Vol. III., No. III., 1927.

The Rhododendron Society Notes.

REPRINTED BY
THE PACIFIC RHODODENDRON SOCIETY

Acknowledgements

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RHODODENDRON, CAMELLIA
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A ROYAL HORTICULTURAL SOCIETY GROUP

2017

THE PACIFIC RHODODENDRON SOCIETY

"Dedicated to the Hobbiest and Home Gardeners"

Foreword

The Pacific Rhododendron Society has reprinted the Rhododendron Notes in an effort to further the knowledge of the Genus Rhododendron by those enthusiasts with an avid interest in the history, exploration and biographical sketches contained herein.

The Rhododendron Notes are offered to the end that the reader may more easily understand the progress encouraged by those who contributed the wealth of information contained in these volumes, thereby making clear our understanding of the Genus Rhododendron today.

The Society wishes to gratefully acknowledge the efforts on our behalf by the following persons and organizations: Dr. R. Shaw, Curator and M.V. Mathew, Librarian of the Royal Botanic Garden Edinburgh, Scotland, for providing the missing numbers; Lord Aberconway and John Cowell, Secretary of the Royal Horticultural Society, for certain photocopies and other considerations, Sir Giles Loder and Sir Edmund de Rothchild for their esteemed counsel, and to Thomas V. Donnelly our printer.

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The Pacific Rhododendron Society
1976

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NOTES

CONTRIBUTED BY

MEMBERS OF THE SOCIETY

FOR THE YEAR

1927

All communications regarding the publications of the Rhododendron Society should be made to Charles Eley, Esq., East Bergholt, Suffolk.

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MEMBERS' NOTES FOR THE YEAR 1927.

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The Rhododendron Society Notes.

ADDRESS BY CAPTAIN KINGDON WARD AT A MEETING OF THE SOCIETY HELD AT 46 PARK STREET, W.1, ON TUESDAY, 3RD MAY 1927.

J. C. WILLIAMS, Esq., in the Chair.

Captain KINGDON WARD: This first specimen is a plant collected in Tibet two years ago. It was included because it throws a little light on a specimen collected last year also. It is a new species called Rhododendron UNIFLORUM. On the Burma-Tibet frontier last year I collected a plant which I call "Purple Emperor," No. 6884. For some time we were unable to find what it was related to at all, but I think it is related to the specimen I have just handed round. It seems to me to be a Lepidotum, related, I should think, to Rhododendron PUMILUM. The latter had never been found outside until we found it in Tibet. In 1926 I found this very curious thing, which might also deserve the name of uniflorum, that is to say there is only one flower on the truss. I do not know that it has been named at all. I called it "Purple Emperor" in my dispatches.

The PUMILUM was collected twice: once in Tibet, and 6961 in Burma. No. 6884 is the Purple Emperor. I do not think PUMILUM is in cultivation. If you can imagine an ordinary campylogynum with pink flowers, you have PUMILUM exactly.

The next three are epiphytic species of the Vaccinioides type. I do not think the Vaccinioides are much use in cultivation. They are rather small flowers; ordinarily one would never take them for Rhododendrons at all. But 6735 is a new species called INSCULPTUM, which looked very promising. It has flowers of a very good colour, a pure orange, but they are not very numerous. There are only one or two on the truss, and they are rather small. I do not think the Vaccinioides are of any more than botanical interest.

A MEMBER: What height are they?

Capt. WARD: They form a very spreading bush, rather loose, and not more than a couple of feet high. The young shoots are very often purple, which are really more effective than the actual flowers. The flowers are so frightfully small and so few that they hardly show up at all. They grow in the forest, are semi-tropical, and from 7000 to 9000 feet up. That yellow variety grows at about 8000 feet. They generally grow on very big trees and in the forest. They flower rather early, some as early as May.

6806 is MEKONGENSE. It is rather a poor plant. A plant I got in Tibet with the same name was a very much darker and better colour.

6819 is MEGERATUM. I call it a very good colour and a very good plant, but I do not think it would be very hardy. It grows very much better on cliffs. Where there is water perpetually dropping it grows best. Then it had these bright silver leaves, and a tremendous number of very good flowers—a very good

yellow but not an orange. Whether it will be hardy or not I do not like to say, but I think you have it in cultivation.

A MEMBER : Where are the roots ?

Capt. WARD : I should think the roots are in moss practically always.

A MEMBER : We get so much wet in the winter.

Capt. WARD : I think this would be wet in the winter, too, because the great masses of snow on the cliff would be melting and dropping down the cliffs. In the middle of June it was flowering excellently.

A MEMBER : It will not stand a great deal of wet in heavy soil in England.

Capt. WARD : No. 6834 has been identified as TEPHROPEPLUM. I saw Mr. J. C. Williams' TEPHROPEPLUM to-day, and I am bound to say I do not think it is the same plant, but it is near that.

A MEMBER : How would it compare with what you saw to-day ?

Capt. WARD : I think the truss was smaller and a comparatively long pedicel, so that the truss was extremely loose and of a much brighter rose, more rose than purple. This may be TEPHROPEPLUM. I do not want to be dogmatic about that at all. I think this plant has a much darker leaf than the TEPHROPEPLUM exhibited by Mr. Williams to-day. I think myself it is a very good plant. It is a bush about as big as AUREUM. It was extremely rare, or rather local. I only found it in two gullies. I do not suppose I saw a hundred plants of it. It also grows on limestone as well as igneous rocks. I would not call it a typical limestone plant.

A MEMBER : Is it not very like CERINUM ?

Capt. WARD : I do not know CERINUM.

The valley where I was working last year was fairly rich in SALUENENSES. There were certainly three species and possibly more. The first one, 6903, is a new species called RIVULARE. I call it a new species. As a matter of fact, I collected it in Tibet in 1924.

6934 and 7012. The next was HUMICOLA. It has a very dark rich purple flower. It isa rather spreading bush type. CALOSTROTUM in Burma is absolutely prostrate, and only the flower rises above the ground, but as grown here the whole bloom comes up. I think it is a question of whether it is in a sheltered position or out in the open moorland.

The HUMICOLA flowers very late, certainly not before the beginning of July.

SALUENENSE and HUMICOLA are very much alike. It is a very livid flower. Unless you get a very fine illumination over it, it has a rather bad colour. With bright sunlight it is a very fine colour.

This is rather too wet for a good development of the type. In Tibet in 1924 we found about five or six different species of Anthopogon, but on this Tibet frontier, where the rain is far more persistent, the Anthopogon had rather deteriorated, and the Saluenense rather came to the front. We had at least four species of Saluenense and only about two of Anthopogon. I do not know that those two are at all striking, except that one had a very big pink flower. They

are aromatic but not fragrant. In Tibet in 1924 it was very much drier in many parts of the country, and there was a great deal of red Anthopogon. This approaches it, but it is pink.

6960 was the first of the Lapponicums to flower. This was a scented Lapponicum. It was not very obvious, but I found, when I collected specimens and put them into a tin and carried them back to my camp, when I opened the tin they were very obviously scented. They scented my hut as soon as I opened the tin. Otherwise the plant was a fairly ordinary Lapponicum with purple flowers.

The second Lapponicum was found a good deal higher up, and was consequently a good deal smaller.

6967 was the second Anthopogon with very pale rose-pink flowers in very good trusses. That came from about 14,000 feet.

6984. This is an interesting plant because it is a new Saluenense. I call it "Limestone Rose." It has been called CALCIPHILA. That was growing on poor limestone, and as far as we could make out the limestone is not magnesium limestone, and is quite soluble. Like so much of these regions, you very often get belts of limestone. There was one range of limestone ran right through the country. It ran about 17,000 feet, and had a flora quite peculiar to itself. This "Limestone Rose" grew on no other rock. The flowers are a most beautiful rose-pink, with very little of the purple which is usually seen in the Saluenense series. I thought it myself one of the best specimens of the exhibition. That is why I gave it a name. The plant itself was not very rare. I made a special expedition to get it. It only grew on this limestone rubble.

6985 I think is ordinary CAMPYLOGYNUM or GLAUCUM. It is a good dark bloom, purple with a blue-grey outside, rather a florescent type of flower. If you get the light reflected from it, it is more of a dead purple. There was very little seed of it.

7023 is only a coloured variety of the Anthopogon.

7038 is identified with HYPOLEPIDOTUM. The flowers of that vary a good deal, some of the best forms being almost salmon pink. It seemed to vary between the real cream of HYPOLEPIDOTUM and the real plum of a new species called PRUNIFLORUM. It might possibly have been a hybrid. That was found only on the igneous rocks. It forms much more compact tuffets than the ordinary HYPOLEPIDOTUM.

7045 is this new PRUNIFLORUM. I take it it is something like SHWELIENSE. It has almost cherry-coloured flowers. Below 11,000 feet it was always yellow (HYPOLEPIDOTUM), and above 11,000 feet it is this plum-coloured variety (PRUNIFLORUM). The best variety of it was found on the other side of the pass in Tibet, and is found under another number.

7188 is the best form of PRUNIFLORUM. That, when well grown, is a very pretty flower if you can get the sunshine on the flowers. When I first saw it, it was raining, and it was rather a drab-looking colour.

The second Lapponicum to flower is 7048. It is probably a new species. It is a form of HIPPOPHAEOIDES, and has these extraordinary deep-coloured purple flowers about the colour of RUPICOLA. On the reverse of the leaves are very

conspicuous shining bands of scales. It grows up to about 12,000 feet on the open moor and in the valley. That again with the sun shining on it or through it is an extraordinarily striking species. On a really wet day it is so dark as to be almost black.

7058 is the third Lapponicum. That is a plant of the open wind-swept moorlands. It has very small leaves. It is a very bright-flowered species, but otherwise there is nothing to single it out for notice.

7070 is an elaeagnoides. I would not call it a very good plant.

7186. That is OBOVATUM, a purple lepidotum.

7187 is the Anthopogon. It is a plant with a very chocolate leaf. It may be anything.

7455 is the golden-flowered Maddenii. The flower is a bright golden yellow. It is an epiphytic, not very hardy. It is a very good plant when it is in full bloom. It flowers so freely that the ground underneath the trees was often yellow with fallen corollas. It has very small flowers. It grows in the shade, and wants plenty of water.

6912 is, I think, REPENS. In most of the Sanguineums you find a large number of small flies, and the birds used to visit them, particularly a small honey-sucker. For one seed there are generally about ten flowers, so you used to see sheets of these small scarlet-runners, and then had to look all over the hill-side to capture any seeds at all. I rather took it that it was the birds that pollenated the repens and not the insects. A bird is not going to poke its head inside a plant that is lying on the hill-side, and the ants were not very effective, so apparently it is only casually that they get pollenated at all. They vary particularly in the size of the leaf.

6913. I only found one plant of this, and the only seeds I got from it numbered exactly five.

6955 is, I consider, the best Sanguineum I have ever seen. I call it the "Scarlet Letter." It is really the most extraordinary glowing and intense scarlet on very large trusses. It is an alpine species growing 12,000 feet and upwards on the steep hill-sides. It also grew on limestone. It spread out horizontally instead of vertically, certainly not more than a foot above the surface. You could see it a mile away. Very free-flowering.

The Haematodes has an extraordinarily waxy appearance which prevents the light shining through it. If that wax is not on the surface of the corolla, the corolla seems to be much more translucent.

6854 is a true Neriiflorum. The corolla is red. It gives you a real flame colour from the distance, a sort of flickering effect of orange and red. It is a good one. I believe it has been named in Edinburgh. It forms a good solid bush 6 or 8 feet high.

6818 is a Falconeri. It is near ARIZELUM. It is very like the Falconeri I got in Tibet, in 1924, which has so far not been named. It is good. It opens pink and gradually changes to scarlet. The buds of this plant are always pure pink. The pink gradually fades, while the flower shows no sign of bronzing or browning, gradually changing to white. It forms a good big bush, 10 or 12 feet high, grow-

ing along the margins of the Abies Forest. It wants a good deal of shade. It grows rather high up.

7327 is an Irroratum, of which I got seed in 1922. I did not get seed of it this time.

7090 is rather an interesting plant. It is one of what I consider a large number of hybrids which I found last year. I am a complete convert to the theory that hybrids occur in nature quite commonly. To my mind hybrids in nature are as common as species. In this particular expedition half the Thomsoniis were hybrids. The reason why I think so can be briefly stated. I used to find one plant, we will say with bright pink flowers, growing in the midst of yellows and whites. There would be just a little group, or occasionally just a solitary plant. When it came to seeding time, one knows that hybrids do not seed very freely. I usually found that the thing had either given no seed at all, or had seeded very little, and where you had had a dozen trusses of flowers there would be one truss of fruit with about two capsules on it. In only one case did I have a complete failure in getting seed, but in all cases the seed was extremely slight.

In two instances I found what appeared to be a cross between a Thomsonii and a Sanguineum, and in both cases I got seed of them.

