucous beneath—and as glandular as that of white-flowered, low-growing and stoloniferous *R. atlanticum* of coastal Delaware.

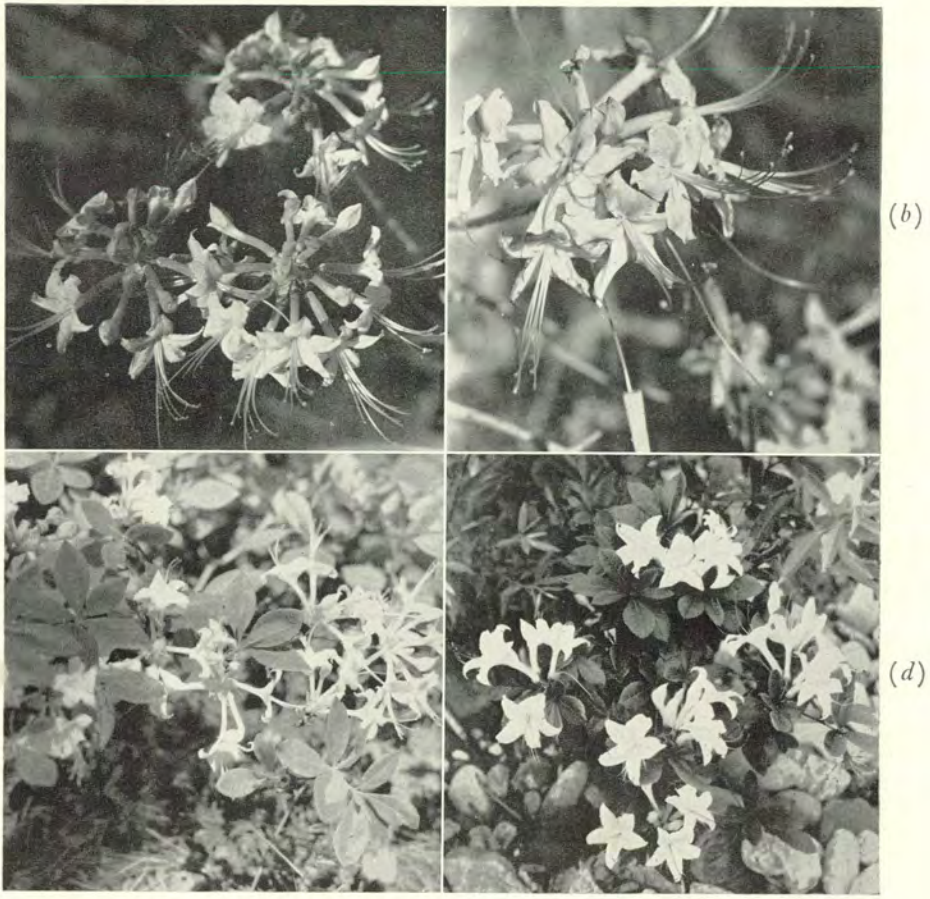
R. alabamense is obviously later flowering than *R. canescens* but the two have nevertheless hybridized to produce numerous intermediate individuals, intermediate in flowering time, often taller growing than the true Alabama azalea and varying in colour from pure or yellow-blotched white to pinks, often without the deep pink tube of *canescens* proper. As it is followed through Cullman and Winston Counties the Alabama azalea is found very much on the fairly dry hilltops and often on the eastern slopes where it seems tolerant of considerably more shade than *R. canescens*. Still white-flowered but taller growing and in less "pure" form, it leaves the wooded hilltops to flow down sunny slopes to the Sipsey River in a mantle of May snow, as far as the eye can see. In such places, though without such pronounced fragrance, this is unquestionably the clearest and showiest of all white native azaleas.

Much as one would have liked to linger in this intriguing collecting area, the azaleas of the north were now calling much too loudly—*calendulaceum*, *atlanticum* north of Virginia, *roseum* and *nudiflorum* in Pennsylvania and New York, and so on; and none of them would wait. But information was still needed on the early azaleas of Tennessee. A route was consequently taken due north across the Tennessee River in the vicinity of Mussel Shoals, then

east through southern Tennessee to the rising escarpment of the Cumberland Plateau. Other hills of northern Alabama were covered with the confusing *R. canescens-alabamense* complex mentioned earlier but good *R. canescens* was again found in the occasional sphagnum bogs which are scattered across the red soil land of southern Tennessee. These red soils are interspersed with limestone outcrops, and produce abundant black locust (*Robinia pseudoacacia*) and red cedar, but few azaleas, except in these upland bogs. If these boggy areas are followed in a north-easterly direction, their azalea populations undergo a hesitant transition from *Rhododendron canescens* towards *nudiflorum*, settling down as relatively "pure" *nudiflorum* in the lowlands of Cumberland County. But the picture is quite different if we proceed directly east from Fayetteville and ascend the plateau escarpment. At lower elevations the limestone strata become overlain with sandstone and beyond this point azaleas immediately appear in a confused complex reminiscent of *R. canescens*, *nudiflorum* and *alabamense*—all thoroughly mixed together and varying in flower colour from pure white to lavender, pale pink with pale tubes and pink with deep red tubes, many of the plants being highly stoloniferous. On the plateau this complex again extends north for seventy miles or more to Cumberland County, just as we have already followed it across northern Alabama from Mississippi.

Leaving this area, the route lay down the scenic Sequatchie Valley (Fig. 4), with side excursions to the plateau ridges on either side. On the upper sandstones azaleas remained abundant, but on the limestone valley floor they occur only along occasional streamsides amid sandstone boulders washed from the upper slopes. It was repeatedly observed that azaleas grow in limestone areas, often abundantly, but detailed observation invariably reveals a situation like the above or a restriction to leached hilltop soils a few inches or a few feet in thickness as they cap the limestone ridges of Virginia, Kentucky and Tennessee.

Eastward beyond the Great Valley of the Tennessee River, the uplands of the southern Appalachian mountains present some of the finest scenery and most luxuriant forest of the eastern United States. Across into North Carolina the great National Forest of Nantahala is named for the Indians' "Land of the Noonday Sun". Here the valley sides are so steep that direct sunlight is soon lost, while an annual rainfall of over 80 inches is only matched on this continent in local areas of the Pacific north-west. Within this forest few azaleas were yet blooming. However, typical, large-flowered



IN SEARCH OF NATIVE AZALEAS

FIG. 1 (*a*) *Rhododendron canescens*, widely distributed pink azalea of the southern States (See p. 10)

(*b*) *R. austrinum*. An all-yellow specimen lacking the normal red tube (See p. 11)

(*c*) *R. alabamense*. Thin tubed grey-leaved and lemon-scented (See p. 15)

(*d*) *R. arborescens*. A large-flowered specimen of Sweet azalea (See p. 22)

FIG. 2—*Rhododendron alabamense* × *canescens*. This is white flowered and showier than either species (See p. 11)

FIG. 3—*R. canescens* in a woodland glade in Alabama (See p. 10)

FIG. 4—Valley of the Sequatchie River and the Cumberland Plateau in Tennessee (See p. 16)

FIG. 5—*Rhododendron serrulatum*. The Hammocksweet azalea in Louisiana (See p. 26)

IN SEARCH OF NATIVE AZALEAS

FIG. 6—Among the natural hybrids of Gregory Bald. North Carolina
(See p. 23)

FIG. 7—Tiny bush of a red-flowered Cumberland azalea, *R. bakeri*, on a cliff face in North Georgia (See p. 20)

R. calendulaceum was found in full flower at lower altitudes, and was thus followed well up into Virginia.

THE VIRGINIA MOUNTAINS

Back in Virginia *R. roseum* and *nudiflorum* were also still in flower and on a hill slope near Konnarock a collection was made of an interesting group of triple hybrids involving these two species and *R. calendulaceum*—which would imply the somewhat puzzling combination of two diploids and a tetraploid if published chromosome counts have actual application in the wild. The hybrid progeny included small, sweet-scented pinks with yellow blotches all the way to salmon yellows of the same flower size as normal Flame azalea.

Farther north a second especially interesting stop was at Peaks of Otter in the Blue Ridge where a transect was run down the west side of Broad Top Mountain. This transect took five hours to accomplish and was decided upon after brief analysis of intermediate elements of a continuous azalea cover which runs from elegant, highly glandular *R. roseum* on the mountain top through transitional stages of vari-coloured, stoloniferous individuals to "good" *R. nudiflorum* at lower elevations conveniently reached by a gravel road sharply descending from the much-travelled Skyline Parkway.

Following further *R. roseum-nudiflorum* collections on the Pinnacle Peak transect, on May 21, the way lay east to coastal Delaware for a last collection of *R. atlanticum*, en route to Philadelphia for the replenishment of supplies.

NEW YORK AND WESTWARD

A check of the flowering guide at this stage indicated the need for northern samples of the early species and for more westerly collections of both these and *R. calendulaceum*. Accordingly, on May 26, a route was chosen via the Pocono Mountain area of northern Pennsylvania to the Finger Lake region of central New York for Pinxterbloom and Roseshell azaleas—or for what passes as these two species after their too rapid or too sociable post-glacial trek to this northern region. They were here in abundant bloom, in excellent colour and in oft-proved hardiness, but both species are a little more like one another than are *R. roseum* and *nudiflorum* of Virginia—a fact which has worried both botanist and azalea growers of the north on more than one occasion. Good collections of New York State Pinkshell were also made in the entertaining company of Dr. C. G. Bowers in the hills above Binghamton.

Travelling south-west, one of the very interesting hybrid swarms was found on June 14 on the eastern slope of Spruce Knob Mountain in West Virginia. The plants were scattered through an abandoned pasture in a region where *R. calendulaceum*, *nudiflorum* and *roseum* all grew and bloomed together. The progeny of these triple matings were bizarre in the extreme—short and tall bushes bearing large or small flowers in every colour from coral pink through salmons to rich lavender, pale yellow or pure white. The last was large-flowered and otherwise identical with the Flame azalea. Such happenings, exciting to the horticulturist, could obviously be most confusing when unexpectedly encountered in an herbarium where such specimens customarily lack any reference to flower colour or to peculiarities of their occurrence. White-flowered hybrid progeny seem relatively frequent when parental *R. nudiflorum* is involved.

Returning to Virginia, a later-flowering and somewhat redder phase of Flame azalea was found in partially open bud on White Top Mountain and High Knob in south-west Virginia, at a time when the last blossoms of the normal large and orange-flowered *R. calendulaceum* were scattered on the lower slopes. This same joint occurrence was likewise met on June 6 on Big Black Mountain in Kentucky, only here at the higher elevation of over 4,100 feet the later "Camp's Red" phase of the summit would obviously not be at its best for another two weeks or more.

IN QUEST OF *R. CUMBERLANDENSE*

Planning a return to the interesting azaleas of Black Mountain, we headed north-west for a general Kentucky reconnaissance in an eleven-county circular swing to Yahoo Ridge, type locality for *R. cumberlandense* at the Kentucky end of the Cumberland plateau.

Within a few miles the first little red and red-orange flowered azalea plants were found on a ridge of Pine Mountain, an azalea which in "best" forms makes a low, twiggy bush, often quite stoloniferous, with glossy green leaves often glaucous beneath and which may or more probably may not be quite the same as the late azalea of Black Mountain. At least on Pine Mountain this is undoubtedly *R. cumberlandense* of E. L. Braun's description and its smaller, thin-tubed flowers are immediately suggestive of a diploid if the earlier, coarsely large-flowered Flame azalea is truly tetraploid—a suspicion which has since been confirmed through cytological examination by Dr. H. L. Li.

Leaving Pine Mountain there was an interval of several miles in which only normal *R. calendulaceum*, past bloom, was seen, but again at higher elevation beautiful little geranium-red azaleas were in shining bloom on a rocky cliff face; they remained with us for many more miles and in fact seemed quite common throughout these wooded hills of south-east Kentucky, all the way to Yahoo Ridge where the type locality for *R. cumberlandense* was revisited with the aid of detailed directions kindly furnished by DR. BRAUN. Unfortunately, the station where BRAUN had collected some time after logging operations in 1935 was now so rapidly reforesting that the shade was becoming heavy and the azaleas poor—a rotation which was frequently observed on this journey. Again and again the most striking displays of azaleas were in open woodland which had obviously been logged, cleared or burnt a few years previously. Presumably it is the scattered parent plants which burst into bloom with the sudden sunlight, set abundant seed and populate the forest floor before young trees again almost shade them out. In the long view one gains the impression of ephemeral, constantly shifting populations, except perhaps in the case of conservative *R. prunifolium* of West Georgia or *R. speciosum* of the Savannah River. By the average plant age the latter species seem to have occupied the same territory for many years. They reproduce sparingly.

As noted in this region perhaps the finest single Kentucky collecting point for the Cumberland azalea was on a fire-tower hill in west central Knox County. The road up this hill was one of those eroded rock and mud affairs which may have been passable to a jeep in good weather but which caused the Chevrolet to rest quietly near the main highway during an attack on foot. The hill was covered with open deciduous forest and towards the top, flowing over the ridges and down the sides of steep gullies, was a multicoloured riot of azaleas. It must have been a fairly old growth, for while some of the flat-topped bushes were only waist-high others were well above eye-level, indicating that fair height is attained by this species, at least in partial shade. Under these conditions, and compared with normal Flame azalea the flowers seemed especially thin-tubed and delicate and with a colour luminosity, in the filtered sunlight, which the other wholly lacks. The shades of colour were infinitely and widely variable from pale straw yellow through yellow-orange to red, and from salmon through pink to translucent cerise as lively as shot silk. Such diversity was often later found, although a constant leaning

toward orange-red and red suggests that the latter may possibly have been the original colour of this azalea.

Having confirmed the Kentucky occurrence of this distinct phase of former *R. calendulaceum*, the next obvious task was to determine with some accuracy the limits of its distribution. So far it had been confined to the northern heights of the dissected west escarpment of the Cumberland plateau so that a logical course was to follow this westerly escarpment southward—and the decision proved a wise one. Leaving Kentucky on June 9, this same little azalea was followed in comparative abundance through the upland woods of the entire length of the Cumberland plateau as it crosses the state of Tennessee. On into Georgia the azalea was there, too, on Fort Mountain. Continuing at about 3,000 feet elevation (in contrast to early *R. calendulaceum* of the lower mountain slopes) it was found towards the summit of Mt. Oglethorpe and on Branch Mountain. It was on this mountain that a spot of brilliant red, like a scarlet tail-light, shone from the top of a cliff. This little beacon was too fascinating to pass up, even though the only approach lay by way of a long flanking climb. But the reward was a tiny, twiggy, rock-clinging azalea plant 6 inches high, a foot across, grey-leaved and covered like a pin-cushion with its little red bells—as extreme a form of this *R. cumberlandense* as one could hope to find and a gem for the garden if its habit is not unduly altered by cultivation (Fig. 7). Travelling north-east the azalea stays with us until, just east of Wolfpen Gap, it covers a hillside in a billowy patchwork of clear yellow, orange, orange-red, cerise and all shades of salmony pink to apricot—both colours and plants so reminiscent of those of our fire-tower hill in Kentucky that even before making a detailed check of less obvious characters one could scarcely doubt that this was the same Kentucky azalea. But was it? This particular spot happened to have been sought out by design, for it is the type locality of *R. bakeri* described by Lemmon and McKay in 1937, four years before *R. cumberlandense* was named by Braun from Yahoo Ridge. Since both descriptions fit these plants with reasonable accuracy it would seem that this gay little bush of the Cumberland plateau must soon shed its dual personality to be recognized by the single, prior, though less happily descriptive name of *R. bakeri*. Here in Georgia its colour may tend slightly more toward the yellow and yellow-orange and its flowers may be slightly larger than when it was seen in Kentucky, but such differences would seem to be of very minor consequence.

CONFUSION IN MACON COUNTY

Still anxious to find where else this little late red azalea might be, another visit was next paid to the Nantahala region of North Carolina, a few miles across the Georgia border. The first plants were found in a deep valley on the approach to Wayah Bald from the west. The plants were 2 feet high in stoloniferous patches deep red in colour and just coming into bloom at this higher elevation. But they were not alone. On all sides were bushes in a bewildering array of colours, of heights to 15 feet or more and of flower sizes to 6 centimetres across the "wing" petals. Either *R. bakeri* was falling apart or it had met up with something else. The latter seems probably the better guess, for not far away were a few late-flowering individuals of normal, early Flame azalea. The sampling and collecting of this amazing population consumed a full half-day, during which time the characteristics of these intermediates became reasonably familiar. Finally heading to Nantahala Lake and Wayah Bald, imagine our astonishment at discovering that the fast-opening azalea display around the lake and well up the slopes of the mountain was composed not of *R. bakeri* or "normal" *calendulaceum* but entirely of recurring batches of these vari-coloured intermediates which eventually settled down to something resembling a reasonably uniform "type" of their own. Other collections were made on later visits to this region, and many more in principally orange and orange-red colours were subsequently found at higher elevations (above 3,000 feet) north through the mountains and right back again to south-west Virginia and Kentucky. A seeming third phase of the *R. calendulaceum* complex presents a puzzling pattern in need of further study as to its true nature and origin. The fact of its existence begins to shed light on the confusing flowering-time behaviour of *R. calendulaceum* from different collection sources. Previously unreported from Alabama, normal *R. bakeri* was also found to occur in two rather widely separated localities in this state.

THE TEXAS AZALEA

For collections of the Texas Azalea, but with *R. bakeri* still in mind, our route was headed, on June 20, for the long trek to the Ozark Mountains of Arkansas and eastern Oklahoma. On arrival there, some five peaks of the Ouachita and Boston ranges were covered in two days.

There was no Cumberland azalea as had been vaguely hoped, but local *R. oblongifolium*, the Texas azalea, was found in several

places with sufficient plants still in flower for at least representative collections. This generally white and rather small-flowered species is confusing in that it so frequently grows side by side with a pubescent-leaved pink azalea akin to *R. roseum*, and evidently breeds with it; the white form may be more adapted to moist valley sites and the other to drier hillside slopes, but the line of preference is not strong. There is needed an earlier season and more careful study of these Ozark plants than was possible in this too rapid survey.

On the third morning in Arkansas, on June 24, with the car again headed back towards the now-passing eastern azaleas, nearly 600 miles were covered before nightfall in eastern Kentucky.

BACK TO THE ALLEGHENIES

The next week was spent in a traverse of the mountains of Virginia, West Virginia, Tennessee and North Carolina in quest of late forms of *R. calendulaceum* and of northerly *R. arborescens* and *viscosum*, wherever it might occur. Throughout this tour the Sweet azalea, *R. arborescens*, was fairly plentiful along streamsides of the upland valleys and in some places, as at Mountain Lake, Virginia, and on Great Pisgah Mountain in North Carolina, it was hybridizing freely with *R. viscosum* to produce variable and often pink-flowered hybrids quite similar to entire populations seen in northern Pennsylvania a month later.

The Sweet azalea tends to be quite variable in certain characteristics and throughout its range from New England to Georgia and Alabama. It may be variable in habit from low, widespreading and bushy in open places to tall and leggy in denser woods; its foliage may be glaucous beneath or entirely green; its corolla may be pure white or carry yellow blotches of varying intensity and in flower size it may be a plant of mediocre attraction to one of quite outstanding quality. A clone with especially large and showy flowers (Fig. 1*d*) was found on the east fork of the Pigeon River in Pisgah National Forest, but others almost equally good were seen at intervals. From the horticultural standpoint, such individuals were quite superior to over-extolled "var. *richardsonii*" of Wayah Bald whose flowers are medium in size and whose dwarfness seems a product of wind-swept exposure which is not expressed in the forest shelter at a few feet lower elevation.

A MOUNTAIN-TOP MARVEL

A fine Fourth of July found the Chevrolet headed towards the azaleas of Gregory Bald, a southern peak of the great Smoky

Mountains of the North Carolina-Tennessee border. Representatives of the Gregory Bald population, as collected earlier by W. H. CAMP, had been inconclusively studied previously and there was a real need to discover what this puzzling situation might actually be.

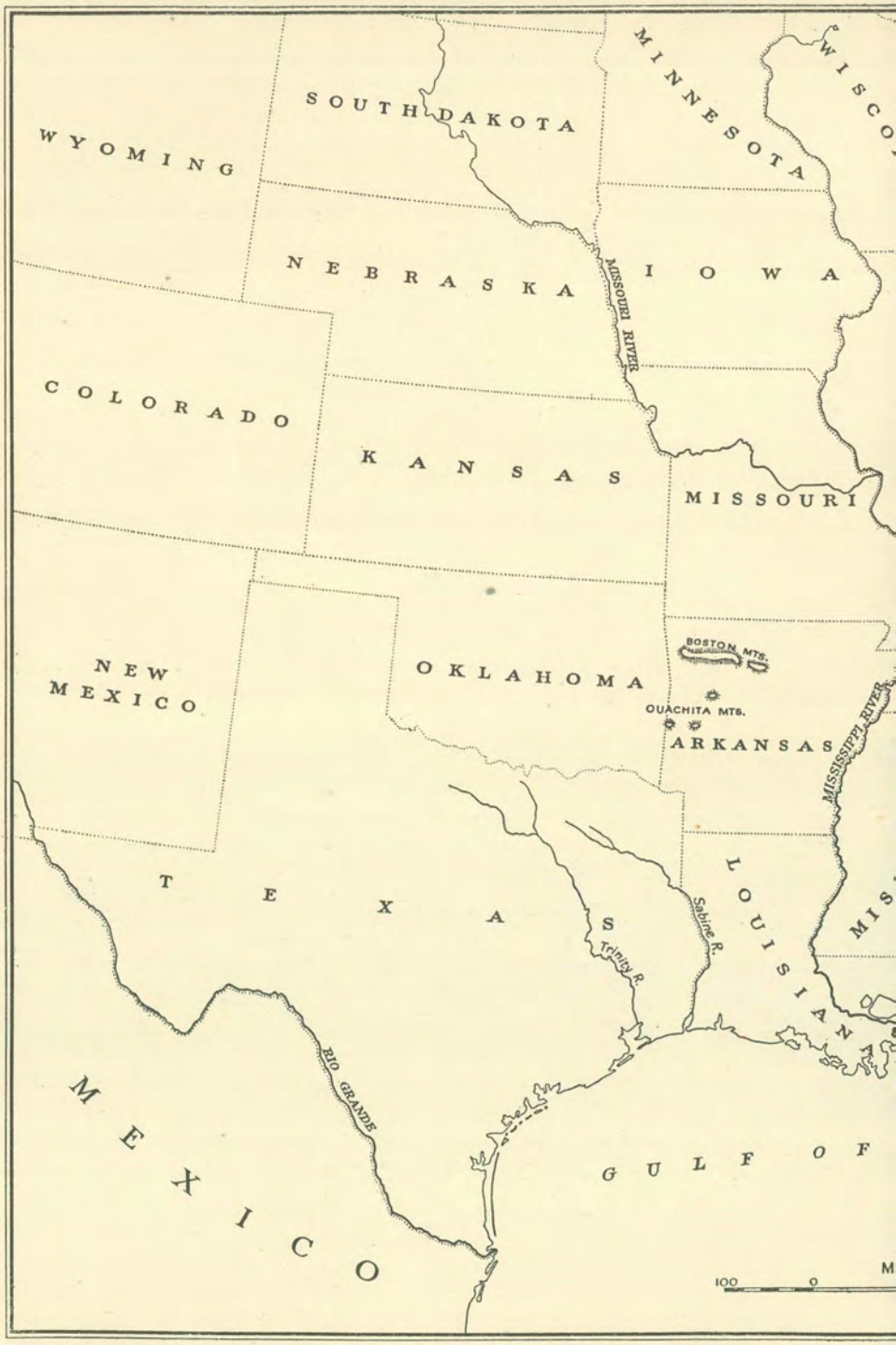
The azaleas of Gregory Bald are at first glance bewildering and almost unbelievable (Fig. 6). The mountain is a true "bald" having a broad grassy summit fringed by scrub trees leading quickly into vigorous deciduous forest. The origin of the bald is unknown but it is probably man-made, resultant from earlier Indian grazing. It is the marginal region between trees and the grass sod which supports a peripheral band of a bizarre collection of azaleas —thousands of plants in every imaginable hue from white to pale yellow, salmon yellow, clear pink and orange-red to red. Many of the flowers are yellow blotched, many of the bushes are stoloniferous and foliage varies from normal to deep glossy green, often glaucous beneath. Obviously it is a complicated hybrid swarm dating, in the older plants, to perhaps thirty years ago when some happening such as a brush or forest fire may have been responsible for the start of this strange and fascinating collection. Omitting the steps which led to this conclusion, it can be certainly stated that these represent the hybrid progeny of three species, *R. bakeri* (Fig. 8), *R. arborescens* and *R. viscosum* var. *montanum*, all of which occur on this mountain, the latter in especially bud-sticky, low and stoloniferous form. While hybrid swarms involving as many species are not rare among eastern azaleas, no other yet seen has equalled this one in impressive size and effect.

Occasional hybrids between just *R. arborescens* and *R. viscosum* var. *montanum* were subsequently seen in several places. These can be striking with their large pink flowers, as are similar hybrids with *viscosum* itself at lower elevations.

THE PLUMLEAF AZALEA

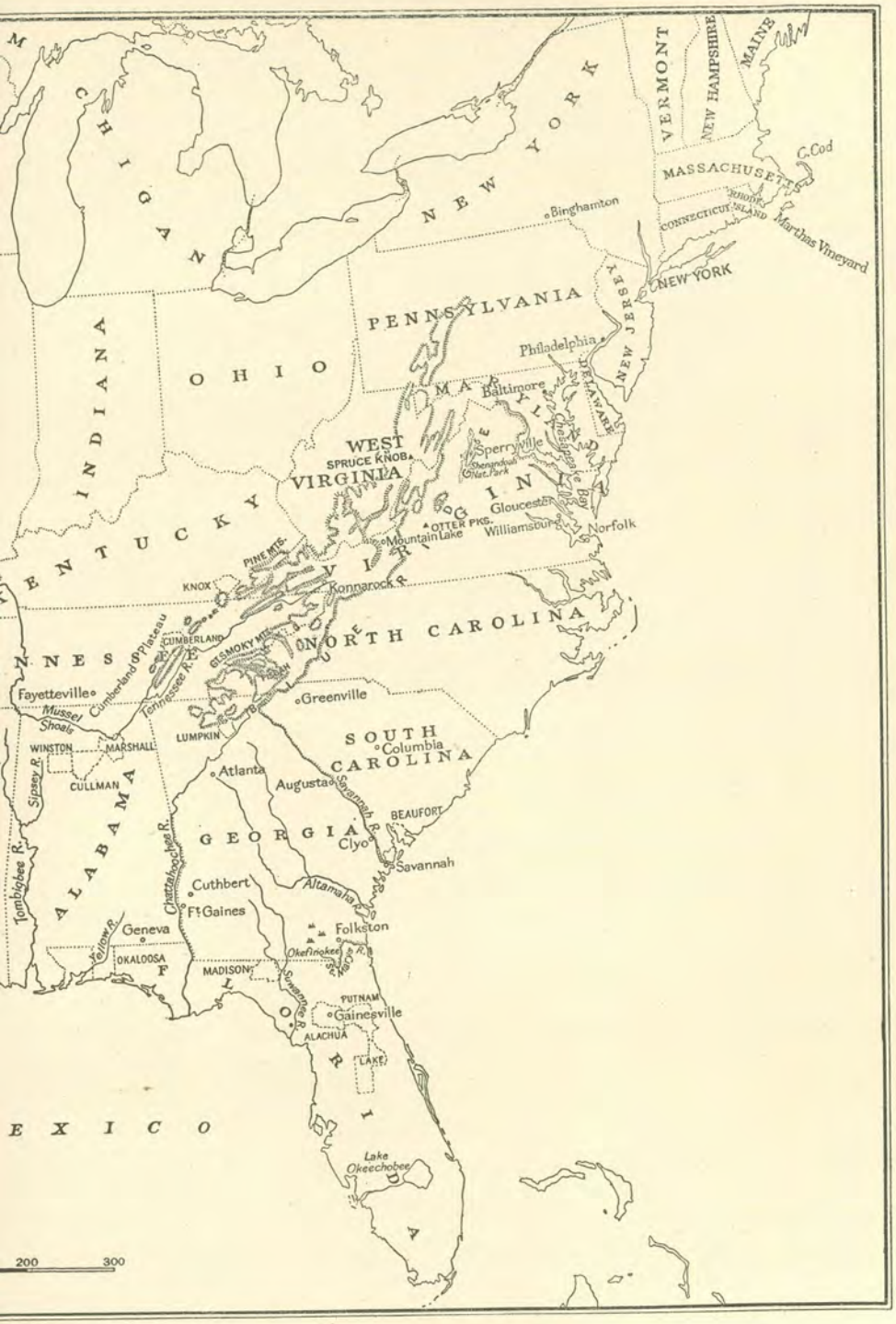
Fort Gaines, Georgia, is a sleepy little town on the banks of the Chattahoochie, the river separating Georgia and Alabama. Both Fort Gaines and Cuthbert, twenty miles north-east, and type locality for the Plumleaf azalea, are situated in a region where the clays of the rising coastal plain have been cut into deep gullies by small meandering streams. The sides are often so steep that the only access is by wading the stream, and one is almost forced to do this (in spite of the water moccasins) by the dense cat-briar (*Smilax*) tangles of the wooded surroundings.

It is in these gullies of a few Georgia and Alabama counties,



IN SEARCH OF

Map showing the eastern and southern State



NATIVE AZALEAS

of the U.S.A. visited by Dr. Henry Skinner

generally centring on Fort Gaines, that the Georgia late red azalea, *Rhododendron prunifolium*, is at home (Fig. 9). Here, on steep slopes, wherever enough light has penetrated to permit flowering, it is found in round-topped bushes up to 12 feet high in reds, red-oranges, apricots and orange-yellows. The colour range is not far different from that of the Cumberland azalea and after seeing the latter for so long one is impressed by the similarity between the two. They both have those characteristic ridged flower tubes in the bud stage; they are both late, both red, and in more detailed morphology have little to show reason why they could not be quite logically and quite possibly regarded as high and low elevation derivatives from a common ancestor. By its lateness of bloom and geographic isolation *R. prunifolium* has not had the opportunity for recent gene exchange with other species. Thus it lacks the aggressive adaptability of its mountain counterpart, so that now, even in its chosen *locale*, young seedlings are seen so infrequently that one wonders how much longer it may persist without more effective protection than it now receives.

The visit to Fort Gaines also provided a valuable lead to a curious little May-flowering white azalea of Central Georgia and Alabama, hitherto overlooked. The next day or so was spent in following this low-growing plant, now past bloom, as far as Mississippi. On a basis of characteristics which lie somewhere between *R. viscosum*, *serrulatum* and *oblongifolium*, it may prove referable to *R. viscosum* var. *aemulans* of Rehder.

HAMMOCKSWEET

Returning to Mississippi on a stifling July 18 with the thermometer hovering around 104° F. the first plants of true *R. serrulatum*, the Hammocksweet azalea, were found in flower the day following on the edge of a wooded swamp in Jones County (Fig. 5). Through the following week and a half it was followed in equally good flower into south-eastern Louisiana, east around the Gulf Coast to within a few miles of Lake Okeechobee in South Central Florida, back to its type collecting locality in Lake County, Florida, north again to the edges of the Okefenokee Swamp and again east to Folkston, Georgia, and the type locality of Rehder's *R. serrulatum* var. *georgianum*. Throughout this thousand miles and more the Hammocksweet azalea showed no excessive variation. At times it is true that its leaves or dormant buds became more silky pubescent, its flower pedicels varied from pale green to deep red in colour and its flowering season was obviously prolonged in

lower Florida where single individuals may bloom from July to October or later, but essentially it remained the same sticky-tubed and rather inconspicuous little white azalea of the bog tussocks and the cypress islands of the southern waterways. At times it formed rounded bushes 10 feet tall, but it was often low or producing but a few rangy stems seeking light through a dense cover of vine-covered holly or palmetto. The very late flowers of individual specimens could well be a characteristic worthy of exploitation in some future race of garden hybrids.

THE NORTHWARD RETURN

With good collections of *R. serrulatum* one could feel with fair satisfaction that the gamut of southern azaleas had been about run, until such time as return visits to puzzle areas might be called for in another year. A northward return was thus in order, so planned as to catch any further outliers of the *R. serrulatum* complex together with a fairly detailed survey of its northern counterpart, *R. viscosum*, which should now be in scattered bloom well into New England.

Leaving Folkston on July 28, our route headed towards Savannah and the Georgia side of the Savannah River where late azaleas had been observed during the *R. speciosum* season. The only collections this day were of fine specimens from a northerly distribution of *Befaria racemosa*, the curious ericaceous "Tar Flower" which, with its spikes of pink blossoms, is suggestive of a primitive azalea form. Here in coastal Georgia it grows on dry soils of the pine-palmetto forest. Farther south the scattered clumps of this single North-American representative of a Central and South-American genus is a frequent sight along the Florida roadsides.

Occasional Hammocksweet azaleas were seen on the way to Savannah, while, bypassing this city, the first low white azaleas resembling *R. viscosum* rather than *R. serrulatum* were blossoming at a woodland edge. Farther along was found a swamp where the swamp tussocks were covered with quite normal *R. serrulatum*, the swamp margins with a very variable dwarf and stoloniferous azalea, sometimes highly pubescent in its buds and leaves which was clearly much more akin to *R. viscosum* than the other species. On drier land an outer circle of *R. canescens*, past bloom, completed the azalea picture. This was the last collection of *R. serrulatum*, which does not seem to spread north of the Savannah River. It is clearly a region where the two late white azaleas meet and as such it is likely that gene exchange with resultant variability could be expected here in East Central Georgia.

Crossing the Savannah River on Route U.S. 301, this road was followed north to Baltimore, as it runs parallel to the coast some 100 miles inland. Throughout the distance of the Carolinas, Virginia, and Maryland, *R. viscosum* was mass-collected, usually in good bloom, at intervals of approximately 60 miles. From Baltimore it was followed past Philadelphia into New Jersey, across New Jersey to Connecticut, and across Connecticut and Massachusetts to Cape Cod and even to the island of Martha's Vineyard where it was flowering on August 8. This was another 1,000-mile run in which the variation of one species could be observed, step by step, until it became a fascination that terminated only as the last plants were collected. From the dwarf, twiggy and semi-evergreen bushes of the marshes of South Carolina to the tall, grey-leaved and large-flowered shrubs of the pond margins of Cape Cod, the Swamp azalea is much more changeable than its sister of the Gulf coast. REHDER has divided it into eight varieties and forms. One could make these many more, or less, depending upon the viewpoint of the observer. It seems certain that not a little of the trouble is due to *R. viscosum* and *arborescens* having met on occasion in the northern states, as was strongly suggested by the last New York State and Pennsylvania collections on the return to Philadelphia. In some of these northern swamps genes have been so freely exchanged between these two species that nomenclatural assignment of present populations becomes virtually impossible. The situation is similar to that previously noted with regard to *R. roseum* and *nudiflorum*. But in spite of these local happenings, *R. viscosum* can still be regarded as "good" a species, though variable, as *R. roseum*, *nudiflorum* or *serrulatum*.

The return to Philadelphia was on Sunday, August 12, and thus ended, after twenty-one weeks and 25,000 miles of almost continuous collecting, this quest for American azaleas. A few additional collections have since been made, as doubtless there will be others in the future. From this major field survey were secured 8,000 herbarium specimens and 500 living plants, whose study should throw much new light upon the nature and the behaviour of these plants, as well as clues, perhaps, to the behaviour of other members of this genus, on other continents. The herbarium specimens, now mounted and catalogued, are deposited in the herbarium of the Morris Arboretum of the University of Pennsylvania, at which institution the collection of living plants is also maintained for future observation and for their use in current cytological studies.

RHODODENDRONS AT TRENGWAINTON

By PATRICK M. SYNGE

TRENGWAINTON, Cornish for "the house of the springs", lies on the higher ground 400 feet above Penzance and inland about three miles from the sea. The ground slopes away down the drive to the entrance which is only 200 feet above sea-level and from the house there are lovely views of St. Michael's Mount and Mount's Bay, the former neatly framed in a gap cut between the beeches. Enjoying the mild Cornish climate with the influence of the sea close by, a moisture-retentive soil of loam and leaf-mould, though without clay, and the good drainage given by the slope, the growth of rhododendrons has been very good, only curbed by the skilful but vigorous pruning of SIR EDWARD BOLITHO. This has enabled him to grow as compact masses, species such as *Rhododendron griersonianum* and *R. johnstoneanum*, which in this climate are normally rather loose growers. The result is plants which are literally covered with flower, and the large groups of plants all growing together present a much more floriferous and perhaps finer spectacle than they usually give when left to grow according to their own devices (Figs. 14 and 18). Such a policy would, however, have to be modified in gardens with less favourable climates. This pruning is started soon after flowering ceases and is carried on as convenient throughout the summer. Sometimes large plants which have grown straggly in the woods are cut to within a foot or two of the ground.