While I am on the subject of hybrids, it might be opportune to say that I noticed a rather peculiar thing, that the seeds of Rhododendrons appear to be of three types. The alpine type have seeds which have absolutely no wing at all. The forest type has a wing all round, more or less equal, right round the seed. The third type, the epiphytic type, has a very long narrow seed. The lateral wing is almost obsolete, and it is drawn out towards the end. That occurs in most of the Maddeniis. It seemed to me that if there is any empirical rule for hybrids, probably all the species or series which have the wingless seed will breed into seed, and the same with the winged seed. Curiously enough the Triflorum has the alpine type of seed. I take it that the Triflorums will therefore breed with Lapponicums or Saluenense, and possibly not with Falconeri, a forest type of seed. That is purely an empirical rule and a shot in the dark.

6903 is a large Lacteum. It is rather a fine thing with great big globular trusses or flowers, which vary somewhat from pink to white. In full flower I thought it was one of the finest species I saw, but I doubt if it is particularly novel. The plant has a way of growing on very steep hills, with all the branches coming up in such a way as to get all the blossoms together. The small Lacteum is a much more ordinary type, forming a very deep tangled scrub. I did not see any yellows. The Lacteum very like it, which I got in Tibet, ran right through the gamut of colours.

7184 was the COCCINOPEPLUM type, a little scrub plant, but I did not see it in flower. It was apparently an extraordinarily free-flowering species. That grew on the Tibetan side of the range only. In the Tsangpo Valley rain was practically perpetual. On the other side of the range we had much finer weather. I made two trips over there, one in the summer for about three weeks, and the second on the way home. There I think I found about ten species of Rhododendron on the Tibetan side. They are not being shown to-night because naturally most of them were found out of flower. I went over there rather late, in

the middle of July for the first trip, and in October and November for the second trip. My anxiety to come home by Assam was chiefly centred on the hope of getting seed of Rhododendrons which had been found on the Tibetan side of the range.

6835 is probably a Haematodes. It has very waxy flowers of an intense scarlet.

Growing with it was 6991, which I fancy is a Sanguineum.

7123 is the second Roxieanum, and was found only on the Tibetan side of the range.

6831 is one of a batch of Sanguineums and Haematodes.

7427 is the Irroratum with very large leaves. It must be a most magnificent plant. The leaves are about one foot long. There was only one tree of it in a forest of much more ordinary looking Irroratum. I thought it must be a Grande, but I think there is no doubt that it is really an Irroratum. I am afraid it will not be hardy.

7612 is a plant I have not been able to place. It looks to me more like MARTINIANUM than anything else. The seeds are slightly curved.

6855 is a rather interesting Barbatum. I found some plants of it in 1924. Out of hundreds and hundreds of bushes I could not find a single seed. Then by a stroke of fortune I came across some last year. The only way of getting across to it was across a snow bridge, and that lasted till the end of June, then broke, so I missed it in flower altogether. I got some seed in October. It has a very fine foliage. If the flowers in any way extend with the leaves I think it will be a good plant. It is a thickish tree, and has these enormous leaves. The most distinctive feature of the plant is the way the leaves are persistent for quite a number of years.

There are a large number of Thomsoniis (6923), which I call "Cherry Brandy." They have a cream corolla, a loose truss and very free-flowering. I can only compare it with THOMSONII itself.

6900 is the one I wrote home about, a Thomsonii with glowing pink flowers. There was only one plant of it. I cut three trusses of it. When I came to collect the seed of it there was only about one truss left, so I am afraid it was another of these hybrids. It is an extraordinarily fine plant, because both the size of the corolla is unusual and the colour is of the purest pink, more like CALLIMORPHUM, a most beautiful colour and very large.

6922 is another of those chaotic kinds of Thomsonii. I think that is a yellow Souliei, rather like the one I got in Tibet which I called the "Yellow Peril." That was the commonest Thomsonii on the hills there. There were two species which I called fundamental species, one a bright sulphur yellow and the other bright speckled purple. The others were all extremely rare, and only found in one solitary clump or one solitary plant. Apart from those three, all the rest must have been hybrids or else possible mutations.

MR. WILLIAMS proposed a hearty vote of thanks to the lecturer, and the meeting concluded with a vote of thanks to Mr. Lionel de Rothschild, to whom the Society is also indebted for the above verbatim report of Captain Ward's address.

The Rhododendron Society Notes.

THE SOCIETY'S SECOND SHOW, BY G. H. JOHNSTONE.

The second Rhododendron Show held under the management of the Society took place at the Royal Horticultural Society Hall, Vincent Square, on 3rd and 4th May 1927, being a two-day Exhibition instead of one as in 1926.

The Committee deputed by the Society to make all arrangements in connection with the Show were: Mr. Lionel de Rothschild, Chairman, the Hon. H. D. McLaren, and Messrs. J. B. Stevenson, E. H. Wilding, and P. D. Williams.

Entries were not expected to equal in number or quality those of the previous year, owing to the season being generally admitted to be the worst known for many years in respect of blooms. From all over the country the same complaint was heard of many old-established plants being almost, if not quite, devoid of flowers.

Moreover, where plants did bloom the flower heads seemed smaller than in normal years. Finally, the anxieties of those responsible for the Show reached a climax when a spell of very warm weather was succeeded, three days before the date of the Show, by a general and severe frost, as much as 15 degrees being registered in the southern districts, while in the Midlands and in the North the discomfiture was completed by a heavy fall of snow.

In spite of these severe handicaps the Society's Show proved to be a success both in the number and variety of blooms exhibited, as well as in the interest shown by the public in the display.

Undoubtedly the central feature of the Show was the educational exhibit prepared by the Society under the direction of Mr. J. B. Stevenson of Tower Court, Ascot. This consisted of a comprehensive group of the Lapponicum series staged amongst sandstone rock down the lower half of the hall. As many as could be obtained of the named Lapponicums were there staged in conditions as nearly as possible similar to those under which the plants may be grown with success in this country, and the Society is greatly indebted to the assistance of the Marquess of Headfort and of the R.B.G., Kew, as well as several other private supporters who supplied material for this exhibit. The Society is especially indebted to Mr. Stevenson for providing so many plants, and for the pains taken in setting up the collection, as well as permitting his gardener (Mr. Keir) to remain in attendance throughout the Show, there to reply to the innumerable questions of those interested.

Mr. Stevenson succeeded in placing on view no less than 36 out of a total of 56 named species, so that it was possible to obtain at a glance probably a more comprehensive survey of the series than has hitherto ever been possible, and although no doubt the exhibit offered to the critic opportunity to draw attention to the lavish expenditure of names, and long ones too, sometimes amongst plants which are very similar, it offered at the same time real and practical help to those desirous of noting the more apparent distinguishing features of the several kinds. The group included examples of the following, often in more than one form: CANTABILE, CHEILANTHUM, CHRYSEUM, CUNEATUM, DASYPETALUM, DIACRITUM, DRUMMONIUM, FASTIGIATUM, FLAVIDUM, HIPPOPHAEOIDES, IDONEUM, IMPEDITUM,

INTRICATUM, LITANGENSE, MULIENSE, NIGROPUNCTATUM, ORESBIUM, ORTHOCLADUM, OSMERUM, POLIFOLIUM, POLYCLADUM, PRIMULINUM, PROPINQUM, RAVUM, RUPICOLA, RUSSATUM, SCINTILLANS, SEMANTEUM, SETOSUM, STICTOPHYLLUM, TAPETIFORME, TELMATEIUM, VERRUCULOSUM, VIOLACEUM.

The trade exhibits bore testimony to the increasing interest of the public in the genus, being represented by Messrs. Koster and Van Ness from overseas, Messrs. Cheal, Cuthbert, Gill, Hillier, Reuthe, Stewart, J. H. Veitch, Wallace, and Waterer from this country.

It is to be regretted that in their displays nurserymen often seem more anxious to show how many plants or blooms they can balance in the space allotted to them for their accommodation than to show a lesser number to greater advantage ; nor indeed does this comment apply only to the trade, many amateur exhibitors swamping some remarkable exhibits amidst a flood of uninteresting, and sometimes unsightly, material. Much, very much, remains to be learnt both by trade and amateur of the decorative possibilities of the Rhododendrons, and none of those who staged plants or flowers at the Society's Show this or last year will have been the losers if they devoted some attention to the arrangement of other groups than their own, noting where these failed as well as wherein they succeeded.

In Class 1 (trade) Messrs. R. Gill & Sons, Penryn, received the reward that their enterprise entitled them to in staging a vast quantity of Himalayan and Chinese plants, many of them of a large size. The effect of the more striking sorts would have stood out far better, and thus gained more attention, had they not been smothered by those which, in a sense, were fill-ups. Thus it was necessary to look amongst a mass of DECORUMS, etc., to find SEARSIAE, GENESTIERIANUM, SPERABILE (not in flower), and others which were likely to appeal to the specialist as well as to the public. BULLATUM was well shown, also NUTTALLII.

Second prize went to Messrs. Wallace & Co., of Tunbridge Wells, on whose exhibit the hardy hybrids, mostly of Messrs. Koster's raising, preponderated, while one end of the stage was made up with some good plants of SMITHII AUREUM, a colour which never fails to tone well with any other, HIPPOPHAEOIDES and FASTIGIATUM. Amongst the hardy hybrids exhibited on this stand there were none which might be considered a new break in colour with the possible exception of K 214, which might be a cross between CORONA and CAMPYLOCARPUM. RH. MRS CHARLES PEARSON was a striking plant owing to the open shape of the flowers, which made the truss an attractive one.

Messrs. Waterer, Sons & Crisp were third, J. Cheal & Sons fourth, with hardy hybrids staged amongst a groundwork of Azaleas—on this stall was a well-grown plant of GOVERNIANUM. It is surprising how uncommon this Rhododendron is, being one of the most attractive scented plants for the garden, as well as being easy to grow.

Messrs. Van Ness also staged a group in this class ; again hardy hybrids, in which red predominated as a colour. One of the most attractive plants was RH. MRS. A. J. DE LA MARE, an attractive white, evidently closely allied to DECORUM. Another popular plant in this stand was VAN NESS SENSATION, a

very large truss of pale lilac or mauve, while W. R. DYKES was also a large truss and of carmine pink.

Class 2 for the best trade group of azalea brought two competitors only, Messrs. R. & G. Cuthbert being first and Stewart & Sons second. On the first-prize stand BRILLIANT was the strongest colour and ISABEL VAN HOUTTE a good light yellow. A clear form of VASEYI was an attractive feature of this stand, though probably Azalea "ROBESPIERRE," a good rich orange, drew the eye of the judges to this stand. Opinion may have been divided as to the respective merit of this rich colour against the ALTACLARENSE which was also well shown on the same stand. A well-grown plant of NARCISSI-FLORA was also to be seen here.

Messrs. Stewart & Sons showed MALVATICA and several hybrids raised from this strain. MALVATICA × KAEMPFERI was amongst the best. LEDIFOLIUM (MUCRONATUM, I believe), and AMOENA BLUTHEANA ALBA seem so nearly the same as hardly to be deserving of separate names. FOSTEREANUM was a feature of this stand, as it was shown with the crimson flowers toned down by the young growth of the leaves.

Class 3, group of cut Rhododendrons. Messrs. Koster & Sons won with a good group of hardy hybrids, of which undoubtedly the most outstanding was a yellow, perhaps the best, maybe the only, yellow we have yet seen in this class of Rhododendron. EILEEN HENDERSON was a buff with a dark eye, and K 144 a nice mauve which were also both noticeable in the group. This exhibit was staged in wine bottles, the mouths of which were sealed—probably this accounts for the good condition in which the plants reached London after their long journey from Holland—but wine bottles do not add to the "effect" of a show stand, and whether or not the old wine labels added to the attraction of the bottles probably depended upon the degree of thirst attained by the observer. Messrs. R. Gill & Son were second in this class with a "great" exhibit of cut blooms.

The Challenge Cup for the most meritorious exhibit in Classes 1, 2, and 3 went to Messrs. Gill & Son for their stand in Class 1 already referred to.

Class 4, being for the best group shown by an amateur, not exceeding 150 feet, was won by Lady Aberconway and Mr. McLaren, who staged a wonderful exhibit of both hybrids and species, a good coloured AUGUSTINII, YEDOENSE and one of the semi-pink forms of YUNNANENSE furnishing the background of the arrangement. There was a particularly good plant of CALLIMORPHUM staged in this exhibit. A special word of praise is due to this exhibit for the way in which the blooms had been brought to the Show, exhibiting little trace of a journey from Wales. In addition to these already mentioned, the more noticeable of the varieties staged for this exhibit are ORBICULARE, ORBICULARE × WILLIAMSIANUM, CALOSTROTUM, and FASTIGIATUM shown as plants, and as cut blooms OREOTREPHES × CINNABARINUM, COALITION, PENJERRICK, CORNISH CROSS, WIGHTII, the yellow form of WASONII, HAEMATODES, and LODERI.

The second prize in this class was won by Mr. Lionel de Rothschild for his group from Exbury, which among a variety of hybrids included examples of the species Farrer 948, SUPRANUBIUM, CAMPANULATUM, being a finer form of this species than perhaps any other that is known, ZALEUCUM, and TYERMANICUM. Of hybrids on this exhibit the more striking were the Exbury form of CORNISH

CROSS (LR 106), THOMSONII × AUCKLANDII, VAN NESS 7, a hybrid of a particularly cheerful colour, and HELEN SCHIFNER × MRS. BUTLER. Perhaps, however, the outstanding merit of this exhibit rested in the lavish use of RH. KAEMPFERI, a species which has a charm both of form and of colour all its own. Admiral A. Walker-Heneage-Vivian was the winner of the third prize in this class, his exhibit being chiefly remarkable for the profusion of sweet-scented hybrids (COUNTESS OF HADDINGTON and FRAGRANTISSIMUM).

In Class 5, for the best group shown by an amateur, and not to exceed 72 feet, the first and second prizes were divided between the exhibits of Mr. J. C. Williams and Sir John Ramsden, these being considered of equal merit, while Colonel Stephenson Clarke's exhibit was placed third.

Sir John Ramsden's exhibit consisted chiefly of hybrids, and the staging of it was undoubtedly assisted by the use of saucers for the trusses shown in the front row; an idea which seemed so successful that it is likely to be copied by other exhibitors in the future. A visit to the Show on the second day showed that the blooms accommodated in this way had survived the ordeal of a hot day and a glaring light better than others staged in the customary jars.

The Caerhays exhibit brought to the Show several species which were probably new to the majority of those who entered the Show hall. While ideas as to merit, both of form and of colour, are so varied and diverse that it would seem almost pedantic to single out any blooms as being of special mention, one is tempted to remark upon the LEPTOTHRIUM shown in this exhibit, the mauve-pink flowers of which toned with the green-brown foliage to make a most attractive vase. This group included ASSAMICUM, OVATUM, LINDLEYI, SPHAERANTHUM, both white and pink forms, AUREUM, a very dark AUGUSTINII, CHRYSEUM, CARNEUM, NERIIFLORUM, TEPHROPEPLUM, the last mentioned being a most attractive pink flower the seed of which was collected from the limestone cliffs of South-Eastern Tibet, where it is said to grow to four feet high, SALUENENSE, BAILEYI, LYI, STAMINEUM, OREOTREPHES, AND WEYRICHII.

Colonel Stephenson Clarke was able with his group to extend still further the range of species shown, for his group included SPINULIFERUM, HABROTRICHUM, ROYLEI, DELAVAYI, WILTONII, IRRORATUM, and a fine dark form of THOMSONII. In this group there was shown a form of the hardy hybrid "EARL OF ATHLONE," which seemed superior to any of the other exhibits of this Rhododendron. Another hybrid of especial merit on this stand was a cross between DECORUM and THOMSONII.

Class 6, for the best group of species shown by an amateur, was won by Mr. A. M. Williams, whose exhibit from Werrington Park included BAILEYI, EUANTHUM, CHAMAEUNUM, DICROANTHUM, IMPEDITUM, and HORMOPHORUM, which latter appears to be a form of YUNNANENSE, with which it will probably be merged at some future date.

Class 7, for twelve distinct species, brought seven exhibitors, and was won by Lady Aberconway and Mr. McLaren with the following: CROCEUM, ARGYROPHYLLUM, a beautiful pink form, an AUGUSTINII of monumental proportions, WIGHTII, HAEMATODES, VERNICOSUM, NERIIFLORUM, CALLIMORPHUM, WILLIAMSIANUM, ARBOREUM, THOMSONII, and ORBICULARE.

Mr. Williams, who tied with Mr. G. W. E. Loder for second place, showed in his group a plant of singular attraction under the number F 14131. This may be HAEMALEUM, and may be said to resemble a very large bloom of CAMPYLOGYNUM. The same group also included POTHINUM and RUSSATUM. This exhibit of RUSSATUM being the bluest and largest flowered of the Lapponicum series which we have yet seen, gained a lot of attention, and was accorded an award of merit at this show.

In the class for twelve hybrids (No. 8) Lady Aberconway and Mr. McLaren were again first, Colonel Stephenson Clarke second, and Sir John Ramsden third. The winning exhibit included the variety of LODERI to which the name "Patience" has been given, COALITION, BEAUTY OF LITTLEWORTH, PENJERRICK, BEAUTY OF TREMOUGH, ARBOREUM × FORTUNEI, FORTUNEI × THOMSONII, SOULIEI × KINGIANUM, and a LUSCOMBEI seedling.

Colonel Stephenson Clarke had a striking exhibit in this class under the name of "ROSE PERFECTION," while Sir John Ramsden brought out a novelty in LODERI × BLOOD-RED ARBOREUM; but it will probably be agreed that the most interesting single exhibit in this class was a hybrid between GLAUCUM and BOOTHII staged by Mr. Magor.

Mr. G. W. E. Loder won Class 9, his selection of six species being CAMPYLOCARPUM, NIVEUM, DECORUM, CALIFORNICUM, HAEMATODES, and that rarity ADENOPODUM. In this class Mr. de Rothschild was second and Lord Stair third.

Class 10, for six hybrids. Mr. P. D. Williams was first, Sir John Ramsden second, and Mr. J. J. Crosfield third. Mr. Williams brought in the fine CAMPANULATUM hybrid raised by himself, SMITH'S SCARLET × AUCKLANDII, and a very fine truss of GEOFFREY MILLAIS. C. B. VAN NESS was an outstanding bloom in the second prize exhibit in this class.

The pure white DECORUM shown by Mr. G. W. E. Loder won with ease the prize offered under Class 11 for a bloom of a single species. It was obviously a bloom from a plant in high state of cultivation, for the leaf was as noticeable as the flower. Second prize was awarded to Mr. Magor's XENOSPORUM, a very rare Rhododendron believed to be a rogue which appeared in a pan of ADENOGYNUM. A form of FORTUNEI collected by Mr. Forrest and shown by Mr. P. D. Williams was awarded third prize.

Class 12, for a single truss of a hybrid brought out no less than fourteen competitors, the first and third prizes going to Bodnant (Lady Aberconway and Mr. McLaren) for LODERI (Patience) and FORTUNEI × THOMSONII respectively, Mr. Lionel de Rothschild being second with GEOFFREY MILLAIS, and Mr. Johnstone fourth with TREWITHEN MOTHER O' PEARL.

The next class, for a single bloom of blood-red ARBOREUM, did not bring any blooms up to exhibition standard, it being too late in the year for these plants. Admiral A. Walker-Heneage-Vivian was first, and Lady Aberconway and Mr. McLaren second.

Class 14, for any other of the Arboreum Series, was won by Lord Stair with a white ARBOREUM, and the same exhibitor also took the second prize with a pink ARBOREUM, Admiral A. Walker-Heneage-Vivian being third.

In Class 15, for Barbatum Series, no first prize was awarded, but a second prize was awarded to the exhibit of Mr. P. D. Williams of Lanarth. In the CAMPANULATUM Series, Class 16, RH. WIGHTII, shown by Lady Aberconway and Mr. McLaren, was awarded first, Mr. Lionel de Rothschild being second with CAMPANULATUM.

In Classes 17 and 18 no exhibits of either FALCONERI or FICTOLACTEUM were forward, but a bloom of the yellow FALCONERI from Carclew, shown by Mrs. Tremayne, was awarded a second prize in Class 19.

Class 20, for AUCKLANDII, went to Mr. G. W. E. Loder, second prize being divided between Admiral A. Walker-Hencage-Vivian and Mr. Johnstone.

The Fortunei Series in Class 21 brought eight entries, the winner being Mr. P. D. Williams, second Mrs. Tremayne, third Colonel J. M. Rogers, and fourth Lady Aberconway and Mr. McLaren.

There were no entries in the Grande class, and in that for the Irroratum Series (No. 23) only three. This was won by Mr. Magor, who staged a bloom of MORII, a species from Formosa which, as a white, has probably a future before it when it becomes more widely known.

Classes 24 and 25 brought no entries for the Lacteum Series; indeed it is doubtful whether this year, so universally bad for Rhododendrons, any pure LACTEUMS have bloomed in this country, there being of course no old-established plants of this species.

RH. NUTTALLII won in Class 26 for the Megacalyx Subseries, being shown by Mr. J. J. Crosfield; Mr. Magor's exhibit of LINDLEYI being second; but Mr. Crosfield's bloom of NUTTALLII in this class was quite dwarfed by a truss of the same species staged in the next class (27) for the Maddenii Series by Mr. Stevenson. This exhibit was surely the most magnificent bloom of this superb species that we may ever expect to see. It is understood that the plant from which this truss was cut was growing in a greenhouse, but, having outgrown the available space inside, had pushed out through the light at the top, the bloom exhibited having been cut from this part of the plant outside the greenhouse. The second prize in this class was awarded to Lady Aberconway and Mr. McLaren for an exhibit of VEITCHIANUM.

Exhibits in the class for the Haematodes Subseries were poor, no first prize being awarded, but second was given to Mr. A. M. Williams for his entry from Werrington Park.

Class 29, for the Neriiflorum Subseries, attracted five entries, and four prizes were awarded, the first going to Lady Aberconway and Mr. McLaren, the second to Mr. G. W. E. Loder, third to Mr. Magor, and fourth to Mr. Lionel de Rothschild. For Class 30 Mr. A. M. Williams gained both first and second prizes, he being the only exhibitor in this, the Sanguineum Subseries.

Class 31, the Taliense Series, brought a bloom of FABERI from Mr. G. W. E. Loder's garden that was certainly one of the features of the Show, being outstanding both in colour, form, and evidence of cultivation. The second prize in this class went to Bodnant for a bloom of WASONII. The winner of this class also won first in the next, which was for the Campylocarpum Subseries, and in this class Mr. A. M. Williams was second with a bloom of the pink RH. CYCLIUM.

Class 33, Souliei Subseries, brought only two competitors, and both first and second prizes went to Lady Aberconway and Mr. McLaren for their exhibits of CROCEUM and WILLIAMSIANUM, and the same exhibitors continued their success in Class 35 for sprays of deciduous Azalea species, gaining first with SCHLIPPENBACHII and second with VASEYI, the former being a superb example of this very beautiful Azalea.

Class 34, for the Thomsonii Subseries, was won by Mr. Lionel de Rothschild's exhibit, Lord Stair being awarded second.

Class 36, for the evergreen Azalea Species, was won by Admiral Walker-Heneage-Vivian's exhibit of AZALEA AMOENA, the second going to Mr. Lionel de Rothschild, who also won the first prize in the next class, which was for the Campylogynum series; Mr. G. W. E. Loder's exhibit of GLAUCUM being second in this class.

Class 38, for the Cephalanthum series, was won by Mr. A. M. Williams's exhibit of SPHAERANTHUM, and Mr. de Rothschild showed KW 3988, for which he was awarded second. This latter seemed to offer very little to distinguish it from the older SPHAERANTHUM.

Cinnabarinums, Class 39, brought out a spray of ROYLEI, for which Sir John Ramsden was awarded first, Mr. Lionel de Rothschild being second with his exhibit of KEYSII.

There was a very attractive form of BULLATUM, almost a buff colour with a crimson stripe on the exterior of the corolla, shown by Sir John Ramsden, which won Class 40 for the Edgworthii Series; Mr. E. J. P. Magor being second in this class.

The Heliolepis section in Class 41 only produced four exhibits, the best of which was Lord Stair's RUBIGINOSUM, Mr. de Rothschild's POLYLEPIS being second, while DESQUAMATUM, exhibited by Colonel Rogers, did not receive an award.

Class 42 (Lapponicums) brought together an attractive group of exhibits, including CHRYSEUM, INTRICATUM, SCINTILLANS, IMPEDITUM, HIPPOPHAEOIDES, and an unnamed species of Mr. Forrest's under the number 16282, for which latter Mr. A. M. Williams was awarded second, while the same exhibitor's RUSSATUM was justly given the first prize in this class. This was an exhibit which drew the praise of all who saw it. Probably it is the nearest approach to a dark-blue Rhododendron that has yet been seen, and, as already recorded, it was subsequently given an award of merit.

Mr. A. M. Williams was alone in Class 43 for the Lepidotum series, in which he exhibited a truss of BAILEYI, and he also won the next class, which was confined to RH. AUGUSTINII, for which he staged a particularly dark form. Of the other seven competitors in this class Colonel Stephenson Clarke was awarded the second prize.

The next two classes, 45 for OREOTREPHES, and 46 for the Triflorums, were both won by Mr. A. M. Williams, who in the latter class staged a very striking variety of DAVIDSONIANUM. Sir John Ramsden was second in this class, and Lord Stair third with YUNNANENSE.

Class 47, being for large-leafed hybrids, brought only one exhibitor, Admiral Walker-Heneage-Vivian, who was awarded a first prize for a NIVEUM hybrid under the name "Singleton Blue."

The AUCKLANDII × FORTUNEI class (No. 48) was won by Lady Aberconway and Mr. McLaren, whose exhibit appeared to be the only one out of the eight in competition that had survived the journey to London in good condition. Colonel Stephenson Clarke was second. Classes 49, 50, 51, and 52 also went to the Bodnant exhibits; indeed in 49, 50, and 52 Lady Aberconway and Mr. McLaren were awarded the second prizes as well as the first. These four classes were respectively for AUCKLANDII crossed with any other species, AUCKLANDII crossed with a hybrid, campylocarpum hybrid, and Thomsonii hybrid. In the class for campylocarpum hybrids the second prize went to the Executors of the late Mr. W. C. Slocock for a bloom of uncommon colouring, being a seedling with a nice red eye on a buff ground.