When Sir Edward inherited the estate about thirty years ago there were few rhododendrons other than forms of *R. arboreum*, the enormous specimen of *R. falconeri* (Fig. 10) and a beautiful pure white *R. griffithianum* (*R. aucklandii*) of which the present plant is a layer. The *falconeri* was planted about 1897 and now it is at least 35 feet high and 50 feet across and in excellent health, a beautiful tree with several large trunks (Fig. 12). A lanky 30-foot *arboreum* rhododendron, although in full flower, was cut down during our visit to give more room to the *falconeri* and to facilitate photography so that it is now seen to full effect. The *R. griffithianum* showed some browning of the leaves due to winter-damage

but was flowering freely. The loose upright trusses carried up to six flowers each on stiff upright pedicels, each flower being 3½ inches across by 3 inches long, sweetly-scented and magnificent in form and purity of colour. It is very seldom that one sees such a fine flowering specimen, now about 15 feet high and 18 feet across, or such a good form of this grand species which has been the parent and grandparent of so many notable hybrids. Placed on the edge of a small lawn just below the house and backed by dark conifers, bamboos, large arboreums and the fresh, yellowish green of young beeches it was a very lovely sight.

The beeches, now about 140 years old, provide invaluable shelter from the strong westerly and northerly gales, and are now in most places 50 or more feet in height. However, above the house and on the edge of the plantation where they are fully exposed to the gale it is interesting to see that they are stunted and twisted and scarcely 15 to 20 feet in height, although they are of the same age. The gales sometimes come with ferocious strength as may be seen from a frame light which was blown right across the woods on the south of the drive and deposited high in the branches of a beech on the north side.

Many of the finest rhododendrons have been planted on both sides of the long drive which can seldom be without interest or colour and few gardeners will want to do other than walk slowly up, probably darting from side to side to examine yet another exciting plant. The entrance is marked by a great mass of *R. obtusum amoenum coccineum*, several yards in both length and depth, just coming into flower during our visit towards the end of April and there are also many other plants of *R. obtusum*, raised at Trengwainton from seed obtained direct from Japan. The dark red and scarlet hybrids raised at Trengwainton from *R. elliottii* and other scarlet-flowering species are a feature of the garden and even as early as this the first flowers were opening on 'Gwilt King' (*R. griersonianum* × *R. zeylanicum*), with a full truss of glowing but deep scarlet-red flowers, while higher up the drive the very fine form of 'Fusilier' (*R. elliottii* × *R. griersonianum*), raised here was beginning to flower. It received an F.C.C. when shown by Sir Edward in 1942. *R. elliottii* first flowered in this country at Trengwainton, as did *R. griersonianum*, the latter in 1930 together with *Meconopsis betonicifolia*. The specimens of *R. elliottii* were 15 to 20 feet in height and half as much through, solid and covered with bud owing to the careful system of pruning. 'Morvah', a very fine hybrid with enormous, rather globular trusses of deep blood-

red flowers received an Award of Merit at the Chelsea Show, 1956. It was raised at Trengwainton from *R. elliottii* × *R. wattii* and is undoubtedly one of the largest flowering and most vigorous of the *elliottii* hybrids yet shown (Fig. 17).

Another good scarlet hybrid raised here and flowering during our visit was *R. elliottii* × 'Britannia' having a large compact truss of bright scarlet flowers with thick, almost waxy corollas. This should make a good garden plant and seemed rather brighter and less blood-red than the 'Leo' which was raised at Exbury from the same cross and received an Award of Merit in 1948.

Seeds were received at Trengwainton from the KINGDON-WARD 1927–8 expedition to Assam, and from this came many fine plants, almost the main basis and foundation of the garden, as SIR EDWARD said. From this have grown the large collection of specimens by the drive and in the woods of *R. macabeanum*, while seedlings were distributed to other gardens. They vary in depth of yellow colour and size of corolla but some plants here are probably as fine both for size and depth of colour as any in the country. The specimen photographed (Fig. 11) was growing in full exposure by the drive and was at least 16 feet in height and as much across the top. It was a fine deep primrose yellow and this year started flowering on March 20 and was still good at the end of April. Several of the forms seemed unusually large in their corollas and one measured in the wood had bells 3 inches long by 2½ inches across the mouth.

Also on the drive and close to the *macabeanum* was a fine plant of *R. sinogrande boreale*, perhaps 20 feet high with a rather narrow leaf for this species and trusses of pale creamy flowers. In front of this plant was a group of unusually fine *R. dendricola* and also *R. iteophyllum*. These, reputedly tender species, were covered with buds, which apparently had not been affected by the frost, though a plant of *R. iteophyllum* seen higher up in the garden had been badly damaged but was recovering.

There are a number of large plants of *R. sinogrande* in the woods.

Among other large-leaved species to be noted were *R. giganteum*, somewhat browned in leaf by the winter, *R. magnificum*, rather more hardy here but not yet having flowered, *R. eximium*, or a species close to it, a large tree on the drive with heavy rusty indumentum on the undersides of the leaves and compact trusses of creamy white flowers with a prominent crimson blotch at the base of the corolla. *R. fulvoides*, 15 feet in height, was another specimen whose foliage gives its chief distinction but is well worth growing

for this reason. *R. lanigerum*, an unusual pink-flowering species was over at the time of our visit but several fine specimens were seen.

A large group of plants of *R. johnstoneanum*, each about 5 feet high and as much through were in full flower and showed well the three different forms of these pale cream flowers; of the singles one had a faint pinkish flush towards the base of the corolla while the other had a greenish-yellow one. The third variety has a double flower (Fig. 29). Behind them was a fine specimen of the unusual drooping green *Chamaecyparis lawsoniana intertexta*. Smaller plants were also seen of SIR EDWARD BOLITHO's pale pinkish-purple, double-flowered hybrid 'Johnnie Johnston' raised from the double form of *Rhododendron johnstoneanum* × *R. tephropeplum* (Fig. 21).

Another feature both of the plantings on the drive and other parts of the garden was a very beautiful pink hybrid with drooping bells, raised at Caerhayes Castle and said to have been derived from *R. williamsianum* × *R. martinianum*, the two species named respectively after the owner and head gardener of that garden. About 5 feet high and as much thick the plants were all covered with flower but varied somewhat in the depth of colour, but in all cases the pink bells were lovely contrasted with the neat rounded glaucous foliage and reddish young growth (Fig. 15). In general appearance the flowers and plants were very close to R. 'Temple Belle' raised at Kew from *R. williamsianum* × *R. orbiculare*. The best of the older hybrids are represented also and we noticed large plants of the blue-mauve 'Susan' and the pink 'Mrs. G. W. Leak' and the scarlet 'Earl of Athlone' while a very beautiful creamy white hybrid raised by MR. G. JOHNSTONE at Trewithen was 'Jennifer' derived from *R. campylocarpum* × *R. griffithianum*. The rather loose truss and perfect bell-like form of the corollas somewhat resembled that of 'Penjerrick' which has a similar parentage and noticeable also were the long red pedicels of the flowers.

A number of plants of a very good blue mauve form of *R. scintillans* had been used to form a vast cushion 2 to 3 feet high and 10 feet across and covered in flower it was a fine sight backed by darker foliage. A group of *R. schlippenbachii* had similarly merged together and included one unusually good pink form with a large flower, which showed up the variation often found in this species. Another unusually large plant seen beside the drive was a twenty-year-old specimen of *R. pseudoyanthinum*. Bushes of *R. neriiflorum* made great solid scarlet masses.

Clumps of flowering brooms, also well pruned into thick masses,

FIG. 8—*Rhododendron bakeri.* This is one of the handsome glossy-leaved orange reds of Gregory Bald (See p. 23)

FIG. 9—*R. prunifolium*—The Plumleaf azalea of Georgia (See p. 26)

Photo, P. M. Synge

RHODODENDRONS AT TRENGWAINTON

FIG. 10—The top of the large *Rhododendron falconeri* (See p. 29)

FIG. 11—*Rhododendron macabeanum*. The top of one of the fine plants of this species grown from seed collected by KINGDON-WARD in 1927–8 (See p. 31)

Photos, N. K. Gould

FIG. 12—*R. falconeri*. The base of the big tree (See p. 29)

FIG. 13—*Rhododendron nuttallii* (See p. 33)

Photos, P. M. Synge

FIG. 14—*R. falconeri*, with *R. griffithianum* on left, and, on right, hard-pruned masses of *R. griersonianum* (See pp. 29 and 57)

help to carry on the colour after the main flowering of rhododendrons is over, while along much of the south side of the drive runs a little stream whose banks are liberally planted with primulas, lysichitums and other bog plants. Old tree ferns and blue hydrangeas massed in great quantities must present a very lovely spectacle later in the summer and in this favoured climate the hydrangeas continue in flower until the middle of December.

A series of walled gardens to the north of the drive have been used to give extra shelter to some of the more tender species and also to a number of fine magnolias, for which genus this garden is also famous. *R. lindleyi* with its beautiful waxy white trumpets was flowering against a wall, although the plant showed some signs of winter damage, while next to it was a very fine plant of *R. megacalyx* 5 feet high and 5 feet in width and covered with pale mauvish purple buds which would shortly open to the great white flowers of this species. A good plant of *R. cubittii* was next to this, though not yet in flower (Fig. 20). One plant of the fine hybrid 'Laerdal' raised in this garden from *R. dalhousiae* × *R. johnstoneanum* had suffered severely from winter damage but was growing again and Sir Edward has informed me that he has another two plants of this untouched by the winter. A large plant of *R. bullatum* (Fig. 16), a fine form very pink in bud and on the outside of the corolla, was covered with flower and seemed in excellent condition. It measured 4 feet by 5 feet approximately.

In a cool greenhouse we were shown a small plant of *R. nuttallii* with a truss of five enormous trumpet-like flowers, white with a deep yellow flush at the base (Fig. 13). This is probably the largest flowered rhododendron species, although, unfortunately, one of the most tender. We were told that it had, however, survived outside at Trengwainton for several years in the past. *R. rhabdotum*, nearly as tender, was showing flower buds outside against a wall although it too had suffered considerable winter damage. A 12-foot bush of the Caerhayes pink form of *R. davidsonianum* covered with flower was a notable feature of one of these walled gardens.

At the edge of the drive close to the front door was a great mass of R. 'Lady Alice Fitzwilliam' covered in flower bud and growing compactly 3 to 4 feet high and 5 to 6 feet in length by more in depth, but with no space whatever between the shoots. This appeared quite undamaged by the winter and when its sweetly-scented white flowers open should be a fine sight.

Adjacent to the house is a large border with azalea seedlings

just coming out during our visit in all shades of flame and orange while a small rockery bank had been made at a corner close by for some of the dwarfer blue- and purple-flowered rhododendrons and here we saw groups of such species as *R. keleticum*, *R. pemakoense*, *R. campylogynum* and *campylogynum* var. *myrtilloides* *R. calostrotum*, *R. riparium* and *R. calciphilum* and dwarf hybrids such as 'Prostigiatum'. When these have grown together the rockery bank should be a fine sight.

Round the corner and past this bank we come to the vast plant of *Magnolia sargentiana robusta*, perhaps the greatest glory of the many fine plants in this rich garden. It was from this plant that the bloom was taken for the painting of the frontispiece in MR. GEORGE JOHNSTONE'S book *Asiatic Magnolias in Cultivation*. It is now 50 feet across, perhaps 40 feet high and branched all round symmetrically to the ground. The principles of pruning are applied here to magnolias as well as to rhododendrons and with good effect. As is befitting to such a fine plant only a few very carefully chosen rhododendrons were planted close to it; here were the graceful *R. quinquefolium*, with its young leaves edged and tipped with deep crimson. R. 'Peace' from Bodnant, 'Lady Chamberlain' from Exbury and the very pretty 'Alison Johnstone' from Trewithen with pale blush pink flowers well set off against the neat foliage (Fig. 19). Lilies shooting up with great strength showed something also of the spectacle to come while tall evergreens such as *Magnolia delavayi* and *Eucryphia cordifolia* provided a background.

Some of the rarer, although less conspicuous, species are also to be found here. There was *Rhododendron parmulatum* with creamy bell-like flowers most heavily marked on the inside of the corolla with deep crimson-purple spots which showed clearly through the waxy petals, *R. glischrum* a good form in flower with pale pink trusses, puckered leaves heavily rusted below with a thick indumentum below and with bristly bases to the petioles, *R. lanatum* in the walled garden, again with a thick rusty indumentum on the underside of the leaves and creamy coloured flowers spotted purple, *R. genestierianum* and *R. exasperatum*, though neither were in flower, and *R. recurvoides*, again a bristly plant, having pale pink flowers with a deeper pinkish stripe down the outside of the corollas and a very heavy indumentum on the underside of the leaves. It is a member of the Taliense series.

Large trees of R. 'Loderi' in full flower, many of good pink forms, great trees and mounds of *R. arboreum* and some of its older hybrids, old bushes of *R. campylocarpum* and *R. wardii* and

scarlet masses of *R. neriiflorum*, provide a spectacle of colour to which it is not possible to do full justice in such a short article.

One final word of tribute should, however, be paid to the generally excellent state of well-being, tidiness and good cultivation in the garden, which reflects great credit on the present head gardener, Mr. G. Hulbert, as well as on his predecessor, Mr. G. W. Thomas who was responsible for much of the planting.

THE CULTIVATION OF DWARF RHODODENDRONS AS POT PLANTS

By Dr. JAMES DAVIDSON

DWARF rhododendrons have always been popular with alpine gardeners and are a great asset to our rock gardens. Unfortunately, they may not be so easily grown outside in certain localities where there is an excess of lime in the soil. Special precautions will have to be taken in such conditions, but even with elaborate care there is always a chance of seepage of lime from the surrounding soil, and the results obtained are not always all that could be desired for the amount of trouble expended. Atmospheric conditions such as might occur in the vicinity of certain industrial areas from noxious fumes may also be detrimental to the foliage. Under such circumstances it is certainly worthwhile and most necessary to protect the plants as far as possible from these adverse conditions.

Again there may be a question of space. In a small garden it is difficult to find the room necessary for dwarf rhododendrons as many species, although they do not grow to any height, may cover a good area in proportion to the size of the garden.

Climatic conditions have also to be considered. Frost and cold winds may do considerable harm, if not to the foliage and young growth, certainly to the flowers. This is evident in the case of *R. leucaspis* and *R. moupinense* where the foliage is quite hardy but the blooms are readily damaged by frost on account of their early-flowering habit in February or March. Moreover, certain years may prove disastrous to the plants themselves unless they are grown in sheltered positions. Cold, dry east winds in the spring can take their toll as occurred in my garden during the spring of 1956 when plants of *R. lepidotum*, *R. radicans* and *R. hanceanum nanum* were completely or almost destroyed. During the spring of 1955 similar winds from the west were particularly damaging. The question is a variable factor and in my experience, species which are considered to be perfectly hardy have been completely destroyed.

It will thus be seen why dwarf rhododendrons may have to be grown in an alpine house or frames.

A great number, but not all, of the dwarf types have been grown as pot plants. They may be grown in cool frames and taken into the alpine house for exhibition and protection during their period of flowering or they may be grown through the year in the greenhouse. They make excellent pot plants and add quite a range of colour to the house. Even when not in bloom their evergreen foliage can give continual pleasure when many other plants are out of sight or looking peculiarly bedraggled during the hard winter months.

Under greenhouse conditions there is the advantage of a certain amount of protection from extreme variation of temperature. Plants naturally respond more favourably to uniform conditions. Such conditions also pertain to a regular supply of water as against varying periods of rain and drought. It has to be remembered however that there is a tendency for plants to dry out more rapidly in clay pots as a result of evaporation. This can be overcome to a certain extent for plants of good size by growing them in a wooden square box which will naturally vary in size and depth according to the requirements of the plant. Good thick wood about 1 inch in thickness should be used. Teak would be admirable. There must naturally be holes in the base of the box to ensure good drainage. With suitable soil and drainage and the right amount of water, dwarf rhododendrons will do well under such conditions. These boxes can also be plunged in ashes in a cold frame or in the greenhouse.

While plants may tend to become larger when grown in the border or rock garden in suitable localities, in fact becoming uncomfortably large for the limited space available, there is always a chance of their retaining a moderate size in a pot or box. Again with regard to the show bench, a plant which has been well grown in such circumstances is more readily available for show purposes. There is less fear of damage than when it has to be continually lifted and specially potted, even in spite of the fact that these dwarf rhododendrons are comparatively shallow rooting. Frequent disturbance can never be beneficial.

The most careful attention must be paid to the moisture content of the soil and plants must never be allowed to dry out. In limestone or chalky districts rain-water should always be used.

The composition of the potting soil is important. It should be quite free from lime and just on the acid side with a pH in the region of 5·3. It must be good open compost with plenty of humus which can retain a certain amount of moisture. Plenty of good leaf-

mould is necessary. A mixture of four parts of leaf-mould to one part of loam and one part of coarse sand is quite satisfactory. A little granulated peat can also be added. If leaf-mould is difficult to obtain, a good horticultural peat can be used in its place. The drainage is not quite so free with peat and therefore the mixture should be kept more open with the addition of a larger proportion of coarse sand.

When potting, a pot slightly on the large side for the plant should be used. It is advisable to fill it from 1½ to 2 inches from the brim in order to allow for the addition of top-dressing because of the shallow rooting habit of these rhododendrons. It is unnecessary to repot each year, all that is required being some top-dressing in the spring. Repotting every second year may be sufficient, but this will depend on the size of plant required. Frequent potting with change of compost may produce a plant which in time is too large for the space available.

Careful cutting back will help to retain a good shape and size. This should be done immediately after flowering, the old wood being well cut back as new shoots will appear a good way down. When long shoots are produced these can be pruned back carefully so that the shape and size of the plant is retained. A bushy plant can be obtained by cutting well back leaving only the bare stems. The plants when in this condition are kept syringed and eventually small buds will appear generally distributed over the bare stems.

In hot weather, plants must be kept cool, the house being well shaded and ventilated. On the other hand, particularly in a small house, they can be removed and plunged in cool, shaded frames with a northern exposure. Plenty of water should be given and syringing at least once a day, preferably in the evening, will be of considerable benefit. During very dry, hot weather especially in southern areas, morning and evening syringing is desirable.

A collection is obtained either by propagation by seed or cuttings or by the acquisition of young plants.

Seed should be sown in March. It is better to use a 4-inch pot, but this will depend on the quantity of seed to be sown. A 4-inch pot will meet with average requirements. The pot must be well crocked and filled to within 1 inch from the top with John Innes seed compost to which a fair quantity of peat has been added. The surface is smoothed and levelled, the seed scattered on the surface and left uncovered. The pots are then watered from the base and put on a bench in a cold house or in a frame and covered with paper. Pay careful attention to the need for further watering.

Watch carefully for germination and when a white radicle is seen appearing from the seed remove the pot from under the paper and place uncovered upon an open bench or in a frame where the pots should be plunged in sand or fine weathered ash. They are left until it is possible to handle the seedlings when they are pricked off into pans or boxes in a similar soil mixture.

. Propagation from cuttings is probably the better method. The mortality rate will naturally vary, some species being harder to strike than others. *R. lepidostylum* for example, is hard to strike. *R.* 'Pink Drift' on the other hand strikes readily. Cuttings should be taken from wood which has just ripened, the best time being about the end of July or during August. They should be about 2 inches long and it is better not to remove any of the leaves, only trimming the stem horizontally with a safety-razor blade. The lower leaves help to anchor the cutting in a mixture of equal quantities of peat and sand. This mixture can be in a small frame or box covered with glass in the greenhouse, or if a house is not available, an outside frame can be prepared with the same mixture. The cuttings are pushed in firmly for a depth of about half an inch into the mixture. This is better than dibbling them in, as under such circumstances an air space might be left in contact with the stem. As already mentioned, if the leaves are in the way, they are just pushed in along with the rest of the stem and so help to anchor the cutting. It is unwise to insert the cutting in too deeply, half an inch being all that is required. They are then watered in with a fine rose which also helps to firm the cutting in the sand mixture. The frame or glass-covered box is shaded by a piece of fabric which is easily removed. Outside frames should have a northern exposure. Cuttings take some time to root and no evidence of this may occur until the following spring. In the meantime they must be well protected from frost and must not be allowed to dry out. Frames and boxes in the greenhouse should be well covered with sacking during frosts. Heated greenhouses will naturally be of great assistance. Outside frames could have double lights and be thickly covered with sacking to withstand the frost.

Rooted cuttings are potted individually in 2-inch pots. On the other hand six rooted cuttings of the same species could be put into an 8-inch pan and in this way a nice pan of good appearance may be produced which would be of use for show purposes. Rooted cuttings should be planted in John Innes No. 1 compost without lime but with a little extra peat. A small quantity of dry, well-rotted dung which has been passed through a half-inch riddle,

added to the mixture will do good. The pots are plunged in peat or ashes in a closed frame with a northern exposure, a careful watch being kept for growth. When this occurs the frame is then opened a little to give air. Some cuttings take a long time to grow after rooting. As growth increases, more air should be given, but at first all precautions should be taken with regard to the correct amount of moisture and air and protection from frost in the late season. With increase of growth the plants should be moved into larger pots. The roots of these growing plants are extremely fine and care must be taken to see that they are not broken or disturbed too much during repotting. Overpotting must be avoided. When the plants are well established and growing, as much air as possible should be given in the summer with a fair amount of sunlight. In this way they are hardened off. The above remarks also apply to the growing on of seedlings.

It is to be remembered that some species such as *R. nivale* may be difficult to strike from cuttings, but frequent attempts can be made. If there is complete failure there must be resort to the raising of plants from seed.

There is a considerable number of the dwarf species which are suitable for cultivation in the alpine house and amongst the following are some of the better forms for this purpose.

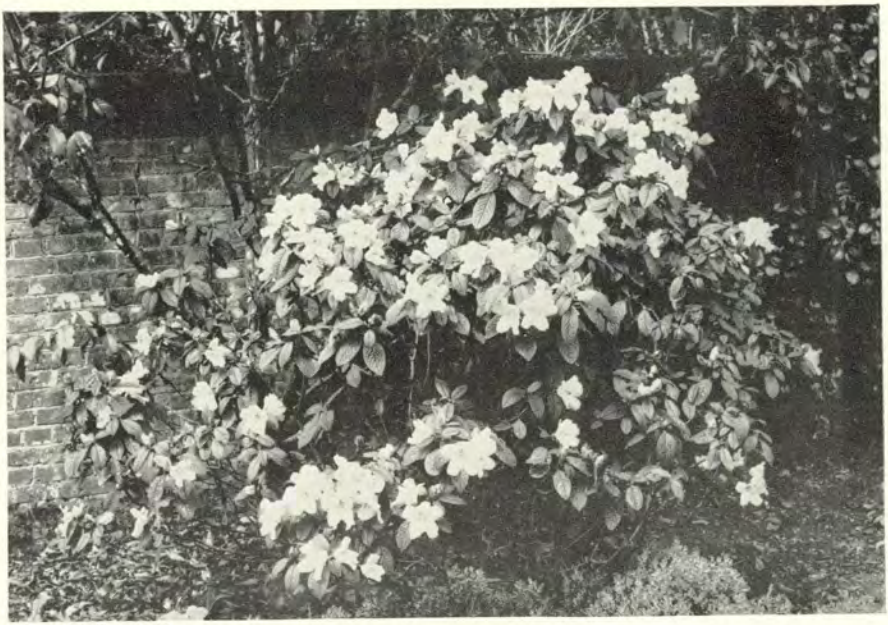
In the Series Anthopogon is *R. sargentianum* which is one of the best with its masses of beautiful pale yellow flowers. Some forms are almost white. Its leaves are delightfully aromatic. *R. cephalanthum* var. *crebreflorum* with its somewhat compact bushy habit and salver shaped, deep rose flowers is one of the best in this series.

R. leucaspis (Series Boothii) is eminently suitable for indoors because of its early-flowering habit in February or March. Apart from the large white flowers the leaves are most attractive, being of good size, covered on both sides with delicate hairs and varying in colour from green to a bronze tint.

In the Series Campylogynum are *R. campylogynum* and its variety *myrtilloides*, one or other of which or both should be in every collection. The latter is probably a better pot plant as it only grows usually to about 6 inches in height, while the former can reach up to a foot or more. They have a neat bushy habit and the leaves in later spring are of a pleasant bright green colour. Both plants produce beautiful little nodding flowers on longish stems of a reddish colour peppered with golden yellow glands. The flowers of var. *myrtilloides* are smaller than the type. In both they vary in colour from pale rose-purple or salmon-pink to plum or almost

Photo, P. M. Synge

FIG. 15—*Rhododendron williamsianum* × *R. martinianum* showing the compact free-flowering bush produced by pruning (See p. 32)



Photo, N. K. Gould

RHODODENDRONS AT TRENGWAINTON

FIG. 16—*R. bullatum* in one of the walled gardens (See p. 33)

Photo, J. E. Downward

FIG. 17—Rhododendron 'Morvah' A.M. May 22, 1956. Shown by LT.-COL. SIR EDWARD BOLITHO, K.B.E., D.S.O. (See pp. 30, 31 and 132)

Photo, N. K. Gould

FIG. 18—*R. johnstoneanum*, showing both single and double forms and the compact bushes produced by pruning (See p. 29)

Photo, N. K. Gould

FIG. 19—Rhododendron 'Alison Johnstone' (See p. 34)

FIG. 20—*Rhododendron cubittii* (See p. 33)

Photos, J. E. Downward

FIG. 21—Rhododendron 'Johnnie Johnston' A.M. May 1, 1956. Shown by LT.-COL. SIR EDWARD BOLITHO, K.B.E., D.S.O. (See pp. 32 and 131)

black-purple. They are well raised above the solid mass of foliage and seen against the sun they are most attractive.

R. camtschaticum (Series Camtschaticum) is a deciduous dwarf with bright reddish purple flowers, which grows to about 6 inches in height. It may be a little slow in producing flowers at first, but once it is established it is quite floriferous.

A number of species of the Series Lapponicum make good pot plants. *R. impeditum* with its neat habit and purplish blue flowers is one of the best. The dwarf, spreading form of *R. fastigiatum* with bluish purple flowers makes a pleasant pot plant. It grows from 4 to 6 inches in height. *R. nigro-punctatum* is a rare, small, compact spreading shrub with pleasant small leaves and pale purple flowers. This should make a good pot plant. Other suitable species in this Series are *R. microleucum*, the albino of the Series Lapponicum, *R. idoneum*, *R. dasypetalum*, *R. drumonium* and *R. chryseum*. The latter is a very pleasing plant with lemon-yellow flowers about 1 inch in diameter.

Only the dwarf forms of *R. lepidotum* (Series Lepidotum), which have purple flowers, and a form known as *elaeagnoides*, which has yellow flowers, are suggested as pot plants.

R. moupinense (Series Moupinense) is an interesting plant for indoor culture. Although quite hardy, the early-flowering period in February makes it almost imperative that it should be grown under glass at this time. It has a pleasant foliage of small shiny leaves and the beautiful white flowers which may sometimes be pink are well worth protecting in this way.

R. forrestii (Series Neriiflorum) the leaves of which are purple underneath and var. *repens* with wholly green leaves make two excellent pot or box plants. They are slow-growing but produce bright scarlet waxen-like tubular flowers, single or in pairs, and which are large for the size of the plant and most striking; these two plants are prostrate. *R. forrestii* var. *tumescens* has a somewhat different habit, producing a mound-shaped growth with outer creeping branches.

The Series Saluenense contains a number of choice dwarf types which are eminently suitable for pot culture. The dwarfer forms of *R. calostrotum* with moderately large open flat bright rosy-purple flowers can be most striking when the bloom is in such quantity as to almost obscure the foliage. Its variety *calciphilum* is also desirable with its rose-purple flowers. *R. keleticum* is a dwarf of very neat spreading habit with tight dark green foliage and dark purplish crimson flowers with darker markings. *R. prostratum* as its

name suggests, has a prostrate habit with crimson flowers. *R. radicans* is a delightful little prostrate spreading dwarf which only grows up to 4 inches. It is most attractive with its little narrow leaves, largish flat purple flowers and with the interesting habit of rooting as it grows.

R. williamsianum (Series Thomsonii) is a well-known plant of variable height, but the dwarfer form is eminently suitable for pot culture. Its unique rounded bluish-green leaves, bronzy when young, and its bell-shaped pale-rose flowers give a particular beauty to this species.

R. lepidostylum (Series Trichocladum) with its young, pale green glaucous leaves with hairy margins and pale yellow flowers is well worth possessing.

R. hanceanum var. *nanum* (Series Triflorum) has a beautiful dwarf compact habit with many-flowered trusses of pale cream or yellow flowers, the red styles and stamens enhancing their beauty.

R. imperator (Series Uniflorum) must also be mentioned with its rather large pinkish purple flowers, either solitary or in pairs and its small narrow leaves. *R. pemakoense*, very closely allied to the former, is a striking dwarf with small leaves and large pinkish purple flowers which are quite out of proportion to the size of the plant. This is easily grown and should be in every collection. *R. pumilum* is a dainty little plant with its long flower stalks and pinkish purple bell-shaped flowers.

The dwarf form of *R. racemosum* (FORREST 19404) (Series Virgatum) should not be forgotten. This is a good type for pot culture, and most floriferous with its typical bright pink flowers obscuring the foliage.

In the Series Azalea, two forms of *R. obtusum* are good pot plants—varieties *amoenum* and *kiusianum*—both being wonderful plants with regard to their wealth of bloom and colour.

Mention must be made of other suitable species such as *R. campylogynum* var. *charopoeum*, *R. fragariflorum*, *R. kotschyi*, *R. ludlowii*, *R. oleifolium* (dwarf form), some forms of *R. orthocladum*, *R. patulum* (closely allied to *R. imperator*), *R. shweliense*, *R. setosum*, *R. stictophyllum*, *R. telmateium*, *R. uniflorum*, and *R. virgatum* (dwarf forms).

Space forbids discussion of the many hybrids, but amongst the latter are the two well-known plants 'Blue Diamond' and 'Blue Tit'. Both are most colourful with their blue flowers. 'Blue Diamond' is probably better than 'Blue Tit', being slightly darker, but that is a matter of opinion. *R. impeanum* is another good dwarf

hybrid which rather resembles *R. impeditum*. It is a nice spreading plant growing to about 12 inches with pale bluish-purple flowers.

Opinions may vary as to the culture, propagation, and species suitable for pot culture, but the methods described above with the plants mentioned have been proved to be successful. The cultivation of this interesting series of dwarf rhododendrons will always give continual pleasure to the enthusiast.

RHODODENDRON (MOONSHINE *G.*) 'BRIGHT'

By FRANCIS HANGER, V.M.H.

DURING the spring of 1946 considerations were being given at Wisley to the raising of further new hybrid rhododendrons of good garden worth. It was decided that efforts should be made to raise a true hardy variety with a compact habit and a full upstanding complete truss of flowers.

To obtain such a most desirable plant many crosses were made between the best hardy hybrid trial rhododendrons, then planted on Battleston Hill, which showed any resemblance to yellow colouring, and selected yellow species and hybrids.

At that time the most outstanding hardy trial rhododendron with the necessary qualifications was 'Adriaan Koster', a creamy white with a yellow centre, and of good growth and habit. This particular plant received a generous supply of pollen from numerous yellow rhododendrons including a very fine form of *R. litiense*.

A good crop of seeds was harvested the following early winter and these were sown in January 1947. Most of the progeny of 'Adriaan Koster' × *litiense* have now flowered; all are of excellent habit, being compact in growth with roundish, shiny, glossy foliage and some with flowers primrose to lemon and others soft yellow to deep rich yellow.

The first seedlings flowered the sixth spring after sowing, the early flowering no doubt being hastened by transplanting the seedlings every two years, a practice carried out at Wisley to check growth and forward the formation of flowering buds.

The best yellow from this first batch to flower was selected and named 'Moonshine'. When shown before the Rhododendron and Camellia Committee it was recommended for and received an Award of Merit from the President and Council of The Royal Horticultural Society. The following description appeared in the R.H.S. *Journal*, Vol. 77, p. 385:

> "**Rhododendron 'Moonshine' A.M.** April 29, 1952. This is a fine, new hybrid made at Wisley by crossing *R.* 'Adriaan

Koster' and *R. litiense.* The truss is compact, dome-shaped and composed of about sixteen flowers. These have a shallow-rotate shape, are 1½ inches long and 2½ inches across, emarginate and lightly frilled at the edges. The throat is stained with a dark crimson blotch against Primrose Yellow (H.C.C. 601/2–601/3) that darkens somewhat on the upper lobe."

A good crop of flowering buds set on more seedlings the following year and great was the joy of the then Director, DR. H. R. FLETCHER, and myself when we discovered what we considered to be an even better yellow than 'Moonshine', therefore we at once christened it 'Moonshine Supreme'. This in turn received an Award of Merit and was described in the R.H.S. *Journal*, Vol. 78, p. 301, as follows:

Rhododendron (Moonshine g.) 'Supreme' A.M. April 28, 1953. A fine hybrid made at Wisley from the cross *R.* 'Adriaan Koster' and *R. litiense.* About fifteen flowers make up a compact truss. The pedicels are long, pale green and glandular. The broad-campanulate corolla is 1¾ inches long and 2½ inches wide. It is coloured a shade of Primrose Yellow (H.C.C. 601/1–601/2) and has some darker staining on the upper segment together with a little indistinct spotting."

During the visit of the Rhododendron Trials Committee to Wisley in May 1954 a third plant from this most desirable cross was selected to be included in the Wisley trial of hardy rhododendrons on Battleston Hill and when well established it should give an excellent account of itself.

Now we come to the object of this note, R. (Moonshine *g.*) 'Bright', which flowered for the first time this year, ten summers from seed sowing. This plant has proved to have even finer qualities than any of its predecessors, being a rich yellow, with a larger fully built-up truss of twenty to twenty-two flowers. When shown to some of the members of the Wisley Scientific Committee the name 'Moonshine Bright' was suggested as most appropriate. Unfortunately, this particular plant had become a little crowded as, indeed, many plants are on Battleston Hill, and consequently became a little spoilt, yet the photograph (*Frontispiece*) shows the habit of growth to be excellent with most pleasing glossy foliage. Although it was growing in the drastic east wind of last February it shows no signs of disfigurement.

It was most tantalizing that R. (Moonshine *g.*) 'Bright' should be at its best immediately after the Chelsea Flower Show and more or less over before the next meeting of the Rhododendron and Camellia Committee and to date has not been shown before the appropriate committee. Endeavours will be made at Wisley to establish clones of each of the four yellow rhododendrons mentioned in this article.

RHODODENDRON OCCIDENTALE ON ALKALINE SOIL

By ANDREW T. LEISER

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(University of California at Los Angeles)

THE question of why rhododendrons will grow on alkaline soils rises to plague or intrigue the enthusiast as the case may be. In the 1947 *Rhododendron Year Book* INGWERSEN gives us an account of the distribution in Europe of *Rhododendron hirsutum* on limestone but unfortunately no mention is made of the pH or soil analysis. The objection might be made that the duff or leaf-mould cover could afford an acid medium for the root growth. DR. COWAN in *Journeys and Plant Introductions of George Forrest* tells of FORREST's report of rhododendrons, their roots mingled in contact with limestone, growing in the Li-Chiang range, Yunnan Province. DR. COWAN goes on to say that to a greater or lesser degree rhododendrons are calcifugous and the theory (of lime tolerance) is of academic interest rather than practical application. He cites the article "Rhododendrons and Lime", by Grove (*Gardener's Chronicle* (London), Vol. 82, pp. 426–8, 1927), which tells of experiments with various species on lime soils. This article gives an analysis of the Li-Chiang limestone. It is a dark grey magnesian limestone, hard, yet readily soluble, containing 50·92 per cent CaO, 1·02 per cent MgO, 4·11 per cent Fe_2O_3 plus Al_2O_3, 40·07 per cent CO_2, 0·29 per cent insoluble residue, and a trace of nitrogen. Again we do not have an actual soil analysis or pH reported for the root zone. The argument has been advanced in this instance also that the roots may be substantially in an acid medium even though in contact with the limestone.

HALL, writing in the *Journal of the Royal Horticultural Society* (Vol. 36, p. 18, 1910) expressed the opinion that the intolerance of ericaceous plants for lime soils was not due to poisoning by the lime itself but was due to the unfavourable pH ("suppression of acidity").

The following report of rhododendrons on an alkaline soil may shed additional light on this interesting question, although it by no means offers the final explanation of it.

During the course of an investigation now in progress into the nutrition of forcing azaleas the writer's attention was directed to an area in California where the Western azalea (*Rhododendron occidentale* Gray) was growing well on an alkaline soil. Dr. W. E. Martin, Agriculturist and Extension Soils Specialist, University of California at Berkeley, discovered this fact several years ago when he noticed azaleas in flower in an area he knew to consist of serpentine soils. Some samples taken at that time gave pH readings of over 7·0.