Mr. Lionel de Rothschild won in Class 53 for a hybrid between two species, for which he staged a cross between an ARBOREUM and FORTUNEI. Sir John Ramsden's exhibit was second.

TREWITHEN MOTHER O' PEARL, exhibited by Mr. G. H. Johnstone, was first in Class 54, and PROMETHEUS, shown by Mr. Lionel de Rothschild, second; this class being devoted to hybrids raised by the exhibitors and not previously shown.

AZALEODENDRONS in Class 55 were exhibited by Sir John Ramsden and Mr. P. D. Williams, who were awarded first and second prize respectively, and Class 56 for any deciduous Rhododendron hybrid went to Mr. Lionel de Rothschild's exhibit.

Mr. P. D. Williams staged a very remarkable branch of HINODEGERI in the next class, which was devoted to evergreen Azalea hybrids, including the KURUMES, and this was outstanding as the first-prize winner, Mr. C. E. Heath taking the second prize with his exhibit of AMOENA.

Cinnabarinum hybrids in Class 58 brought only three exhibits, and first prize was awarded to that staged by Mr. G. W. E. Loder, which was a cross with OREOTREPHES, while the Bodnant exhibit which took the second prize was the same parentage reversed, OREOTREPHES in this case being the seed parent.

Class 59 brought another outstanding exhibit, again staged by Mr. A. M. Williams of Werrington Park. This class was for a hybrid of any alpine species, and was won by FASTIGIATUM crossed with AUGUSTINII. If RUSSATUM, shown by the same exhibitor in Class 42, was the nearest colour to a dark blue in the Show, this hybrid was as certainly the brightest blue we have yet seen amongst Rhododendrons.

The next class was arranged for exhibits of three Alpine Rhododendrons lifted from the ground or grown in pots, and this was won by Mr. G. W. E. Loder, who for his winning three selected, TELMATEIUM, a dwarf form of RACEMOSUM, and CHRYSEUM, which latter as shown in this class is perhaps worthy of especial mention. Mr. Lionel de Rothschild was second in this class.

Messrs. Waterer, Sons & Crisp won the first prize in Class 61 for six distinct

hardy hybrids raised by nurserymen and capable of being flowered in the open at Kew. The most striking blooms in the winning exhibit were undoubtedly ALICE and MRS. E. C. STIRLING. Mr. Lionel de Rothschild was second in this class.

Sir John Ramsden was awarded a second prize in Class 62, which he had all to himself. This class was offered for a group of Alpine Rhododendrons in pots or lifted from the ground. The only group staged included RADICANS, KW 6079, KW 6069, a VIRGATUM, CAMPYLOGYNUM, conspicuous by its absence from other classes of the Show, MULIENSE, which as a yellow is one of the best of the Lapponicum series, and F 19607. This was an interesting exhibit, and it is to be regretted that the class did not attract more competition; but perhaps this should be attributed partly to the educational exhibit of the Society for which Mr. Stevenson was responsible, and for which he claimed plants from several exhibitors which might otherwise have been staged in this class.

Considered as a whole, this year's Show cannot be considered as good as that of the previous year, but this is amply explained by the general shyness of flower on Rhododendrons in 1927 and by the severe frost, already alluded to, which visited with little discrimination gardens throughout the country three days before the Show. This, however, makes our congratulations and our thanks all the more due to Mr. Lionel de Rothschild and his committee for the number and the quality of the exhibits brought together under these adverse circumstances; as well as for the success of their arrangements for the Show, which this year for the first time was extended to two days.

GEORGE H. JOHNSTONE.

TREWITHEN, 1927.

IDENTIFICATION OF THE RHODODENDRONS COLLECTED BY J. F. ROCK ON THE ARNOLD ARBORETUM EXPEDITION TO NORTH-WESTERN CHINA, 1924-27.

During his two seasons' collecting Mr. J. F. Rock sent to the Arnold Arboretum seeds of a great many numbers of Rhododendron, and later the dried specimens bearing the same numbers. The latter have now been examined and identified as hereunder :—

RHODODENDRON THYMIFOLIUM, *Maxim.*

12368 12370 12411 13303 13598 13904

RHODODENDRON ANTHOPOGONOIDES, *Maxim.*

12627 12651 12723 13279 13597 13610 13636

RHODODENDRON CAPITATUM, *Maxim.*

12191	12471	12731	13605	13634	13688	13956	14041
12371	12518	13596	13611	13635	13904A	13968	14045
12376	12647	13600	13622	13674	13905	14006	14101

RHODODENDRON MICRANTHUM, *Turcz.*

14554 15004

RHODODENDRON PRZEWALSKII, *Maxim.*

12154	12373	12419	13052	13612	13677	13685	13695
12189	12397	12652	13278	13629	13679	13686	13906
12364	12415	12672	13302	13676	13681	13694	14770
12365	12417	13047					

RHODODENDRON RUFUM, *Batalin.*

12153	12233	12330	12369	12422	13630	13678	13693
12156	12234	12331	12374	12677	13640	13680	13696
12190	12322	12332	12380	12728	13643	13682	13697
12194	12324	12333	12395	13599	13645	13683	14836
12230	12325	12343	12398	13601	13647	13684	14928
12231	12326	12366	12400	13613	13649	13691	15014
12232	12328	12367	12418	13628	13650	13692	

In his notes and letter Mr. Rock remarks upon the abundance of Rhododendrons in Kansu. Evidently Rhododendron is common there, but is represented by comparatively few species. This is to be expected, since the flora in general is of boreal character and is much influenced by the strong winds and the arid climate of the regions with which it is contiguous.

E. H. WILSON.

ARNOLD ARBORETUM, HARVARD UNIVERSITY, 1927.

THE FOLLOWING NOTES HAVE BEEN CONTRIBUTED BY MR. H. F. TAGG, F.L.S., OF THE ROYAL BOTANIC GARDEN, EDINBURGH.

NEW SPECIES AND VARIETIES OF ASIATIC RHODODENDRONS.

In writing of Rhododendrons the late Sir Isaac Bayley Balfour more than once suggested that further exploration and more abundant material might give transitional and intermediate forms which would lessen the relative distinctness of some of the species described by him. The collections made by Forrest, Rock, and Ward since Sir Isaac's death confirm this anticipation. On the other hand, these collections contain many plants which in cultivation will undoubtedly prove new and distinctive. This was to be expected when it is recalled that in recent years both Forrest and Ward have explored regions not previously botanised. The following are described in the "Notes" of the Royal Botanic Garden, Edinburgh, No. LXXV., October 1927.

Some of these new species were named by the late Sir Isaac Bayley Balfour, but the specimens then available being in fruit only, or fragmentary, he gave no published description of them. More recent collections by Forrest have supplied good flowering specimens. These confirm Sir Isaac's suggestions as to their specific distinctness, and have provided the material for the descriptions referred to above.

RH. ABERRANS, *Tagg et Forrest.* (Lacteum Series.)

This is allied to RH. TRAILLIANUM, and has similar indumental hairs, but the leaves and flowers are much smaller than those of RH. TRAILLIANUM, and the ovary is floccose and glandular. The flowers are white, more or less flushed rose on the outside and spotted crimson within. A species from the Chienchuan—Mekong divide in mid-west Yunnan. In its typical form RH. TRAILLIANUM is found farther east on the Lichiang Range and around Muli.

Forrest 23395, 23373, 23379.

RH. BALFOURIANUM DIELS var. AGANNIPHOIDES, *Tagg et Forrest.* (Taliense Series, Adenognum subseries.)

A distinct variety characterised by larger more lanceolate leaves, by a thicker spongy indumentum recalling that of RH. AGANNIPHUM. A shrub of 4 to 5 feet. Flowers white or rose with crimson markings. In its typical form RH. BALFOURIANUM is a Tali plant. The variety is found in south-west Szechuan around Muli.

Forrest 16316, 20456.

RH. CATACOSMUM, *Balf. f. MS.* (Neriiflorum series, Haematodes subseries.)

A fine and distinct species of the Haematodes alliance, differing from RH. HAEMATODES and RH. CHAETOMALLUM in its larger and more rounded leaves, clad beneath with a pale cinnamon wool. The calyx is a characteristic

feature. It forms a large fleshy cup apparently coloured like the corolla, giving the suggestion of a hose-in-hose form of flower. A shrub of 4 to 9 feet with thick woolly shoots and lax trusses of large crimson flowers. The name was assigned by the late Sir Isaac Bayley Balfour to specimens in fruit collected by Forrest in 1921, but it was not until 1922 that Forrest secured flowering specimens.

Forrest 21727, 22910, 22915, 20078.

RH. CHAETOMALLUM, *Balf. f. et Forrest*, var. XANTHANTHUM, *Tagg et Forrest.* (Neriiflorum series, Haematodes subseries.)

A distinct variety with large flowers, creamy yellow more or less flushed rose.

Forrest 21725, 22863, 21729, 22847, 21745, 22860.

RH. CHIONANTHUM, *Tagg et Forrest.* (Neriiflorum series, Haematodes subseries.)

A very unusual species of the Haematodes subseries characterised by its white flowers. It was collected by Forrest in north-east Upper Burma on the western flank of the Salwin—Kiu-chiang divide. A shrub of 2 to 3 feet.

Forrest 25592, 25594.

RH. DICTYOTUM, *Balf. f. MS.* (Lacteum series.)

A shrub of 9 to 12 feet, with foliage recalling that of some of the members of the Lacteum series. The leaf under-surface is tawny with a thin felt that is easily rubbed off. The flowers are large, as much as 2 inches long, whitish, faintly flushed rose, and heavily spotted.

Forrest 16734, 17332.

RH. DOSHONGENSE, *Tagg.* (Taliense series, Taliense subseries.)

This is a member of the Taliense subseries coming from Doshong-La, a region much farther west than the general area of the group. Captain Kingdon Ward says it forms a tangled scrub 2 to 3 feet high. The foliage recalls that of RH. TALIENSE in shape, but the leaves have a thin silvery indumentum which later becomes pale fawn. The flowers are " pink with many small dark purple spots scattered over the upper lobe."

Kingdon Ward 5863.

RH. ELEGANTULUM, *Tagg et Forrest.* (Taliense series, Adenogynum subseries.)

A small compact bush of 3 to 6 feet with the young shoots and under surfaces of the leaves clad with a dense cinnamon to rusty-red felt. Its nearest ally is RH. BUREAVI, from which it is distinguished, among other points, by its narrow leaves, less woolly indumentum and glandular ovary. Like the majority of the members of the subseries Adenogynum, the calyx lobes are large and fringed with glands. As in other members of the series, the truss is a compact one. The flowers are pale purplish-pink with darker spots. It is a Szechuan species from the vicinity of Yung-ning.

Kingdon Ward 5111, Forrest 21292.

RH. FLOCCIGERUM, *Franch.*, var. APPROPINQUANS, *Tagg et Forrest.*
(Neriiflorum series, Neriiflorum subseries.)

A shrub of 6 to 10 feet, with fleshy pale crimson-scarlet flowers. It has the foliage shape of RH. FLOCCIGERUM, but lacks all evidence of indumentum except a few flecks along the midrib.

Forrest 23297, 21531 ; Rock 9590.

RH. GYMNOCARPUM, *Balf. f. MS.* (Taliense series, Roxieanum subseries.)

A shrub of 2 to 3 feet with oblong or oblanceolate leaves, clad on the under surface with a fawn semi-woolly tomentum. Flowers few in the truss and claret-crimson with deeper markings. RH. GYMNOCARPUM is one of a few aberrant members of the subseries with flower trusses relatively loose and few-flowered. Its nearest ally appears to be RH. MICROGYNUM, from which it is distinguished by its glabrous ovary.

Forrest 16687, 17379.

RH. HEMIDARTUM, *Balf. f. MS.* (Neriiflorum series, Haematodes subseries.)

A close ally of RH. POCOPHORUM, with which it agrees in many features. It differs in the peculiar indumentum of the leaf which, as the name " half-flayed " indicates, is irregularly developed and appears to be ruptured, revealing bare areas. The name was suggested by the late Sir Isaac Bayley Balfour for specimens in fruit. Mr. Forrest has now secured a specimen in flower, and describes it as a shrub of 4 to 5 feet, with flowers of a deep rich crimson without markings, cherry-coloured when held to the light.

Forrest 20028, 20920, 21709, 22886.

RH. MIMETES, *Tagg et Forrest.* (Taliense series, Adenogynum subseries.)

A Szechuan species from the vicinity of Muli. Forrest describes it as a shrub of 3 to 7 feet, with white flowers flushed and margined rose with few crimson markings. In some features it is intermediate between RH. DETONSUM, a southern species from the Sungkwei divide and RH. ALUTACEUM, a north-western member of the subseries centred in the Kari Pass. Its nearest ally, however, is undoubtedly RH. DETONSUM, from which it is distinguished by its different leaf indumentum and by its glabrous style. The stalked leaves are 4 to 5 inches long, oblong and evenly elliptic, clad beneath with a somewhat detersile pale or deep buff tomentum.

Forrest 21417, 20419.

RH. MIMETES, *Tagg et Forrest*, var. SIMULANS, *Tagg et Forrest.* (Taliense series, Adenogynum subseries.)