On April 1, 1955, Dr. Martin accompanied Dr. A. M. Kofranek of the University of California at Los Angeles and the writer to the area where soil samples were collected. The site is located at the point where the Middleton-Pope Valley Road crosses the Napa-Lake county line. It is about sixty miles due north of Oakland, California. This general soil formation has been described at length by Dr. Walker in *Ecology* (Vol. 35, pp. 259–66, 1954). A serpentine soil is one derived from magnesium iron silicate rocks that are metamorphic products of peridotite. In addition some chromite ($FeCr_2O_4$) and garnerite ($(Ni, Mg)SiO_3.nH_2O$) are often present. They are very sterile soils with a distinct vegetational pattern which sharply delineates them from adjoining non-serpentines. The vegetation is a chaparral type with little herbaceous flora and the woody species spaced at rather uniform distances. The area is open with little tree cover. Fig. 25 shows a view of the stream along which sampling was done with the characteristic serpentine hillside behind. It is certainly not the type of an area where one would normally look for rhododendrons to grow. The only other ericaceous species in the area was a sclerophyllous *Arctostaphylos*. Some of these shrubs were growing within a few feet of the azaleas.

Most reports of rhododendrons growing in lime or alkaline soils fail to state with exactness the method of soil sampling. Being aware of this shortcoming and of the usual shallow-rooted nature of the genus, considerable care was taken to get representative soil samples from the actual root zone and to observe the distribution of roots therein. The sampling was done as follows. Samples were taken at three sites: (1) a heavy clay bank several feet above a stream bed; (2) a sandy alluvium in the stream bed; and (3) a site and soil condition somewhat intermediate between these two. A vertical cut was made in the root zone proper from the soil surface to bedrock in the first two cases and to the water table in the third. A slice of soil was then taken the full length of the profile as the

FIG. 22—R. 'Repose' A.M. May 22, 1956. Shown by Messrs. W. C. Slocock Ltd. (See p. 132)

Photos, J. E. Downward

FIG. 23—*R. pseudochrysanthum* A.M. May 1, 1956. Shown by E. DE ROTHSCHILD, ESQ. (See pp. 77 and 132)

FIG. 24—*Rhododendron occidentale* with root zone exposed just prior to sampling. The shovel tip rests on serpentine

FIG. 25—General view of the habitat of *R. occidentale* on Alkaline serpentine soils in Lake County, California (See p. 48)

sample. This slice was separated into different layers according to depth. At none of the sites was there appreciable humus or duff layer on the surface, nor were the roots localized in a shallow zone. In every case the roots traversed the whole profile and even penetrated the cracks in the decomposing serpentine parent rock. The roots were not concentrated in the surface layers quite as much as in the lower layers. This is probably due to the fact that it is an area of low summer rainfall. At the date of sampling the moisture content of two of the surface layers averaged about 10 per cent by weight.

A plant investigated at Site 1 did not have the typical shallow-rooted nature of *R. occidentale* when nursery grown but had the most extensive branching at a depth of 2 feet where the roots entered the rock layer. Fig. 24 shows the plant at Site 2 in the stream bed. The shovel tip rests on bedrock and the better root system is probably due to the shallow soil and proximity of water.

The pH was determined for all samples the same evening with a pH meter using glass electrodes. The following table reports the pH obtained by making the soil samples into a thick paste with distilled water, and the pH obtained when additional water was added to make a very thick slurry. The third column is the pH determined by an independent worker on the same samples four months later. There was no free calcium carbonate in any sample.

TABLE 1

THE pH OF SERPENTINE SOIL SAMPLES FROM AZALEA ROOT ZONES, LAKE-NAPA COUNTY LINE, CALIFORNIA

*Site**	*Depth in.*	*Date of pH Determination*		
		April 1, 1955		*July* 25, 1955
		Paste	*Slurry*	*Paste*
1	0– 3	7·2	7·6	7·2
	10–14	7·4	7·8	7·2
	at 24	8·0	8·5	7·8
2	0– 3	7·4	7·7	7·2
	10–12	8·2	8·4	7·8
3	0– 6	8·2	8·5	8·1
	at 10	8·3	8·6	8·1

* Site 1. Dry bank, main stream, clay.
2. Stream bed, sandy alluvium.
3. Gravelly loam on side creek.

The soil analyses are given in part in Table 2. It will be noted that the calcium level in all cases was higher in the surface layer of each soil. However, the calcium level in every event was low, below that of fertile agricultural soils.

TABLE 2

BASE EXCHANGE CAPACITY AND AMMONIUM ACETATE EXTRACTABLE BASES FROM AZALEA ROOT ZONES, LAKE-NAPA COUNTY LINE, CALIFORNIA*

Site †	*Depth in.*	*Base Exchange Capacity m.eq./100 gm.*	*Ammonium acetate Extractable Cations*								
			Total	*Ca*		*Mg*		*Na*		*K*	
			m.eq./100 gm.	*m.eq./100 gm.*	%	*m.eq./100 gm.*	%	*m.eq./100 gm.*	%	*m.eq./100 gm.*	%
1	0– 3	28·6	28·4	6·0	21	21·8	76	0·06	0·2	0·6	2·0
	10–14	27·5	25·2	2·2	9	22·6	89	0·08	0·3	0·3	1·2
	at 24	26·3	24·8	1·6	6	22·9	93	0·08	0·3	0·2	0·8
2	0– 3	30·0	28·3	4·8	17	23·0	81	0·06	0·2	0·4	1·4
	10–12	25·5	24·6	2·3	9	21·9	89	0·10	0·4	0·2	0·8
3	0– 6	25·5	26·4	3·2	12	22·8	86	0·10	0·4	0·3	1·1
	at 10	22·8	22·7	1·8	8	20·6	91	0·10	0·4	0·2	0·8

* Analyses performed by Agricultural Extension Service Soil Laboratory, Berkeley, California.

† Site 1. Dry bank, main stream, clay. Site 2. Stream bed, sandy alluvium. Site 3. Gravelly loam on side creek.

A possible explanation for the existence of *Rhododendron occidentale* in this location would be the development of serpentine tolerant races. Although some botanists give racial status to the specimens collected in this area, this does not appear to be the explanation for their tolerance for the following reasons. DR. KRUCKEBERG of the University of Washington Botany Department (oral communication, 1955) said that the development of serpentine races had not been demonstrated for the woody species in the area. He has shown (*Ecology*, Vol. 35, pp. 367–74, 1954) that herbaceous species (not ericaceous) on serpentine are much more efficient accumulators of calcium than are the non-serpentine races of the same species. WHITTAKER in this journal (Vol. 35, pp. 275–88, 1954) drew the same conclusion, stating, "Some bodenvag species naturally tolerant of low calcium levels may be able to grow on serpentine without ectotypic differentiations."

Whether or not this explanation is valid for the family Ericaceae remains to be demonstrated. Pot cultures by the author at the University of California at Los Angeles give additional evidence that the existence of *R. occidentale* on serpentines is not a case of ectotypic differentiation. A *R. occidentale* plant from a decomposed granite soil of pH 6–6·5 has been growing in the serpentine soil from Site 1 for over one year. This plant was collected in the San Jacinto Mountains of Southern California, about 500 miles south-east of the serpentine location. A pot of mixed ericaceous seedlings containing *R. carolinianum*, *R. caeruleum*, *R. hippophaeoides*, *R. racemosum*, *Pieris japonica*, *Vaccinium vitis-ideae*, and *Gaultheria procumbens* has also been growing in serpentine soil from Site 1 for a year and all appear of good colour and vigour.

HALL's contention that the pH, not actual calcium "poisoning", is responsible for the intolerance of ericaceous species for alkaline soils appears to be untenable in this instance at least. In fact, the soil analyses would suggest that the extremely low calcium level is the reason for the existence of azaleas there and it would seem that the traditional explanation of the so-called calcifugous nature of rhododendrons is strengthened. The author does not wish to imply endorsement of this theory at the present time, however, since there are other peculiarities of this soil which have not been adequately investigated. Some alternate possibilities as to the nature of this tolerance of *R. occidentale* and other species for this soil may be one or more of the following: (1) low levels of major nutrient elements; (2) the presence or absence of some minor elements; (3) a low calcium-magnesium ratio; and (4) the presence of iron which is usually absent at this high pH.

The occurrence of these azaleas in an area of sparse chaparral type vegetation, low rainfall, and a highly alkaline soil is a fascinating anomaly. The only common denominator between this habitat and the conventional rhododendron habitat so far determined is a soil of relatively low fertility and low calcium saturation.

Investigation of some of these factors is now in progress by the author. It is hoped that these investigations will result in a better understanding of the nutrition of the family Ericaceae.

CAMELLIAS AND RHODODENDRONS

Survey of damage caused by the winter of 1955/56

By PATRICK M. SYNGE

THE following report has been drawn up from answers to a questionnaire sent out in the spring to all members of the Rhododendron and Camellia Committee and a number of other gardeners known to be specially interested in these genera. No replies were requested before the beginning of June so as to give time for new growth to appear. Owing to the unusual drought and cold weather experienced in many parts in April and May and the late May frosts in some areas new growth this year was unusually late in appearing and probably the beginning of June was too early for the signs of recovery after damage to be seen clearly in all cases.

The effects of the winter were very variable. The worst affected gardens were several in Somerset, Devon and Cornwall which grow a number of tender species, while low-lying gardens in Surrey also suffered badly. Gardens in the west of Scotland and Northern Ireland, such as Inverewe in Wester Ross and Mount Stewart in Co. Down, did not register any unusual weather or even severe frosts or any appreciable damage. In the east of Scotland, near Perth, MR. E. H. M. COX, of Glendoick, also reported that the winter there had been milder than in the south and that no unusual damage had been caused by it; they had, however, suffered severe damage due to the drought in the summer of 1955 and in May 1956. At Brodick in the Isle of Arran, The Duchess of Montrose reported only bud damage to such tender species as *R. formosum* and *R. burmanicum*.

There seem to have been several factors involved in causing the damage and it is difficult in many cases to distinguish to which factor particular damage was due. These were:

(1) The summer drought of August and early September 1955, followed by a damper early autumn growing period and then frosts in the middle and end of October.

This caused bud damage to late-flowering rhododendrons such as 'Polar Bear' at Byfleet, in Surrey, and near Romsey, in Hants, but this lovely hybrid was reported to have flowered well in 1956 at Tower Court, near Ascot, which is on higher ground, and at

Windsor. At the Sunningdale Nurseries, which are on low ground near Windlesham, in Surrey, MR. J. P. C. RUSSELL reported three nights of very heavy frost at the end of September when the plants had just begun to grow again after the drought, and this completely stripped some of the evergreen azaleas such as *R. mucronatum* and those usually known as 'macranthas'. By June, however, they had just begun to come into leaf again.

(2) The sudden drop in temperature in early February coupled with prolonged frost throughout the month, with icy east and north-east winds, probably caused the greatest damage. This caused particular trouble in West Country gardens in Somerset, Devon and Cornwall, which had probably escaped the autumn frosts experienced in the home counties. MR. GEORGE JOHNSTONE, from Trewithen, in Cornwall, reported that a high wind blew for three weeks or more from the south-east, often reaching gale force and driving before it 10° to 14° F. of frost. Many plants which had thriven there for many years, such as *Drimys winteri*, first planted in 1918, have been almost killed. At West Porlock in gardens only a mile from the sea the temperature fell overnight from in the fifties to well below freezing, and 17° of frost were recorded on the screen on February 3. There was little snow there but there were strong north-east winds; while in MR. L. S. FORTESCUE'S garden, at Buckland Monachorum, S. Devon, 450 feet up on the edge of Dartmoor, the temperature fell from over 50° F. to 14° F. in a few hours and the lowest temperature recorded was 9°. At Minterne which is 750 feet up in Dorset Lord Digby recorded 25° of frost as the minimum in February, i.e. a temperature of 7° F. In that month he had 23 days with frost. At Wisley the lowest temperature recorded was 14° on February 4 and 21, while from February 19 to 24 the temperature did not rise above freezing point. There were cold easterly winds for fourteen days in February, twenty-three days in March and seventeen days in April, but little snow. At Bodnant the lowest temperature was 8° F. and frost was registered on all days in February except one. At Exbury it was regarded as the worst cold spell they had experienced. In the rhododendron species collection at Windsor Great Park the lowest temperature recorded was 12° F. but no rhododendrons were either killed or damaged so badly as to require removal.

(3) The droughts of April and early May, followed by late May frosts in many districts of the Home Counties north of London, may have accentuated the effect on plants already damaged by the

February frosts at a time when they might have been expected to have started growing again.

In one garden in Shropshire, visited by MR. J. P. C. RUSSELL, which is on low-lying ground near a river and with a ring of hills round it, molle-japonicum azaleas and normally hardy rhododendrons such as 'Cynthia', which is classified as 'B' in the *Rhododendron Handbook*, were cut to the ground, but this seems to have been exceptional.

CAMELLIAS

Practically no appreciable damage was recorded to established camellias outside from any garden and it was clearly demonstrated how very hardy the majority of these are. The only exception was at Buckland Monachorum, where MR. FORTESCUE lost completely numbers of young two-year plants of *C. japonica* varieties in an open field. He reports that nearly all plants of 'Contessa Lavinia Maggi' were killed. He also had some casualties to young two-year plants of varieties of *C. williamsii*, particularly 'St. Ewe'.

In his collection of older (six- to twelve-year) plants of *C. japonica* there was no damage to leaves or buds and among the older plants of *C. williamsii* only slight damage.

At Porlock, MR. NORMAN HADDEN reported that *C. taliensis*, planted in the autumn of 1955, was cut to ground level but subsequently sprouted. At Trewithen this species was defoliated and cut back, but has made new growth. This has always been regarded as a tender species. A 3-foot plant of this species was killed at Wisley. *C. hongkongense*, at Trewithen, where the plant was not only growing against a sheltered wall but was also covered, was cut back to the base. At Wisley some 9- to 10-foot plants of *C. saluenensis* suffered bud damage where there had been clearing to the N.N.E. of the woodland. Many varieties of *C. japonica* in the low ground of the old wild garden received bud damage and have subsequently been transplanted on to Battleston Hill where both air and soil drainage is better. *C. tsaii*, a small plant at Trewithen growing in a sheltered spot and also covered, had its flower-buds killed and some damage to younger growth. *C. fraternia* and *C. pitardi*, in the same garden, were undamaged, as was also *C. saluenensis*. *C. oleifera* had its flower-buds cut.

At the nurseries of Messrs. John Waterer, Sons and Crisp Ltd., at Bagshot, Surrey, where a large collection of camellias is grown, the only plants killed were five- to six-year-old plants of *C. reticulata* in an open position and very little other damage was recorded.

C. japonica 'Imbricata alba', lost flower-buds and had foliage damage in a semi-open position while five- to six-year-old *C. saluenensis*, *C. reticulata* and *C. japonica* 'Arejishi' in a semi-open position had some foliage damaged but recovered and flowered.

At Nymans, in Sussex, bud damage only was recorded to *C. reticulata semi-plena* growing on a north wall, while from Bodnant some dropping of flower-buds was reported for the same variety, but the subsequent flowering was satisfactory. At Benenden, Kent, CAPT. COLLINGWOOD INGRAM reported that *C. saluenensis*, twenty years old and growing against a west wall, suffered some browning of foliage, but like his other camellias later flowered well. At Exbury it suffered bud damage only as did also the wild form of *C. reticulata*.

More serious damage was recorded from Porlock, in Somerset, and Windlesham and Byfleet, in Surrey, to young plants of camellias in pots in cold or only slightly heated greenhouses. These included *C. japonica*, *C. sasanqua* and *C. williamsii* particularly 'Donation'; in most cases the damage was not apparent at the time but only later appeared and many of the plants then died. Both at Windlesham and at Byfleet it is interesting to note that young plants of the wild form of *C. reticulata* survived in the greenhouse where *japonicas*, *sasanquas* and *williamsiis* were killed. MR. J. P. C. RUSSELL reported also that a larger plant of the wild form of *C. reticulata* growing outside in an angle of the house and sheltered from the wind was completely undamaged. Otherwise he found the young plants of *C. sasanqua* and *C. saluenensis* to be the most susceptible to damage, and his *C. williamsii* was badly burnt outside. The only *japonicas* he found on the tender side were 'Effendi' and 'Gauntletti'. MR. HADDEN reported from Porlock that rooted cuttings in boxes standing out of doors were unhurt, while plants in pots in an unheated greenhouse were killed.

RHODODENDRONS

Evergreen Azaleas. The worst damage recorded from a number of gardens was undoubtedly to the evergreen and Kurume azaleas, large numbers of which were defoliated and had their young growth killed back. The majority have, however, sprouted well again by now. MR. FRANCIS HANGER, the Curator, has given us a separate account of the behaviour at Wisley of the Wilson 50 Kurume azaleas and this is printed after this report. At Exbury 'Hi-No-Mayo' was the worst affected of all this group. MR. J. P. C. RUSSELL, from Windlesham, and Messrs. Waterers, from Bagshot, recorded

heavy damage in such groups as *indicum* var. *balsaminaeflorum*, *macrostemon*, *caldwellii* and *mucronatum*, many being killed outright at Bagshot, while the *oldhami-kaempferi* group survived much better. MR. RUSSELL also reported that the large-flowered 'Wadai hybrids' came through the winter perfectly well and flowered as usual. MR. A. T. JOHNSON, from Bulkeley Mill, Conway, N. Wales, reported that 50 per cent of his plants of *R. obtusum* var. *japonicum* had been killed or seriously injured. At Nymans, in Sussex, R. 'Hi-No-Mayo' and R. 'Hino-de-giri' were both cut back to ground level but then sprouted. At Porlock, MR. HADDEN reported that the Kurumes only suffered some browning of foliage, but subsequently flowered. No appreciable damage, other than the instance mentioned above in Shropshire, was recorded to any of the deciduous groups of azalea.

Among the large-leaved rhododendrons less damage than might have been expected was recorded, even such reputedly tender species as *R. giganteum* surviving at Porlock and at Trengwainton near Penzance though after severe damage to its foliage. *R. sinogrande* was damaged badly at Minterne in Dorset and at Trewithen where two plants are reported as dead but it survived with little damage both at Windsor and in a woodland garden above Haslemere. It is interesting to note that K.W. 5418 proved the hardiest form at Windsor, being quite undamaged. Young plants of this species in the Sunningdale Nurseries were killed, but there even *R. rex*, *R. arizelum* and *R. basilicum* were badly burnt by the autumn frosts when their growth was soft. These later species are not recorded as damaged from elsewhere. An unexpected casualty at Trewithen was 8-foot plants fifteen years old of *R. mallotum*, which were killed completely.

The more tender members of the Maddenii Series suffered as might have been expected, particularly in such normally favoured gardens as MR. GEORGE JOHNSTONE'S at Trewithen, and MR. NORMAN HADDEN'S and MR. E. B. ANDERSON'S at Porlock, but I do not think that this winter should cause us to make any major changes in their hardiness ratings. Plants of *R. manipurense*, nine to ten years old were killed at Wisley or damaged so badly as to need removal, although at Windsor they were cut back severely but are now growing well again. At Minterne in a sheltered position on the other hand plants 22 years old and 4 ft. high were either killed or so badly damaged as to require removal. At Porlock this species only lost its flower-buds in MR. HADDEN'S garden as did *R. crassum* and *R. polyandrum*. In MR. ANDERSON'S

garden close by *R. sinonuttallii*, *R. rhabdotum*, *R. cubittii*, *R. ciliicalyx* and R. 'Countess of Haddington' were either killed or very badly damaged. *R. lindleyi*, *R. megacalyx*, *R. dalhousiae* and *R. maddenii* suffered only bud and some foliage damage in both MR. ANDERSON'S and MR. HADDEN'S Porlock gardens. However, from Exbury it was reported that *R. bullatum*, *R. johnstoneanum*, *R. valentinianum*, *R. crassum* and their hybrids were completely undamaged. Plants of *R. bullatum* at Trewithen were, however, severely damaged.

Another group which suffered badly in many gardens were the hybrids derived from 'Royal Flush' such as 'Lady Chamberlain', 'Lady Berry' and 'Lady Rosebery' and it seems doubtful whether these lovely plants can long be grown satisfactorily in gardens apart from the south and west of England except in a few specially favoured by altitude or other situation. At Minterne 'Lady Roseberry' 9 ft. high and 24 years old was cut to the ground. *R. yunnanense* is another plant which was damaged more than might have been expected as it is usually considered a "B" plant as in the *Rhododendron Handbook*. At Bagshot 50 per cent of young four- to five-year plants were reported killed, while the remainder were cut to ground level but are breaking from the base in a partially open spot. Here, also, young plants of *R. augustinii* and *R. lutescens* were killed.

R. griersonianum suffered badly in many gardens, even in Cornwall, having its leaves browned and the younger growth killed back sometimes nearly to the base, but since this is a plant which tends to grow rather straggly and can stand severe pruning perhaps this did not do it as much harm as at first appeared. At Minterne 20-year-old plants were cut to ground level or near to it. However, the hard-pruned mass of this plant at Trengwainton shown in Fig. 14 did not appear to have been damaged at all. MR. HADDEN reported that *R. oleifolium* had been cut to ground level and that this was a group of plants never previously injured with him.

DAMAGE TO RHODODENDRON SPECIES

ABBREVIATIONS

K = Killed or so badly damaged as to require removal.

G = Cut back to ground level or near it but subsequently sprouting.

B = Suffered bud damage only or slight damage to previous year's growth.

F = Suffered from browning of foliage but subsequently flowered and grew satisfactorily.

† = Growing in a sheltered or woodland position.

* = Growing in an open or exposed situation.

N, S, E, W, indicate exposure to North, South, East and West.

Numerals indicate height of plant in feet where known; width of plant, if given, is indicated by numeral following a multiplication sign.

RHODODENDRON SPECIES

aechmophyllum	B	Wisley, 6, E, *
agapetum	G	Trewithen, ten years, 7
arboreum	F	Bodnant, fifty years, †
	F	Exbury, twenty-five years, 20
augustinii	K	Bagshot, three to five years, partly †
	B	Wisley, 6
	B	Windsor (plants all ages)
auritum	B	Minterne, twenty years, 4–5, *
barbatum	B	Uckfield, 12–15, †
beanianum	B	Buckland Monachorum, 2½, *
bullatum	B	Porlock, 4–6, †
	G-F	Trewithen. Damage very variable even to plants in same group, 3
burmanicum	B	Porlock, 3, †
caeruleum album	B	Buckland Monachorum, 4

campylocarpum	F	Porlock, ten to twenty years, †
carneum	K	Porlock, 4, †
chaetomallum	B	Buckland Monachorum, 3
chartophyllum	B	Buckland Monachorum, 5
ciliatum	K	Wisley, 3, N, E, *
ciliicalyx	K	Porlock, 1½, †
	B	Porlock, 1, *
concatenans	B	Conway, eight years, †
	F	Minterne
coriaceum	B	Minterne, twenty-five years, 8–10 *
crassum	F	Porlock, 4, *
	B	Trewithen
	G	Windsor, 6 × 4
cubittii	G-B	Porlock, 1½, †
dalhousiae	G	Porlock, 6 and 12
dauricum	K	Bagshot, four to five years, partly †
dauricum atrovirens	K	Bagshot, four to five years, partly †
davidsonianum (pink)	K	Hythe, 4, in two different places
	G	Minterne, thirty years, 10–12, *
	F	Exbury, fifteen years, 12
decorum	G	Bagshot, one to ten years, *
	B	Conway, 8, †
diaprepes	B	Wisley, 9–10, N, *
discolor	B	Bagshot, four to six years, *
euchaites	F	Porlock, ten to twenty years, †
eximium	B	Minterne, twenty-seven years, 10–12, *
exquisitum	F	Minterne, twenty-five years, 8–9, *
facetum	F	Handcross, 7, †
falconeri	F	Hythe, fifty years, †
	B	Minterne, fifty years, †
formosanum	F	Porlock, ten to twenty years, †
formosum	K	Porlock, 4, †
glaucophyllum	B	Wisley, 2, N, *
	B	Buckland Monachorum, 2
giganteum	G-F	Penzance, 12
	B	Porlock, 12, †

glischroides	F	Handcross, 5, †
	G	Minterne, twenty-five years, 6, *
griersonianum	K	Benenden, *
	K	Chandler's Ford, Hants, 1–2, †
	K	Porlock, 4, *
	G	Minterne, twenty years, 6–7, * and †
	B	Buckland Monachorum, 3, †
	F	Conway, established plants, *
	F	Handcross, 7, †
	F	Porlock, ten to twenty years, †
	F	Exbury, fifteen to twenty years, 6
hormophorum	B	Minterne, twenty-six years, 9–10, *
imperator	G-B	Wisley, 6 inches, *
inaequale	B	Porlock, 1½, †
indicum	K	Bagshot, one to ten years, *
	G	Chandler's Ford, Hants, 2–3, †
indicum album	K	Bagshot, one to five years, *
indicum balsaminaeflorum	G	Uckfield, 2½, †
irroratum	B	Windsor
johnstoneanum	B	Buckland Monachorum, 4
	B	Trewithen, †
keiskei	K	Porlock, 6, †
keysii	B	Wisley, 4, †
kiusianum (syn. *obtusum japonicum*)	K	Conway, 1–2, †
kyawi	K	Buckland Monachorum, 2½, *
leucaspis	G	Wisley, 2, †
	B	Buckland Monachorum, 2
	B	Wisley, 2, sheltered only from North-east
lindleyi	B	Porlock, 8, †
	K	Penzance, 10, †
lindleyi (Edinburgh)	G	Porlock, 4, †
lindleyi L. & S.	B	Porlock, 3, *
lowndesii	G	Wisley, 3 inches, N, E, *
lutescens	K	Bagshot, four to five years, partly *

macabeanum	B	Handcross, 20, †
	G	Minterne, twenty-five 8–9, *
maddenii	K	Buckland Monachorum, 2½, N, W
maddenii (pink form)	G	Porlock, 3, †
	G	Trewithen, fifteen years, 5, †
manipurense	K	Wisley, 3, N, E, *
	K	Minterne, twenty-two years, 4, †
	B	Porlock, 10, †
	G	Windsor, 6 × 4
megacalyx	B	Buckland Monachorum, 2, †
	B	Porlock, 10
	B	Porlock, cuttings, *
	B	Trewithen, 10 years, 6
moupinense	B	Buckland Monachorum, 2
mucronatum	B	Conway, × 3, †
	B	Hythe, various ages, †
neriiflorum	B	Uckfield, 7, †
obtusum amoenum	K	Wisley, 2½, N, E, *
	G	Uckfield, 4
	B	Handcross, 5–6, †
	F	Porlock, ten to twenty years, †
obtusum forma	K	Bagshot, one to ten years, *
oleifolium	G	Porlock, 5
orbiculare	F	Conway, *
pemakoense	G	Wisley, 6 inches, *
	B	Bagshot, four to six years, *
polyandrum	F	Porlock, 6, †
	G	Trewithen, fifteen to twenty years
polylepis	B	Wisley, 9, E, *
quinquefolium	B	Buckland Monachorum, 4
racemosum	B	Conway, 2, *
	F	Wisley, various ages, † and *
rhabdotum	K	Porlock, 3, †
	B	Porlock, 8, †
scabrifolium	G	Minterne, eighteen years, 6, †
sinogrande	B	Handcross, 8–9, E, *
	K	Minterne, twenty years, 6, *

sinogrande	B	Porlock, 12, †
	F	Penzance, very old
	K	Trewithen, two plants 15–20
	B	Trewithen, very sheltered position, 9
F. 26456 and K.W. 8130	G	Windsor, 6 × 6, in hollow facing West (now growing well again)
F. 26003, F. 20387	B	Windsor, 9 × 6 (only main growth bud damaged, now growing well)
K.W. 5418		Undamaged at Windsor in three different situations
sinonuttallii	K	Porlock, 1½, †
sperabile	B	Wisley, 4, †
sperabile var. *weihsiense*	G	Minterne, twenty-five years, 5–6, †
spiciferum	B	Trewithen, fifteen years
suberosum	G	Minterne, twenty years, 6–8, †
taggianum	K	Porlock, 6, †
	K	Penzance, 6, †
	G	Trewithen, 6, †
tephropeplum	B	Buckland Monachorum, 4
	B	Wisley, various ages, †
	F	Minterne, twenty years, 5–6, *
thomsonii	B	Buckland Monachorum, 5, *
triflorum	B	Wisley, 6, E, *
triflorum (Wilson's)	G	Minterne, thirty years, 8, *
venator	B	Porlock, 2–3, N
wasonii	B	Conway, 4–5, †
yunnanense	K	Bagshot, four to five years, partly *
	G	Uckfield, 6–7, partly †
	B	Buckland Monachorum, 6, *
	B	Windsor

HYBRIDS

EVERGREEN AZALEA HYBRIDS

Caldwellii	K	Bagshot, up to five years, *
Hexe	K	Wisley, 2½, *
Hinodegiri	F	Exbury, fifteen to twenty years, 4–5

Hi-No-Mayo	F	Exbury (worst of this group) fifteen to twenty years, 4–5
Kurume hybrids	K	Bagshot, young plants, †
Seikai	K	Bagshot, up to five years, *
malvatica and *obtusum* hybrids	F	Exbury, fifteen to twenty years, 5–6

RHODODENDRON HYBRIDS

Angelo	B-F	Uckfield, 12–18, *
Anita	G	Minterne, twenty years, 10, †
Arethusa	B	Bagshot, eight to ten years, *
Armistice Day	BF	Uckfield, 8, *
Arthur Osborn	K	Chandler's Ford, 4–5, †
	B	Buckland Monachorum, 2
(barclayi *g.*) Robert Fox	B	Buckland Monachorum, 6, †
Beaulieu	B	Bagshot, eight to ten years, *
Blue Tit	B	Bagshot, eight to ten years, *
Bonfire	B	Bagshot, eight to ten years, *
Borde Hill	B	Bagshot, eight to ten years, *
Bric-à-Brac	B	Buckland Monachorum, 2
Britannia	F	Bagshot, ten to twelve years, *
Broughtonii	F	Uckfield, 20–25, *
bullatum × *nuttallii*	G	Trewithen, west wall and covered
burmanicum × *assamicum*	B	Porlock, 2, †
Buttercup	B	Bagshot, eight to ten years, *
Butterfly	B	Bagshot, eight to ten years, *
Cavalcade	B	Bagshot, eight to ten years, *
C.B. Van Nes	B	Bagshot, eight to ten years, *
chrysanthum × *burmanicum*	G	Trewithen, seven years, on sheltered wall
chrysodoron × *burmanicum*	B	Porlock, 1–2, †
ciliicalyx × *albescens*	G	Porlock, 2, †

cinnabarinum × *cinnabarinum roylei*	B	Trewithen, twenty-five years, 8–10
Cinnkeys	K	Porlock, 1, *
Citronella	B	Bagshot, eight to ten years, *
Col. Rogers	B	Minterne, twenty-eight years, 12, *
Cornish Cross	B	Minterne, twenty-five years, 12–15, *
Cornubia	F	Minterne, twenty-five years, 10–12, *
Corona	K	Romsey, three year grafts, *
	B	Uckfield, 8–10, *
Corry Koster	B	Bagshot, eight to ten years, *
Countess of Haddington	K-B	Porlock, 2, †
David	B	Bagshot, eight to ten years, *
Dawn	B	Wisley, 8, †
Dawn's Delight	B	Bagshot, eight to ten years, *
	B	Uckfield, 8–10, *
Diane	K	Windlesham, three to four years, *
	B	Bagshot, eight to ten years, *
Earl of Athlone	B	Bagshot, eight to ten years, *
Eldorado	B	Porlock, 2, †
Elsie	F	Conway, 3, †
Elspeth	B	Bagshot, eight to ten years, *
eriogynum × *elliottii* × *facetum*	F	Bodnant, †
eriogynum hybrids	F	Exbury, fifteen to twenty years, 12–15
eximium × *sinogrande*	G	Minterne, twelve years, 8 *
Fortune	B	Minterne, twenty years, 7–9, *
Fragrantissimum	B	Buckland Monachorum, 3–5
	G	Minterne, sixteen years, 4–5, †
Garibaldi	B	Uckfield, 6, *

Photo, J. E. Downward

FIG. 26—Rhododendron 'Jocelyne' F.C.C. April 17, 1956. Shown by E. DE ROTHSCHILD, ESQ. (See p. 131)

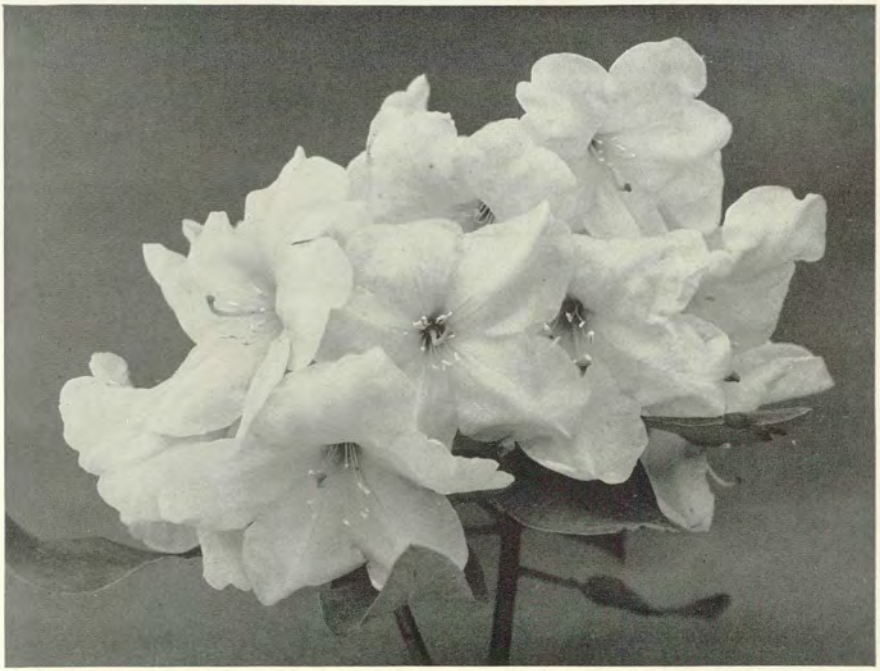
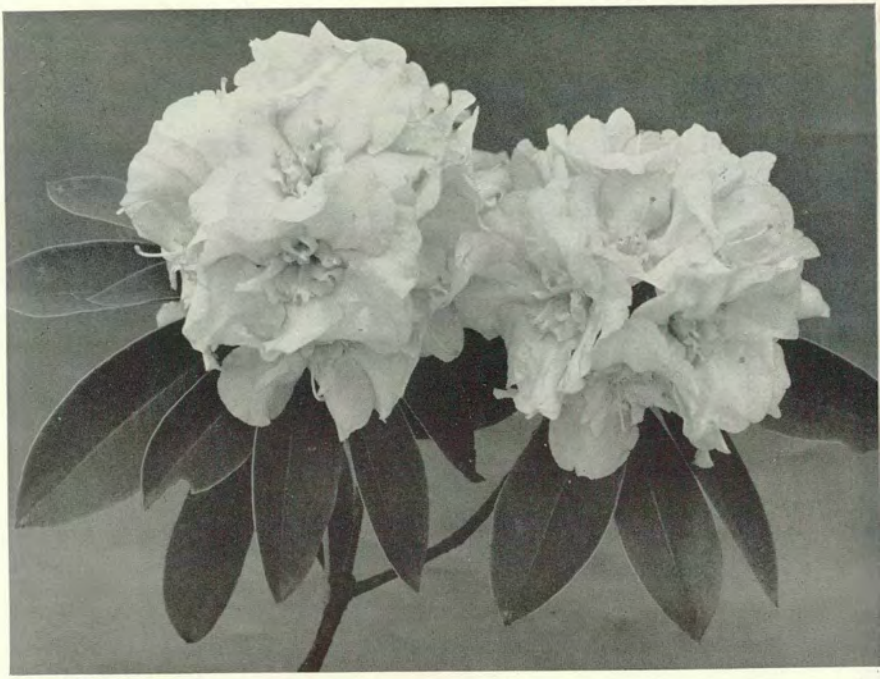


FIG. 27—Rhododendron 'Emerald Isle' A.M. May 22, 1956. Shown by R.H.S. Gardens, Wisley (See p. 130)



Photos, J. E. Downward

FIG. 28—R. 'Pink Rosette' A.M. May 22, 1956. Exhibited by BRIGADIER J. C. M. EVANS (See p. 132)

Gaul	B	Buckland Monachorum, 7
Gladys	B	Bagshot, eight to ten years, *
(Gladys *g.*) Rose	B	Bagshot, eight to ten years, *
Glory of Bagshot	B	Bagshot, eight to ten years, *
Goldsworth Yellow	B	Bagshot, eight to ten years, *
griersonianum × *arboreum*	F	Bodnant, †
griersonianum hybrids	F	Exbury, twelve to fifteen years, 6–12
Gwilt King	F	Minterne, twenty years, 10–12, *
Handel	B	Wisley, 9, †
Handsworth Scarlet	B	Bagshot, eight to ten years, *
Hawk	B	Bagshot, six to seven years, *
Idealist	B	Bagshot, six to seven years, semi-*
Ivanhoe	B	Buckland Monachorum, 2
Jacquetta	G	Minterne, nineteen years, 7–8, *
kyawi hybrids	F	Exbury, fifteen to twenty years, 12–15
Lady Alice Fitzwilliam	B-F	Porlock, 4, †
Lady Berry	K-G	Buckland Monachorum, $2\frac{1}{2}$, *
Lady Bessborough	B	Bagshot, eight to ten years, *
(Lady Bessborough *g.*) Roberte	B	Bagshot, eight to ten years, *
Lady Chamberlain and clones	K	Romsey, 4, †
Lady Rosebery	B	Buckland Monachorum, 5
	G	Minterne, twenty-four years, 9–10, †
Lady Rosebery and clones	K	Romsey, 4, †
Laura Aberconway	G	Romsey, 2–3, †
	B	Buckland Monachorum, 3–4
	F	Wisley, 9–10, N, E, †
Letty Edwards	B	Bagshot, eight to ten years, *
Loderi	B	Bagshot, ten to twelve years, *

Loderi	B	Uckfield, 12–15, †
	F	Wisley, 12, N, E, *
Loder's White	F	Bagshot, ten to twelve years, *
	F	Woking, 1–3, *
Lord Swaythling	F	Wisley, 9–10, *
Margaret	B	Wisley, 5, †
Margaret Dunn	F	Minterne, eighteen years, 5–6, *
Mary Swaythling	B	Bagshot, eight to ten years, *
Mrs. Furnivall	B	Bagshot, eight to ten years, *
Naomi	B	Bagshot, eight to nine years, *
Nobleanum	B	Bagshot, eight to ten years, *
Peace	B	Buckland Monachorum, 2
Penjerrick	B	Buckland Monachorum, 6–7
	B	Romsey, 1–4, †
	F	Bodnant, fifty years, †
	F	Minterne, twenty years, 8–10, *
	F	Wisley, 9–10, †
Polar Bear	B	Romsey, 1–4, †
Princess Alice	B	Porlock, 4, †
Queen o' the May	B	Bagshot, eight to ten years, *
Raoul Millais	B	Uckfield, 5–6, †
Red Admiral	F	Exbury, twenty-five to thirty years, 20
Red Cap	K	Chandler's Ford, Hants, 4–5, †
	B	Buckland Monachorum, 3
Rosabel	G	Porlock, 5, †
Rosa Mundi	B	Bagshot, eight to ten years, *
Rose Perfection	F	Bagshot, ten to twelve years, *
Rubina	G	Romsey, 2–3, †
	B	Buckland Monachorum, 2
Saffron Queen	B	Porlock, 2, †
St. George	B	Bagshot, eight to ten years, *
	B	Wisley, 9, †
Sarita Loder	B	Romsey, 1–4, †

Sarita Loder	G	Minterne, sixteen years, 9,*
Sesterianum	B	Porlock, 4, †
Sir John Ramsden	B	Bagshot, eight to ten years, *
Smithii aureum	F	Uckfield, 5–6, *
Sunrise	B	Buckland Monachorum, 6
	F	Bodnant, fifteen years, *
Susan	F	Woking, 1–2, *. Caused by October 1955 frost?
Tally Ho	G	Uckfield, 6, semi-†
Toreador	B	Minterne, sixteen years, 6,*
Treasure	B	Buckland Monachorum
Tyermanii	G	Trewithen
Vanessa	G	Uckfield, 5–6, †
	B	Buckland Monachorum, 3–5
White Swan	F	Bagshot, ten to twelve years, *

AZALEODENDRONS

broughtonianum Dr. Masters Glory of Littleworth Nelly norbitonense aureum	F	Chandler's Ford, Hants, 1–5, †

HARDINESS REPORT OF WILSON'S KURUME AZALEAS AT WISLEY, WINTER 1955-56

By FRANCIS HANGER, V.M.H.