A very distinct variety with ovate, cordate, or semi-cordate leaves, and a thick spongy indumentum fissured after the manner of the indumentum of RH. FLAVORUFUM.

Forrest 20428.

RH. POCOPHORUM, *Balf. f. MS.* (Neriiflorum series, Haematodes subseries.)

This may be regarded as a glandular expression of RH. CATACOSMUM. It is a plant with leaves some 4 to 8 inches long, more elongate than those of RH. CATACOSMUM, and with a smaller, more irregularly cut calyx. The truss is a large rounded umbel with flowers 2 inches long, ranging in colour from deep purplish-crimson to a light crimson. The leaf under-surface is clothed with a dense thick fulvous-brown felt.

Forrest 19977, 19983, 21711, 21712, 21713, 21720, 22909, 22912, 22913, 22916.

RH. PRONUM, *Tagg et Forrest.* (Taliense series, Roxieanum subseries.)

A very distinct plant in habit, and the only truly prostrate species in the subseries. The short annual growths, the close-set foliage, and the numerous persistent bud-scales give it a very much stunted look correlated doubtless with the high altitude of its habitat. It is found on the Chienchuan—Mekong divide at 13,000 to 14,500 feet. A creeping shrub of 3 to 10 inches.

Forrest 23375, 22334, 22994, 25621, 25823; Rock 9490, 11306.

RH. SPERABILE, *Balf. f. et Farrer*, var. WEIHSIENSE, *Tagg et Forrest.* (Neriiflorum series, Neriiflorum subseries.)

A variety of the type with less lanceolate leaves. The indumentum is less dense than that of the type and of a lighter colour, while the upper surface is less bullate. Seedling plants of Forrest No. 25447 look very different from those of typical RH. SPERABILE.

Forrest 25447, 25932, 25569.

RH. SPERABILOIDES, *Tagg et Forrest.* (Neriiflorum series, Neriiflorum subseries.)

This has the habit of RH. SPERABILE, but differs in its eglandular stems and petioles, in its smaller leaves, smaller flowers, and eglandular ovary.

Forrest 21824, 20003, 20825, 22900.

RHODODENDRONS OF THE FORRESTII SUBSERIES.

An enumeration of the specimens in the Herbarium of the Royal Botanic Garden, Edinburgh.

RH. ERASTUM, *Balf. f. et Forrest.*

Number.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest 14373	Mekong—Salwin divide.	14,000 ft.	28° 12′	..	July 1917

RH. FORRESTII, *Balf. f.*

Number.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest 699	Tsedjong pass, Mekong—Salwin divide.	10-11,000 ft.	28° 10′	..	July 1905

RH. FORRESTII, *Balf. f.* (continued).

Number.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
16689	Sie-la pass, Mekong—Salwin divide.	13,000 ft.	28°	..	June 1918
17450	.. .. ..	..	..	..	Oct. 1918
20027	Salwin—Kiu-chiang divide.	14,000 ft.	28° 24′	98° 24′	Aug. 1921
21724	Salwin—Kiu-chiang divide (large leaf form, with lighter coloured flowers).	14,500 ft.	28° 45′	98° 18′	June 1922
21786	Salwin—Kiu-chiang divide.	14,000 ft.	28° 45′	98° 18′	June 1922
22923	Duplicate of 21724 in fruit.	..	..	..	Oct. 1922
22924	Duplicate of 21788 in fruit.	..	..	..	Oct. 1922
Ward					
3609	Imaw Bum.	12,000 ft.	..	..	Aug. 1918
Rock					
8717	(=11074=Seed No. 59122) Tseku.	..	..	..	Oct. 1923
8745	(large leaf form) ..	..	..	..	Oct. 1923
9234	(=11033=Seed No. 59489) Sila pass.	..	..	..	Oct. 1923
9277	(large leaf form) ..	..	..	..	1923
11033	.. .. ..	..	..	..	1923
11074	=8717	..	..	..	1923

RH. PORPHYROPHYLLUM, *Balf. f. et Forrest.*

Number.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
14293	Mekong—Salwin divide.	13,000 ft.	28° 12′		July 1917
16695	Ka-gwr-pu, Mekong—Salwin divide.	13,000 ft.	28° 40′		June 1918

RH. REPENS, *Balf. f. et Forrest.*

Number.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Farrer					
1558	Chawchi pass.	10,900 ft.			May 1920
Forrest					
13259	Mekong—Salwin divide.	11-12,000 ft.	28° 10′		Sept. 1914
13442	,, ,, ,, ..	..	..	..	Oct. 1914
14011	,, ,, ,,	12-14,000 ft.	28° 20′		June 1917
14138	,, ,, ,,	12-13,000 ft.	27° 40′		July 1917
14534	Ka-gwr-pu, Mekong—Salwin divide.	14,000 ft.	28° 30′		July 1917

RH. REPENS, *Balf. f. et Forrest* (continued).

Number.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
15272	(A fragment of sunk collection).				
16535	Mekong—Salwin divide.	13,000 ft.	28° 12′		July 1917
16678	Tsarong.	..	..	..	July 1918
17425	Yunnan.	..	..	..	Oct. 1918
19203	Salwin—Kiu-chiang divide.		28° 40′	98° 15′	July 1919
19480	Mekong—Salwin divide.		27° 54′	98° 50′	June 1921
19515	Londre pass, Mekong—Salwin divide.	14,000 ft.	28° 12′	98° 40′	June 1921
20226	Salwin—Kiu-chiang divide.	15,000 ft.	28° 24′	98′ 24′	Sept. 1921
21718	W. of Chamatong, Salwin—Kiu-chiang divide.	13-14,000 ft.	28° 18′	98° 27′	June 1922
22673	Tsarong.	..	..	..	Oct. 1922
22922	Salwin—Kiu-chiang divide.	15,000 ft.	28° 48′	98° 15′	Oct. 1922
25524	Mekong—Yangtze divide, East of A-wa.	12-13,000 ft.	27° 25′	99° 18′	July 1924
No number.	.. .. ..	..	..	..	Oct. 1917
Rock					
8788	Mts. above Tseku (=Seed No. 59473=10993).			..	Oct. 1923
9078	,, ,, (=Seed No. 59080=10997).			..	Oct. 1923
9133	,, ,, (=Seed No. 59061=10964).			..	Nov. 1923
9279	,, ,, (=Seed No. 59078=10994).			.	Oct. 1923
10964	,, ,, ..	..	..	..	1923
10993	,, ,, ..	..	..	..	1923
10994	,, ,, ..	..	..	..	1923
10997	,, ,, ..	..	..	..	1923
Ward					
5417	Si-la, Mekong—Salwin div., above Tseku.	14-15,000 ft.			Oct. 1922

A FORM LESS PROSTRATE THAN THE TYPE, AND WITH LARGER LEAVES.

Number.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
19910	Salwin—Kiu-chiang divide.	14,000 ft.	28° 20′	89° 27′	Aug. 1921
20014	,, ,, ,,	14,000 ft.	28° 12′	98° 24′	July 1921

RH. REPENS, *Balf. f. et Forrest*, var. CHAMAEDORON, *Tagg et Forrest.*

Number.	Locality.	Alt.	Lat. N.	Long. E.	Date.
19536	Londre pass, Mekong—Salwin divide.	13,000 ft.	28° 12′	98° 40′	June 1921
21768	Salwin—Kiu-chiang divide, West of Chamatong.	14,500 ft.	28° 18′	98° 27′	June 1922
21916	Salwin—Kiu-chiang divide, N.W. of Si-chi-to.	14-15,000 ft.	28° 45′	98° 18′	June 1922
22706	=21768.	..	..	..	Oct. 1922

RH. REPENS, *Balf. f. et Forrest*, var. CHAMAEDORON, *Tagg et Forrest* (continued).

Number.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Rock.					
9233	Mts. above Tseku (=11042=Seed No. 59103).				Oct. 1923
9278	,, ,, (=11003=Seed No. 59084).				Oct. 1923
11003	,, ,, (=9278=Seed No. 59084).				1923
11042	,, ,, (=9233=Seed No. 59103).				1923

RH. REPENS, *Balf. f. et Forrest*, var. CHAMAE-THOMSONII, *Tagg et Forrest.*

Number.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
21723	Salwin—Kiu-chiang divide, N.W. of Si-chi-to.	14-14,500 ft.	28° 45′	98° 18′	June 1922
21900	Salwin—Kiu-chiang divide, West of Chamatong.	14-15,000 ft.	28° 28′	98° 27′	June 1922
22674	Duplicate of F. 21723. . .	..	..	..	Oct. 1922
22802	,, F. 21900. . .	..	..	..	Oct. 1922
Rock					
8713	Mts. above Tseku, Mekong—Salwin divide. ..	..	..	..	1923
9228	,, ,, ,,	..	..	..	1923
9230	,, ,, ,,	..	..	..	1923
11036	,, ,, ,,	..	..	..	1923
11169	Region of Champutong, Salwin—Irrawady watershed.	..	..	..	1923
11597	Mts. above Tseku, Mekong—Salwin divide.	..	..	..	1923

RH. SERPENS, *Balf. f. et Forrest.*

Number.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
16698	Ka-gwr-pu, Mekong—Salwin divide.	14,000 ft.	28° 40′		July 1918
16700	Doker-la, Mekong—Salwin divide.	14-15,000 ft.	28° 25′		July 1918
17444	Yunnan.	..	..	..	Oct. 1918
19491	Doker-la, Mekong—Salwin divide.	14,000 ft.	28° 20′	98° 42′	June 1921
20037	Salwin—Kiu-chiang div.	15,000 ft.	28° 24′	98° 24′	Aug. 1921

The list includes the numbers of two varieties of RH. REPENS (var. CHAMAEDORON and var. CHAMAE-THOMSONII). The former is in some features intermediate between RH. REPENS and RH. SERPENS, having the leaf shape of RH. REPENS but approaching RH. SERPENS in its indumental characters. The latter has larger leaves than the type, with glaucous bloom on the upper surface recalling the appearance of certain members of the THOMSONII subseries.

THOMSONII SERIES.

SOULIEI SUBSERIES.

Notes on the distribution of the species, with determinations of specimens in the Edinburgh Herbarium.

1. SZECHUAN SPECIES.
   - *A.* RH. SOULIEI, including RH. CORDATUM.
   - *B.* RH. WILLIAMSIANUM.
   - *C.* RH. BONVALOTI.
2. Yunnan and south-east Tibetan species.
   - *A.* RH. WARDII, including RH. GLEOBLASTUM and RH. ORESTERUM.
   - *B.* RH. ASTROCALYX.
   - *C.* RH. CROCEUM, including RH. PRASINOCALYX.
   - *D.* RH. PURALBUM.
   - *E.* RH. LITIENSE.

1. SZECHUAN SPECIES.

A. RH. SOULIEI, *Franch.* (RH. CORDATUM, *Léveillé*).

RH. SOULIEI, the first described (1893) species of the subseries, was discovered by Soulie in the neighbourhood of Tatsienlu in south-western Szechuan, and later in the same locality by Wilson.

It was introduced by Wilson (1903-4), and is now fairly well known in cultivation.

Its outstanding botanical features typify those of the subseries as a whole, viz. :—

1. Leaves ovate or more or less rounded, and more or less cordate.

2. The presence on the leaf stalk of stalked glands which may extend to the leaf margin.

3. The flower is a very open one, cup or bowl shaped.

4. The calyx lobes are conspicuous and beaded at the margin with glands.

5. Glandularness is found also in the glandular flower stalks, and finds full expression in the densely glandular ovary and the style glandular to the tip.

Only in the little known RH. BONVALOTI are the leaves narrow for their length, and in RH. WILLIAMSIANUM only is the flower more tubular than in typical RH. SOULIEI.

While RH. SOULIEI gives its name to the subseries, the centre of distribution of the subseries as a whole appears to be in north-west Yunnan, where there is a free development of yellow-flowered forms akin to RH. WARDII.

The name RH. CORDATUM was founded by Léveillé on very fragmentary material collected by Maire in 1911 on Io-shan. So far as the material available enables one to judge, it is RH. SOULIEI. If the synonymy is correct the distribution of RH. SOULIEI extends south of Tatsienlu, but it should be pointed out that the

area of RH. CORDATUM is far east, and that the flora of the area has close connections with that of south-west Szechuan.

Collectors.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Soulie 793	S.W. Szechuan, Tatsienlu.		30°	102° 10′	1893
Wilson 1222	W. Szechuan, Tatsienlu.	9-11,000 ft.	30°	102° 10′	1908
Maire	E. Yunnan. Summit of Ioshan (RH. CORDATUM of Léveillé).	10-12,000 ft.		104°	1911

B. RH. WILLIAMSIANUM, *Rehd. et Wils.*

This very distinct and in some respects aberrant species in the subseries is rare according to Wilson. Wilson's two gatherings in 1908 (June and October) appear to be the only collections made. Wilson says it is " very local, occurring only in isolated places on the cliffs of Wa-shan."