THE winter of 1955–56 was comparatively mild at Wisley until the month of February. However, on October 26, 10 degrees of frost were registered on the ground and 4 in the screen, following which no exceptional frost occurred until February 11. Severe weather then ensued until February 23, the climax being reached on February 20 when the minimum temperature recorded 17 degrees of frost in the screen and 25 on the ground. The maximum temperature that day never rose above 23 degrees Fahrenheit (9 degrees of frost) in the screen. Added to these low temperatures was the piercing north-east wind which continued night and day for approximately one week.

There are very few complete collections of Wilson's Fifty Kurume azaleas, cultivated in this country, but individually many varieties have achieved widespread popularity. It was considered therefore that a report on the behaviour of the complete collection at Wisley under the adverse conditions already mentioned might prove to be of value and interest to the readers of the *Rhododendron and Camellia Year Book*. The Wisley collection is planted on the north side of Battleston Hill with only a *Rhododendron luteum* hedge as shelter from piercing north-east winds. The following records were compiled during April and continued until early June to provide ample time for the dormant buds of many completely defoliated varieties to break into new growth.

Key H = Hardy
FH = Fairly hardy, leaves browned
ST = Slightly tender, tip wood dead
T = Tender plants, killed

WILSON'S FIFTY KURUME AZALEAS

No.	*Name*	*Hardy*	*Fairly Hardy*	*Slightly Tender*	*Tender*
1	Seikai	H			
2	Kureno Yuki		FH		
3	Shin Seikai		FH		
4	Yorozuyo	H			
5	Nani Wagata		FH		
6	Tancho				T
7	Hachika Tsugi				T
8	Irohayama		FH		
9	Hoo			ST	
10	Suiyohoi				T
11	Takasago			ST	
12	Kasumi Gaseki		FH		
13	Bijinsui				T
14	Asagasumi	H			
15	Kimigayo	H			
16	Azuma Kagami		FH		
17	Osaraku				T
18	Otome		FH		
19	Aya Kammuri		FH		
20	Shintoki-No-Hagasane		FH		
21	Saotome		FH		
22	Kirin	H			
23	Tamafuyo	H			
24	Kiritsubo	H			
25	Omoine			ST	
26	Oino Mezame		FH		
27	Katsura-No-Hana			ST	
28	Shin Utena			ST	
29	Kumo-No-Uye			ST	
30	Benifude		FH		
31	Suga-No-Ito	H			
32	Kasane Kagaribi		FH		
33	Tsuta Momiji		FH		
34	Suetsuma	H			
35	Fudesute Yama		FH		
36	Ima Shojo			ST	
37	Rasho Mon			ST	
38	Waka Kayede		FH		
39	Yayehiryu	H			
40	Kurai-No-Himo			ST	
41	Agemaki		FH		
42	Hinodegiri		FH		
43	Aioi			ST	
44	Sakura Tsukasa		FH		
45	Tama-No-Utena	H			
46	Gosho Zakura	H			
47	Ukamuse	H			
48	Hinode-No-Taka			ST	
49	Osaraku Seedling		FH		
50	Hana Asobi	H			

THE RAISING OF RHODODENDRONS FROM SEED

By FRANCIS HANGER, V.M.H.

CORRECT harvesting is of paramount importance to obtain perfect germination from any viable seed. From the end of October onwards a sharp eye must be kept on all rhododendron seed pods intended for harvesting so as to be ready for sowing, early in the spring. It is most important to leave the seed on the plants as long as possible to obtain full maturity, but at the first signs of capsule splitting they should be gathered and placed in carefully labelled packets. Store the packets of seed in a tin box for safety from pests, and place in a dry cupboard until early January. The seed should then be cleaned and made ready for sowing when it will be found that most of the capsules have begun to open enabling the operator to extract the seed with ease. Any seed pods still intact may be forced open with the aid of a pen-knife. It is most important to remove all chaff and capsule rubbish caused by the breaking down of the capsules before sowing. Should waste be scattered with the seed at the time of sowing, fungal disease may become prevalent, which could speedily wipe out the young seedlings at an early stage.

SEED SOWING ON GRANULATED PEAT

If a propagating frame inside a greenhouse with bottom heat and a temperature of 55°–60° F. is available, January to the middle of February is the most suitable time to sow the seed of rhododendrons including deciduous azaleas. This early start enables the plants to have a long season of growth and to become large and strong enough to withstand the coming winter.

Various different composts have been tested by the writer during his experience of raising tens of thousands of rhododendrons from seed, and he is convinced that nothing is better than a good granulated peat properly prepared with a little silver sand added. This mixture should have a low pH value of somewhere near 4·0 to 4·5. The seedling plants will live and exist in this compost for several years, and once they have become hardened off no fungal disease seems to affect them.

Except where very large quantities are required, rhododendron

together with azalea seed is best sown in pans or shallow boxes according to the amount of seed available. The receptacles should be perfectly clean and half-filled with washed crocks. Pass the peat moss through a quarter-inch sieve, then mix with a little silver sand after which the compost should be ready to place in the pans or boxes ready for sowing. Being of a spongy nature, a little patience is necessary to press the material evenly into the receptacles. Do not try to fill the container in one operation, but rather in layers, until the pan is filled to within a half-inch of the top. Finish the surface off with a layer of the same compost passed through a much finer sieve and press firmly. This gives a very even surface upon which to sow the seed. To prepare these seed vessels perfectly one must have the compost well and truly moist. When mixing dry peat it is necessary to add soft rain water, constantly rubbing the peat between the hands during the operation. When the pans or boxes are prepared they should be thoroughly soaked again with rainwater and allowed to drain all night ready to be sown the following morning. Sow the seed evenly and reasonably thinly on the surface, label each receptacle when completed, and unless the seed is quite large, no covering will be required. All is now ready for the receptacle to be plunged in the propagating frame which must have previously been thoroughly scrubbed out, and now granulated peat placed ready for the plunging.

With a bottom heat of 55° to 60° F. one must guard against fluctuations between dryness and saturation. A uniform moisture is essential and on no account must the surface of the seed beds become dry, or the sprouting seedlings may become scorched through lack of water almost before one has noticed that germination has commenced. This is even more important with the "alpine" species of rhododendron. Here the seed is so small and the initial growth so threadlike in appearance that a magnifying glass is necessary to view the primary stages of germination. These small-growing rhododendrons need removing from the very close propagating frame earlier than their larger-growing cousins and are much better placed on a bench in the house, to be covered with a piece of glass, as soon as the first signs of germination appear.

When the cotyledons have developed, anchoring of the seed will be necessary. This is easily accomplished with a fine layer of dry silver sand applied when the seedlings are dry, taking care not to overdo the operation and bury the cotyledons. From now on, air should be given to the propagating frame, to be gradually increased as the seedlings grow. Eventually they become strong enough to be

placed on the bench in the house outside the frame. Approximately a fortnight will pass before the commencement of germination and another fortnight before the removal from the propagating case. Care must be taken to keep the sun's direct rays from shining upon the seedlings. All watering if at all possible should be capillary, i.e. by placing the pans in containers of rainwater and allowing the moisture to creep through the bottom until the pan is thoroughly soaked. This is greatly preferred to overhead watering with a fine rose, which has the tendency to beat down the soft minute seedlings in the early stages, oft-times causing much damage.

There are other means of raising rhododendron seedlings, but the foregoing method is advised for the maximum development during the first season of growth. Seeds sown in identical compost and placed in a warm or even an unheated house and covered with a sheet of glass will give very good results. Excellent results may also be obtained by sowing rhododendrons, especially azaleas, into cold frames and keeping them shaded and close until germination takes place. In this case the last week in March will be early enough to sow the seed and if precautions are taken to sow thinly, the young plants can remain undisturbed until the autumn or following spring. With such treatments a compost of equal parts of granulated peat and lime-free loam is advised together with a surface layer of fine sieved granulated peat and silver sand.

SPHAGNUM MOSS COMPOST

Chopped sphagnum moss which has been carefully cleaned by the removal of all foreign matter is also an ideal medium for the raising of rhododendrons by seed. Shredded sphagnum moss passed through a fine quarter-inch sieve is an excellent compost for the raising of many ericaceous and moisture-loving plants and cannot be excelled as a surface covering for the propagation of lily scales.

Equal parts of sphagnum moss and granulated peat passed through a fine sieve forms what I consider to be the best compost for the raising of rhododendrons, with the aid of rectangular colourless plastic dishes with tight-fitting covers such as those used for food storage in small domestic refrigerators. These make excellent propagators for the small grower or amateur gardener who has to leave daily for business reasons and is not at hand to give frequent attention to the seedlings in their early stages. This medium has excellent moisture-retaining qualities which is of paramount importance when used in plastic vessels with no drainage. The compost should be well mixed, and prepared several days before sowing takes place,

at the same time adding sufficient rainwater, to soak thoroughly the compost before placing and firming it within the plastic dishes.

It must be borne in mind that the plastic dishes have no drainage, so all composts must be extremely light and moisture-retaining to maintain a constant humidity within the receptacle without additional water for a period of several weeks. These plastic dishes with depths of 3–4 inches are most desirable for raising the rarer primulas, gloxinias, begonias, gaultherias and other plants possessing small seeds. Under the conditions formed within the plastic containers the seeds respond immediately, germinate with added rapidity and certainty, needing only the minimum of attention regarding watering, shading, etc.

Practically the same conditions can be obtained if the seeds are sown in boxes. The boxes are filled to within half an inch of the top with the desired compost, made level and thoroughly watered in. Seeds are sown and sugared in with silver sand but not covered. After this the whole box is inserted into a polythene bag, the bag is tied or fixed in such a manner to enable the polythene to be stretched tightly over the top of the box, thus preventing sagging in any way. The airtight container is then placed in the temperature normally recommended and will not need any further attention until the seeds start to germinate. When the seedlings have formed their cotyledons the plastic bag can be gradually removed and the young plants allowed to grow on without the polythene covering.

This method like that of the airtight plastic dishes prevents the compost from drying out and gives a constant high humidity providing excellent conditions for successful germination.

AFTER TREATMENT OF SEEDLINGS

The pans of young rhododendron seedlings must be kept growing freely in a warm greenhouse. To encourage clean growth it will be necessary to syringe between the pans and over the seedlings in the early mornings and late afternoons on all favourable sunny days; and at the same time keep the paths, stagings, etc., of the house damped to create those ideal growing conditions so essential for the production of free healthy growth.

Arrange the seedlings as near the glass as possible, and protect them from mid-day sun. It is not advisable to have permanent shading at the commencement, but just a temporary light covering, which should not be placed immediately over the pans, or boxes, of seedlings. As April approaches and the sun becomes more powerful

a permanent shading may be painted on the glass, taking care not to apply the covering too thickly.

Always keep a sharp look-out for attacks of greenfly or thrips amongst the seedlings. These will, if allowed to remain long unnoticed, speedily cause a severe check in growth, and also disfigure the tiny young leaves. A fumigation with nicotine shreds or compound as soon as the pest is discovered (making sure that the seedlings are dry overhead) will easily dispose of this trouble. As "prevention is better than cure" a monthly fumigation of the house during the seedling stages assures the grower of seedlings free from pests. By the month of April the seedlings will have produced their first true leaf and then preparations must be made to prick out the plants into boxes without delay, to prevent any check in growth.

Given the above treatment most of the seedlings should be ready by the middle of July to be transferred from the boxes and planted out into suitably prepared cold frames, the lights of which should be removed every night to allow the autumn dews to do their work. Admit rainfall to the young plants on every possible occasion.

RHODODENDRON SHOW AND COMPETITION

May 1 and 2, 1956

By N. K. GOULD

AS a result of the very unfavourable weather in the early part of the year, the exhibits at the Show were less numerous than they would have been in a normal year. There was, however, a varied and colourful display, and the lateness of the season made it possible for exhibitors to include some species and hybrids which are usually past flowering at the beginning of May.

There were eight non-competitive exhibits staged in the centre of the hall. MR. OLAF HAMBRO brought from Logan a remarkable collection of different forms of *Rhododendron sinogrande*. Forty-one vases, each containing one truss, showed a wide range of variation in form and colour of the flowers, the shape and density of the truss, and in size of the leaf. The Society's silver-gilt Lindley medal, which is reserved for exhibits of considerable botanical interest, was awarded to the exhibitor.

Messrs. W. C. Slocock Ltd. staged a large group backed with tall bushes of *davidsonianum*, in front of which were specimen plants of 'Letty Edwards', 'Butterfly', 'Goldfort', 'Blue Diamond' and other brightly-coloured hybrids. The front rows were occupied by low bushes of 'Fabia', 'Elizabeth', 'Purple Splendour', 'Goldsworth Orange', 'Susan' and other popular varieties. This exhibit won the silver-gilt Banksian medal.

The Silver Flora medal was won by the Knap Hill Nursery, Ltd., for a very colourful group of flowers in fine condition. Outstanding among the azaleas were 'Golden Oriole', 'Golden Sunlight', 'Hotspur', 'Comte de Quincy' and 'Mary'. The hardy hybrid rhododendrons included 'Corona', 'Mount Everest', 'Chintz', 'Zuiderzee' and 'Britannia'.

Messrs. J. Waterer, Sons & Crisp, Ltd. made a central feature of large bushes of 'Loderi' and 'Handsworth White', surrounded by smaller specimens of 'Earl of Athlone', 'St. George', 'Dawn', and 'Jacksoni'. Some of the more conspicuous azaleas in this group were 'Hortulanus Witte', 'Victoria', 'Emile Liebig' and 'Sunbeam'.

The bulk of Messrs. Hillier & Sons' exhibit consisted of small-flowered species. The blue and purple shades of *scintillans*, *impeditum*, *edgarianum* and *hippophaeoides* contrasted pleasantly with *roseum* and *schlippenbachii*. The range of colour was extended by the use of azaleas such as 'Nancy Waterer', 'Tunis' and 'Gloria Mundi'. Among the hybrid rhododendrons were noticed 'Snow Queen', 'Naomi' and 'Earl of Athlone'.

Messrs. A. Charlton & Sons put up a group of compact, well-flowered bushes of hardy hybrids. A bold centre feature of 'Purple Splendour' was surrounded by the varieties 'Cynthia', 'Pink Pearl', 'Mme de Bruin', 'John Walter' and 'Diphole Pink'.

Messrs. G. Reuthe, Ltd. made use of several species valuable for their foliage, including *hodgsonii*, *fictolacteum*, *falconeri*, *clementinae* and *coryphaeum*. These were associated with flowering specimens of *cuneatum*, *canadense*, *fargesii*, *scintillans* and several well-known hybrids.

Mr. Frederick Street had a pleasing exhibit of well-shaped bushes of a number of hardy hybrids, all of which were full of flower. Among the more conspicuous were 'Starfish', 'Langley Park', 'Mount Everest' and 'Countess of Derby'.

The number of entries in the competitive classes was below the average, but the quality was generally high. The schedule was similar to that of previous years, except that a new class (90) asked for a group of plants or flowers, to compete for the Rothschild Challenge Cup.

There were five entries in Class 1, for one truss of each of eight species. The first prize was won by Mr. Hambro, with a set of *sinogrande*, *falconeri*, *lacteum*, a large pale *hodgsonii*, *niveum*, *thomsonii*, a pale lilac *campanulatum* and *macabeanum*. Sir Henry Price took the second prize with *lacteum*, *fictolacteum*, *falconeri*, *niveum*, *irroratum*, *catacosmum*, *campylocarpum* and a very deep maroon *chaetomallum*. For the third prize the Dowager Marchioness of Londonderry and the N.I. National Trust sent from Mount Stewart a collection comprising *sinogrande*, *hodgsonii* in a rosy-lilac form, *irroratum*, *delavayi*, *fictolacteum*, *falconeri*, *lindleyi* and a fine creamy-yellow *macabeanum*.

In Class 2 for one truss of each of three species, there were six entries, of which Mr. E. de Rothschild's was given first place. This comprised a bright rose-pink *arboreum*, a blue *campanulatum*, and a form of *fulvum* with very bright red indumentum. Wing-Commander F. L. Ingall was second with *fictolacteum*, *lacteum* and a white *sphaeroblastum* with heavy cinnamon indumentum.

MR. E. M. KING took the third prize with *falconeri, hodgsonii* and *rex*. Class 3, for three species, was open only to exhibitors who had not won a prize in Classes 1 or 2 in the preceding five years. There were only two entries, and only one prize, which went to MR. C. ARMYTAGE MOORE for *wightii, thomsonii* and *campylocarpum*.

In Class 4, for a truss of one species, there were thirteen entries of exceptionally high quality. LADY LONDONDERRY won first prize, the McLaren Challenge Cup, with *macabeanum*, MR. HAMBRO filled the second and third places with *sinogrande* and *hodgsonii*, and a large blush-pink *fictolacteum* from the Commissioners of Crown Lands, Windsor Great Park, won the fourth prize.

Class 5 required a spray or branch of any species. MR. DE ROTHSCHILD entered a beautiful specimen of the pale rose *pseudochrysanthum*, the foliage covered with a scurfy tomentum giving it a frosted appearance (Fig. 23). This won the first prize. The second went to LADY LONDONDERRY for a fine creamy-white *johnstoneanum*. Two entries from LORD ABERCONWAY, namely a deep rose *argyrophyllum* and a light lavender *desquamatum*, filled the third and fourth places. There were six other entries.

In Class 6, for a truss of *arboreum* or its subspecies, LADY LONDONDERRY showed a fine truss of the blood-red form which secured first place. MRS. LAURA DAVID took second place with *cinnamomeum*, LORD ABERCONWAY'S pink *arboreum* was third, and SIR GILES LODER'S red form of the species fourth. Among the other entries was the beautiful wide-flowered pink variety *shirleyi*, from Bodnant. The following class called for any other species or variety of the Series Arboreum. Here the Commissioners of Crown Lands headed the prize list with a pale, bluish-lilac *floribundum*. The second prize entry of *niveum* came from MR. HAMBRO, and LORD ABERCONWAY'S *argyrophyllum* was placed third.

In Class 8 the Series Barbatum was represented by eleven entries, among which *morii*, represented by a beautiful truss from LORD ABERCONWAY, won the first prize. MRS. R. M. STEVENSON'S rose-striped *crinigerum* was second, and MR. HAMBRO'S *habrotrichum* third.

LORD ABERCONWAY'S entries of *megeratum* and *leucaspis* occupied the first and third places in Class 9, for a species of the Series Boothii, and SIR GILES LODER'S *tephropeplum* was placed second. In the next class, for the Series Campanulatum, good blue forms of the type species from CAPT. M. ADAMS-ACTON and MR. DE

ROTHSCHILD won the first and second prizes, respectively. MR. HAMBRO entered a lilac-coloured form of the same species which was awarded the third prize. A very attractive deep yellow *concatenans* from SIR HENRY PRICE was the sole entry in Class 11, covering the Series Cinnabarinum. Rather surprisingly there were but two entries in the following class, for the species *falconeri*. BRIGADIER EVANS showed a truss with large, frilled cream flowers supported by broad leaves, and MR. HAMBRO entered a high full truss of somewhat smaller flowers. The nine exhibits of *fictolacteum* in the next class showed a good deal of variation. From the Crown Lands came a form with very large rose-flushed blooms, which won the first prize. MR. R. STRAUSS entered, for the second prize, a white, heavily-blotched and long-leaved form. SIR HENRY PRICE'S third prize exhibit had unusually long funnel-shaped flowers, and LORD ABERCONWAY'S entry was of similar form.

Class 14, for the remaining species of the Series Falconeri, attracted fourteen entries. A pale blush-pink, heavily blotched *rex* from the Crown Lands, was given first place, and a very similar form from MR. DE ROTHSCHILD, was third. SIR HENRY PRICE entered *arizelum*, with large white bells, for second place, and LORD ABERCONWAY'S *hodgsonii*, with a compact truss of lilac-coloured flowers, was fourth.

There were only two entries in Class 15, for a truss of *griffithianum*, a pink-flushed form from LADY LONDONDERRY, and a white one from Exbury. Other species of the Series Fortunei were eligible for the next class, and here the prizes went to MR. DE ROTHSCHILD for *fargesii*, MRS. DAVID for *sutchuenense*, and LORD ABERCONWAY for *vernicosum*. Among the other entries was a very striking dark pink *fortunei* entered by LORD DIGBY, and MR. DE ROTHSCHILD'S *planetum* was equally attractive. The Series Fulvum was represented in Class 17 by the type species, shown by MR. HAMBRO and MRS. DAVID, and by *uvarifolium* from MR. HAMBRO. The first place in Class 18 was taken by a superb example of *macabeanum*, brought by LADY LONDONDERRY, and this was followed by two imposing trusses of *sinogrande*, from the Logan and Mount Stewart gardens respectively.

Class 19, for the Series Irroratum, produced some very interesting material. SIR GILES LODER secured the first place with a specimen of *hylothreptum* with long, matt green leaves and a truss of bell-shaped, purplish-crimson, seven-lobed flowers, and his *irroratum* was given second place. Next came a light purplish-rose, dark-blotched *anthosphaerum* from MR. HAMBRO.

In Class 20, for the Series Lacteum, the type species was a popular choice, and the prize-winning exhibits of this came from Mr. Hambro, Sir Henry Price and Wing-Commander Ingall. Other entries included *wightii* and *traillianum*. The next class, for the Subseries Megacalyx, was quite spectacular, although it contained only three entries. From the Crown Lands came a superb, seven-flowered truss of *lindleyi* (Fig. 31) in perfect condition. Lord Aberconway brought a specimen of *taggianum* (Fig. 32) with four huge frilled flowers, and also a very lovely *dalhousiae*. In the class for the other species of the Series Maddenii, Lady Londonderry showed a well-flowered example of *johnstoneanum*, and Mr. J. W. Howlett entered a cream, rose-flushed *polyandrum*.

The next four classes were allotted to the Series Neriiflorum. The Subseries Haematodes was very sparsely represented in Class 23, by *catacosmum* from Sir Henry Price and *chaetomallum* from Mr. Hambro and Sir George Jessel. The Subseries Neriiflorum attracted a number of bright entries, of which Sir Henry Price's *neriiflorum*, Mr. de Rothschild's *euchaites* and Mr. Howlett's *neriiflorum* were judged to be the most meritorious. The trusses of *aperantum*, shown in the following class by Lord Aberconway, Mrs. Stevenson, and Wing-Commander Ingall, were all rather on the small side and did not show the species at its best. In Class 26 Sir Henry Price took the first place with a nice blood-red *didymum*, Mrs. Stevenson entered for the second place a truss of the rosy-scarlet, waxy textured *eudoxum* var. *brunniaefolium*, and a specimen of *haemaleum* for the third.

A Tower Court specimen of *recurvum* var. *oreonastes*, with many linear, dark green leaves and a small round head of pale maroon-pencilled flowers, won the first prize in Class 27, for the Series Taliense. Mr. de Rothschild entered a pale sulphur-yellow *wasonii* which won the second prize, and the third went to Mr. Hambro for *roxieanum*.

Some beautiful sprays of *campylocarpum* won the prizes in Class 28 for Sir Giles Loder, Mr. Armytage Moore and Mr. de Rothschild. The next class, for other species of the Subseries Campylocarpum, attracted only two entries of *caloxanthum*, from Mr. Armytage Moore and Mrs. Stevenson. In Class 30 the Subseries Selense was represented by *erythrocalyx* ssp. *docimum* with creamy flowers and pink-flushed buds, entered by Mrs. Stevenson, and by the pale rose flowers of *rhaibocarpum* sent by Lord Aberconway and Sir George Jessel. Mr. Armytage Moore won the first prize in Class 31, for the Subseries

Souliei, with a fine spray of a particularly well-coloured variety of *williamsianum*. The only other entries in this class were a slightly paler example of the same species, and a good form of *wardii*, both from Bodnant. Ten exhibits in Class 32, for the Subseries Thomsonii, showed interesting variation in form and colour of calyx and corolla. The judges selected those from SIR GILES LODER, SIR HENRY PRICE and MR. M. HAWORTH-BOOTH for the prizes.

One of the more surprising consequences of the late season was that only two entries of *schlippenbachii* appeared in the class for that popular and lovely species. The one from MR. DE ROTHSCHILD was chosen for the single prize awarded. In the next class, for a spray of one other deciduous azalea, MR. E. M. KING secured the first place with a free-flowered branch of a very richly-coloured *albrechtii*. After this came a spray of the dainty white *quinquefolium*, entered by MR. DE ROTHSCHILD, and *reticulatum* from the Crown Lands was third. MR. DE ROTHSCHILD and LORD ABERCONWAY shared the honours in the class for branches of three different deciduous azaleas, each choosing *albrechtii*, *reticulatum* and *schlippenbachii* for this class.

In Class 36, for a spray of the Series Anthopogon or Cephalanthum, MRS. STEVENSON gained the first place with a pure white, daphne-like *primulaeflorum* under the number K.W. 5384. The same species was entered by LORD ABERCONWAY and MR. DE ROTHSCHILD. A spray of *campylogynum* from LORD ABERCONWAY was the only exhibit in the next class.

The Series Edgeworthii was represented in Class 38 by the species *bullatum*, shown in its white form by SIR GILES LODER, who gained first place, and by the Commissioners of Crown Lands, whose exhibit was placed third. The second place was occupied by an attractive pink form shown by LADY LONDONDERRY. The next class, for the Series Glaucophyllum, had only one entry, a large-flowered *glaucophyllum* from Bodnant. In Class 40, for sprays of the Series Heliolepis, the first prize was awarded to LORD ABERCONWAY for a large, floriferous branch of a rosy-mauve *desquamatum*, the second to SIR HENRY PRICE for a large-flowered *rubiginosum*, and the third to MR. HAMBRO for the same species in a darker-coloured form. One of the most popular classes was the next, which called for a spray of a species of the Series Lapponicum. There were fifteen entries, and the one adjudged the best was a richly-hued *scintillans* from the Crown Lands. The second and third places were given to *chryseum* and *flavidum*

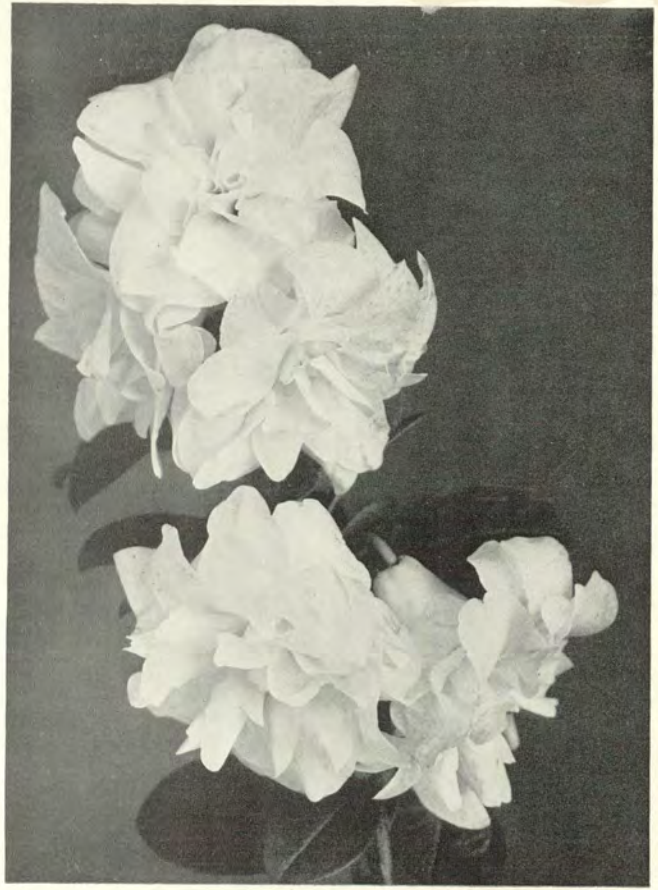
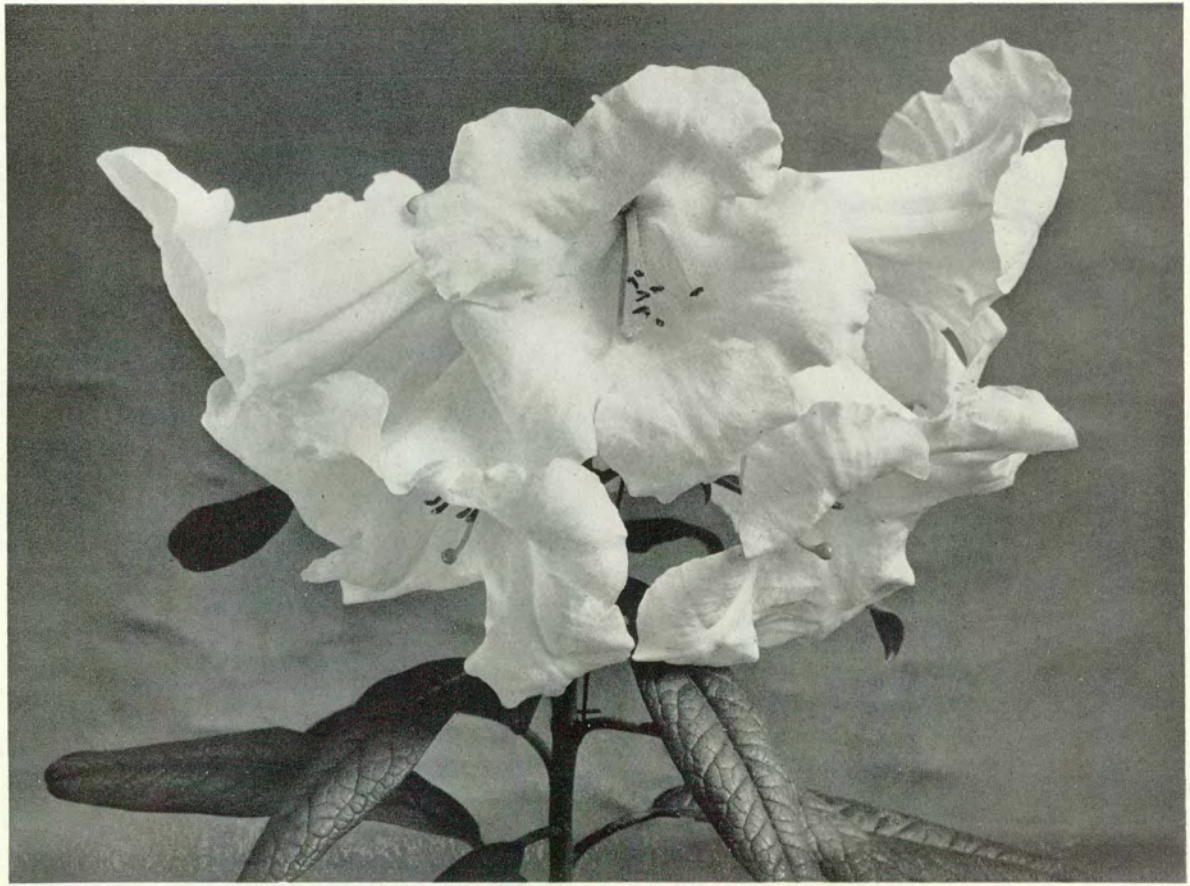


FIG. 29—*Rhododendron johnstoneanum* double form, A.M. April 17, 1956. Shown by the Commissioners of Crown Lands, Windsor Great Park (See pp. 32 and 131)

Photos, J. E. Downward

FIG. 30—R. 'Mistake' A.M. June 19, 1956. Shown by BRIGADIER J. M. J. EVANS (See p. 132)



Photo, J. E. Downward

FIG. 31—*Rhododendron lindleyi.* A fine specimen shown in the Rhododendron Competition, 1956 (See p. 79)

Photo, J. E. Downward

FIG. 32—*Rhododendron taggianum*. A fine specimen shown in the Rhododendron Competition, 1956.
(See p. 79)

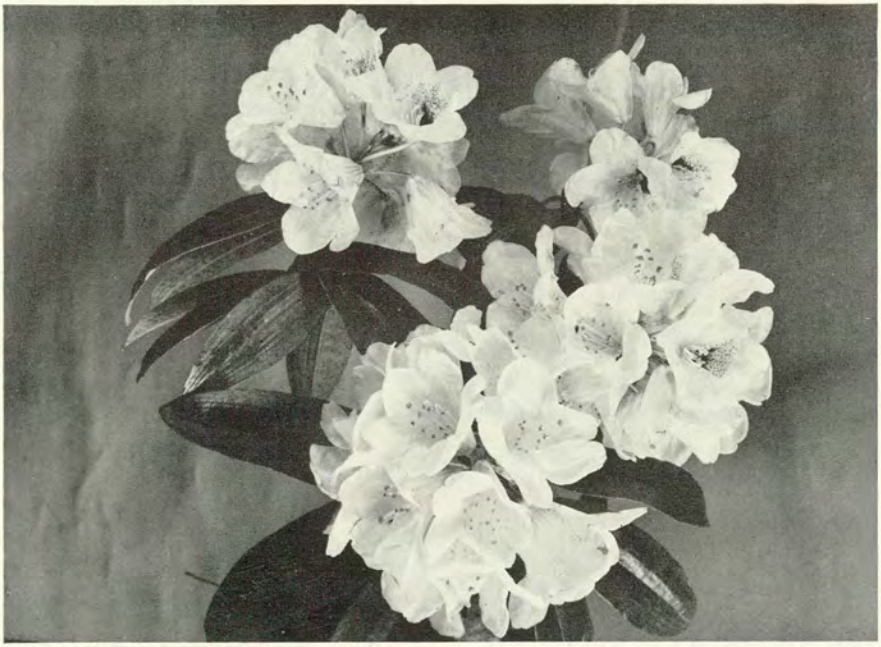


FIG. 33—*Rhododendron morii* A.M. May 1, 1956. Shown by CAPT. COLLINGWOOD INGRAM, V.M.H. (See p. 131)

Photos, J. E. Downward

FIG. 34—*R. basilicum* A.M. May 1, 1956. Shown by COL. THE LORD DIGBY (See p. 130)

entered by LORD ABERCONWAY. The species *russatum* and *scintillans* figured prominently among the other entries.

In Class 48, for a spray of the Series Forrestii, *repens* was shown by the three exhibitors, LORD ABERCONWAY, MRS. STEVENSON and SIR GEORGE JESSEL. The entry from Tower Court represented the variety *tumescens* (K.W. 5846). In the next four classes, covering several small-flowered series, there was little of interest to report. Even in Class 48, for *augustinii*, there were only two entries, from MR. DE ROTHSCHILD and LORD ABERCONWAY, who both showed a lavender, rose-flushed variety. In Class 51, for the Subseries Polylepis, LORD ABERCONWAY won the first prize with a large, dark-coloured *concinnum*, and his rather open, starry *pseudoyanthinum* took second place. Messrs. Waterer entered a pale blush-pink *polylepis* which was placed third. In Class 53, for the Subseries Yunnanense, MAJOR-GENERAL E. G. HARRISON won the first prize with a very well-flowered spray of *caeruleum album*. LORD ABERCONWAY and MR. DE ROTHSCHILD competed with pink forms of *davidsonianum*. The next class, for any species not included in any earlier class, produced a bright pale pink *adenopodum* with long, white-tomentose leaves, from LORD ABERCONWAY; a pure white unspotted *hyperythrum* from MR. DE ROTHSCHILD, and a good truss of *metternichii* from MAJOR-GENERAL HARRISON.

The classes from 61 to 89 inclusive asked for hybrids. It is not proposed to list or describe in detail all the numerous entries. As is usual, Class 61, for a truss of each of eight hybrids, displayed a rich selection of both old and new varieties. The first prize was awarded to MR. DE ROTHSCHILD who staged 'Cornish Cross', 'Mariloo', 'Adelaide', 'Yvonne', 'Quaker Girl', 'Carita', 'Aurora' and 'Gypsy King', MR. HAWORTH-BOOTH'S second prize entry comprised 'Marilyn', 'Maiden's Blush', 'Elizabeth', 'Red Crown', 'Dr. Stocker', 'Cornish Cross', 'Luscombei' and 'Bodartianum'. The third prize went to LORD ABERCONWAY for a set of 'Phoebus', 'Cornish Cross', 'Tregedna', 'Coresia', 'Koodoo', 'Matador', 'Luscombei' and *griffithianum* × *fargesii*.

In Class 62, for a truss of each of three hybrids, MR. HOWLETT entered 'Mariloo', the pink form of 'Carex' and 'Red Star', winning the first prize. The MISSES GODMAN won the second with 'Diane', 'White Glory' and an unnamed hybrid from 'Gauntlettii' × 'Loderi'. The third prize was awarded to MR. DE ROTHSCHILD for 'Queen of Hearts', 'Naomi' and 'Lionel's Triumph'. There were six other entries. The next class was open to competitors who had not won a prize in Classes 61 or 62 for the past five years.

and required a truss of each of three hybrids. Mr. Armytage Moore secured the first place with 'Cornish Cross', 'Luscombei' and an unnamed flower. Lord Digby showed 'Luscombei', 'Campxen' and *vernicosum* × 'Ernest Gill' and Mrs. G. M. Gosney showed 'Luscombei', 'J. G. Millais' and 'Rose Perfection'.

In Class 65 a single truss of one hybrid was required, and the Loder Challenge Cup was won by Sir Giles Loder with a superb example of 'White Glory'. From eleven other entries Mr. Hambro's specimens of 'Ivery's Scarlet' and 'Elsae' were chosen to fill the second and third places. The next class, which specifies six hybrids raised by, or in the garden of, the exhibitor, is always keenly contested. Here the judges selected for first prize Mr. de Rothschild's group of 'Adelaide', 'Naomi', 'Lionel's Triumph', 'Janet', 'Mariloo' and 'Queen of Hearts', and he was awarded the Crosfield Challenge Cup. Sir Giles Loder staged an attractive selection of 'Gay Lady', 'Maiden's Blush', 'Gay Beauty', 'White Glory', 'Pink Glory' and 'Rosamund'. Lord Aberconway showed 'Camilla', 'Matador', 'Coresia', 'Cardinal', 'Phoebus' and 'Cornish Cross' × 'Kewense'. In the next class, for three hybrids raised by the exhibitor, Lord Aberconway won the first prize with 'Bluebird', 'Matador', and 'Elizabeth'. Mr. de Rothschild won the second with 'Cremorne', 'Electra', and 'Lady Chamberlain', and the third went to Sir Giles Loder for 'Gay Beauty', 'Maiden's Blush' and *thomsonii* × 'Queen Wilhelmina'.

The new Class 90, asking for a group of plants for cut blooms staged on a table 10 feet long by 4½ feet wide and 2½ feet high, was a most interesting innovation, although in a difficult season few exhibitors would be able to fill so large a space. There were two entries, and the Lionel de Rothschild Challenge Cup was won by Mr. E. de Rothschild, whose group contained many of the best Exbury hybrids in fine condition (Fig. 38). The exhibit included 'Cremorne', 'Yvonne', 'Naomi', 'Idealist', 'Queen of Hearts', and many others, as well as a number of species among which *hyperythrum* and *fictolacteum* deserve mention. Lord Digby, who won the second prize, used several of the large-leaved species in the background, and the *falconeri*, *fictolacteum* and *hodgsonii* were very effective. In addition, *albrechtii*, *campanulatum*, *williamsianum* and *campylocarpum* were well shown, supported by such reliable hybrids as 'Penjerrick', 'Luscombei' and 'Bodartianum'.

In Class 94, for a plant of a dwarf rhododendron suitable for the rock garden, Messrs. Waterer showed a very handsome bush of

russatum about two feet high, compact and full of bloom. MR. DE ROTHSCHILD entered a specimen of the deep blood-red 'Carmen', 3 feet in diameter. In the next class, for a plant of an evergreen, MR. DE ROTHSCHILD chose 'Pippa' in beautiful condition, and Messrs. Waterer put up a shapely bush of 'Dawn' carrying fourteen trusses.

Class 97, for two leaves of each of six rhododendrons, again demonstrated the wide variety and attractive qualities of the foliage. The Commissioners of Crown Lands won the first prize with a set comprising *falconeri, bureavii, sinogrande, mallotum, mollyanum* and a *hodgsonii* hybrid. MISS ROBIN LINDSAY BULLARD took the second prize with *falconeri, orbiculare, bureavii, sinogrande, hodgsonii* and 'Grandex', MR. DE ROTHSCHILD used *mallotum, bureavii, lanatum, sinogrande, fulvum* and *calophytum*. The MISSES GODMAN chose *hookeri, fulvum, kyawi, sinogrande, vellereum* and *mallotum*.

In Class 98, for a vase or bowl of flowers, there were only two entries.

The first prize was won by MRS. VIOLET GORDON, who used tall sprays of foliage as a background in her vase. The left-hand side was massed with trusses of medium-sized blood-red flowers, with a contrast of rose and lilac-coloured blooms on the other side. In SIR GILES LODER'S second prize exhibit rather large-flowered varieties such as 'Loderi' and 'Cornish Cross' in tones of white, rose and cream were used in conjunction with sufficient foliage to set off the flowers to advantage.

WASHINGTON RHODODENDRON SOCIETY SHOWS, 1956

By LEONARD F. FRISBIE (*President*)

THE big news from the north Pacific Coast in the U.S.A. is weather news. Usually our troubles of this sort are minor, late frosts and mild freezes, with only temporary damage. But we are far north here in Washington State. Usually our weather pattern is dominated by the benevolent Pacific in winter, and we are heavily shrouded in moisture-laden clouds. But sometimes these protecting rain clouds fade away and a frigid storm comes from the Gulf of Alaska to bring zero temperatures or a little below. This will usually happen late in the season when plants have been hardened by previous cold and slight damage results. But summer came very late in 1955, and growing weather continued into the autumn. Zero weather hit in mid-November and found the plants soft with growing sap flow. The damage to rhododendrons was unprecedented. Many plants were killed, and most were severely damaged. The mild places immediately on Puget Sound that escape cold damage unscathed as a rule enjoyed no immunity in the November debacle. In spite of the loss the Washington Rhododendron Society went ahead with show plans for 1956.

The eighth Annual Tacoma Rhododendron Show was staged on May 19 and 20 in the Oakland Recreation Centre in Tacoma, Washington. Interest on the part of the public was very high, and there is no indication whatever that fewer rhododendrons will be grown because of our severe damage from cold. In fact there will be added effort to overcome the set-back (Fig. 39).

Among the hybrids which withstood the cold and flowered with their usual beauty were: 'Madame Fr. J. Chauvin', 'Blue Peter', 'Goldsworth Yellow', 'Mrs. E. C. Stirling', 'Purple Splendour', 'Mrs. Furnivall', 'Mars', 'Belvedere' and 'Sappho'. I. S. Broxson, Tacoma Seed Co., won three first places, best commercial display, best landscaping, and best five hybrids. A huge plant of 'Madame Fr. J. Chauvin' dominated this display. 'Butterfly' added cream colour and 'Earl of Athlone' provided strong red accent. Knap Hill azalea 'Firecrest 'and various Exbury seedlings completed the exhibit.

LOREN BROWN, of Bremerton, brought to the show a group of large plants of fine hybrids. 'Belvedere' attracted a lot of attention. 'Mars' and 'Purple Splendour' won first places in their colour class for hybrids. The display won second place for landscaping, five hybrids and commercial exhibit. Woodland Park Floral Co., of Sumner, displayed a huge bank of evergreen azaleas dominated by a large-flowered form of 'Hexe'. This exhibit was placed third in the commercial class. JAMES SMITHEART, of Orting, brought a nice plant of 'Hon. Jean Marie de Montague', and MRS. DAVE CURRY of Puyallup showed a large plant of 'Blue Peter'.

DR. CHAS. BERRY, of Tacoma, 1956 Show Chairman, had a very interesting non-commercial display. An enormous plant of 'Mrs. E. C. Stirling' amazed visitors by its size and beauty. A well-flowered plant of 'Betty Wormald' was highly popular. Knap Hill azalea clones 'Gold Finch' and 'Home Bush' were well received. 'Blue Peter' added a pleasing touch of mauve colour, and the New Zealander 'Scarlet King', one of the late EDGAR STEAD's originations, was shown in flower for the first time in the U.S.A. It has outstanding quality. The display won first in the amateur class and 'Gold Finch' won first place in the deciduous azalea class. HOWARD HARMON, of the Metropolitan Park Board of Tacoma, again developed one of his floral masterpieces with a blend of rhododendrons, azaleas, hydrangeas and calceolarias.

LEONARD F. FRISBIE, of Puyallup, displayed massed plants of 'Goldsworth Yellow', 'Blue Peter', *R. luteum* *R. atlanticum* and 'Snowbird', the natural hybrid of *R. atlanticum* × *R. canescens* which is a prime favourite wherever shown with its mass of tubular, pure white flowers, eccentric growth habit and spicy fragrance.

At Centralia, Washington, the Lewis County Garden Clubs invited the Washington Rhododendron Society to stage a rhododendron section in their Spring Garden Show. This exhibit was staged by MR. and MRS. PHIL SPICER of Centralia who brought a plant of 'Mars'. MRS. CLIFTON O'CONNOR showed a plant of 'Mother of Pearl'. LEONARD F. FRISBIE, of Puyallup, sent down a large plant of 'Bow Bells' and one of *R. carolinianum album*. MISS LILLIE DOSSER, of Centralia, showed cut trusses of her deciduous azalea hybrid originations. *R. occidentale*, *R. luteum* and *R. calendulaceum* have been used by MISS DOSSER to produce a unique group of fragrant, elegant and charming hybrids with pastel-coloured flowers. Work with these is still progressing and genuine quality has already been achieved.

In the impressive lobby of the Hotel Monticello in Longview, Washington, the second Annual Cowlitz County Rhododendron Show was staged by the Washington Rhododendron Society. Sears' Farm and Garden Store of Longview won the R.H.S. Silver-Gilt Affiliated Societies Medal for the best commercial display, which was very attractively landscaped with a nice lot of rhododendrons and azaleas and other plants, including dwarf conifers. The display won a number of first, second and third places for various sorts of plant material. Azalea 'Purple Splendour' attracted favourable attention. The colour scheme of the exhibit was excellent with a blend of pink, mauve, yellow and orange in light shades. The display was placed third in the competition for the Banksian Medal awarded by permission of the Council of The Royal Horticultural Society, London, with a cash value of awards of $32.00.

Mr. and Mrs. Garland Kistner, of Longview, won the Silver R.H.S. Affiliated Societies Medal for rustic landscaping that was very attractive. 'Blue Peter' won first place in the mauve hybrid class. Good forms of *R. calendulaceum* were popular with visitors. Massed plants of 'Trilby' provided a strong red accent. The display came second in the Banksian Medal competition with a cash award value of $34.00. The Sloan Nursery of Castle Rock attracted much attention with a huge plant of the azalea 'Arnoldiana,' a group of hybrids developed at the Arnold Arboretum of Harvard University from a cross of *R. obtusum amoenum* × *R. kaempferi.* This plant whose flowers were a clear Phlox Pink (H.C.C. 625/2) won a blue ribbon for Mr. Sloan in the azalea class. A large plant of 'Madame Fr. J. Chauvin' won lots of followers for this fine pink-flowered, very hardy hybrid and it drew a blue ribbon in the pink hybrid class. Plants of *R. calendulaceum*, *R. roseum* and *R. carolinianum* attracted attention as these American natives invariably do when displayed. This display won many blue ribbons for individual plants and captured the coveted Banksian Medal with a total cash award value of $41.00.

The Washington Rhododendron Society feels that it has had a very successful show season. These shows help immensely in educating the general public and in arousing interest in rhododendrons. Plans are going forward to add one or two shows each year.

A SYMPOSIUM

MY FIVE FAVOURITE CAMELLIAS

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

Most of the contributors to this symposium will think, if not write, first of Camellia 'Donation', especially if they were fortunate enough to see the lovely plant shown at the 1955 camellia competition. But though 'Donation' at Bodnant is represented by several plants which flower copiously, I shall resist the temptation to include it among my favourite five.

Instead, I shall start with 'Salutation', regarded by many, though not by me, as much inferior to 'Donation'. Perhaps at Bodnant there is a particularly good form of it; anyway, I find it difficult to sympathize with its critics. Its large, open, blush-pink flowers are recognizable from afar. The bush holds both itself and its blooms well. My education does not extend to the counting of chromosomes; I know that those who can so count (or, anyway, the majority of them) say, with a certainty unusual in botanists talking of hybrids, that it must be a hybrid of *saluenensis* and *japonica* (probably Donckelarii'), but I prefer to think that its other parent with *saluenensis* is *reticulata*. Certainly it has the lanky habit of the latter, and I see a likeness in the leaves. 'Salutation' does not strike readily, but cuttings, once rooted and planted out, show one or more large pale pink flowers on bushes less than a foot high, to the astonishment, and then the delight, of the visitor ignorant of the ways of camellias.

My second choice must be *C. williamsii* 'Mary Christian'. I know of no camellia that holds itself better than this, and throughout the year its stately upright bearing attracts the eye and graces the position it occupies. Its leaves have a touch more yellow in the green than most, and are rather more pointed. It flowers copiously, and slightly later than most other varieties of *williamsii*. It strikes well from cuttings, which makes more inexcusable the frequent distribution of inferior forms under this name.

I cannot, as my third choice, resist a second variety of *williamsii*, namely, 'J. C. Williams'. Its distinctness of leaf, habit, and flower, from other forms of *williamsii*, is a sufficient justification. It was

raised from a paler form of *saluenensis* than other *williamsii* crosses, and its open shell-pink flower stretches 4 inches across, with a gold-tipped cluster of stamens in the middle. My father was particularly fond of this variety, and understandably so, for it does excellently at Bodnant, where, true to his principle of having a lot of what one likes and what does well in one's particular garden, he planted a large number. It flowers over a long period, from January in a mild year, until April. Each branch tip has a cluster of buds which open successively. And it has one immeasurable merit, that it discards its blooms once they are over. I think particularly of a wall below the house at Bodnant where half a dozen of these plants, standing shoulder to shoulder, show for months on end an unbroken mass of fresh pink blossom: and if a severe frost comes, there may be no colour for a week, a fortnight, or three weeks, according to the hardness of the frost, but then the sequence of blooms starts again on this wonderful garden plant.

C. japonica 'Lady Clare' must find a place in my list. Its large, shiny, pointed, dark green leaves, and its curving-over, almost weeping habit, make it as distinguished as it is distinctive. Its flowers are large, bright pink, and semi-double, and it can hold its own with any rival form of *japonica*. When several plants are grouped they are particularly effective, whether in flower or not.

The last place is always difficult to fill, and to do so one must harden one's heart. Having spoken hitherto entirely of camellias which we grow out of doors, I am tempted to give the last place to one or other of those old cool-house *japonica* varieties, the white 'Flora' or the red 'Sylva': we grow both in the open as well, but it is the indoor plants that stay in the mind. Equally I am tempted to select finally the wild form of *reticulata*, its large veined pink petals shyly opening, as if scared of the man-made surroundings in which it finds itself: or the species *saluenensis*, tight of flower, of variable pink hues, with leaves narrow, pointed and serrated. But tempting as those are, I cannot omit the garden form of *reticulata*, which I select as my fifth. I have little use for it when grown in a greenhouse, for it can do equally well out of doors, against a wall. Its sparse spreading habit, thin of branch and with few leaves, gives the effect from a distance of deep pink saucers clinging to the wall: as one draws near, they take shape and form, and one sees these lovely regular semi-double flowers, with curving billowing petals, almost, but not quite, blowsy. Alas, one has not sufficient walls to have as many plants of it as one would wish.

All these five camellias have one great virtue, in common with

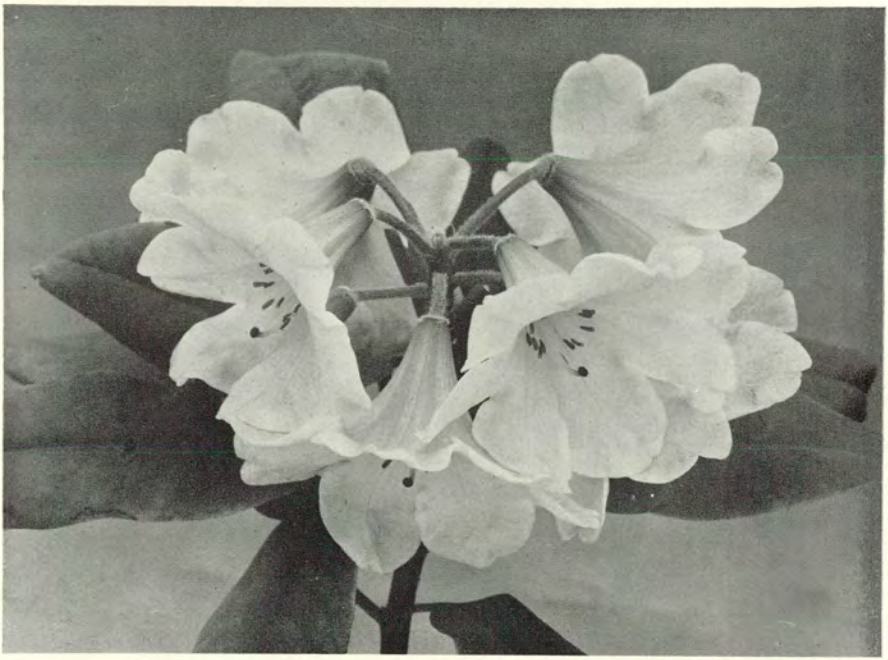
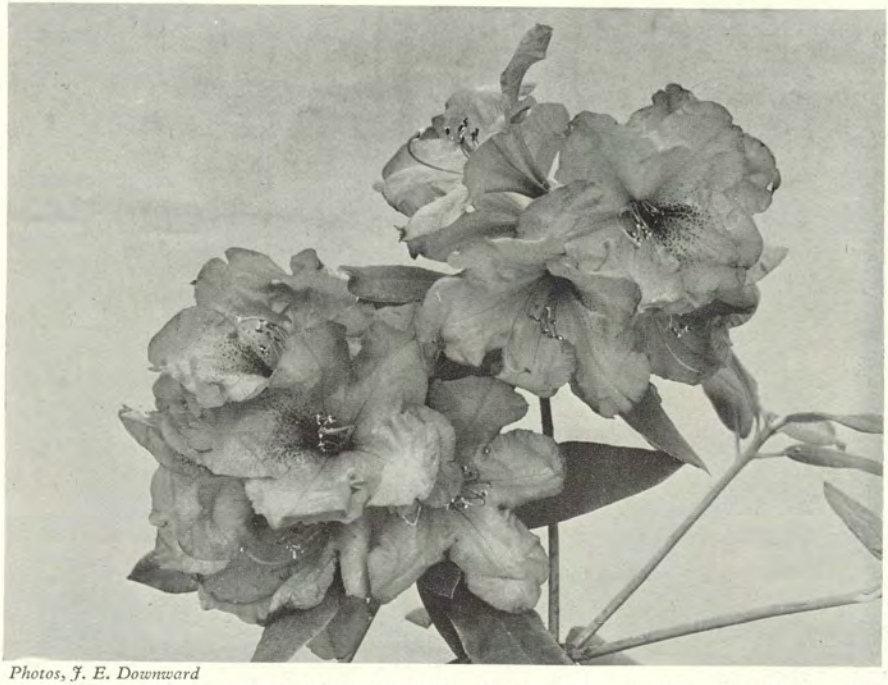


FIG. 35—Rhododendron 'Serena' A.M. May 22, 1956. Shown by R.H.S. Gardens, Wisley (See p. 133)



Photos, J. E. Downward

FIG. 36—R. 'Grenadine' A.M. May 22, 1956. Shown by The Commissioners of Crown Lands, Windsor Great Park (See p. 130)

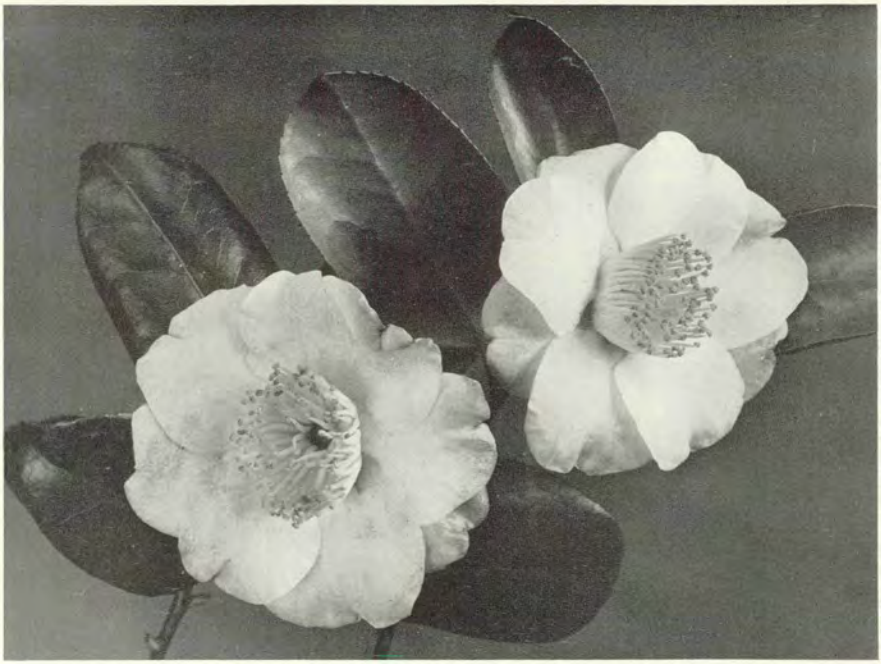


FIG. 37—*Camellia japonica* var. shown as "Furoan" A.M. March 13, 1956, subject to verification of name. Shown by The Commissioners of Crown Lands, Windsor Great Park

Photos, J. E. Downward

FIG. 38—The Rothschild Cup, 1956. The Winning Group in Class 90 in the Camellia Competition, shown by E. DE ROTHSCHILD, ESQ. (See p. 82)

Photo, Richards, Tacoma

FIG. 39—General view, Eighth Annual Tacoma Rhododendron Show, Tacoma, Washington, May 19–20, 1956 (See p. 84)

Photo, Edmond Amateis

FIG. 40—*Rhododendron chapmanii* (See p. 128)

Photo, J. E. Downward

FIG. 41—*Camellia japonica* 'Apollo' A.M. May 1, 1956. Shown by E. DE ROTHSCHILD, ESQ. (See p. 129)

each other and with most of their genus. Throughout the long succession of moderate frosts in 1956, which lasted from February to late April, and which browned all magnolias and pulped all rhododendrons as they struggled into flower, camellias continued to provide life and colour in the garden. Individual blooms admittedly were touched by the frost and their perfection marred, but the general effect was unspoilt, and the garden value of this wonderful genus was convincingly proved.

* * *

T. H. FINDLAY
Windsor Great Park

Camellias are, in my opinion, indispensable shrubs for the lime-free woodland garden and my five favourites are chosen for their ability to grow well, flower freely and form first-class foliage plants of good habit, requiring little or no pruning. It is quite easy to produce the perfect camellia flower when it is grown under glass, but I like the camellia that can stand up to our variable climate and pay its rent under ordinary garden conditions.

First must come that wonderful hybrid *williamsii* 'J. C. Williams', which is absolutely hardy—hardier, in fact, than most japonicas. I feel it is all that a camellia should be; of neat habit, yet vigorous growth, and overloaded with flowers annually. Its lovely rose madder, single flowers continue with us at Windsor for a period of at least two months, usually April and May. The reader must be warned that many inferior forms are hiding under the name of 'J. C. Williams'. These should be avoided and only the type planted. A hybrid of *japonica* and *saluenensis*, it has the added advantage of always dropping its faded flowers—not a common feature in forms of *Camellia japonica*.

Next on my list is *Camellia japonica* 'Adolphe Audusson', a fine foliage plant of upright habit and very vigorous in its young state, but inclined not to flower too freely when young. Once settled, however, it will produce masses of brilliant red semi-double flowers, each 4 to 5 inches across, every year. This is a camellia worth keeping in vigorous health and one that responds to good cultivation. It received a well-deserved F.C.C. last year.

Third I would put another semi-double *japonica*, the old 'Gloire de Nantes', a camellia which I think ought to be planted more often than it is today. It is not as vigorous as 'Adolphe Audusson', but rather more spreading in habit. During mild

winters it will open its lovely deep pink flowers from Christmas right through to April and May. Its buds, even at the half-open stage, are very frost resistant. This is an Award of Merit shrub which should be in every camellia collection.

My next is another single whose history is rather obscure. It was raised in Japan by MR. WADA and imported into this country in 1939, and is known to us as 'Furoan'. Its charming flat pink flowers, 2 to 3 inches across, are enhanced by a bold boss of golden stamens. This camellia has good distinctive dark green foliage and is of vigorous habit. Its flowering period is during late April and May. It makes an ideal plant for a north or west wall.

The last of my five, *Camellia japonica* 'Lady Clare', is easily recognized by its spreading growth and free-flowering habit. It has large semi-double pink flowers, but needs semi-shade to show off its blooms to advantage.

* * *

MISS E. GODMAN
South Lodge, Horsham

Camellia japonica 'Donckelarii', a plant of about one hundred years old, is one of the most valuable shrubs in the garden, producing its first flower last year on New Year's Day, and despite alternate damage by frost and sun has provided its brilliant blooms for three months regularly, and in such a mass that they are conspicuous half a mile away. The pinky red flowers are more or less streaked or flecked with white and though many have broken petaloid centres, the most perfect are the regular semi-doubles with golden stamens. In summer, watering is important and the plant usually sets some seed.

C. japonica 'Mathotiana', a contemporary of 'Donckelarii', with a trunk over three-quarters of a yard in girth is one of the handsomest camellias, with its immense blood-red flowers and large dark shiny leaves. Grown in a cold-house it is spared the purple and mahogany shades which result from the chilling of the tissues. The most characteristic flowers retain the pyramid-shaped bud in the centre till the last petals are uncurled and, later, when the slender stalk can no longer support the weight of the heavy blooms, the constant suicidal "plop" of the still perfect flowers is equally characteristic. From the carpet of red heads a few swimmers can be picked to continue their life as "water-lilies".

'Augusto L. Gouveia Pinto' shares two characters with 'Mathotiana'—the purple discolouring of the capillaries from cold, and the fatal "plop" of the whole head. Its form depends on cultivation or rather perhaps on climate. In this country it can either be grown out-of-doors as the "blue camellia" prized in Portugal, with smaller flowers and weak growth, or indoors as a more robust and beautiful coloured rose-pink flower, delicately veined from the centre with almost rosy-red, and edged with a white border. It compares favourably with several variations which have been distinguished under different names in other countries, from France to the U.S.A.

'Adolphe Audusson', the handsomest semi-double camellia of an almost iridescent red, has in its perfect form a thick golden tassel of stamens. Although even the best of types break up into petaloids at times, some of the innumerable plants which shelter under the label of 'Adolphe Audusson' never achieve more than a confused centre and an almost anaemic version of the prototype. The handsome dark green shiny leaves and vigorous growth combine to make it one of the most worthwhile camellias.

C. 'Imbricata alba' contrasts with C. 'Mathotiana' in its opening flower, which resembles a half-filled cup, and in the shower of petals which fall from the full-blown flower and carpets the ground like snow. The pure white petals reflect a cream glow in the centre of the bloom and as it comes to maturity the outer petals recurve slightly and the centre rises up like a soufflé making an unusually deep flower for a camellia of its size. The dark shiny leaves also curl back at the tip and the whole tree, an octogenarian or centenarian like C. 'Mathotiana', which here starts flowering indoors in early spring, is later covered with a mass of white.

* * *

HAROLD H. HUME
Gainesville, Florida, U.S.A.

Through recent years there has been a steady increase in the number of horticultural varieties of camellias. Approximately 2,000 are listed as growing in the United States and from time to time additions still are being made. They have come mainly from three species, *Camellia japonica, C. sasanqua* and *C. reticulata:* To select five from this mass of varieties, if all had been seen and could be remembered, is to say the least a difficult assignment. It would be much easier to select five fives and even then many favourites

would have to be omitted. When asked, as I was leaving a camellia show, not so long ago, "What is your favourite camellia?" I replied, "The one I saw last", I had seen so many! And that for me is about as satisfactory as selecting five favourites.

I must confess to two predilections, one for self-coloured sorts and the other for white ones. So having placed a limitation on my range of fancy, here are five: 'Donation', 'Hishi-Karaito', 'Haku-rakuten', 'Mathotiana' and 'Elegans'. Of necessity, varieties derived from the species *C. sasanqua* and *C. reticulata*, in which groups there are fine varieties, have been left out.

Having selected these varieties, the question follows naturally, "Why?".

When first I saw 'Donation' in the garden of the late Colonel Stephenson R. Clarke, where it originated, its flowers appealed to me because of their uniform size, their semi-double form and fine, pleasing self-rose colour. The original plant, a hybrid (*C. saluenensis* × *C. japonica* 'Donckelarii'), had been clipped from time to time to secure cuttings, and it was not until a specimen in good growth, a large-sized shrub with abundant bloom, was seen in Mr. George H. Johnstone's garden at Trewithen that the rare value of the variety was fully appreciated. I thought then it was the loveliest camellia I had ever seen and the mental picture still remains. It has the habit of blooming all over the shrub at one time. One of Mr. Johnstone's plants literally was covered with flowers from the branches at the ground to the uttermost tip of the 8-foot specimen. This free-flowering, showy habit makes it particularly desirable as a garden shrub and the blooms are equally good for indoor decoration.

'Hishi-Karaito.' This variety, another importation from Japan has been chosen because of its neat, small flowers, Tyrian Rose (H.C.C. 24/2) with flag-like white petaloids mixed with short stamens in a small compact central mass. It is not variegated in the usual sense but is a bicolored flower. There is a fine specimen of this camellia in the garden of Mr. Dave C. Strother, Fort Valley, Georgia. There, I have seen it several times, always in abundant bloom in season. It is a variety of moderate growth, very compact in habit. In recent years, the trend in public favour is decidedly toward large flowers and the intrinsic beauty of small ones is overlooked. No small flower is likely to win "Best in Show" in any camellia exhibit in the United States, and yet small flowers, 7·5 cm. wide and smaller, may be as well formed and as beautiful as large ones. Large size is not essential to the basic requisites of beauty.

There can be as much beauty in a miniature as in a mural painting that covers the extended surface of a wall.

'Haku-rakuten' is an introduction from Japan. Its flowers are semi-double to incomplete double, and self-white. Sometimes the petaloids are folded and elevated, giving the blooms a different appearance; there is similarity in their make-up, but not uniformity. The general tendency with us is toward informality in camellia flower structure. We have departed a long way from the attitude of GEORGE GLENNY, who wrote, "The only sorts that are worthy at all of cultivation are those which are improvements upon the double white and double red, those of which the petals are symmetrical, whole upon the edge, high in the middle, and approaching to a circular outline." In short, to him, the only worth-while camellia flower was a complete double imbricated one. Fortunately, fashion has strayed abundantly from that concept. 'Haku-rakuten' is a large flower, 10 cm. or more, and the beauty of its snow-white blooms leaves little to be desired. It is a strong upright grower. Another variety closely related in general appearance is 'Haku-Tsuru'.

Among complete double varieties, 'Mathotiana' is chosen. PROFESSOR WATERHOUSE believes that its correct name is 'Grand Sultan', but it is so widely known under the designation 'Mathotiana' that it is retained here. It is a vigorous camellia, free blooming. Its flowers continue to open over a long period, the finest being those that open early in the season. They are large, up to 11 cm. or more. As the season progresses the flowers are smaller when open and some of them show stamens in the centre, whereas the early ones have a conical or subglobose bud of petaloids in the centre. Colour Self-Carmine (H.C.C. 21/2). In symmetrical flower development and uniform colour it is unequalled. Sometimes, under the impact of low temperatures, the flowers take on a purplish cast. At one time it was thought that this was a stable departure and as such it was named 'Purple Dawn'. Perhaps the fact that it has received ten different names may be an index of its popularity.

'Elegans', a variety secured from seed by ALFRED CHANDLER and described by CHANDLER and BOOTH in 1831 is perhaps the best of all the sorts originated by CHANDLER. If it had come on the camellia scene in 1955–6 as a new variety, it would have created a sensation. There is an old specimen in the Temperate House at the Royal Botanic Gardens that produces an abundance of bloom in true unvariegated colour, Carmine (H.C.C. 21/1). Its colour in the United States is usually boldly variegated with white often-times

with wide spread open centre and prominent stamens. It is a mid-season variety of medium to large size, 7·5 to 10 cm., abundant in flowering.

* * *

SIR GILES LODER, BT.
Leonardslee, nr. Horsham, Sussex

In choosing my five favourite camellias, I am thinking of them as they flower in our woodland garden, hundreds of blooms covering the big bushes, and not as individuals on a show bench. At Leonardslee they grow unprotected and show their strong constitution, normally providing several weeks of flower, whilst their foliage is a pleasure to look at for the remainder of the year.

'Althaeaflora' is one of the most vivid reds amongst camellias, and its exceptionally dark green foliage shows off the brightness of its colour to advantage. C. 'Althaeaflora' is a strong-growing, free-blooming variety with flowers of peony-form type. The plant at Leonardslee, which obtained an Award of Merit in 1950, seems particularly resistant to spring frosts, being amongst the earliest to bloom. This is an important factor.

'Donckelarii' is an old favourite amongst camellia lovers. This well known variety has the charm of varying degrees of white mottling on its pink flowers. This varies over a bush as well as between different plants; indeed, some plants exhibit no mottled flowers at all. Its foliage is distinctive with narrow leaves. In some years when grown in full sun it bears a heavy load of seed pods in the autumn which, when they turn deep red, form a striking sight.

'Alba simplex.' A bush of this single white camellia in full flower is a most pleasing picture, and with its numerous buds is a long lasting one. It varies considerably in the amount the flower opens. Our variety, 'Snow Goose', which recently gained an Award of Merit, opens almost flat when full out and has the added charm of an occasional pink fleck on some of its flower petals. The habit is tall and upright.

'Mathotiana.' In contrast, the formal double camellia seems almost to have gone out of fashion; but when one sees the beautiful pattern, almost geometrically drawn out, of a 'Mathotiana' flower, one wonders why the imbricated blooms are not more in favour. I would choose the type which is red in preference to the varieties 'rosea' or 'alba'. The deep red colour of this large flower is very

impressive, and on some of our bushes here, they turn a rich burgundy colour before falling. Its foliage of rather a yellow-green hue shows up the blooms well which with its characteristic shape enables the 'Mathotiana' varieties to be easily distinguished from others, when not in flower.