Collector.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Wilson 1350	W. Szechuan, Wa-shan.	9-10,000 ft.			June 1908

C. RH. BONVALOTI, *Bur. et Franch.*

This species was collected by Prince Henri d'Orléans and Bonvalot in the province of Szechuan, near Tatsienlu. My knowledge of it is limited to what I find in the one rather fragmentary specimen in the Edinburgh Herbarium, supplemented by Bureau and Franchet's description. The flower in all its structural characters is essentially a small RH. SOULIEI, but the flower colour is unknown. The few detached leaves of the Edinburgh specimen are small and narrowly elliptic to oblanceolate. Bureau and Franchet say " Folia . . . oblonga subacuta."

Collectors.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Bonvalot and the Prince d'Orléans	Szechuan about Tatsienlu.		30°	102°	Previous to 1891

2. YUNNAN AND SOUTH-EASTERN TIBETAN SPECIES.

A. RH. WARDII, *W. W. Sm.* (RH. GLEOBLASTUM, *Balf. f. et Forrest* and RH. ORESTERUM, *Balf. f. et Forrest*).

This species is the type of an assemblage of yellow-flowered micro-species centred in north-west Yunnan and south-east Tibet. Typical RH. WARDII finds its full development on the Mekong—Salwin divide and the adjoining high ranges somewhat east of the Mekong. The collections indicate that the home of the species lies between latitude 28° and 28° 30′ N. and longitude 98° 30′ and 99° E. There are, however, in the collections a few specimens which, if correctly determined, extend the distribution east and south-east as far as Muli, and from there north-east towards the Litang.

Microforms of RH. WARDII are RH. GLEOBLASTUM and RH. ORESTERUM, both from the central region of typical RH. WARDII.

Collectors.	Locality.	Alt.	Lat N.	Long. E.	Date.
Forrest					
13315	Mekong—Salwin divide.	12-13,000 ft.	28° 10′	98° 50′	Sept. 1914
13991	Mts. N. of Atuntze.	13,000 ft.	28° 35′		June 1917
14028	Bei-ma-shan.	14,000 ft.	28° 12′	98° 55′	June 1917
14095	Mekong—Salwin divide.	13,000 ft.	28° 12′	98° 50′	June 1917
16493	Muli Mountains.	12,000 ft.	28° 12′	100° 50′	June 1918
16749	Mts. N.E. of Chungtien.	12,000 ft.	28°		July 1918
17022	.. .. ..	..	..	..	Sept. 1918
17351	.. .. ..	..	..	..	Oct. 1918
19212	Salwin—Kiu-chiangdivide.		28° 40′		July 1919
19742	Mekong—Salwin divide.	11,000 ft.	27° 30′	98° 56′	July 1921
19743	,, ,,	11,000 ft.	27° 30′	98° 56′	July 1921
20470	Mts. east of Yung-ning.	11,000 ft.	27° 30′	100° 50′	July 1921
22604	.. .. ..	..	..	..	Oct. 1922
Rock					
5542	Muli.	..	..	..	1922
8930	Mekong Valley. ..	..	..	..	1923
9252	Bei-ma-shan to Atuntze.	..	..	..	1923
9320	N.E. of Yangtze—Mekong divide. ..	..	..	..	1923
9353	Tseku Mekong—Salwin div.	..	..	..	1923
9363	,, ,, ,,	..	..	..	1923
9372	,, ,, ,,	..	..	..	1923
10093	,, ,, ,,	..	..	..	1923
10925	=10093.				
11114	=9252.				
11147	=8930.				
11152	N.E. of Yangtze—Mekong divide.	..	..	..	1923
Soulie					
1008	Mount Sila.	..	..	..	1895
Ward					
529	Doker-la.	13-14,000 ft.			June 1913
586	Ka-gwr-pu.	12-13,000 ft.			June 1913
4170	West flank of the Litang.	12,000 ft.			June 1921
5197	West flank of Muli.	13,000 ft.			June 1922
5320	Kari pass.	11,000 ft.			Aug. 1922

Microform RH. GLEOBLASTUM.

Collector.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
18672	Tsarong. ..	..	..	..	1917
20794	Mekong—Salwin divide.	10-11,000 ft.	27° 56′	98° 45′	1921

Microform Rh. oresterum.

Collectors.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
14190	Ka-gwr-pu, Mekong—Salwin divide.	12,000 ft.	28° 25′		July 1917
14357	Doker-la, Mekong—Salwin divide.	10,000 ft.	28° 20′		July 1917
16715	Ka-gwr-pu, Mekong—Salwin divide.	13,000 ft.	28° 40′		July 1918
17399	.. .. ..	..	..	..	Oct. 1918
19512	Mekong—Salwin divide.	10-11,000 ft.	27° 54′	98° 30′	June 1921
19565	,, ,, ,,	12,000 ft.	27° 54′	98° 50′	1921
19651	Mekong—Yangtze divide.	11,000 ft.	27° 36′	99° 10′	1921
19692	Londre pass, Mekong—Salwin divide.	13,000 ft.	18° 14′	98° 40′	1921
Rock					
9351	Tseku, Mekong—Salwin div.	..	..	..	1923
11355	S.E. of Bei-ma-shan.	..	..	..	1923

B. Rh. astrocalyx, *Balf. f. et Forrest.*

A yellow-flowered species closely akin to but distinguished from typical Rh. Wardii by its reddish star-like calyx. Its home, however, is that of typical Rh. Wardii.

Collector.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
14128	Mekong—Salwin divide.	11,000 ft.	28° 12′	98° 20′	June 1917
17373	No precise locality given.	..	..	..	Oct. 1918
20834	Salwin—Kiu-chiang divide.	12,000 ft.	28° 24′	98° 24′	Oct. 1921

C. Rh. croceum, *Balf. f. et W. W. Sm.* (Rh. prasinocalyx, *Balf. f. et Forrest*).

This must be regarded as an eastward expression of the typical Mekong—Salwin Rh. Wardii. The centre of its distribution is east of longitude 99° 50′, and ranges north about latitude 27° to latitude 28°. Forrest's recent gatherings of a form that is not quite typical (Forrest 25494, 25511, 25978, and 25979) extend the distribution westward in the same latitude to longitude 99° 12′ (west of Wei Hsi). It should be noted that while isolated gatherings of what I assume to be typical Rh. Wardii are recorded from the area here assigned to Rh. croceum, the collections do not give us Rh. croceum from the north-west area that appears to be the home of Rh. Wardii.

Collector.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
10680	Chungtien Plateau.	11-12,000 ft.	27° 55′	99° 50′	July 1913
10428	N.E. of the Yangtze bend.	12,000 ft.	27° 45′	100° 20′	Oct. 1913
11317	,, ,, ,,	11-12,000 ft.	27° 45′	100° 20′	Sept. 1913
11466	,, ,, ,,	12,000 ft.	27° 45′	100° 20′	July 1913

C. RH. CROCEUM, *Balf. f. et W. W. Sm.* (continued).

Collectors.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
12697	West of Fengkow.	14,000 ft.	27° 40′	100° 30′	June 1914
12731	Chungtien Plateau.	13,000 ft.	27° 30′	99° 50′	July 1914
15402	No precise locality given.	..	..	..	Aug. 1919
15412	,, ,, ,,	..	..	..	
17459	,, ,, ,,	..	..	..	Oct. 1918
25494	West of Wei-Hsi.	11,000 ft.	27° 12′	99° 12′	June 1914
25511	,, ,,	12,000 ft.	27° 12′	99° 12′	June 1914
25534	Mekong—Yangtze divide, east of A-Wa.	12,000 ft.	27° 25′	99° 18′	July 1914
25978	=25494.				
25979	=25534.				
Rock					
3983	Yangtze watershed. ..	..	..	..	Oct. 1922
9582	S.W. of Yangtze bend at Shiku.	..	..	..	1923
9592	S.W. Yangtze bend at Shiku.	..	..	..	1923
9777	Yangtze drainage basin.	..	..	..	1923

Microform RH. PRASINOCALYX.

Collectors.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
16511	Mts. N.E. of Chungtien.	12,000 ft.	27° 55′		July 1918
16321	Mts. around Muli.	11-12,000 ft.	28° 12′		June 1918
15396	No precise locality given.				
Rock					
11247	Mt. Lauchunshan, S.W. of Yangtze bend. ..	..	..	..	1923

D. RH. PURALBUM, *Balf. f. et W. W. Sm.*

This species from the same area as RH. CROCEUM resembles that species in many of its features, but is typically pure white. Ward No. 4410 is included in the list, but it should be noted that some plants of the number in cultivation are RH. CROCEUM.

Collectors.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
10616	Mts. N.E. of Yangtze bend.	11,000 ft.	27° 45′	100° 40′	July 1911
12698	Mts. west of Fengkow.	14,000 ft.	27° 45′	100° 50′	June 1914
15417	Yunnan, no precise locality.	..	..	..	Aug. 1917
Ward					
4410	Litang—Yalung divide.	12,000 ft.	28° 15′	101°	July 1914

E. RH. LITIENSE, *Balf. f. et Forrest.*

RH. LITIENSE is a distinctly local species allied to RH. CROCEUM, but apparently confined to an area south-west of the region assigned to RH. CROCEUM and south-east of that in which RH. WARDII is found.

Collectors.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
12969	Mekong—Yangtze divide.	13,000 ft.	27° 40′	99° 20′	Aug. 1914
13922	On the Li-ti-ping.	9-10,000 ft.	27° 12′		June 1917
13548	No locality given. ..	..	..	..	Oct. 1914
15439	,, ,,	..	..	..	Nov. 1917
17366	,, ,,	..	..	..	Oct. 1918
19467	Li-ti-ping, Mekong—Yangtze divide.	11,500 ft.	27° 12′	99° 38′	June 1921
21017	,, ,,	12,000 ft.	27° 12′	99° 38′	Nov. 1921
21551	Chienchuan—Mekong div.	11,000 ft.	26° 40′	99° 40′	July 1922
21954	,, ,, ,,	11-12,000 ft.	26° 35′	99° 45′	July 1922
22018	,, ,, ,,	10-11,000 ft.	26° 30′	99° 40′	Aug. 1922
23295	,, ,, ,,	11,000 ft.	26° 30′	99° 30′	June 1923
Rock					
8947	Li-ti-ping ranges.				
8965	,, ,,				
9399	,, ,,				
11137	=8947.				
11389	Li-ti-ping range, Mekong—Yangtze divide.				
11567	,, ,, ,,				

NOTE.—It will be noted that three of the species constituting the Souliei subseries as given in the Society's "Tentative List of Rhododendrons in their Series" are omitted in the list of species given above. RH. AXIUM is left out because it seems to have more affinity with the members of the Selense subseries than with RH. SOULIEI and its associates. RH. ESETULOSUM in its general aspect recalls RH. SETIFERUM, and it seems unadvisable to have them in different subseries. These two species, along with RH. MANOPEPLUM, RH. JUCUNDUM, and RH. CALVESCENS, form a somewhat aberrant section of the Selense subseries, having affinity also with the Taliense series in spite of the absence of a dense felt. RH. EUCALLUM is a microform of RH. ERYTHROCALYX. It finds its true relationship therefore with those members of the Selense subseries having large leaves cordate at the base.

RHODODENDRONS OF THE MARTINIANUM SUBSERIES.

An enumeration of the specimens in the Herbarium of the Royal Botanic Garden, Edinburgh.

RH. MARTINIANUM, *Balf. f. et Forrest.*

Collector.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Farrer					
1540	Nyitadi, Chawji pass.	10,500 ft.			May 1920
1650	Crags of Shing-Hong.	10,000 ft.			June 1920

RH. MARTINIANUM, *Balf. f. et Forrest* (continued).

Collectors.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
13301	Mekong—Salwin divide.	11,000 ft.	28° 10′		Sept. 1914
13439	Duplicate in fruit of Forrest No. 13301	..	..	..	Oct. 1914
13949	Mekong—Salwin divide.	12,000 ft.	28° 12′		June 1917
17421	Duplicate in fruit of Forrest No. 13949	..	..	..	Oct. 1918
18666	Duplicate of 1917 (13949).	..	..	..	1919
19540	Mekong—Salwin divide.	12,000 ft.	27° 54′	98° 30′	June 1921
20246	Salwin—Kiu-chiang divide.	10,000 ft.	28° 24′	98° 24′	Sept. 1921
20826	,, ,, ,,	13-14,000 ft.	28° 24′	98° 24′	Oct. 1921
20960	Mekong—Salwin divide.	10-11,000 ft.	28°	98° 42′	Oct. 1921
21695	Salwin—Kiu-chiang div., N.W. of Si-chi-to.	12,000 ft.	28° 40′	98° 18′	June 1922
21775	,, ,, ,,	10-11,000 ft.	28° 40′	98° 18′	June 1922
22939	S.E. Tibet, Tsarong, dup. in fruit of 21695. ..	..	..	..	Oct. 1922
22940	Tsarong, dup. of 21775.	..	..	..	Oct. 1922
Ward					
5434	Gompa-La.	13,000 ft.			Oct. 1922
5486	Taru Tra pass. ..	11,000 ft.			Nov. 1922

RH. MARTINIANUM, white form.