'Lady McCulloch.' Here we have a small semi-double flower of a light pink with a darker fleck, most unassuming to look at near to, but when seen in literally thousands on a big bush, interspaced with the other two "sports" that 'Lady McCulloch' produces, and with an occasional flower here and there which seems undecided as to which colour it wants to be—the result is most striking. I personally prefer the full pink sport with slight red veining, the deepest one being a self light red. It is again a very free-growing variety and makes a shapely bush, clothed well down to the ground.

* * *

CAPTAIN N. MCEACHARN
Villa Taranto, Lago Maggiore, Italy

I think the simplest way to answer the question is to choose five really fine camellias from plants in these gardens. I have not chosen some I am particularly fond of, such as *Camellia reticulata*, as my plants are still small.

My first choice is *Camellia sasanqua*, which grows particularly well here and is never affected by the winter weather. The plants came through last winter's severe frost without damage and flowered well, even when the ground was covered with snow—a really remarkable sight. Some are single, some double, some large, some small, some fragrant. They vary greatly in form and colour from white to red. Many of them are more than 20 feet high. They are not fastidious as to their position and they flower from October to April. Perhaps it is rather misleading to choose *C. sasanqua* as there are several named varieties such as 'alba' and 'fragrans' and a great many unnamed varieties as well, most of which also grow here. Many of my plants came from Japan twenty-five years ago; some were sent to me from Australia and others were bought locally.

My next preference is for *C. maliflora* which grows to 14 feet here and is covered with flushed-rose, double flowers from January to March. My plants came from Japan many years ago and are very good examples, being compact and every year covered with flowers. They do not suffer from the cold, but appear to dislike

wind. One plant which is exposed to wind lost all its leaves last winter but recovered in the spring.

I feel I must include *C. japonica* 'The Czar'. This is an Australian variety and PROFESSOR WATERHOUSE in his *Camellia Trail* writes, "No trace of it has been found in Europe, England or America". I, however, have two plants sent from Australia about ten years ago. The flowers are large semi-double crimson. The habit is upright and compact, the foliage is very dark green. Now that my two original plants are strong and healthy I intend to propagate them in order to be able to distribute plants to my friends.

Next, I select *C. japonica* 'Adolphe Audusson' which is a fairly common variety. There are many old plants in Italy. The large turkey-red flowers are very freely produced and so conspicuous that visitors to the gardens always ask what it is. Like the others I have mentioned it is perfectly hardy and grows fast. I have plants which flourish in the shade and also in full sunshine. I can recommend this variety for its beauty and hardiness. A group of these camellias mixed with C. 'Alba plena' I think would be very effective.

My last choice is *C. japonica* 'Magnoliaeflora' because of its unusual shape and for its white, flushed pale pink semi-double flowers. I have chosen this as my plants are fine forms of this variable variety and it is one that should appeal to all growers of camellias. It is perhaps not quite as hardy as some others; however, it is well worth including in one's collection.

For the first time since I started my gardens here twenty-six years ago, many of the camellias were ruined by rain and wind this year, which I have never experienced before, but with this exception the camellias here have always been a really remarkable sight so I am hoping there will be no repetition of this exceptionally bad weather in the spring.

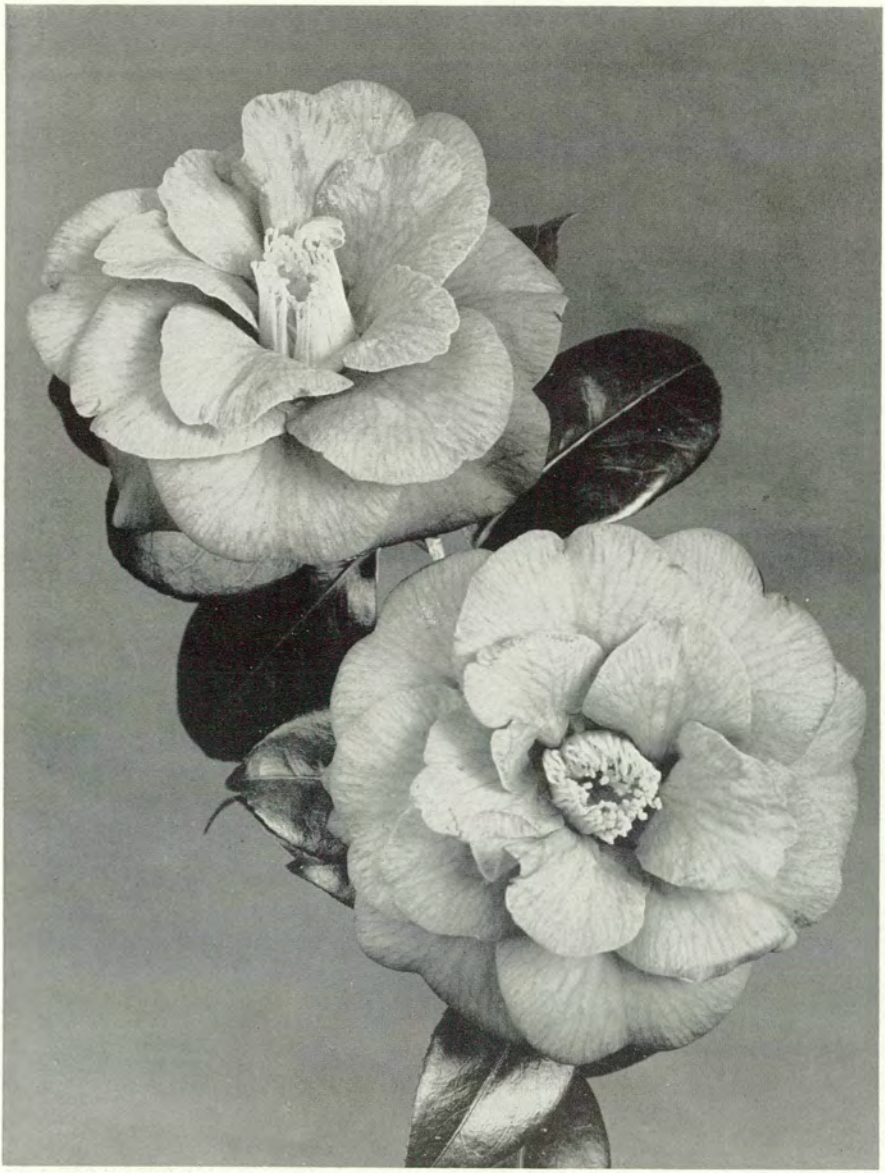
* * *

RALPH PEER
Los Angeles, U.S.A.

For an avid amateur like myself, it is somewhat difficult to settle down to only five favourites. All members of the family interest me greatly, and I never tire in my search for new species, varieties and cultivars.

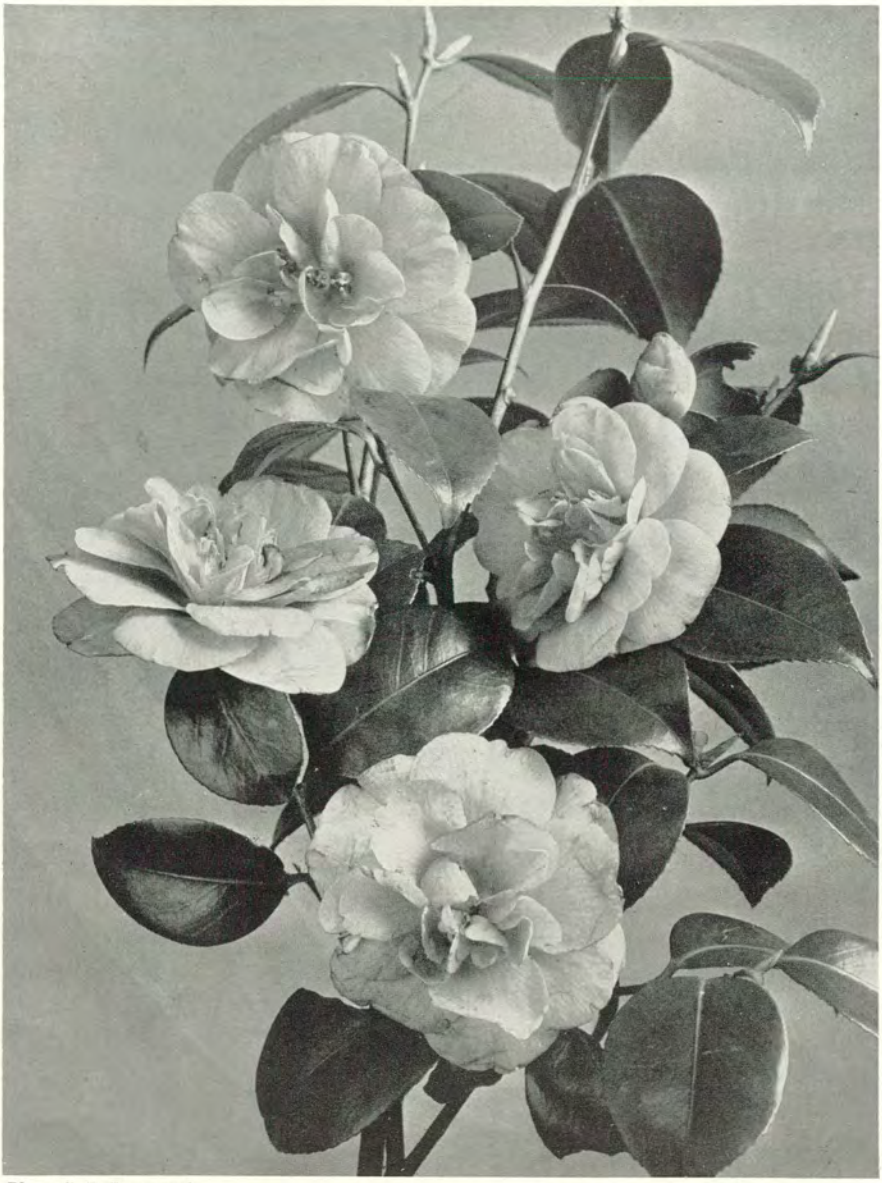
Both MRS. PEER and I are in full agreement that the most desirable item in the large collection at Park Hill is the British

FIG. 42—*Camellia japonica* variety. This fine variety received an Award of Merit on March 27, 1956, when shown under the name of "Saturnia" by MRS. B. LESLIE URQUHART. This name is incorrect but the correct name may be 'Satanella', but it is still subject to verification. From a painting by PAUL JONES, kindly reproduced by permission of the artist and MRS. URQUHART (See p. 101)



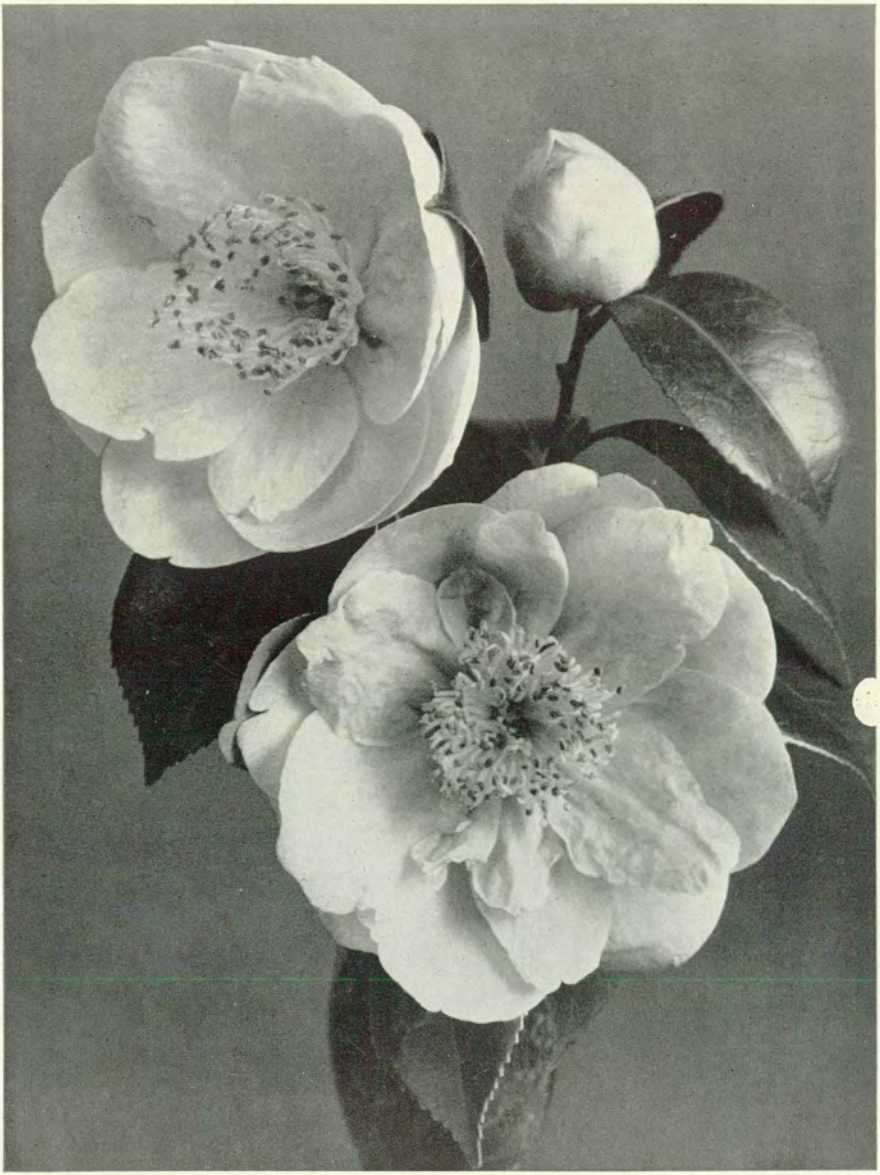
Photo, J. E. Downward

FIG. 43—*Camellia japonica* 'Adolphe Audusson' F.C.C. February 28, 1956. The unusually fine blooms exhibited by The Commissioners of Crown Lands, Windsor Great Park (See p. 129)



Photo, J. E. Downward

FIG. 44—*Camellia japonica* 'Gloire de Nantes' A.M. May 1, 1956. Shown by The Commissioners of Crown Lands, Windsor Great Park (See p. 130)



Photo, J. E. Downward

FIG. 45—*Camellia japonica* 'Hana Fuki' A.M. March 27, 1956. Shown by the Commissioners of Crown Lands (See pp. 101 and 129)

hybrid—*Camellia williamsii* 'Donation'. We have grafted plants grown from scions taken from both the original tree at Borde Hill and the magnificent offspring at Trewithen. In California, this turns out to be one of the most floriferous types and, incidentally, one of our fastest growers. My largest specimen resulted from grafting three scions on twenty-five-year-old understock. This was started in March 1952 and by December of that year growth had reached a height of 4 feet and we had an abundant crop of blossoms.

Perhaps because of long acquaintance, our best white camellia seems to be 'Lotus'. Actually, this is the Californian name for the very old *japonica* known in Japan and throughout the world as 'Sode-Gakushi'. 'Lotus' is a prolific grower in California and must be severely disbudded. The blossoms are frequently 5½ inches in diameter and last very well in shady positions.

In all countries where I have investigated the subject, this cultivar seldom bears seeds. In a small town near San Diego, California, Mr. Harvey Short discovered that due to special climatic conditions, still not understood, 'Lotus' will bear large quantities of seed. He has succeeded in making many crosses with 'Lotus' as the parent. At least three of these new cultivars produced blossoms 6 inches and more in diameter.

'Adolphe Audusson' is one of the type producing consistently large flowers. The blossoms grown at Park Hill are 5 inches to 5½ inches across and usually quite perfect in form. I grow not only the original solid red type, but also a variegated sport having beautiful white markings. There is a very beautiful mutation producing flowers which are sometimes 90 per cent white, but veined in red.

Probably, the most impressive camellia in our garden is 'Mathotiana'. In time, this develops into a huge bush bearing a myriad of blossoms over a long period. The individual blossoms sometimes are 6 inches across and of great beauty. Here again, we have several mutations—two variegations, one with a small amount of white, and the other with large white spots; the type with stamens interspersed among the petals, and 'Flowerwood', producing fimbriated blossoms. All things considered, this is perhaps our most stable and standard camellia. It is to be found in practically all camellia collections in the U.S.A.

In spite of the large number of wonderful new cultivars produced during the last ten years, the variegated form of 'Donckelarii' continues near the top of my list. The solid red form is found in most countries except Japan, but in the U.S.A. it is seldom grown.

In California, efforts have been made to produce a nearly white type of 'Donckelarii', and we have been 80 per cent successful. There are various important sports and mutations, the most important being 'Ville de Nantes' and 'Lady Kay'. 'Donckelarii' produces a tremendous quantity of seeds and is one of the parents of many well-known cultivars.

These five camellias are the favourites at Park Hill. It seems probable, however, that within the next few years there will be significant changes. The new cultivars just becoming generally known may displace the five old monarchs named above.

'Mrs. D. W. Davis', producing 6½- to 7-inch light pink almost single blossoms; 'Reg Ragland', having 6-inch red-and-white variegated semi-double blossoms; 'R. L. Wheeler', producing 6-inch semi-double blossoms either in solid red or variegated; 'Onetia Holland', with 6- to 6½-inch porcelain white semi-double blossoms having an intricate central petaloid arrangement; and 'Billie McCaskill', with blossoming habits somewhat like 'Donation' but with each petal fimbriated and coloured dark pink shading to light pink, are all most interesting and should attain great popularity when generally distributed.

* * *

E. DE ROTHSCHILD
Exbury, nr. Southampton

I wonder how many people in the gardening world of Great Britain still consider the camellia an exotic plant to be carefully tended in a tub in their greenhouse. In the last century this was probably the only use to which the camellia was put. Of later years it has found its place into many gardens and, as it should be, is treated in the same way as a rhododendron or other hardy flowering shrub.

Surely this last winter, one of the coldest this country has experienced, has proved how right this is. Certainly here at Exbury it was the coldest spell since the garden was made. Not one camellia has been lost, no camellia foliage has been damaged and never have we had a better flowering season. Perhaps this will now encourage the gardeners who are still afraid of this plant to think of it as an ideal flowering shrub for gardens where the soil conditions are suitable.

During the flowering season one sees so many different camellias, all of them exceptionally beautiful, that it is very difficult

to pick on one or two, and say, "These are my favourites"; in spite of this, however, and of all the new camellias we have seen in recent years, I still prefer *C.* × *williamsii* 'J. C. Williams'. Apart from the perfection of its flower, with which most of us are familiar, it has a very tidy habit of growth and never fails in its profuseness of flowering. Its hybrids are probably considered as being among the best of modern camellias. We recently showed a hybrid which we named 'Inspiration' and I rate this as one of the better hybrid camellias produced at Exbury. It is a good addition to any camellia collection.

Of the Japanese hybrids, I have yet to see one that I like better than 'Apollo', which this year received an Award of Merit. Not only is its shape perfect, but the depth of colour, which has been described as "Rose Red", is superb. 'Apollo' is one of the medium-growing *japonicas*, having a spread rather greater than its height.

Another favourite we have at Exbury, which is not yet very well known, is C. 'Mercury', which received an Award of Merit in 1949. Again, I think the outstanding quality is its colour. I find it rather difficult to describe the flower, but I see in the American publication, *The Camellia—Its Culture and Nomenclature*, it is described as "Scarlet, very large, flat semi-double with two rows of petals". Correct description or not, the effect is good and this plant has never failed to give a good display.

I want to include among my choice one of the newer introductions from Japan. We have received quite a large number at Exbury in recent years, but we have yet to see most of them flower. I have, therefore, selected one from the last batch of plants which were imported to this country from WADA just before the war. I refer to C. 'Ha-Na-Tachi-Bawa'. I think this was planted out in the woodland in 1940 as a very small camellia. It now stands 10 to 12 feet and is, indeed, a noble plant. I think that it has made its ultimate height, but it continues to spread. It is a perfect example of a complete double camellia, with all the grace and symmetry that this implies. It is rather later to flower than the majority of the *japonicas*, which is always an asset. Its colour is delicate pale pink.

I cannot possibly complete my list without including the wild form of *C. reticulata* (A.M.). It starts to flower early in March and continues profusely through April. It is one of the few camellias in our garden at Exbury that sets seed. The seed pods look like, and are sometimes, the size of a small russet apple. The pink flowers are loose and funnel-shaped. It has a very free upright habit of growth.

Unfortunately, this particular camellia will only thrive in the more sheltered gardens as it does not like the excessive cold, nor is it a camellia that can be propagated from cuttings like the majority of others. We have to go to the trouble of grafting.

Having selected five camellias that I like very much, this does not mean that I think that they are the best. I can think of many more I like equally as well.

I wish we had the nomenclature sorted out a little better, but, of course, there is so much work involved in doing this properly. A lot of time and thought has already been spent on this by our camellia experts and we must all be grateful to them, but there is still so much to do. Nevertheless, as time goes on, the problem will be resolved and we shall all have a lot of fun in the process.

* * *

MRS. B. LESLIE URQUHART
Sharpthorne, East Grinstead, Sussex

Camellias, with their rich, glossy, evergreen foliage and their lovely, delicate blooms, which vary so greatly both in colour and in form, have always held first place amongst my favourite flowers.

Looking back over the years I can recall memories of some beautiful camellias, 10 to 15 feet high, growing under glass and also under fantastic climatic conditions in our garden at Kyshtim, in the Ural Mountains on the Russo-Siberian border, where I spent three years before the 1914–18 war. Those old-fashioned camellias flowered magnificently each season, although half of their life was spent in the semi-darkness of the winter in that land of the midnight sun.

The most exquisite of them all was a large bush of 'Incarnata', perhaps better known as 'Lady Hume's Blush'. Its elusive flush of the palest pink was enchanting and its blooms, sometimes prim and daintily formal, resembled those charming flower pictures which our grandmothers made out of shells in the good old Victorian days. Other blooms followed an equally attractive pattern with layer upon layer of small petals, building up into a perfectly symmetrical star. 'Incarnata' has light green foliage which sets off the flowers to perfection. This year sees the 150th anniversary of its introduction into England. It was imported from China in 1806 for LADY AMELIA HUME, of Wormleybury, Hertfordshire, for whom it was named.

My choice of a pure white camellia is 'Yuki-Botan' (the

beautiful *Snow Paeony* of Japan), imported into America in 1930 and there renamed 'Pride of Descanso'. It was sent to me this spring from California with a collection of the famous Kunming *reticulatas*, by Scandinavian Airlines, flying over the North Pole. It is a large white semi-double with a few long and narrow inner petals, stiffly folded, arching gracefully over a crown of long, erect white stamens tipped with gold. Its immaculate purity and the unusual shapes of its petals are very striking. The small, dark green leaves emphasize the whiteness and the size of the flowers.

Another of my favourites, 'Hana-Fuki' ("Flower of Crepe-Paper"), is a beauty not yet widely known in this country (Fig. 45). It is often called 'Chalice' in the U.S.A., an allusion, no doubt, to the unusual formation of the flower with its three tiers of petals curving inwards to form a distinct cup from which emerges the rounded cluster of stamens. The colour is a delicious rose-pink taking on a salmon tint from the reflection of the bright yellow anthers. The bud is unlike that of any other camellia, forming a perfectly rounded ball which deepens to a stronger pink than that of the expanded flower. The leaves are ovate, bluish green and with a satiny sheen instead of the more characteristic high gloss of most camellias.

My fourth choice must be sweetly-scented 'Hikarugenji' ("Shining" or "Brilliant Genji")—PRINCE GENJI was the Don Juan of Japan. This camellia was one of the favourite varieties grown in and around old Tokyo. It was imported by SEIDEL of Germany in 1893 and renamed 'Herme'; The Guichard Nursery at Nantes later listed it as 'Souvenir de Henri Guichard', but 'Hikarugenji' is its original and valid name. In the typical 'Hikarugenji' the pink ground colour is bordered with white and shows an occasional stripe of dark pink or red. There is also a beautiful variant with rose-flushed ground colour and distinct white border without any stripes. This was named 'The Mikado' in *The Garden* (1889). An old plant of 'The Mikado' is still growing at the Royal Caledonia Nursery in Guernsey.

From the red camellias which flowered here this season (under glass) I am selecting a very beautiful, large, peony-form semi-double, deep scarlet in colour, with a characteristic high-crowned centre composed of numerous petaloids closely intermingled with golden anthers (Fig. 42). The foliage is exceptional in its size; very large and very glossy dark green leaves are borne on long, arching stems. Of special interest to me is the fact that each stem carries a solitary blossom, for I know of no other camellia which

bears its flowers in this way. I bought it from Messrs. Veitch many years ago under the name of 'Satinalia'. In spite of an intensive search I could find no record anywhere by which I could establish the validity of this name, and I was forced to the conclusion that the name was misspelled. It appeared, however, to be identical with 'Saturnia' as described in *Camellia Culture and Nomenclature* (1955), and I submitted it to the committee (Rhododendron & Camellia) of The Royal Horticultural Society, under this name and stating the above facts, who granted it an Award of Merit subject to verification of name. I sent a colour print of a painting which MR. PAUL JONES had done for me of "Saturnia" to PROFESSOR WATERHOUSE in Australia, who has now produced ample evidence that my plant is not 'Saturnia' but in all probability is 'Satanella' as described by BERLESE in *Annales*, **40**, 82, (1849). The name may have to be changed and I am glad that this short article has given me the opportunity to correct a mistake which has unfortunately received official approval. This camellia, under any name, would always be one of my favourites.

* * *

E. G. WATERHOUSE
Gordon, New South Wales

I make my selection from varieties grown in the open, either in the ground or in tubs, in a climate that is almost ideal for camellias. Amongst the singles 'Hatsu-Zakura' (syn. 'Daitairin') gives me great pleasure. Its large blooms, Rose Madder (H.C.C. 23/2), are often 5 to 6 inches in diameter, with five or six large rounded petals often 3 inches across, from the centre of which rises a flared cylinder of pinkish white stamens with large golden anthers and numerous feathery blush-pink petaloid flags curving inwards over them. It is a lovely, very early and dependable variety, free flowering, of excellent foliage and good habit of growth. Its first flower, so early in the season, can be counted as an event. The flowers usually fall before they fade or become tarnished and leave the bush neat and tidy. Under good cultivation the central petaloid flags form a marked feature of this variety. This camellia received an Award of Merit in 1953 and was illustrated in Figure 31 of the *Rhododendron and Camellia Yearbook*, 1956, under the name of 'Hino Maru' in a plate which gives a good idea of the form and shape of flower and foliage. Unfortunately, the name 'Hino Maru' is invalid and belongs to a different variety. In 1937 WADA listed 'Hino Maru' as "flatly open semi-double, intense crimson, with a

contrast of golden yellow protruding stamens". McIlhenny, 1941, gives it as "deep rose red, late flower". Some plants obviously reached England erroneously labelled. Other Nurserymen received and exhibited it under the name of 'Hatsu-Zakura' (sometimes spelled 'Hatsu-Sakura'). This may well prove to be its first validly published name. McIlhenny's catalogue, 1941, is my first record of it, and the only name to compete with it is 'Daitairin' which was used by Wada in the same year. Hume, *Camellias in America*, calls it 'Daitairin' and says it originally came from an old garden at Nagoya, Japan, and was introduced by K. Wada. I find it difficult to determine which of these two names has priority, but one is clearly a valid synonym of the other. The name 'Hatsu-Zakura' means "first blossom of cherry" (i.e. the first blossom of cherry tree). Satomi, in *Camellia Varieties in Japan*, describes it as "Blushed Cherry Pink. Medium large, single, with large prominent cluster of yellow stamens slightly petaloid. Early." In Australia this camellia was introduced from Japan by a nurseryman in Victoria and distributed for some years under the picturesque name of 'Golden Temple'.

Passing now from the singles to semi-double camellias it requires some effort to yield sole allegiance to a single representative of this group. And yet I have no hesitation in proclaiming the superb loveliness of 'Cho Cho San'. This camellia likewise originated in Japan and was imported into America by Domoto. As the label was lost or absent he at first called it 'Light Pink Import', and later named it 'Cho Cho San'. This camellia is a real gem, and yet it has not been traced in Japanese catalogues. It is possible that it may have been sent to America as an unnamed seedling. 'Cho Cho San' is a large semi-double of the palest pink and with occasional petaloids—a saucer-shaped bloom of exquisite delicacy and charm. Its texture is superb and can best be admired when displayed in a float-bowl. The growth of the plant is vigorous and erect. It has rather a distinctive leaf, medium to light green, very glossy, and rather long, narrow and pointed, with a suggestion of rib-structure. This camellia is best planted in a sheltered, semi-shady position.

Another lovely semi-double is 'Hanafuki'—also from Japan—which received an Award of Merit at the R.H.S. Show on March 27, 1956, and was illustrated on the cover of *Gardeners' Chronicle and Gardening Illustrated* on May 5 this year. It is a very large cup-shaped semi-double bloom of Lotus form and with glowing light pink crinkled petals. Its bud is also particularly striking, being very

round and showing for two-thirds of its height rosy pink folded petals set in a calyx of apple-green scales.

Coming now to the informal or incomplete doubles, my favourite is 'Pukekura'. This is a camellia of singular beauty and distinction of which one grows fonder year by year. Not a Japanese variety this time, but one from New Zealand. I found it growing in Pukekura Park, New Plymouth. It is probably a local seedling as it has not been reported elsewhere. It bears its flowers singly and freely and over a long period. The large, informal white blooms are 5 inches in diameter and have very large, rounded outer petals 2 inches across. The tall filaments of the stamens are pure white and enhance the golden anthers. Some of the stamens are transformed into petaloids and surrounding these are five or six tall folded petals. There is a delightful absence of uniformity about the blooms, some being rather more open and others fuller in the centre. The bush has a very open habit which enables the slight variation in blooms to be appreciated to full advantage. PAUL JONES painted a rendering of two blooms of this variety for *Camellia Trail.*

And now a Chinese variety for my fifth and last. Among the formal doubles I know of nothing finer or nobler than 'Alba plena' the old 'Double White'. It is large, completely imbricated, with many rows of petals decreasing in size from circumference to centre and of the purest white. It was introduced from China to England in 1792 and has remained a prime favourite for over one hundred and fifty years. Its fringed white sport, 'Fimbriata' is a favourite of the florists and runs it very close in popularity, but with me, personally, 'Alba plena' takes pride of place.

FIG. 46—*Yunnanea xylocarpa* Hu : 1 flowering branch; 2 corolla cut open showing stamens; 3 a single stamen; 4 cross-section of young fruit; 5 mature fruit; 6 longitudinal section of fruit; 7 a seed

FIG. 47—*R. lowndesii* at the Royal Botanic Garden, Edinburgh (See p. 133)

YUNNANEA

A New Genus of *Theaceæ* from Yunnan, China*

By HSEN-HSU HU

Institute of Botany, Academia Sinica

Yunnanea gen. nov.

Flores solitarii, magni, pedicellati. Sepala bracteis similia, sed gradatim maiora, coriacea, persistentia. Petala 5, pro parte inferiore in tubo satis longe connata. Stamina numerosa, in series plurales disposita, series exteriores ad tubum corollae alte adnatae, series interiores liberae; filamentis glabris; antherae versatiles, apice obtusae, glabrae. Ovarium ignotum. Fructus drupaceus tarde dehiscens (?), sepalis bracteisque coriaceis magnis subtentus, 3-locularis, loculis 2 plerumque abortis, exocarpio ligneo, crassissimo, endocarpio tenui; cavum loculorum parvum; columna centralis gracilis. Semina in loculis solitaria, oblonga, exalata. Arbor. Folia coriacea, petiolata, serrulata.

Monotypic genus in southern Yunnan, China.

Yunnanea xylocarpa, sp. nov.

Arbor parva ad 6 m. alta; ramuli teretes, striati, glabrescentes, parcissime nigro-glandulosi. Folia coriacea, elliptica vel late lanceolata, 6–10 cm. longa, 2–3·8 cm. lata, apice longe acuminata, basi cuneata vel subrotundata, margine callososerrulata, glabra, costa nervisque utraque facie elevata, nervulis supra impressis subtus reticulatis; petioli supra excavati, 6–10 mm. longi, glabri. Flores solitarii, subterminales. Sepala coriacea, suborbicularia, sub fructu ad 2·5 cm. diametro. Petala 5, obovata, 3·5 cm. longa, 2·5 cm. lata, parte inferiore in tubum 1·2 cm. longum connata. Stamina numerosa, in series plures disposita; filamentorum seriebus pluribus exterioribus corollae alte adnatis, interioribus liberis, parcissime pilosis sed nigro-verruculosis; antherae satis magnae, ovatae, obtusae, 3mm. longae, glabrae, nigrae. Fructus juvenes 3-loculares, loculis 2 abortis, apice apiculatis, longe pilosis; fructus maturi globosi, 3·5 cm. diametro, exocarpio lignoso, 1 cm. crasso, extra verruculoso, ad basin leviter dehiscente, cavum loculorum 7 mm. longum, 4 mm. latum; endocarpio tenui; pedicelli graciles, glabri, 1 cm. longi. Semina solitaria, ovalia, 6 mm. longa.

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interesting species of camellia of promising ornamental value. One of the new genera is Yunnanea. A second new genus is *Parapiquetia* of 2 species; the type is based on my formerly published species, *Pyrenaria camellioides*. The collection of mature fruit makes it necessary to establish it as belonging to a new genus. The third new genus is named *Kailosocarpus*, with the monotypic *K. perplexus*, just discovered in Southern Yunnan last year. It has small flowers with many stamens the filaments of which are fleshy and much broadened on the lower part and attenuated at apex, bearing basifixed anthers. The ovary is 3–4 celled with 3–4 distinct subsessile stigmas which in fruit become wide apart, leaving a tri- or tetrangular aperture at apex. Usually only one cell is developed into a large cavity, while the others are aborted. The central column is slender and attached to one side of the fragile endocarp. The exocarp is also thin and easily broken. Another interesting character is that there is usually only one single large seed developed, loose in the large cell cavity, like a die in a die box. The seed-coat is thin and fragile and adnate to the endocarp, thus leaving in the cell cavity the naked kernel consisting of 2 thick cotyledons. These last two genera are both more or less related to *Camellia*, the former more closely so to *Piquetia* Hallier and the latter to *Stereocarpus* Hallier both of Indo-china. Both of these genera have no ornamental value; though their seeds may be utilised to express oil. The seeds of all these three genera are not available at present.

"Of the large-flowered or large-fruited camellias, I must first mention *Camellia chekiangoleosa*, a tall shrub of Chekiang, Kiangsi and Anhwei provinces. It has red flowers 8 cm. in diameter and thick woody capsule 5 cm. in diameter. This species is cultivated in Southern Chekiang for its oil. But it promises to be a highly ornamental plant rivalling *C. japonica* if improved. I may be able to get seeds for you next year. The second species is *C. austroyunnanensis*, with a capsule to 5·5 cm. in diameter; the flowers are red, 5 cm. in diameter. The third species is *C. sumingensis*, with red flower-buds, and large capsule with very thick woody valves and very thick central column 2 cm. thick at the apex. We may be able to collect flowers and seeds next year."

OBSERVATIONS ON SOME CAMELLIA NAMES

By E. G. WATERHOUSE

CLARIFICATION of the confusion existing in camellia names can be effected only by close study of all published and dated records and descriptions in camellia literature, including nurserymen's catalogues. Unfortunately, the latter are not always dated, and according to the *International Code of Nomenclature*, the absence of a date fails to establish the validity of a name. The camellia 'Lady Marion' is a case in point. It was one of a batch of camellias imported from Japan by L. VAN HOUTTE and sold by him to the Caledonia Nursery in Guernsey in 1887, according to the entry in the unpublished ledger of the nursery. In their printed but undated catalogue, the camellia is described and named 'Lady Marion' (p. 25), and it was distributed to England and America under that name. However, this same camellia was validly published under its Japanese name 'Kumasaka' by Tokio Nurseries in 1896. This latter name takes priority over 'Lady Marion' simply because the publication of 'Lady Marion' was undated.

More fortunate are the cases of two other Japanese camellias received from VAN HOUTTE in 1887 by the Caledonia Nursery and which they described and listed as 'Lady Clare' and 'Lady Vansittart' respectively.

'Lady Vansittart' was described in *The Garden*, **3**, 318 (1887) and 'Lady Clare' in *Gardener's Chronicle*, **73**, 93 (1923).

A self-coloured sport of C. 'Tricolor' was named 'Lady de Saumarez' by the Caledonia Nursery after the grand-daughter-in-law of the admiral who fought with NELSON. At the time of the naming she was in residence at Saumarez Park, Castel, Guernsey. The correct spelling of Saumarez should be noted, as it is often erroneously given as "Saumerez".

The Japanese camellia 'Nagasaki' was published in *The Garden*, **36**, 218 (1889). The name thus takes priority over the Japanese synonym 'Mikenjaku' and over its much later English synonym 'Lady Audrey Buller'. Quite rightly therefore, the Award of Merit, March 3, 1953, was bestowed on it under the name of 'Nagasaki'. It must be remembered that in dropping the name 'Lady Audrey

Buller' we are not changing the name of a camellia, but merely restoring to the camellia its rightful name.

The Garden, **36** (1889), also named other Japanese varieties, including 'Lady McCulloch' and 'The Mikado'. This gives the correct spelling 'McCulloch', and it is to be noted that it is 'The Mikado' and not just "Mikado". 'The Mikado' is a form of 'Hikarugenji' (syn. 'Herme'), differing from it in having a distinct white margin, not crossed by any stripe. 'The Mikado' is at the Caledonia Nursery. The plant labelled "Mikado" at Wisley appears to be identical. A plate of this is given in Fig. 13 in *Camellias & Magnolias*, 1950.

Various camellias have been introduced to England from the Guichard Nursery at Nantes. Among these was one seen by the writer at Kew, in 1950, bearing the label 'Paolina Guichardini', but it was actually 'Rubescens Major'. Both these names appear in the Guichard catalogues. The first is obviously the Italian camellia 'Contessa Paolina Guicciardini' which originated in Florence and was listed there by the nurseryman MERCATELLI, in 1881, as "ivory white, faintly streaked light rose, petals large, perfectly imbricated, very large". In listing this camellia at Nantes, HENRI GUICHARD assimilated the surname to his own, and omitting "Contessa", gave the name as 'Paolina Guichardini' with the description "imbricated white faintly tinged with soft carnation . . .", but the later Guichard catalogues describe it as "imbricated, very large cherry red flower, tinged with soft carnation". It would seem that the confusion noticed at Kew originated at the Guichard Nursery in France. Can it be that 'Rubescens Major' originated at that nursery as a sport of 'Contessa Paolina Guicciardini'?

Another camellia listed by the Guichard Nursery is 'Monsieur Faucillon', "imbricated, cherry rose". This was imported into America by MCILHENNY in 1941 and listed as "imbricated, cherry red". In the same list MCILHENNY also gives 'Mme Faucillon' (G.S.) "Very double, light rose, sometimes spotted white", but only 'Monsieur Faucillon' appears in the Guichard lists. Is the 'Madame Francillon' twice mentioned in the 1955 R.H.S. *Yearbook* a corruption of the name "Faucillon", and as it was exhibited as a "complete double red" (p. 81) was it really "Monsieur Faucillon" that was shown? And does the 'Souvenir de Madame Francillon' on p. 136 of the 1954 *Yearbook* stand for either of these camellias? These are clearly cases for further study. VICTOR DE BISSCHOP, of Belgium, in the 1930's listed " a 'M. Francillon', red". This would appear to be corruption of 'M. Faucillon'.

The 'Aspasia' at Villa Taranto mentioned on p. 37 of the 1955

Yearbook is the Australian variety 'Aspasia Macarthur' and not the European 'Aspasia' as illustrated and described by VERSCHAFFELT in his *Nouvelle Iconographie des Camellias* in 1853. The European 'Aspasia' is possibly still to be seen at MRS. CARLYON'S in Cornwall.

In both the 1954 and 1955 *Yearbooks* a camellia is mentioned under the name of 'Chandler's Red'. Can this be 'Chandleri' as distinct from 'Elegans' which was also raised by CHANDLER? This question could be determined by reference to the illustrations of 'Chandleri' in the Lindley Library.

In 1950 an Award of Merit was given to ROBERT VEITCH for his camellia 'Devonia'. This is its validly published name, and the substitution for it of 'Devoniensis' is not admissible.

The mention of the little-known camellia 'Bertha Ravene' in the 1955 *Yearbook*, p. 81, shows how an old camellia may turn up unexpectedly. This camellia was published by RODA in Italy in 1885, was listed by SEIDEL in Germany in 1907 and by GIBBONS in New Zealand in 1908.

And now the resources of the Lindley Library provide the first validly published name for the Japanese variety listed by Chugai Nursery, Kobe, 1936/7, as 'Sode-Gakushi'. This proves to be 'Gauntletti', a name which has always had a certain currency in England. Gauntlett's catalogue *Hardy Plants Worth Growing—Planting Season 1909 and 1910*, includes on p. 11 the following: "Camellia Gauntletti—a new Japanese Camellia: white flowers 4–5 ins. across when fully expanded. Young plants 5/–". A later undated catalogue, No. 95, repeats the description and includes a photograph of the camellia and the price is given as 21*s*. Catalogues 96–99 (undated) repeat the entry and photograph.

As regards the name 'grandiflora alba' sometimes erroneously attached to this camellia, reference to BERLÈSE'S *Monographie*, 1840, shows clearly that 'grandiflora alba' is a double white camellia raised from seed in Europe.

Summarizing the main conclusions of this article, 'Kumasaka' is the valid name for 'Lady Marion', 'Lady de Saumarez' for 'Lady de Saumerez', 'Nagasaki' for 'Lady Audrey Buller' and 'Mikenjaku'; 'Lady McCulloch' and 'The Mikado' the correct names for these camellias; 'Contessa Paolina Guicciardini' is the correct name for 'Paolina Guichardini'. Similarly, 'Devonia' is correct and not 'Devoniensis', and both 'grandiflora alba' and 'alba grandiflora' are inadmissible as names for the Japanese camellia validly named 'Gauntletti' in 1909.

THE PARENTAGE OF CAMELLIA 'SALUTATION'

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

THE *Rhododendron and Camellia Year Book* for 1956 contains a brief note on Camellia 'Donation' in which the controversy regarding parentage of C. 'Salutation' is referred to with the suggestion that the question as to whether or not this camellia is the result of crossing *C. saluenensis* with *C. reticulata* could be decided from the chromosome count of the hybrid.

By the kindness of MR. L. F. LA COUR of the John Innes Horticultural Institution I have been able to obtain a chromosome count of C. 'Salutation'; and the result of several counts extending over two seasons from this hybrid shows that 2n = 30.

It may be remembered that in the case of *C. reticulata* 2n = 90 and in that of *C. japonica* 2n = 30, so that in a hybrid between these two 2n = 60 could be expected if there is a regular reduction of chromosome at meiosis in the hexaploid *C. reticulata.* Whereas if C. 'Salutation' is, in fact, of the same breeding as C. 'Donation' of which both parents have 2n = 30 the hybrid would be expected to be the same.

In a paper contributed to the American Camellia Society's *Journal* for 1952, DR. JANAKI AMMAL gives the count for C. 'Salutation' as 2n = 60. It is a pity that we have no record of where the material was obtained for this count if only because tetraploid camellias are unusual and it is unlikely that DR. JANAKI could have been mistaken in making the count.

Now the count of C. 'Salutation' referred to in para. 2 above shows this hybrid to be a diploid, as would be expected if the parents are *C. saluenensis* and *C. japonica* which are both of them diploid; whereas if C. 'Salutation' resulted from *C. saluenensis* × *C reticulata,* a diploid and a hexaploid, a tetraploid—in this case 2n = 60—would be the expected result, but as DR. JANAKI points out at p. 108 of the same *American Camellia Year Book,* "we find in species from Yunnan a parallel evolution of large-flowered hexaploids related to, and derived from, smaller flowered diploids the aberrant tetraploids found in the natural population (of Yunnan) providing the 'missing link' between the diploid and hexaploid species".

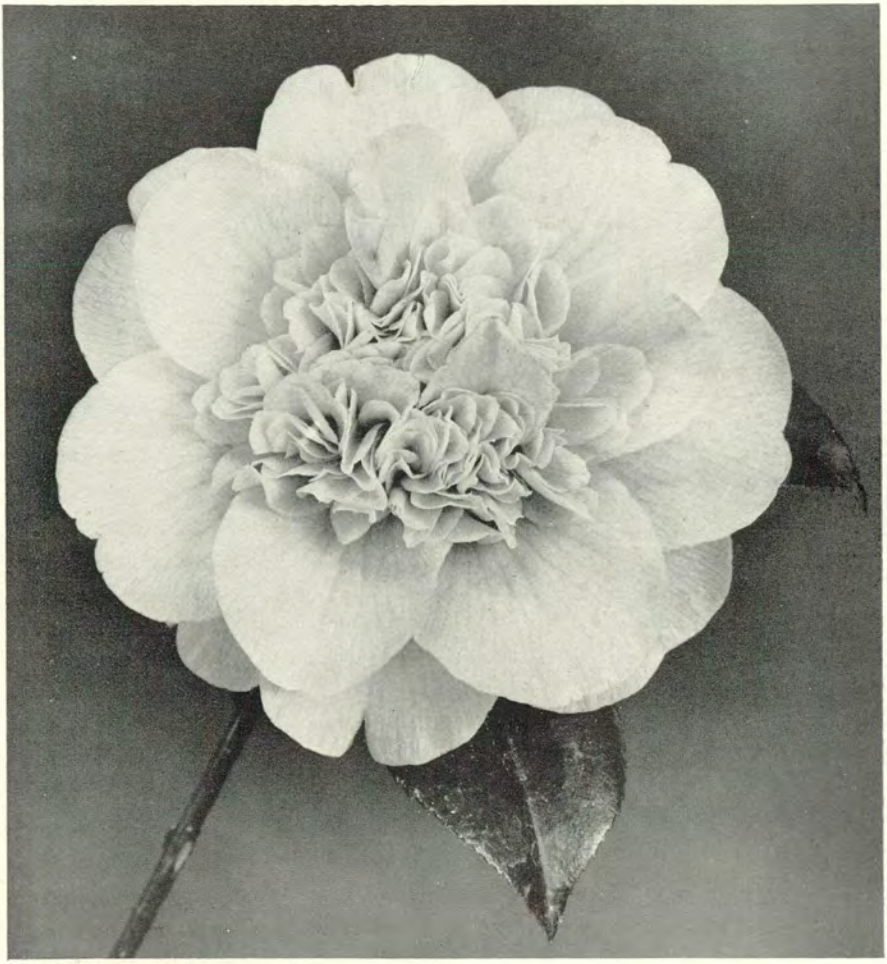
Dr. Janaki in her same article refers to the Exbury hybrid C. 'Inamorata' which she found to have a complement of 2n = 75 chromosomes although a product of *C. saluenensis* (diploid) × *C. reticulata* (hexaploid), and she adds "*C.* × 'Inamorata' evidently received the full complement of 30 chromosomes from its mother, *C. saluenensis*, which proves that this diploid is capable of producing unreduced gametes. This again explains the occurrence of tetraploid seedlings observed both in nature and in cultivation." Dr. Janaki here points out that C. 'Inamorata' is unique among camellia hybrids in being the first known pentaploid (5×) camellia.

While from this we see that a hybrid between a diploid, *saluenensis*, and a hexaploid, *reticulata*, need not necessarily be a tetraploid but, due to certain unlikely groupings of gametes, may result in a pentaploid, 2n = 75; this, however, would not account for the hybrid C. 'Salutation' being diploid, 2n = 30; indeed, it would not seem possible that this content could be obtained except in the case of progeny resulting from the union of two diploids.

Some have claimed that a difference observable in the foliage of C. 'Donation' and C. 'Salutation' suggests a different parentage and that in shape the leaf of the latter indicates *reticulata* relationship. Certainly the leaves of these two hybrids are somewhat distinct, those of C. 'Salutation' being rather lighter in colour and more oblong in shape, but resemblance here is surely closer to some forms of *C. saluenensis* than it is to any known form of *C. reticulata.*

Be this as it may in the light of the information which the chromosome count affords we may surely assume with some certainty that the two hybrids, 'Donation' and 'Salutation', are sisters of the same breeding, and in support of this assumption we have the opinion of Mr. J. R. Sealy, the leading systematic authority on the genus Camellia who, at p. 175 of the Supplement to the R.H.S. *Dictionary of Gardening*, writes of C. 'Salutation' "thought to be a hybrid of *C. reticulata* × *C. saluenensis*, but undoubtedly *C. japonica* × *C. saluenensis*, i.e. *C.* × *williamsii*".

In two letters from the late Col. Stephenson R. Clarke of Borde Hill to the author dated September and October 1948 he refers to a visit to Borde Hill in September of that year by the late Mr. C. P. Raffill of Kew and Dr. Harold Hume. Both of these had told him that they thought a mistake had been made in attributing 'Salutation' to a cross between *C. saluenensis* and *C. reticulata* and that it should really be attributed to a cross



Photo, J. E. Downward

FIG. 48—*Camellia japonica* 'C. M. Wilson' A.M. February 28, 1956. Shown by Messrs. J.Waterer, Sons & Crisp Ltd. (See p. 129)

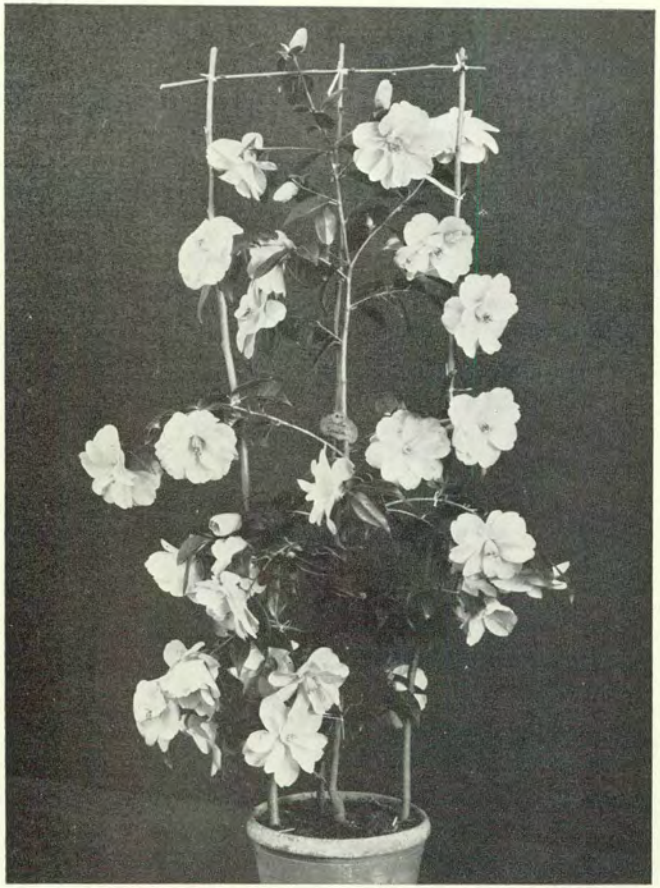


FIG. 49—The Peer Trophy 1956. The fine plant of Camellia 'Donation' shown by the MISSES GODMAN in the Camellia Competition, 1956, which won this Trophy (See p. 118)

Photos, J. E. Downward

FIG. 50—*Camellia japonica* var. shown as "Coquetti" A.M. April 17, 1956, subject to verification of name. Shown by Messrs. J. Waterer, Sons & Crisp Ltd.

between *C. saluenensis* and *C. japonica* 'Donckelarii' making it a sister seedling to 'Donation'; in the second letter Col. Stephenson Clarke added "I must confess they look to me as though they might be such."

EDITOR'S NOTE. Material of the foliage of plants of C. 'Salutation' was kindly sent from Trewithen, Borde Hill and Windsor Great Park for comparison. No appreciable difference could be detected.

Foliage of *C. saluenensis* was also sent from Trewithen and it was noted that the venation of the upper surfaces of the leaves was sunk while the venation in 'Salutation' was raised very slightly above the surface of the leaves on both surfaces. The leaves of *C. saluenensis* were slightly smaller and more glossy and this effect was retained after they had been in water for several days.

CAMELLIA 'DONATION' AND CAMELLIA 'SALUTATION'

By FRANCIS HANGER, V.M.H.

TO the late MR. J. C. WILLIAMS must go the credit of producing the first *Camellia* × *williamsii* but since then other notable horticulturists have been busy introducing hybrids obtained by the crossing of *C. saluenensis* with various forms of *C. japonica*. Outstanding amongst these is C. 'Donation' introduced by the late COLONEL STEPHENSON R. CLARKE, V.M.H. of Borde Hill, Sussex, England. C. 'Donation' has attained heights of up to 10 and 12 feet in certain gardens in this country. I do not think it possible for any lover of camellias to visualize its outstanding beauty unless he or she has been favoured with the opportunity of seeing the plant in full bloom. Its large true pink, semi-double flowers are produced in abundance, the plant in this country being hardier than *japonica* itself and during the past winter has shown no sign whatsoever of browning of the foliage or damage by frost.

On April 17 last, on the occasion of the Camellia Competition in London held by The Royal Horticultural Society, the Ralph Peer Cup given for the first time for the best exhibit in the show, was awarded to a fine floriferous plant of C. 'Donation'.

C. 'Salutation' is another outstanding hybrid with semi-double silvery pink flowers produced by the same creator and from the same garden.

Much controversial history has been written about these two outstanding plants. Recently, MR. N. K. GOULD (the senior Wisley botanist) and the author paid a visit to the present owner of Borde Hill, SIR RALPH CLARKE, who has given me permission to publish the following personal information about these two outstanding hybrids.

CAMELLIA 'SALUTATION'. In my father's book *Catalogue of the Trees and Shrubs (excluding Rhododendrons) at Borde Hill, Sussex in December 1932*, compiled by ALBERT BRUCE JACKSON, A.L.S., on page 50 it states:

> *Camellia speciosa* (Syn. *C. saluenensis*)—It is growing on the north side of the Rose Garden wall, where it blooms freely

and has been hybridized with *C. reticulata.* The resulting hybrid bears a double flower of a very pleasing light pink. The flowers of this species can withstand several degrees of frost without receiving perceptible damage.

There is a note on the opposite page in manuscript:

C. 'Salutation' (*C. saluenensis* syn. *speciosa* × *reticulata*). A hybrid raised at Borde Hill. Wall of Rose Garden, also Gores Wood. Facing North. [*This note is undated.*]

CAMELLIA 'DONATION'. In my father's book as above there is in manuscript, opposite page 50, the following note:

'Donation' *Camellia speciosa* Syn. *C. saluenensis* × *japonica* var. 'Donckelarii'.

A hybrid raised at Borde Hill — Gores Wood S.E. 1937/38 Rose Garden Wall facing North.

From the above it looks rather as if 'Salutation' was the earlier hybrid of the two, and at any rate 'Donation' appears to have been produced in 1937–38.

In a letter written by his father on June 1, 1948, about five months before he died, to MR. FRANCIS HANGER, Curator R.H.S. Gardens, Wisley, it is stated:

So far as I know I have not raised any hybrids of *Camellia japonica* × *Camellia reticulata* wild form, but I have received a good many hybrid cuttings raised by other people, and I may have received some from MAJOR GEORGE JOHNSTONE of Trewithen, Grampound Road, Cornwall. The only plants raised here have been *Camellia saluenensis* × *Camellia japonica* var. 'Donckelarii', and *Camellia saluenensis* × *Camellia reticulata.* To the first mentioned hybrid we gave the name of 'Donation' and to the second the name 'Salutation'.

MR. SEALY of the Royal Botanic Gardens, Kew does not readily accept claims of hybrids between *C. reticulata* and *C. saluenensis,* and has written to me saying that "The only example of a *C. reticulata-saluenensis* hybrid I know is your own C. 'Inamorata' ".

He states that some plants in Cornwall said to have been raised from FORREST's seed do not correspond to *C. reticulata* nor to *C. pitardii* nor to *C. saluenensis* and may be of garden origin.

This may or may not be the case but MR. GOULD and myself on our recent visit to Borde Hill studied the foliage of the original C.

'Donation' and C. 'Salutation' very closely and came to the conclusion that the former possessed a glossy leaf confirming its parentage of *C. saluenensis* and *C. japonica* 'Donckelarii' and the latter C. 'Salutation' possessed a more dull matt leaf showing distinct resemblance to *reticulata*. It is also worthy of note that this opinion is also held by the authorities in charge of the gardens in Windsor Great Park. This rather confirms the late COLONEL STEPHENSON CLARKE's records.

The internationally famous cytologist DR. E. K. JANAKI AMMAL has more or less also accepted this conclusion in her article "Chromosome relationships in cultivated species of Camellia", on page 108 of the *American Camellia Year Book* for 1952, where she writes: "Garden hybrids between *C. reticulata* and *C. saluenensis* normally have 2n = 60 chromosomes. One such hybrid is the beautiful C. 'Salutation' produced by COLONEL STEPHENSON R. CLARKE."

C. 'Inamorata' was obtained by the writer in crossing *C. saluenensis* with *C. reticulata* (wild form) and again doubt was raised as to its true parentage, which DR. JANAKI AMMAL has more or less accepted by writing in the same article: "C. 'Inamorata' had a complement of 2n = 75 chromosomes evidently receiving the full complement of 30 chromosomes from its mother *C. saluenensis* which proves that the diploid *C. saluenensis* is capable of producing unreduced gametes."

This again explains the occurrence of tetraploid seedlings observed both in nature and cultivation. 'Inamorata' is unique amongst camellia hybrids in being the first pentaploid (5×) camellia. DR. JANAKI AMMAL goes on to say that *C. saluenensis* crossed with *japonica* known as *C. williamsii* is a diploid 2n = 30, like its parents. There may be some triploids amongst these hybrids but so far I have not found any.

In conclusion it is important to note that C. 'Donation' is most easily reproduced from cuttings, whereas C. 'Salutation' is quite the reverse. It is a well known fact that the wild form of *C. reticulata* will respond and increase fairly freely from cuttings, whereas *C. reticulata semi-plena* and also *flore pleno* is almost impossible, and inarching or grafting must be resorted to for propagation.

C. 'Inamorata' (*C. saluenensis* × *C. reticulata* (wild form)) is also difficult and to date no success has been achieved at Wisley by cuttings as a means of increase, although numerous efforts have been made.

THE CAMELLIA SHOW AND COMPETITION

April 17 and 18, 1956

By PATRICK M. SYNGE

IN spite of the severe cold weather and prolonged frost of February and March, followed by a drought in April, the Camellia Show attracted a very large number of entries and the quality of many of the blooms was very high. Very little damage to camellias beyond a little bud-dropping was reported from most parts of the country. The competition was held in conjunction with one of the fortnightly Shows, but the whole of one side of the New Hall was filled with the competitive classes, while camellias predominated among the trade groups and in the remainder of the Hall.

Messrs. John Waterer, Sons and Crisp Ltd., staged a very large group, mostly of varieties of *Camellia japonica*, and a silver-gilt medal was given for this group. In the centre were large plants very well flowered in most cases, and notable among these were 'Peach Blossom' under the name of its synonym 'Fleur de Pêche', good plants of 'Mathotiana rosea', a large group of 'Alba simplex' and 'Mrs. Victor Bishop', a little-known white with semi-double flowers 4 inches in diameter and spreading stamens. 'Tsukonigruruma' was another unusual and very floriferous semi-double with white petals heavily flushed pink especially towards to base. It was a beautiful flower. Also represented was 'Coquetti', one of the plants which received the A.M. this year subject to verification of name.

Messrs. Haskins staged a large group in which 'Elegans' filled the centre. The varieties were arranged in small groups and noticeable among them were 'Peach Blossom', 'Latifolia' and 'Souvenir de Bahuaud Litou', a light pink sport of 'Mathotiana alba'. Camellias were mingled with other shrubs on several of the other stands. Messrs. Hillier had the new variety of *C. williamsii* which they have named 'Barbara Hillier', and the flowers were large and of a deeper pink than in 'J. C. Williams'. They also had young plants of the rare *C. tsaii* with attractive bronzed foliage. In *C. hongkongensis*, a tender species, the young foliage was also very

handsome, being bronze in colour and tipped with crimson, while the older leaves were large and glossy, some being 8½ inches in length.

THE CAMELLIA COMPETITION

The Peer Trophy was awarded for the first time this year. This is a silver trophy provided from a fund established by MR. RALPH S. PEER and is offered for the most meritorious exhibit in the competitive classes. It was awarded to the MISSES GODMAN of South Lodge, Horsham, for a fine pot plant of C. 'Donation', 3 feet high and trained ingeniously on a framework (Fig. 49). It was noticeable that in this Class, No. 81, for a camellia plant in bloom and in Class 82 for three plants the maximum height had been raised to 4 feet and this was a distinct improvement.

The first eight classes are for single varieties of *C. japonica* and Classes 1 to 7 for single blooms of different varieties. In Class 1, for 'Alba simplex' or 'Devonia', the first prize was given to a very perfect bloom of 3¾ inches diameter exhibited by MR. C. ARMYTAGE MOORE. The second and third prizes went respectively to SIR GILES LODER and Messrs. Waterers. It was obvious in the naming of these single white varieties that there is still much uncertainty between 'Alba simplex', 'Devonia' and 'White Swan'. PROF. WATERHOUSE's article (p. 110) prefers the name 'Devonia' to the more commonly used 'Devoniensis'.

In Class 2, for 'Jupiter' or 'Juno', the DUKE OF DEVONSHIRE was first with a fine bloom of 'Jupiter', which was 4½ inches in diameter and of large size for this flower. The dark slender leaves were also noticeable. In Class 3, for 'Kimberley', MR. E. DE ROTHSCHILD won the first prize with a rather small but otherwise fine bloom of intense red with the prominent boss of yellow stamens in the centre. Class 4 required any red variety not specified above and the first prize was won by the VISCOUNTESS FALMOUTH, with an unnamed very deep pink, single bloom, rather resembling 'Jupiter'. MR. O. CUTTS was second with a single deep pink. It is interesting to note that all his flowers were grown in a London garden. Class 5 was a similar class for white varieties and the first prize was won by Messrs. Waterer, Sons & Crisp Ltd., with a beautiful flower labelled 'Swan', 4½ inches in diameter. The petals were slightly undulating at the edge, the flower opened flat and the boss of stamens opened wider than in 'Alba simplex' from which these characters would seem to differentiate it. MR. DE ROTHSCHILD won second prize for a slightly smaller flower labelled 'White Swan' but this appeared to be the same variety.

In Class 6 a self-coloured variety other than red or white was required and the Commissioners of Crown Lands won first prize with the deep salmon pink 'Furoan'. This received an Award of Merit again subject to verification of name. Sir Giles Loder was second with 'Apple Blossom', a paler pink flower with a more compact boss of stamens in the centre. For third place Mr. de Rothschild showed a bloom attributed to 'Hatsu-Zakura'. Another fine bloom also attributed to this variety and shown by Messrs. Waterers was disqualified since a number of the stamens were half-petaloid. In Class 7, for any blotched or striped variety not previously specified, Mr. de Rothschild was first with a very pretty bloom of 'Lady de Saumarez'. It was heavily striped and veined with deep crimson on a white ground just flushed pink and the central boss of stamens was compact. The leaves were dark green, broad and prominently toothed. Sir Giles Loder was second with an unnamed variety, much less prominently streaked.

In Class 8, for three single-flowered varieties, one bloom of each, there were six entries. Mr. de Rothschild was first with 'Hatsu-Zakura', 'White Swan' and 'Jupiter'. The Commissioners of Crown Lands were second with 'Devonia', 'Furoan' and a rather small unnamed deep pink bloom with a tight boss of stamens, which had been obtained from Mr. Wada of Japan. Sir Giles Loder was third with three unnamed blooms, while the entry of Mr. R. Try was highly commended.

Classes 9 to 19 required semi-double varieties of *Camellia japonica*, one bloom in each class from Classes 9 to 18 and three varieties one bloom of each in Class 19. There were some very fine blooms in these classes, which in general attracted more entries than the classes for single varieties. In Class 9, for 'Adolphe Audusson', Mr. M. Haworth-Booth won first prize with a very fine bloom of 5 inches diameter. He was also awarded second prize, while Mr. E. Barranger was third. In Class 10, for 'Donckelarii', the Misses Godman were first with a large but rather pale red flower with prominent white markings on the side petal. Viscount Falmouth was second with a fine regular bloom, but which was not quite so large. Sir Giles Loder showed a self-coloured form. In Class 11, for 'Gloire de Nantes', Mr. C. Armytage Moore won first prize with a very fine flower of 5 inches diameter which is unusually large for this variety. Messrs. Waterers were second, and Mr. O. Cutts third. In Class 12, for 'Latifolia', Mr. G. Barranger was first and Messrs. Waterers second. The fine shining foliage of this variety is very distinct. In Class 13, for 'Lady Clare', Mr. C.

ARMYTAGE MOORE was first with a rather pale but very large bloom 5½ inches in diameter. VISCOUNT FALMOUTH was second and Messrs. Waterers third. The long pointed and heavily serrated leaves of this variety were a noticeable contrast to the leaves of 'Latifolia'. Class 14 was for 'Magnoliaeflora', always one of the loveliest camellias, and Messrs. Waterers won first prize with a fine waxy bloom of almost perfect shape, a pale blush pink in colour. The second and third places went to the MISSES GODMAN and MR. G. BARRANGER respectively.

In Class 15, for any semi-double red variety not specified above, the first prize went to Messrs. Waterers for a very fine bloom of 'Alexander Hunter', 5½ inches in diameter, pale red with a close boss of yellow stamens in the centre (Fig. 52). This is undoubtedly one of the most promising of the newer varieties. MR. G. BARRANGER was second with 'Fred Sander' whose fringed petals always attract attention, and MR. DE ROTHSCHILD third with 'Apollo'. In Class 16, for white varieties not specified above, SIR GILES LODER was first with a fine bloom of 'Gauntlettii'. It was a large bloom 5 inches across. Messrs. Waterers were second with 'White Empress', which opened less flat than 'Gauntlettii' and was slightly smaller being 4¼ inches across. This is a vigorous variety raised from Japanese seed imported into America.

Class 17 called for one bloom of any semi-double self-coloured variety other than red or white and not specified above. MR. G. BARRANGER won first prize with 'Bush Hill Beauty', a variety resembling 'Apollo' but a little paler. MR. DE ROTHSCHILD was second with an unnamed deep pink variety and Messrs. Waterers third with 'Nagasaki'. In Class 18 for a blotched or striped variety, not specified above Messrs. Waterers were first with a little-known variety 'Bikashi-Bia', deep pink in colour with prominent white blotches mostly on the inner petals. It was a large flower 5 inches in diameter. VISCOUNT FALMOUTH was second with 'Lady Audrey Buller' and MR. DE ROTHSCHILD third with 'Lady McCulloch'. Class 19, for three semi-double varieties, was popular and attracted nine entries, among which there were some very fine blooms. MR. BARRANGER was first with magnificent flowers of the three old and well-known varieties 'Adolphe Audusson', 'Fred Sander' and 'Latifolia'. His 'Adolphe Audusson' was 5¾ inches in diameter and probably the largest bloom of this variety in the Show. VISCOUNT FALMOUTH was second with 'Lady Clare', 'Lady Audrey Buller' and an unnamed variety. Messrs. Waterers were third with 'Nagasaki', 'Donckelarii' and 'Edwin H. Folk'. This last named

was a large bright crimson-red flower 5 inches in diameter and having a prominent centre. It is one of the more promising of the newer varieties shown, being a seedling raised in America by MR. D. FECHTMAN. Another unusual flower in this class was 'Ichi Setsu' shown by MR. E. DE ROTHSCHILD. It was only a small flower of 3½ inches diameter, but it had very regular imbricated petals (Fig. 54).

Classes 20 to 28 called for incomplete double varieties of *C. japonica*. In Class 20 for the always popular 'Elegans', the DUKE OF DEVONSHIRE, Messrs. Waterers and MR. G. BARRANGER won the first three prizes respectively, the first prize being given for a self-coloured bloom without any white on the petals. Class 21 was for 'Nobilissima', and SIR GILES LODER was first with MR. R. TRY and Messrs. Waterers second and third respectively. In Class 22, for 'Preston Rose', only one prize was awarded; this went to Messrs. Waterers for an unusually large bloom, 4 inches in diameter, of this old variety. In Class 23, for any anemone-centred variety, SIR GILES LODER won first prize with a fine but unnamed bloom. MR. DE ROTHSCHILD was second with 'Childsii', a slightly larger flower than the winning bloom and with a closely packed centre. Class 24 for any red variety not specified above attracted an interesting and little-known variety from Messrs. Waterers called 'Beau Harp'. It was slightly flaked with white on the outer petals, a flower of medium size and with a well formed, almost paeony-form centre.

In Class 25 for a white variety SIR GILES LODER was first with 'Gauntletti'. It is one of the anomalies commonly found in Camellia classification that this variety won first prize both in this class for incomplete double varieties and in Class 16 for semi-double varieties. Messrs. Waterers were second with 'Duchess de Montpensier'. Class 26 required any self-coloured incomplete double other than red or white and not specified above. Messrs. Waterers won first prize for a very fine bloom of 'Virgins Blush', very pale pink, 4½ inches in diameter. This seemed to me one of the most beautiful flowers in the Show. VISCOUNT FALMOUTH was second with an unnamed deep pink variety. In Class 27, for a blotched or striped variety, MR. R. TRY was first with a small regular unnamed flower while Messrs. Waterers were second with 'General Lamorcière', a white variety with delicate pale pink streaks. In Class 28, for three varieties, there were five entries. Messrs. Waterers were first with 'Monjisu', a pale red with white blotching, 'Princess Murat', a large deep pink flower and 'Lady Mary Cromarty'. No

second prize was awarded, but VISCOUNT FALMOUTH was awarded a third prize.

The Classes 29 to 41, for double varieties, are always popular, but it was noticeable how many unnamed blooms there were in this section apart from the 'Mathotiana' forms.

In Class 29, for 'Contessa Lavinia Maggi', there was much variation in the amount of red colouring in these flowers. Messrs. Waterers were first with a very fine bloom streaked with red. The Commissioners of Crown Lands were second with a more heavily streaked flower on a ground colour flushed pink, while MR. G. BARRANGER for third place showed a much paler flower with only slight streaking.

In Class 31 for 'Mathotiana', the MISSES GODMAN showed one of the outstanding blooms of the Show, a very regular flower, 5 inches in diameter and of a very bright red colouring for this variety. This deservably won first prize, the DUKE OF DEVONSHIRE was second and MR. G. BARRANGER third. MR. DE ROTHSCHILD won first prize in Class 32, for 'Mathotiana rosea', and Messrs. Waterers were second. This order was reversed in Class 33, for 'Mathotiana alba'. In this class MR. R. TRY won a third prize. In Class 34, for 'Imbricata alba', and Class 35, for 'Imbricata rubra', MISS C. E. M. MARSH won first prize. In Class 34 the MISSES GODMAN were second and in Class 35, SIR GILES LODER. Class 36 was for 'Souvenir de Bahuaud-Litou' and here the MISSES GODMAN again exhibited an unusually fine flower for first place. Messrs. Waterers were second. In Class 37, for any complete double red variety not specified above, SIR GILES LODER won first prize with 'Duc de Bretagne', a pink flower with deeper coloured veining and some slight white streaking on a few of the petals. MISS M. MCDONALD was second with 'Margharita Coleonie'. For a white variety in Class 38 the DUKE OF DEVONSHIRE was first with a fine flower of 'Alba plena', Messrs. Waterers and SIR GILES LODER were second and third respectively with unnamed blooms. Class 39, for a self-coloured variety other than red or white and other than those in the previous classes, was very popular and attracted eleven entries, as did also the next class for a blotched or striped variety. Messrs. Waterers were first with 'Valtervaredo', a beautiful regular, deep shell-pink flower. MRS. A. BUTLER and the DUKE OF DEVONSHIRE were second and third respectively with unnamed blooms. The first two places in Class 40 also went to unnamed blooms exhibited by MRS. A. BUTLER and VISCOUNT FALMOUTH respectively. Messrs. Waterers were third with 'Rubens'. Class 41

required three varieties, one bloom of each, and this attracted seven entries. The Misses Godman won first prize with a very fine bloom of 'Mathotiana', 5 inches in diameter, 'Souvenir de Bahuaud Litou' and a double deep pink variety with white-edged petals and deeper pink veining, named, although with some doubt 'Portuguese Pink'. The Duke of Devonshire was second and Mr. de Rothschild third while the entry of Messrs. Waterers was highly commended. An unusual flower in this class was 'Chitosigibu' shown by Mr. de Rothschild. It was a full double with a rose bud centre and with wide streaks and marks on the outer petals.

Class 42, for one bloom of six varieties of *C. japonica*, mixed types, was also popular and there were eight entries. The first prize went to Mr. G. Barranger for very fine blooms of the deep red, the pink and the white 'Mathotiana', 'Adolphe Audusson', 'Fred Sander', and 'Contessa Lavinia Maggi'. Messrs. Waterers included some unusual flowers in their exhibit for second place. Among these were 'Baron Lequay', a complete double with deep pink petaloids, extending nearly to the outer petals; 'Mathotiana Supreme' was a large semi-double pink flower with wide spreading stamens, an unusual sport from 'Mathotiana', 'Princess Murat' was a large deep pink, self-coloured flower 5 inches in diameter, having a large central boss of petaloids among which the stamens showed; 'Colletia' was a smaller flower, a real incomplete double heavily striped with white. Lord Aberconway and the National Trust were third and Mr. de Rothschild also had a good exhibit in this class.