Collector.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
25614	Salwin—Kiu-chiang divide.	11,000 ft.	27° 5′	98° 35′	July 1924
25811	N.W. Yunnan=25614.	11,000 ft.	27° 5′	98° 35′	Oct. 1924

RH. EURYSIPHON, *Tagg et Forrest.*

Collector.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
21694	Salwin—Kiu-chiang divide, N.W. of Si-chi-to.	13,000 ft.	28° 40′	98° 18′	June 1922
22938	Duplicate of 21694 in fruit, Tsarong.	..	..	..	Oct. 1922

RH. EURYSIPHON, allied forms of.

Collector.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
21708	S.E. Tibet, Tsarong, Salwin—Kiu-chiang divide, W. Si-K'ai.	11,000 ft.	27° 46′	98° 33′	June 1922
21781	Salwin—Kiu-chiang divide, W. of Si-K'ai.	11,000 ft.	27° 46′	98° 33′	June 1922

RH. EURYSIPHON, allied forms of (continued).

Collector.	Locality.	Alt.	Lat. N.	Long. E.	Date.
Forrest					
21787	Salwin—Kiu-chiang divide, N.W. of Si-chi-to.	11,000 ft.	28° 45′	98° 18′	June 1922
22610	Tsarong, duplicate of 21708 in fruit.		..	..	Oct. 1922
22611	Dup. of 21787 in fruit.	..	..	..	Oct. 1922
22619	Dup. of 21781 in fruit.	..	..	..	Oct. 1922

RH. EURYSIPHON is a shrub of 3 to 5 feet, with somewhat rigid foliage. It is certainly allied to RH. MARTINIANUM, but in some of its forms it recalls a small-leaved RH. STEWARTIANUM. The truss is an open umbel of 3 to 5 flowers, which are broadly campanulate, creamy white or rose, more or less flushed magenta, and copiously marked with crimson spots.

H. F. TAGG.

EDINBURGH, 1927.

THE FOLLOWING NOTE HAS BEEN CONTRIBUTED BY MR. A. D. COTTON, F.L.S., OF THE ROYAL BOTANIC GARDEN, KEW.

FLOWER-BUD FORMATION IN RHODODENDRONS.

It was generally assumed that the severe frost at the end of April 1927 would, by destroying the young shoots, result in a very great reduction in the amount of Rhododendron bloom in 1928, and in some varieties in its complete absence. This prediction will to a certain extent hold good. There are, however, a few exceptions, and the case of a fairly large shrub flowering for the first time after having been cut back by frost appeared to be sufficiently interesting to be worth attention and study.

The tree in question is believed to be a hybrid some thirty-five years old which had been grown successfully in a tub under glass at Kew, but owing to its disinclination to flower was planted out in a border five years ago. The tree has since been well mulched in summer, and watered when required, and it has made moderate but not luxuriant growth. The young shoots were some 2 or 3 inches long when they were killed by frost in April 1927, and the new growth which developed is very short. In spite of this, however, it has produced over fifty flower-buds.

On inspection it was found that the flower-buds are mainly confined to the lower branches, and that in each case the new growth was exceedingly short, consisting of four or five leaves immediately above those of 1926. Very little growth developed until June, and the bulk of it was probably not made till after the rains at the end of that month. It would appear therefore that flower-bud development was not due to early formation and ripening of the buds during the dry spell of May and June.

The occurrence of unusual flower-formation on plants which have received a sudden check is a phenomenon well known to gardeners, and various views are held as to the causes responsible. Although such factors as ripening, pruning, and sudden checks are undoubtedly concerned in the process of flower-bud formation, it is obvious that fundamentally it is a matter of nutrition. In considering food supplies it should be remembered that though the tree obtains its water and nutrient salts from the soil, it also obtains a very essential part from the air by means of its leaves, viz. the carbon supply from which it builds up its carbohydrates. It has been shown recently that the factors governing the production of flower- and leaf-bud respectively depend not so much on the quantity of nitrogen and other compounds taken from the soil as on the relation between these and the organic supplies manufactured by the leaves.

The plants which have been experimented with in this connection have mostly been fruit trees, and a useful summary by H. D. Hooker of the investigations and conclusions drawn is to be found in the *Journal of Pomology* (Vol. v. pp. 34-42). It is claimed that fruitfulness is correlated with a certain ratio between the carbohydrate and nitrogen compounds in shoots, and that the data indicate that flower-bud differentiation is invariably associated with carbo-

hydrate accumulation in the vicinity of the bud previous to the time of its differentiation. In the apple and peach starch storage forms a striking index of this accumulation. The starch nitrogen relations characteristic of flower-bud and leaf-bud differentiation respectively were found on the same tree, showing that separate parts of a plant may act independently, and that flower-bud formation is associated with local carbohydrate-nitrogen ratios.

Professor B. T. P. Barker, Director of the Horticultural Research Station at Long Ashton, Bristol, has drawn my attention to the case of a young apple tree at Long Ashton which behaved comparably to the Rhododendron in question. The tree, which had been temporarily " laid in " during the winter, was planted out as an experiment at the end of May some years ago. A hot dry spell followed, and the tree lost all its leaves. During July a number of dormant buds developed, but the growth made was very short, practically nothing but a rosette of leaves. In spite of this, however, many of the buds became converted into flower-buds. The following year the tree developed normally, and since that time the growth has been normal except that the lower part of the tree carries more fruit spurs than is usual in the variety. Professor Barker remarks that in the case of fruit trees when lateral buds start growth (as a result of a check to the growth of the main shoots) " if conditions are such that these new lateral growths are restricted in length so that the leaves formed are arranged as a close rosette enclosing a terminal bud, the latter is placed under conditions of nutrition favouring its conversion into a flower-bud. Looking at the matter in terms of the carbohydrate nitrogen ratio hypothesis, the arrangement of a rosette of actively assimilating leaves concentrating their carbohydrate products on the central bud of the spur is one which should lead to the ratio being a relatively high one for carbohydrate, and this is the condition regarded as important for the conversion of a vegetative bud to a flower-bud."

Comparing the Rhododendron (evergreen) and the apple (deciduous), we see that in both cases the growth of the main shoots was checked, in one by frost and in the other by late transplanting and drought. In both, as a result of the cessation of terminal growth, dormant lateral buds subsequently developed which were of very limited growth, and in both a number of flower-buds were formed. In the Rhododendron the new leaves of 1927 were few and small, but owing to its evergreen habit two sets of leaves are present, and the flower-buds are mainly on the lower shoots which made the least growth, so that the two rosettes of leaves are in very close proximity.

Similar cases have since been observed at Kew, notably in a plant of Rh. BARBATUM.[1] The young shoots were killed by frost, and a number of flower-buds have formed this autumn in the lower branches. In Rh. BARBATUM the leaves are usually in rosettes of 8, and the flower-buds this year are without exception found only on shoots which have made very short growth, and are therefore accompanied by two rosettes of leaves close together. The total area of leaf tissue immediately below the flower-bud is consequently relatively large.

It appears, therefore, that the presence of ample leaf tissue in the immediate vicinity of the terminal bud favours the formation of flowers, and thus provides

[1] Since this note was written the plant has been described by Mr. J. Hutchinson as Rh. IMBERBE, sp. nov. See *Gard. Chron.*, March 24, 1928, pp. 212-14.

an explanation of the blossoming of certain varieties which made very short growth after the frost and the absence of flowers on other trees where longer (but not normal) growth was produced.

A cursory attempt has been made to test the carbohydrate nitrogen ratio theory, as indicated by the presence of ample leaf tissue immediately below the bud, with Rhododendrons in general. In estimating the amount of leaf tissue it is clear that the size, number, and closeness together of the leaves must be considered, and for efficiency their period of formation, since very late growth is almost useless. In some species such as RH. DECORUM and many of the small-leaved species there is no definite rosette, and it is obvious that the carbohydrate nitrogen ratio for flowering is otherwise provided. In the very free-flowering species and in most hybrids the ratio for flowering, provided normal leaf growth is made, appears to exist annually in almost every shoot. But in a large number of cases especially in the large-leaved species, the theory provided a very useful key to the explanation of flower-bud production, and has a definite bearing on alternate year flowering and other phenomena familiar to gardeners.

A. D. COTTON.

KEW, *December* 4, 1927.

THE GARDEN AT ROSTREVOR HOUSE.

In the notes for 1926 we gave a short memoir of the late Sir John Ross of Bladensburg and his work at Rostrevor House. The present contribution is an attempt to enumerate a selection of the more interesting plants in the collection.

A difficulty presents itself to the writers, whether to make the list an alphabetical one or such an one as will be a useful guide to future visitors to Rostrevor House, where the plants mentioned may be found. We have adopted the latter system.

In this article we have followed the winding path that leads from the entrance gate of " Fairyland " to the summit of the hill, mentioning the plants in the order met with as far as possible.

The dimensions were taken with due care after a personal inspection of the specimens to which reference is made shortly after Sir John's death in 1926.

No attempt is made to give a complete list of the species of Rhododendrons in the collection, which is fully representative of the genus ; we content ourselves with mentioning those which may be considered both choice and interesting.

Owing to the system that we have adopted in writing this article the Rhododendrons do not appear in one group, as they are planted amongst the trees and shrubs.

Fairy Hill.

Cup cashmeriana, fruiting freely, good height.
Berberis, representative collection.
Athrotaxis selaginoides, 15 feet.
Hoheria populnea type, large specimen.
Juniperus bermudiana, 8 feet.
Magnolia Kobus, 25 feet.
Rubus lineatus, growing freely in open.
Athrotaxis laxifolia, remarkable for golden tint in young growth, 25 feet.
Athrotaxis cupressoides, 30 feet.
Tsuga Brunoniana, 24′ × 30′, fruits freely.
Leptospermums, in variety, are remarkable for freedom in growth and fruit.
Trochodendron aralioides, finest specimen of this plant in Ireland.
Hypericum species, a remarkable plant sent from Burma by Mr. Rogers, I.W.F. Dept. ; flowers cup-shaped, deep yellow, large, of fine substance.
Myrtus obcordata, 9 feet high, flowered this season.
Cordyline indivisa, 20 feet.
Tetraclinis articulata, fine spreading bush, 15′ × 12′.
Olearia insignis, a fine specimen.
Olearia odorata, not often seen ; in flower.
Cercidiphyllum japonicum, clean stem, 25 feet.
Embothrium coccineum forma, with deep orange flowers, raised from seed. Sir John Ross considered this to be distinct species.

Juniperus pachyphlaea, 14 feet.
Corokia virgata, conspicuous in fruit.
Myrsine divaricata, rare plant, beautiful small white flowers.
Torreya californica, good specimen, healthy, furnished to base.
Juniperus recurva, 24 feet.
Embothrium coccineum forma, long ribbon-like leaves, glaucous below, undulated, 12 inches long, this plant flowers a fortnight earlier than the type.
Pistacia Terebinthus.
Pistacia chinensis.
Pittosporum rigidum.
Magnolia macrophylla, 20 feet high, 15 feet through, flowers regularly.
Buddleia Colvilei, Howth Castle variety, flowers deep red colour.
Clethra canescens, in full flower.
Umbellularia (*Oreodaphne*) *californica*, big specimen in the open.
Drimys aromatica, 25 feet high, now fighting battle for its life with *Castanopsis chrysophylla*, a magnificent specimen densely furnished to the ground, 30 feet.
Magnolia hypoleuca, 35 feet.
Asimina triloba.
Betula Maximowiczii, 55 feet, the best specimen in Ireland.
Coprosma propinqua.
Pinus leiophylla, absolutely hardy, 30 feet, well-feathered to the ground.
A group of species of *Eucalyptus* on top of the hill—a remarkable group, 30 to 70 feet high, including some exceptionally fine specimens, *E. verruculosa* in full flower, flanked by dense growth of bamboos from the pigmy *Arundinaria Hindsii* to giant *Phyllostachys fastuosa*, and growing nearby are tall plants of *Cordyline Banksii.*
In more exposed position a collection of *Coniferæ*, including the new Chinese *Pinus yunnanensis Picea Balfouriana* var. *purpurea Picea.*
Breweriana, a fine young specimen.
Pinus contorta.
Abies Faxoniana, 15 feet.
Picea asperata, *Pinus ponderosa.*
Tsuga sinensis, 20 feet.
Following the path farther on one comes on *Nothofagus fusca*, 16 feet.
Eucryphia Billardieri, 25 feet high, in full flower, delicate white cup-shaped flowers, slightly pendant, crimson anthers, small narrow leaves, glaucous underneath, one of the finest specimens at Rostrevor.
Buddleia Farreri, *B. Forrestii*, *B. Fallowiana*, *B. auriculata*, and others, all quite hardy.
Lomatia longifolia.
Ilex corallina, 9 feet high.
Eupatorium Weinmanniana, a dense bush 15 feet.
Styrax japonica.
Pittosporum eugenioides variagata, 20 feet.
Olearia avicenniaefolia, 10′ × 15′.
Itea ilicifolia, 6 feet high, a waterfall of long pale green tassels.
Hydrangea vestita.
Adenocarpus frankenioides.