Classes 43 to 51 are described in the schedule as Miscellaneous, but these include all the lovely *reticulata* and *williamsii* varieties. In Class 43, for the wild form of *reticulata*, Lord Aberconway and the National Trust won both first and second prizes, the first prize being awarded for a fine bloom of 'Trewithen Pink' which showed the superiority of this selected form over those normally seen. These were the only two entries. For double or semi-double varieties the Duke of Devonshire won both first and second prizes with very beautiful blooms each 6 inches in diameter. Sir Giles Loder won third prize with a slightly smaller flower.

In Class 45 for single varieties of *C. williamsii* there were nine entries and the first prize was won by Mr. de Rothschild with a fine flower of 'J. C. Williams', Mr. C. Armytage Moore being second with 'St. Ewe'. Class 46, for 'Donation', only attracted two entries and Lord Aberconway and Messrs. Waterers were placed first and second respectively. In the next class for any other double

or semi-double *C. williamsii* LORD ABERCONWAY won first prize with an unusual semi-double form of 'J. C. Williams'. Also shown in this class were 'Salutation' and 'Inspiration'. A good bloom of 'Salutation' shown by LORD ABERCONWAY also won first prize in Class 48 for any other hybrid of *C. saluenensis*. An interesting flower in this class was 'Elizabeth' which was a slightly deeper pink than 'J. C. Williams'.

In Class 49, for any camellia hybrid not specified above, only one prize was awarded, namely that to Messrs. Waterers, who showed a very fine bloom of 'Mars', 5¼ inches in diameter, a large and semi-double, deep pink variety. Class 50 for three species, varieties or hybrids, was more popular and attracted seven entries. MR. C. ARMYTAGE MOORE won first prize with very fine blooms of 'Lady Clare', 'J. C. Williams' and 'Elegans', while LORD ABERCONWAY was second and MR. G. BARRANGER third. The next class was for six blooms and again MR. ARMYTAGE MOORE was first, LORD ABERCONWAY second and Messrs. Waterers third. In Messrs. Waterers' exhibit a little-known flower was 'H. A. Downing', a deep pink medium-sized semi-double variety, not unlike a deeper coloured 'Elegans', but showing rather more stamens.

The remaining Classes 61 to 84 were for sprays, growing plants and floral decorations. In this way to my mind the camellia is shown off to the greatest advantage but in most cases fewer entries were received for these classes than for the single bloom classes where each flower was shown in a separate vase embedded in moss. It certainly showed well the very free flowering capabilities of some of the older varieties of *C. japonica* and of the varieties of *C. williamsii* and enabled one to assess their garden value better than the single blooms. Particularly fine were the sprays of the single-flowered varieties 'Alba simplex' and the red 'Sylva', shown for first and second places in Class 62 by MR. C. ARMYTAGE MOORE and LORD ABERCONWAY respectively. Among the semi-double sprays of *C. japonica*, Messrs. Waterers' 'Peach Blossom' was a particularly beautiful exhibit, and won first prize in Class 63, which attracted ten entries. Among the other varieties which always showed up well in these sprays were 'Adolphe Audusson' and 'Gloire de Nantes'. In Class 81, for a camellia plant in bloom, which was won by the MISSES GODMAN with the plant of 'Donation', already described under the Peer Trophy, SIR GILES LODER had a fine semi-double pale pink variety of *japonica*, slightly flecked, in 'Prince Albert', and this won third prize. In Class 82, for three plants in bloom, Messrs. Waterers had very well flowered plants

up to 4 feet in height of 'Alba simplex', 'Mathotiana alba' and an unnamed deep pink semi-double and deservedly won first prize. The second place went to SIR GILES LODER, who showed 'Donation', 'White Swan' and 'Purple Emperor', the last being a large deep pink, semi-double, slightly marked with white.

There were seven entries for the vase or bowl of camellias and the first prize went to a very striking arrangement by MRS. M. E. MCDONALD of 'Margharita Coleonie', on a black tray (Fig. 51). SIR GILES LODER was second with 'Alba simplex' arranged in a rather unusual glass bowl and the DUKE OF DEVONSHIRE third with an arrangement of 'Nagasaki'. An arrangement of the semi-double form of *C. reticulata* made a particularly sumptuous decoration.

RHODODENDRON AND CAMELLIA NOTES

Chilled Camellias

IT may not be generally realized that the blooms of *Camellia japonica* 'Mathotiana' suffer from cold in exactly the same way as the human body, and that the naturally blood-red, almost scarlet flowers, turn mahogany-colour or almost purple if exposed to a low temperature—just as human beings "turn blue" in similar circumstances. Without being obviously marked by frost, the tinge of the whole flower changes, and on close inspection it is found that the veins in the petals have become marked as purple lines. A Portuguese plant of this species, imported about twenty years ago, never produced anything but cocoa-coloured flowers out of doors, so we moved it recently to a cold greenhouse where the flowers now are the normal healthy red.

The white-edged pink sport of 'Mathotiana' ('Augusto L. Gouveia Pinto') also raised in Portugal, behaves in a similar way. It created some interest when it was exhibited as a purple flower some years ago, and I believe it is prized as the "blue camellia" in Portugal. Out of doors in England, in our normally chilly spring, the flowers are the proverbial "blue" of a cold person's face, and only part of a sheltered flower, or a few unexposed blooms, attain the natural rosy pink—whilst the branches are lanky and sparsely furnished with leaves. In a cold house, however, the plant makes much better growth, looks far more healthy and produces rosy flowers.

The pink sport has the characteristic habit of 'Mathotiana', of the flower-head flopping off whole, without disintegrating, but it lacks the other feature of the opening flower, a pointed bud inside the surrounding cup of petals.

E. GODMAN

South Lodge,
Horsham, Sussex.

Unfringed Sport of Camellia 'Fred Sander'

DURING the visit to SIR EDWARD BOLITHO'S garden at Trengwainton in Cornwall, described earlier in this volume, an unusual occurrence was noted on the usually fimbriated, crimson-red flowers of *Camellia japonica* 'Fred Sander'. These were sports with unfringed flowers on a few branches. An interesting correlation was pointed out to us between the foliage of these sporting shoots and the flowers without fimbriation. The leaves were toothed quite prominently, while in the foliage of the branches with normal flowers the margins of the leaves are almost smooth.

PATRICK M. SYNGE

Rhododendron chapmanii

AT the request of the editor of the *Rhododendron and Camellia Year Book*, I am presenting the following items of interest relative to *Rhododendron chapmanii*.

The plants I have growing at both Brewster, New York and Clermont, Florida, were raised from seeds sent to me by MR. DAN COLEMAN, of Fort Gaines, Georgia, a professional nurseryman and enthusiastic collector of our native plants, particularly azaleas and rhododendrons. After one failure and many miles of searching he finally found three plants in an area north-east of Port St. Joe which is in western Florida on the Gulf of Mexico. These were upright plants about 3 feet high, growing on the sand dunes in full sunlight. Though his nursery is in the "Deep South" and not much more than a hundred miles north of the Gulf, he found them quite tender. The collected plants have split their bark on several occasions and seedlings have been killed outright.

Another man interested in *R. chapmanii* and who has made collections, is MR. FRED J. FERRELL, superintendent of the Killearn Gardens at Tallahassee, Florida. MR. FERRELL'S findings paralleled those of MR. COLEMAN. He says in part, "My men and I dug the shrubs at Killearn Gardens from the Appalachicola area in West Florida about five or six miles from the coast. We found the plants, which were few and scattered, growing to a height of 2 or 3 feet out on the edges of the hills in pure sand and in full sunlight. The foliage was yellow and starved looking. The plants had very

old root systems and no new plants were in evidence. These conditions were probably due to the frequent burning of the area. Here at Killearn we grow the plants in a rich loam and under considerable shade. They have healthy foliage and have reached a height of 6 feet or over. They do not have a heavy trunk but are pliant and tend to bend over rather than grow upright. They are rather heavy bloomers and the flowers are light pink."

The Florida State University says that the only other place where they are apt to be found is on the east side of Kingsley Lake near Camp Blanding in Clay County, Florida. From what both men say, *R. chapmanii* is nearing extinction due to the inroads of civilization, fires and vandalism.

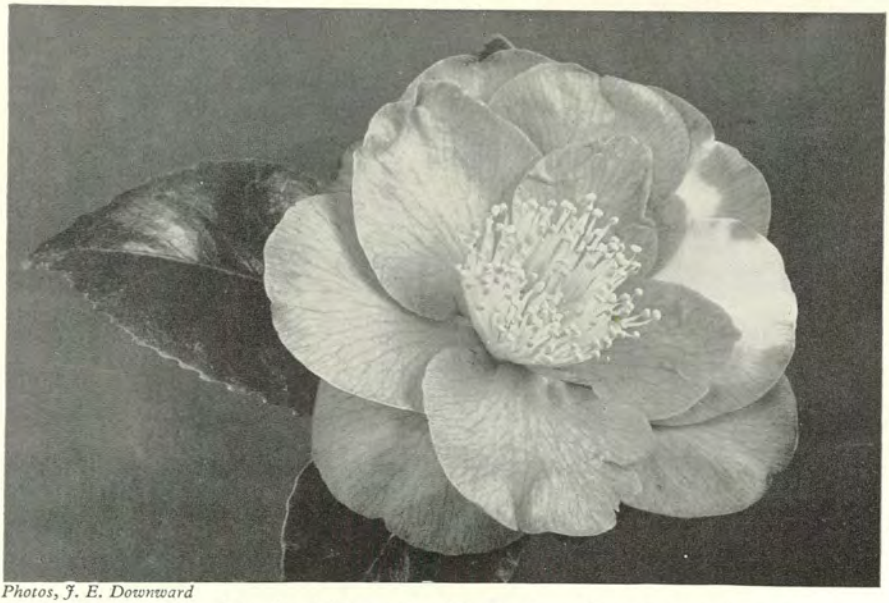
My own interest in it was as a parent to cross with the more desirable and fragrant lepidotes, hoping to infuse them with the heat and drought resistant qualities of *chapmanii*. So far I have had no luck as the plants at my place in New York lost their buds due to the cold and those in Florida bloomed in late February, which was too soon to obtain the pollen I wanted. In northern Florida these plants are subjected to many frosty nights, but I find, in central Florida, with no frost at all this past winter, that they matured their buds and bloomed beautifully. They have now passed through two summers when the heat was daily in the nineties for over six months. Its blossoms are pink, not unlike those of *carolinianum* and *minus*. It can be readily identified, though, by its time of blooming and its very distinctive leaves which are rather small, oval and *definitely bullate* (Fig. 40). This past winter and spring was quite unusual. It was one of protracted cold and high winds without the benefit of snow cover. Once it went to eight degrees below zero and on another occasion to six below. The spring was three weeks late and then, on May 26, we had a hard killing frost when everything was in tender growth. Under these conditions, of seven plants I had growing in the open here at Brewster, five were killed outright. Of the two survivors which are now recovering, one managed to unfold a few florets in its truss, blooming somewhat after *carolinianum* and about a week before *minus*.

EDMOND AMATEIS

Brewster,
New York, U.S.A.

EDITOR'S NOTE. MR. AMATEIS adds in his letter the interesting information that he has been successful in hybridizing between other members of the Carolinianum Series and *R. ciliatum*, *R. edgeworthii* and *R. barbatum*.

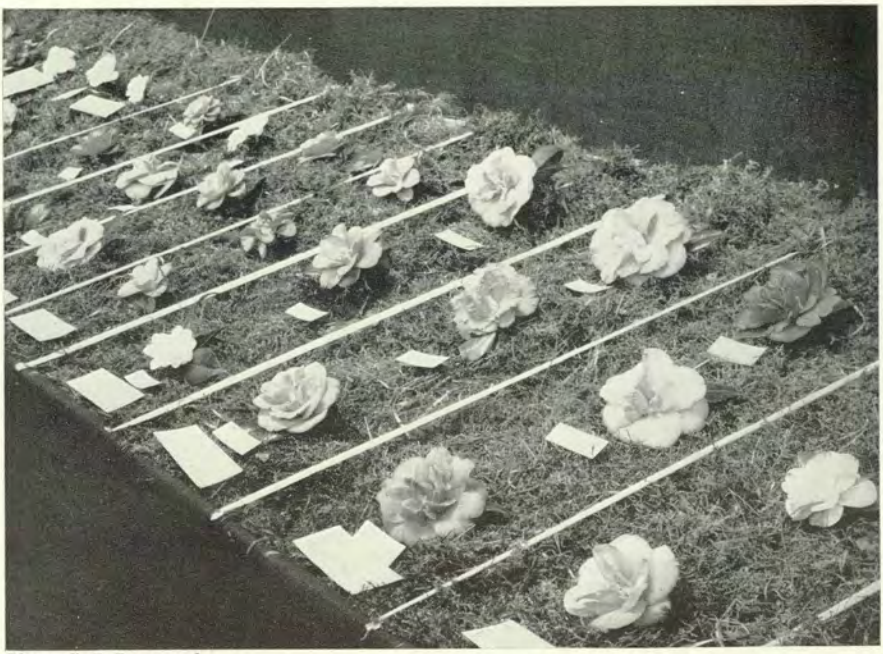
FIG. 51—An arrangement of *Camellia japonica* 'Margharita Coleonie' which won first prize in the competition in Class 83 in the Camellia Competition, 1956. Exhibited by MRS. MCDONALD (See p. 125)



Photos, J. E. Downward

FIG. 52—*Camellia japonica* 'Alexander Hunter'; a fine new variety shown in the Camellia Competition, 1956 (See p. 120)

FIG. 53—Part of Camellia Competition



Photos, J. E. Downward

FIG. 54—Close-up of Class 19. Double Varieties of *Camellia japonica* (See p. 120)

CAMELLIAS AND RHODODENDRONS WHICH RECEIVED AWARDS IN 1956 *

Camellia japonica 'Hana-Fuki', A.M. March 27, 1956. This attractive flowering shrub was imported by the exhibitors from Japan in 1938.

On the specimens shown, the leaves were closely edged with small, singularly sharp-toothed serrations while, in general, the foliage was small, having regard to the size of the flowers. In turn these were large, Semi-Double, shallow cup-shaped and had a prominent, loose cluster of stamens—a few of which were slightly petaloid—in the centre. About fifteen petals of good substance made up each flower and were prominently veined against a pleasing shade of Neyron Rose (H.C.C. 623/2). Exhibited by Commissioners of Crown Lands, Windsor Great Park, Berks. (Fig. 45)

Camellia japonica 'Adolphe Audusson', F.C.C. February 28, 1956. A description of this well-known camellia appeared in R.H.S. JOURNAL, **59,** 399. Exhibited by Commissioners of Crown Lands, Windsor Great Park, Berks. (Fig. 43)

Camellia japonica 'Apollo', A.M. May 1, 1956. On this variety the leaves were typical of the species in shape and size but had some limited variegation. Each flower had fifteen petals, was Semi-Double and coloured a pale shade of Turkey Red (H.C.C. 721/1). The stamens were in a tight, central cluster. On April 28, 1953, a plant under the same name received an award of merit but this was, in fact, *C. japonica* 'Jupiter'. Exhibited by E. de Rothschild, Esq., Exbury, nr. Southampton. (Fig. 41)

Camellia japonica 'C. M. Wilson', A.M. February 28, 1956. Without doubt this is an outstanding camellia of distinctive form and colour. It was introduced by the exhibitors from the United States where it arose as a sport of *C. japonica* 'Elegans'. The

* EDITOR'S NOTE. Three varieties of *Camellia japonica* were shown under the names respectively of "Coquetti", "Furoan" and "Saturnia" and were given Awards of Merit subject to verification of the names. Unfortunately it has not proved possible to do this and consequently the descriptions of these plants have not been published here. It is hoped that it may be possible to verify the names after another season and if so the descriptions will be published in the next issue of the Year Book.

leaves are typical of the species. Each flower shown was 5 inches across, an Anemone Form of Incomplete Double and coloured Neyron Rose (H.C.C. 623/2), while the veination was a delicate shade of deep pink. Exhibited by Messrs. J. Waterer, Sons and Crisp Ltd., The Nurseries, Bagshot, Surrey. (Fig. 48)

Camellia japonica 'Gloire de Nantes', A.M. May 1, 1956. It is stated by the exhibitors that this is a particularly desirable variety for planting out of doors, flowering freely when weather permits, from December to May. The flowers are 4 inches across and are the Peony Form of Incomplete Double with a few stamens visible and the remainder petaloid. The petals are a bright shade of Neyron Rose (H.C.C. 623/1). Exhibited by Commissioners of Crown Lands, Windsor Great Park, Windsor, Berks. (Fig. 44)

Rhododendron (Azalea) 'Golden Sunset', A.M. May 22, 1956. A bright-flowered azalea with large trusses of bloom containing, in some cases, as many as thirty flowers. The corolla was 3¼ inches across and coloured Mimosa Yellow (H.C.C. 602/1) while the upper petal was densely spotted with orange. Exhibited by Messrs. J. Waterer, Sons and Crisp Ltd., The Nurseries, Bagshot, Surrey.

Rhododendron basilicum, A.M. May 1, 1956. A species from the Falconeri Series and of which it is the only member with flat, more or less winged petioles. It is found naturally in rhododendron forests in Western Yunnan where it makes a shrub or small tree up to 30 feet high. The trusses shown were large ones made up of about twenty-six flowers ventricose campanulate in shape. In colour, the corolla was pale whitish-cream with a small crimson blotch in the throat, while on the outside there was an irregular staining of limited, pale, dull-crimson markings. Exhibited by Col. The Lord Digby, D.S.O., M.C., T.D., Minterne, Dorchester, Dorset. (Fig. 34)

Rhododendron ('Idealist' × 'Naomi') 'Emerald Isle', A.M. May 22, 1956. An unusual break in colour is found in this rhododendron for the open campanulate corolla is coloured Chartreuse Green (H.C.C. 663/1) with the throat and central veination stained Chartreuse Green (H.C.C. 663/2). Nine flowers of this colour compose the loose, upright truss. Exhibited from the R.H.S. Gardens, Wisley, Ripley, Surrey. (Fig. 27)

Rhododendron (griersonianum × 'Pauline') 'Grenadine', A.M. May 22, 1956. This is a strong-growing plant of vigorous habit. It has a large truss composed of nine flowers which are open campanulate in shape and coloured Cherry (H.C.C. 722) with deep brown spotting originating in the throat. The hybrid was raised by

the late MR. LIONEL DE ROTHSCHILD and it shows the distinct characteristics of *R. griersonianum* in its flowers and foliage. Exhibited by Commissioners of Crown Lands, Windsor Great Park, Windsor, Berks. (Fig. 36)

Rhododendron (calophytum × lacteum) 'Jocelyne', F.C.C. April 17, 1956. A description of this hybrid appeared in R.H.S. JOURNAL, **79**, 415. Exhibited by E. de Rothschild, Esq., Exbury, nr. Southampton. (Fig. 26)

Rhododendron (johnstoneanum double form × tephropeplum) 'Johnnie Johnston', A.M. May 1, 1956. On this unusual hybrid the flowers are semi-double with the large majority of stamens petaloid. Three or four flowers make up a truss and in colour the flowers are a variable shade of Tyrian Rose (H.C.C. 24/3) with irregular staining of a darker shade (H.C.C. 24/2). The leaves are 4½ inches long by 1¾ inches wide, beneath scaly; pedicel 1 inch long, red-stained and scaly. Exhibited by Lieut.-Col. Sir Edward Bolitho, K.B.E., D.S.O., Trengwainton, Heamoor S.O., Penzance. (Fig. 21)

Rhododendron johnstoneanum (double form), A.M. April 17, 1956. On this form the leaves are obovate-elliptic, margins ciliate and the underside scaly; the petiole also is ciliate and scaly. Each truss is made up of two or three flowers on long, stout, scaly pedicels. The corolla is 3 inches long by 4 inches across, is completely double; in colour it is white with the vestige of an orange tinge in the throat. Exhibited by Commissioners of Crown Lands, Windsor Great Park, Berks. (Fig. 29)

Rhododendron (Limerick g.) 'Piccaninny', A.M. May 22, 1956. This hybrid is one of the progeny from the crossing of R. 'Britannia' and *R. dicroanthum*. It has a lax, drooping truss made up of about seven flowers on each of which the calyx is petaloid and up to 1½ inches long. The corolla is tubular-campanulate and coloured a shade of orange, tinged at the margins of the lobes with a very pale shade of Cherry (H.C.C. 722/1). Exhibited by The Earl of Limerick, K.C.B., D.S.O., T.D., Chiddingly, West Hoathly, East Grinstead.

Rhododendron morii, A.M. May 1, 1956. Leaves on this species are oblong-lanceolate in shape and somewhat leathery. The inflorescence is in the form of a loose, racemose corymb of ten to fifteen flowers. Each wide, semi-drooping corolla has large lobes and is white with a crimson blotch and some crimson spotting. Exhibited by Capt. Collingwood Ingram, F.L.S., V.M.H., The Grange, Benenden, Cranbrook, Kent. (Fig. 33)

Rhododendron (elliottii × wattii) 'Morvah', A.M. May 22, 1956. A hardy plant of vigorous habit and one with a singularly large, globular truss composed of twenty closely-packed flowers. The campanulate corolla is coloured Turkey Red (H.C.C. 721/3) with limited, indistinct spotting on the upper lobes. Underneath, the leaves show a sparse tomentum and are of a coriaceous nature. Exhibited by Lieut.-Col. Sir Edward Bolitho, K.B.E., D.S.O., Trengwainton, Heamoor S.O., Penzance. (Fig. 17)

Rhododendron (discolor × 'Pink Pearl') 'Mistake' A.M. June 19, 1956. When exhibited this plant was shown under the varietal epithet of "Pink Brocade" but this name was not acceptable to the International Registration Authority and was therefore changed subsequently. The funnel-shaped flowers were 2¼ inches long by 4 inches wide and pale pink in colour, suffused with a varying shade of Rose Madder (H.C.C. 23/3) together with olive green spotting and light markings at the base of the upper three lobes. Exhibited by Brigadier J. M. J. Evans, C.B.E., M.C., Wishanger, Churt, Surrey. (Fig. 30)

Rhododendron (fortunei × 'Mrs. E. C. Stirlng') 'Pink Rosette', A.M. May 22, 1956. On this plant about fourteen large flowers form a heavy, globular truss. The corolla is flat campanulate and has a cluster of petaloid stamens in the centre. In colour the flower is pinkish-white suffused with Fuchsine Pink (H.C.C. 627/3) and the lobes tinged a slightly darker shade. Exhibited by Brigadier J. M. J. Evans, C.B.E., M.C., Wishanger, Churt, Surrey. (Fig. 28)

Rhododendron pseudochrysanthum, A.M. May 1, 1956. An outstanding exhibit of this plant was shown, for it is a most attractive rhododendron, being of trim habit and naturally free flowering. The loose truss is composed of nine flowers on each of which the deep funnel-shaped corolla is white flushed with varying shades of pale pink and the throat spotted with crimson. The leaves appear crowded on the plant, are thick and rigid; the upper surface markedly floccose, the underside glossy and the mid rib prominent. Exhibited by E. de Rothschild, Esq., Exbury House, nr. Southampton. (Fig. 23)

Rhododendron (discolor × lacteum) 'Repose' A.M. May 22, 1956. This is a desirable hybrid and one which the exhibitors state has not been affected by cold weather in their experience. The corolla is deep campanulate and coloured whitish-cream suffused with a faint greenish tinge and the throat spotted with limited greenish-crimson markings; the lobes are small and reflexed.

About eighteen such flowers make up a large, open, flat-topped truss. Exhibited by Messrs. W. C. Slocock, Ltd., Goldsworth Nursery, Woking, Surrey. (Fig. 22)

Rhododendron ('Jalisco' × 'Vanessa') 'Serena', A.M. May 22, 1956. An outstanding hybrid with the most delicate of colourings in its flowers, resultant of the well-conceived crossing of R. 'Jalisco' ('Dido' × 'Lady Bessborough') and R. 'Vanessa' (*griersonianum* × 'Soulbut'). The single, loose, flat-topped truss exhibited was made up of seven flowers. Each of these measured 2¾ inches long by 4 inches across, were campanulate in shape and coloured a warm, bright shade of Carmine Rose (H.C.C. 621/2), in the base of the corolla Cherry (H.C.C. 722) and, on the outside, a pale, translucent shade of pink suffused with Cherry (H.C.C. 722/3). The leaves were 7 inches long by 2½ inches wide, dark olive green paling towards the edges, and the margins waved. Exhibited from the R.H.S. Gardens, Wisley, Ripley, Surrey. (Fig. 35)

RHODODENDRON LOWNDESII

By H. H. DAVIDIAN, B.Sc.

Rhododendron lowndesii, named after the late Col. D. G. Lowndes its discoverer, flowered for the first time towards the end of May 1956 at the Royal Botanic Garden, Edinburgh. It was raised from seed taken from a herbarium fruiting specimen under No. 3486 collected by Polunin, Sykes and Williams in Nepal in 1952. It is a small, spreading, deciduous shrub, 5 cm. high with pale green oblanceolate or obovate leaves bristly at the margin, 1–2·5 cm. long, 0·5–1 cm. broad. The flowers are paired; the pedicels are bristly, 3·6 cm. long. The corolla is flat, 2·6–2·8 cm. across, pale yellow with greenish-yellow spots at the base of the upper three lobes. (Fig. 47)

R. lowndesii is ideally suited for the rock garden. It would appear to be tender and somewhat difficult, but it may prove to be hardy in the west, south and in milder gardens inland.

Editor's Note. *R. lowndesii* also flowered at Wisley in early June this year on the peat bank on Battleston hill.

AWARDS TO RHODODENDRONS AFTER TRIAL AT WISLEY, 1956

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

ANNIE LAURIE. (Raised and sent by Mr. L. F. Frisbie, Puyallup, Washington, U.S.A. and introduced by Mr. Greg McKinnon, Sumner, Washington, U.S.A.) **H.C.** May 29, 1956. A deciduous azalea. Plant 2¾ feet high, 5 feet spread, vigorous, lax habit, flowering very freely; leaves 2¾ inches long, $\frac{9}{10}$ inch wide, medium glossy green; flower truss 4 inches across, 2½ inches deep, flattened dome-shaped, eight flowers per truss. Corolla 2¼ inches diameter, 1¾ inches long, open funnel-shaped, margins slightly waved, ground colour French Rose (H.C.C. 520/3) deepening at edges of petals to Carmine Rose (H.C.C. 621/1), blotch at throat of Saffron Yellow (H.C.C. 7/1). Flowering from May 19, 1956. [819]

FARALL YELLOW. (Raised, introduced and sent by Mr. M. Haworth-Booth, Farall Nurseries, Roundhurst, Haslemere, Surrey.) **H.C.** May 29, 1956. A deciduous azalea. Plant 2½ feet high, 4 feet spread, vigorous, flowering freely; leaves 5 inches long, $1\frac{9}{10}$ inches wide, medium green slightly tinged bronze; flower truss 5 inches across, 3½ inches deep, flattened dome-shaped, eleven flowers per truss. Corolla 3 inches diameter, 2 inches long, very open funnel-shaped, margins waved, Chrome Yellow (H.C.C. 601) with blotch at throat of Buttercup Yellow (H.C.C. 5/1). Flowering from May 23, 1956. [110]

HATSU-GIRI. (Sent by Messrs. Knap Hill Nursery Ltd., Woking, Surrey.) **A.M.** May 14, 1956. An evergreen azalea. Plant 2 feet high, 4 feet spread, vigorous, very compact, flowering very freely, flowers either in pairs or threes, corolla 1¼ inches diameter, ⅞ inch long, open funnel-shaped, Mallow Purple (H.C.C. 630). Flowering from May 7, 1956. [547]

MOTHER'S DAY. (Raised and introduced by Messrs. van Hecke, Zevenecken, Germany and sent by Messrs. W. C. Slocock, Ltd., Goldsworth Nurseries, Woking, Surrey.) **H.C.** May 29, 1956. An evergreen azalea. Plant 1 foot high, 2¼ feet spread, vigorous, compact, flowering very freely, flowers mostly in threes. Corolla 2⅛ inches diameter, 1¾ inches long, open funnel-shaped, a bright shade of red near Rose Opal (H.C.C. 022). Flowering from May 22, 1956. [193]

SEVERN. (Raised and sent by The Royal Horticultural Society's Gardens, Wisley, Ripley, Woking, Surrey.) **H.C.** May 29, 1956. A

deciduous azalea. Plant 4 feet high, 3 feet spread, vigorous, upright, flowering freely; leaves 6½ inches long, 4½ inches wide, glossy medium green; flower truss 6½ inches across, 4½ inches deep, dome shaped, compact, twelve flowers per truss. Corolla 3¼ inches diameter, 2½ inches long, open funnel-shaped, Dawn Pink (H.C.C. 523/2) deepening at tips of petals and along the mid-ribs to Dawn Pink (H.C.C. 523), blotch on upper petal at throat of Maize Yellow (H.C.C. 607). Flowering from May 23, 1956. [134]

SYLPHIDES. (Raised, introduced and sent by Messrs. Knap Hill Nursery, Ltd.) **H.C.** May 29, 1956. A deciduous azalea. Plant 3 feet high, 4 feet spread, vigorous, flowering very freely; leaves 4¾ inches long, 1¾ inches wide, glossy, medium green tinged bronze; flower truss 6 inches across, 3½ inches deep, flattened dome-shaped, lax, fourteen flowers per truss. Corolla 2⅝ inches diameter, 2½ inches long, open funnel-shaped, a pale shade of pink near Phlox Pink (H.C.C. 625/3) with blotch on lower petal at throat of Buttercup Yellow (H.C.C. 5/1). Flowering from May 22, 1956. [772]

THAMES. (Raised and sent by The Royal Horticultural Society's Gardens.) **H.C.** May 29, 1956. A deciduous azalea. Plant 4 feet high, 3½ feet spread, vigorous, upright, flowering freely; leaves 5 inches long, 2 inches wide, glossy medium green; flower truss 5 inches across, 4 inches deep, dome-shaped, compact, twelve flowers per truss. Corolla 3½ inches diameter, 2½ inches long, open funnel-shaped, margin waved and surface creped, Neyron Rose (H.C.C. 623/1) veined slightly deeper rose with blotch on upper petal at throat of Apricot (H.C.C. 609/1). Flowering from May 23, 1956. [131]

RHODODENDRON SERIES GLAUCOPHYLLUM

The name Glaucum Series is now to be changed to Glaucophyllum Series, the reason being that the name *R. glaucophyllum* Rehder has replaced the name *R. glaucum* Hook. f.

H. H. DAVIDIAN.

SOME NEW CAMELLIAS RECORDED IN AUSTRALIA

THE following details of new varieties of *Camellia japonica* and *saluenensis* raised in Australia have been recorded with the Australian and New Zealand Camellia Research Society and are reprinted from Number 2 of their *Camellia Annual*, by kind permission of their Honorary Secretary, PROF. E. G. WATERHOUSE and their Council.

1. 'Margaret Waterhouse': *saluenensis* seedling raised by E. G. WATERHOUSE and grown by GORDON WATERHOUSE, at Kurrajong Heights, N.S.W. Semi-double, diameter 3½ inches. Three rows of petals. Colour, Amaranth Rose (H.C.C. 5-30/2 to 5-30/1). Free flowering, June to August. Gained Award of Merit, Killara, 1955.

2. 'William Honey': Plant growing in Melbourne Botanic Gardens. Origin unknown. Bushy, slightly pendulous habit, vigorous growth, easy to propagate. Flower incomplete double. Large petaloids upright, taller than the stamens. Stamens inclined to occur in bunches interspersed with petals. Two or three rows of outer petals merging into a centre bunch, the inner ones almost vertical. Diameter 3½ to 4 inches. Colour, white with Carmine (H.C.C. 21/1) stripes. Blooms August to early November, very prolific. Produces a carmine sport.

3. 'Red Ensign': Seedling of 'Gauntletti' (syn. 'Sodegakushi') raised by G. C. LINTON, Somersby, N.S.W. Foliage similar to parent, but flower is a brilliant scarlet crimson. Single and semi-double blooms with a few petaloids. Diameter 5½ to 6 inches. First bloomed July 1952.

4. 'Laurie Bray': Raised by G. C. LINTON, Somersby, N.S.W. The seedling came up under a plant of 'Edith Linton'. Semi-double soft pink with paler shadings. Fourteen to seventeen petals spaced and ruffled. Diameter 5 inches. Flowers May to August. First flowered June 6, 1952. Erect habit, foliage dark green, curved.

5. 'Teringa': Raised by MRS. HUME TURNBULL, Melbourne. Parent 'Spencer's Pink' (Taylor and Sangster's). Growth upright, rapid. Leaves dark green, serrated, sharply pointed. Flowers glowing crimson, single, generally five petals, sometimes seven. Anthers thickly pollinated so that the flower is generally dusted with gold, giving it a shining appearance. A free and early flowerer. May to September.

6. 'Mattie Cole': Originator CHARLES FREDERICK COLE, Canterbury, Victoria. Parents 'Spencer's Pink' (pollen) and 'Elegans' (seed). Hand-crossed 1946. Awarded Blue Ribbon, Melbourne Camellia Show, August 1954. Flower single, large and open, 4½ to 5 inches in diameter. Colour rose carmine. Blooms late July to end of August.

7. 'Rosemary Elsom': Raised by CHARLES FREDERICK COLE, Canterbury, Victoria. Parents 'Elegans' (pollen) and 'Spencer's Pink' (seed). Hand-crossed 1946. Won Blue Ribbon at Melbourne Camellia Show, August 1953. Informal double, diameter 3¾ to 4 inches. Colour, delicate shell pink. Blooms early August.

8. 'A. W. Jessep': Already published, Shere Camellia List 1951, p. 4, and *Camellia Trail*, 1952, p. 30. Parent: 'Gauntletti' (syn. 'Sodegakushi'). The seed was obtained from under a plant of C. 'Gauntletti' in the garden of Dr. CLENDINNEN, Kallista, Victoria, and planted in the Melbourne Botanic Gardens. First flowered in 1948. Won First Prize and Blue Ribbon for best seedling at the Camellia Show of the R.H.S. (Vic.) in Melbourne in 1952. Habit of growth vigorous, slightly pendulous. Leaf large, broad, obovate, 4½ by 2½ inches, bright green and resembling the leaf of the female parent. Flower bud pointed, with long dark green bracts. Semi-double, inclined to be hose-in-hose. Diameter 5 inches. Pure ivory white. Petals fifteen to twenty, large firm texture. Blooms July to September. More robust than 'Gauntletti'.

9. 'Henry Turnbull': Published in Shere Camellia List, 1951, p. 4, and *Camellia Trail*, 1952, p. 30. Originator MRS. HUME TURNBULL, of Melbourne. A seedling from 'Spencer's Pink'. Growth similar to 'Spencer's Pink', bushy and somewhat pendulous. Narrow pointed leaves. Large pure white single flowers seven to eight petals (not semi-double as in Shere list). Early and free-flowering, May to September.

CAMELLIA CLASSIFICATION

This classification of varieties of *Camellia japonica* has been drawn up for use by The Royal Horticultural Society by the Camellia Nomenclature Sub-Committee.

CLASS

I *Single.* Not more than nine petals.

II *Semi-double.* Two or more rows of petals, conspicuous stamens.

III *Anemone Form.* A flat flower with one or more rows of larger outer petals; the centre a convex mass, composed of petalodes and stamens intermingled.

IV *Peony Form.* A deep rounded flower with several rows of outer petals, the centre a convex mass of twisted petalodes and stamens.

V *Rose form.* Imbricated petals showing stamens in a concave centre when fully open.

VI *Formal Double.* Fully imbricated, many rows of petals, rarely showing stamens.

MODERN RHODODENDRONS

By E. H. M. COX and P. A. COX

MODERN RHODODENDRONS by Cox 1956* fills a long-felt need in present-day gardening literature. All those of us who can grow and have room for specimens of this fascinating genus, which comprises forest giants as well as excellent rock-garden plants, will acquire a mine of information from reading this book. The number of new species introduced from Asiatic sources during the past half century, and the subsequent enthusiasm for hybridization, are evaluated in the cleverest way by the unique editorship of father and son, whose great practical knowledge and experience provide an interesting combination of two generations of enthusiasts.

I am fascinated by the first three chapters, all of which contain much to interest not only the beginner but also the more experienced rhododendron lover. They give valuable and detailed advice on the cultivation and propagation of rhododendrons and, above all, provide such useful hints and warnings about what *not* to do in order to ensure successful results.

The way in which the species of rhododendrons has been dealt with is most interesting, and the authors deserve great praise in having selected from a very large subject what appear to be the more valuable rhododendrons for modern use. This chapter, comprising more than half of the book, has been presented in a masterly and unusual way and will be read with great pleasure by the expert as well as the novice.

The selection from the vast number of rhododendron hybrids now in cultivation has been wisely limited to those more readily obtainable in the trade and will be a great help in guiding purchasers, and this has been facilitated by a comprehensive index.

An instructive chapter on diseases, and what to look for to prevent them, is, I am glad to say, also concisely achieved.

I don't think anyone in the gardening world today having the right soil to grow rhododendrons would ever regret the guinea spent on the purchase of this useful and helpful book.

DIGBY

* xiv + 193 pp. Illustrated. (Thomas Nelson & Sons Ltd., 1956) 21*s*.

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

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