Prunus ilicifolia.
Rh. decorum, an original plant from Vilmorin, 18 feet, blooms late.
Bowkeria triphylla (Natal), pure white flower of thick waxy substance.
Laurelia serratifolia, 25 feet high.
Acradenia Franklinii, 7 feet high.
Olearia Lyallii.
Weinmannia trichosperma, 14 feet.
Lomatia ferruginea, 25 feet, self-sown seedlings surround this plant.
Lomatia tinctoria (Australia).
Weinmannia racemosa, 10 feet high.
Cytisus Hildebrandtii, 15 feet high.
Callistemon lanceolatus.
Panax Henryi.
Pittosporum bicolor, 25 feet, covered with fruit.
Saxegothea conspicua, 15 feet.
Berberidopsis corallina, spreading freely though a holly.
Metrosideros floribunda.
Philesia buxifolia.
Rhaphithamnus cyanocarpus, 10 feet high.
Camellia cuspidata.
Rh. Roylei, 12′×10′.
Anopterus glandulosus.
Olearia Fosteri, 30 feet.
Distylum racemosum.
Rh. fragrantissima.
Rh. Shilsonii.
Restio subverticillatus, 15 feet across.
Vaccinium arctostaphylos, a remarkable plant with purple fruit.
Eucryphia pinnatifolia, 30 feet.
Gaultheria Veitchiana, bunches of pale blue berries.
Magnolia acuminata, splendid specimen, 50 feet high, stem 4 feet.
Bauhinia yunnanense.
Stuartia pseudo-camellia.
Dicksonia antarctica, untouched.
Acacia verticillata.
A. melanoxylon, 40 feet.
Astelia Banksii, *A. montana.*
Rh. Schlippenbachii.
Xanthoxylon piperinum.
Brachyglottis repanda, 10 feet.
Hypericum triflorum, flowers 4 inches across.
Melicytus ramiflorus.
Senecio Hectori, 14 to 17 feet, covered with flower.
Hakea pugioniformis, fruits freely and produces fertile seed.
Coprosma lucida, brilliant orange berries.
C. Cunninghamii, *C. robusta*, all of which berry well.
Carpodetus serratus.
Hybrid olearias.
Pittosporum patulum.

Garrya Wrightii, a rare plant.
Magnolia salicifolia.
Azara microphylla, 36 feet high.
Pittosporum eugenioides, 46 feet.
Maytenus Boaria.
Libocedrus doniana.
Coprosma petriei, a sheet of green covering a rock, 16 feet across, 16 feet long, like grass.
Rh. grande, a fine plant, over fence by old tea-house.
Hamamelis mollis, 16 feet.
Callitris oblonga, 10 feet.
Juniperus Cedrus, 30 feet high.
Metrosideros lucida.
Dacrydium cupressinum, 12 feet.
Tricuspidaria dependens.
Ilex fragilis.
Disanthus cercidifolius, best plant in Ireland, with clean stem, brilliant autumn foliage.
Nothofagus obliqua, 30 feet.
Acer reticulata, a fine healthy tree, uninjured by season's frost.
Puya chilensis, *Puya Andina*, and other species, fine and striking.
Prostanthera lasianthos, a magnificent bush covered with violet and white flowers.
Colquhounia vestita, a fine shrub, flowers freely, orange-red flowers.
Laurus camphora.
Keteleeria Fortunei, 15 feet.
Ceanothus arborea, 12 feet.
Collections of *rosa* species, including *Rosa longicuspis.*
Rosa microphylla.
Rh. discolor, 12 feet.
Cupressus formosensis, 14 feet.
Rh. spinuliferum, 7′ × 7′.
Plagianthus betulinus.
A series of Californian evergreen oaks.
Nothofagus Cunninghamii, 30 feet.
Group of Rhododendrons, *Triflorum* series, *yunnanense*, *Davidsonianum.*
Nothofagus Menziesii, 20 feet.
Nothofagus procera.
Quercus alnifolia.
Guevina avellana, 15 feet, from which seedlings have been grown.
Rh. Ririei.
Rh. ficto-lacteum, distinct form, 11 feet.
Rh. diaprepes, vigorous, 9 feet high.
Rh. longesquamatum, 3 feet 6 inches.
Rh. fulvum, 10 feet.
Rh. sino-grande, 9 feet, well-furnished.
Rh. Hunnewellianum.
Rh. ambiguum.
Rh. rhombicum.

Rh. Lindleyi, outdoors for many years, 9 feet high.
Group of good forms of *Rh. Augustinii.*
Rh. barbatum Smithii, 9 feet, very dense bush form.
Rh. zaleucum.
Rh. yanthinum.
Rh. neriiflorum.
Rh. rhantum.
Rh. Fargesii.
Rh. oreodoxa.
Sorbus megalophylla, good specimen.
Fagus sylvatica macrophylla.
Quercus incana.
Platanus cuneata.
Thuya japonica.
Pyrus vestita.
Abies concolor violacea.
Pinus ponderosa.
Pseuda-Tsuga macrocarpa, rare species, good specimen.
Ilex insignis, twenty-five years, in open, 16 feet.
Gaultheria Griffithii, a Himalayan plant.
Rh. auriculatum.
Rh. eriogynum.
Rh. facetum, Rh. Griersonianum.
Rh. crassum, Rh. aemulorum.
Rh. protistum, unprotected.
Rh. arizelum, Rh. Mackenzianum, unprotected.
Rh. sino-Nuttallii, Rh. megacalyx.
Rh. niphargum, Rh. apodectum.
Rh. Kyawii (Farrer), unprotected.
Rh. desquamatum, Rh. habrotrichum.
Rh. Souliei, Rh. Falconeri, Rh. callimorphum.
Taiwania cryptomerioides.
Tsuga yunnanensis, Picea Albertiana.
Acacia Dietrichiana.
Acacia decurrens.
Panax arborea, 18′×18′.
Aralia quinquefolia.
Aralia trifolia.

Leaving the hill and going to the avenue, one finds on the right many good specimen conifers and other plants—*Abies nobilis, Cupressus macrocarpa* of fine type, *Picea pungens glauca, Cedrus atlantica glauca, Golden Lawson, Sciadopitys verticillata, Picea polita.*
Nothofagus betuloides, 18 feet.
Abies Pinsapo, 40 feet.
Acer griseum, very fine specimen. *Abies Webbiana.*
Quercus chrysolepis, a rare plant, good specimen.
Q. cuspidata, a fine specimen bearing fruits.
Pinus Ayacahuite, finest plant in Ireland, 75 feet.

Cornus Koussa.
Podocarpus totara.
Abies bracteata, 35 feet.
Tsuga canadensis var. *parvifolia.*
Cupressus pisifera var. *squarrosa sulphurea*, a wonderful specimen.
Podocarpus chilinus, *Podocarpus alpinus*, 10 feet through.
Parrotia persica.
Juniperus drupacea, 15 feet.
Cupressus thyoides, 30 feet.
Fitzroya patagonica, 30 feet.
Nothofagus cliffortioides, 30 feet.
Prumnopitys elegans, 35 feet.
Cupressus lusitanica glauca, fine old specimen.
Stuartia monodelpha.
Hovenia dulcia.
Cupressus obtusa nana aurea.
Cupressus pisifera var. *filifera aurea*, a fine specimen.

HEADFORT.
F. W. MOORE.

September, 1927.

NOTES FROM WAKEHURST.

If the season of 1926 was a record one for the profusion with which Rhododendrons flowered, that of 1927 was as remarkable the other way.

Whether the cause is to be attributed to weather conditions or to some unknown cycle in the life history of the genus, one cannot say. All we know is that two good flowering seasons rarely follow one another.

I do not know whether the experience of others agrees with mine, but I have observed that hybrids flower much more regularly than species, especially the older hybrids. The failures to flower occur chiefly among the larger-leaved species, such as SUCHUENENSE, CALOPHYTUM, etc., and even more markedly in FALCONERI, GRANDE, and so on.

I have no first flowering to record at Wakehurst this year. A frost on April 27 did considerable damage, but the effect was not so disastrous as might have been expected. The summer was a very wet one, and perhaps owing to this growth has been luxuriant.

As I write, at the end of December, we are experiencing the effects of the heaviest fall of snow and most severe blizzard of recent years. Not since the winter of 1916-17 has there been anything so trying. It is impossible to say yet what has succumbed to the cold, but the disasters wrought by the snow are evident enough, large branches having been broken off many of the larger specimens.

Let us hope that 1928 may be a more propitious year for Rhododendrons.

G. W. E. LODER.

WAKEHURST PLACE, 1927.

THE LATE MR. RICHARD GILL AND HIS RHODODENDRON HYBRIDS.

I am told that it might be of interest to the readers of the *Notes* if a few words were written as to the work of the late Richard Gill, that skilful gardener who has given us so many first-class hybrid Rhododendrons.

Richard Gill was born nearly eighty years ago. He began his career in the garden and acquired his knowledge of plants by handling them rather than from books.

He was for many years head gardener to Mrs. Shilson at Tremough, near Penryn in Cornwall, a garden where Rhododendrons introduced from the Himalayas were early planted and throve to perfection. In later life Mr. Gill, in conjunction with his son (already a nurseryman) leased the old walled garden at Tremough from the owners, and devoted himself to a nursery business which was recently, on the ending of the lease, transferred to a site nearby. Thus Gill's hybrids have been widely distributed in our gardens, and as on his death this year his business descended to a son, with a grandson to follow, it is pleasant to think that in all probability his hybrids will continue to be accessible to those who wish to grow them.

One of Gill's earliest hybrids was the well-known RH. SHILSONII, named, of course, in honour of the owner of Tremough. This was a hybrid between RH. BARBATUM and RH. THOMSONII. Although usually a thin grower it is of fine upstanding habit, with leaves intermediate between those of the parents and with the beautiful bark of RH. BARBATUM.

It has a reputation, I think deserved, of not being the easiest of plants to grow, and undoubtedly Sir Edmund Loder's reverse cross has the better constitution, although Gill's hybrid has, as a rule, the finer flowers. The cross, however, is a fairly hardy one, and the flower-buds are rarely injured by winter frosts.

Probably Gill's best known and most successful hybrid was that between his very fine form of RH. AUCKLANDII and a very good blood-red ARBOREUM, of which there are several large specimens at Tregothan to-day.

The plants he raised from this cross vary fairly widely, and, as numbers of the original seedlings were distributed, different individual plants received different names.

Thus this cross produced in our gardens GILL'S TRIUMPH, BEAUTY OF TREMOUGH, GLORY OF PENJERRICK, TREBIANA, TREBAH GEM, GLORY OF LEONARDSLEE, GILLII, GILL'S GOLIATH, and other named varieties. It was not a new hybrid, as the first, and it is said the best, of this cross has been made at Heligan and named JOHN TREMAYNE, and in another form MRS. BABINGTON. The same cross was also made at Tregrehan (CARLYON'S CROSS) at Scorrier, (SCORRIER PINK), and at Caerhays, but as these hybrids were in private hands they were but little distributed, so that it is Gill's cross which is chiefly found in gardens.

It is a tall, very vigorous plant, retaining in some cases the tree habit of ARBOREUM rather than the bush habit of AUCKLANDII. Its flowers vary from self rose-red (GILL'S TRIUMPH and GLORY OF PENJERRICK) to a white flushed and feathered with pink (BEAUTY OF TREMOUGH and TREBIANA). They are very large (5 inches across), in loose trusses, of rather flimsy petal, and the bud is always deeper in colour than the expanded flower, a factor which adds very greatly to the beauty of the plant in bloom. Gill appears to have kept good forms of GILL'S TRIUMPH, BEAUTY OF TREMOUGH, GILLII, and GILL'S GOLIATH, and to have propagated these by layers and, in recent years, by grafts. It is these layers that one sees principally in gardens, although there are old-established plants of the original seedlings at Trebah, Penjerrick, Leonardslee, Anstie Grange, and elsewhere. The cross is only hardy in southern and western counties, and even there the flower-buds are apt to be killed by winter frosts.

Individuals vary somewhat in their hardiness, GLORY OF LEONARDSLEE and GILL'S TRIUMPH being, in my experience, the hardiest, and GILL'S GOLIATH one of the most tender.

The flowers, however, are so beautiful when they come to perfection that the plant is well worth growing even if only a proportion of the flower-buds survive the winter frosts.

Gill's other hybrids are less well known and less widely distributed than these two. One of the finest in my opinion is one of which I believe only a very few plants were raised, and which was sent both to Exbury and to Bodnant as "CRIMSON SEEDLING." Mr. Lionel de Rothschild flowered this and obtained an Award of Merit for it at the Chelsea Show in 1924, it being named by him "COALITION." It is a free-growing, upstanding plant, with deep green leathery leaves and large waxy deep blood-red flowers of fine form. It has no stamens. If one had to guess at the parentage one would say that this might very possibly be similar to that of BARCLAYI, namely, one of the GILL'S TRIUMPH set crossed with THOMSONII, or perhaps in this case with SHILSONII. Against this theory must be put the fact that it seems to be quite a hardy plant, which BARCLAYI is not.

Another fine set of seedlings raised by Gill were his "AUCKLANDII MOTTLED" crosses. He distributed many of these seedlings, but one of the best of them he kept and named "WILLIAM WATSON." They are good hardy plants, with shiny, deep green leaves, upstanding in habit, with a pale pink flower striped crimson on the reverse, reminding one somewhat of Mangles' DAWN'S DELIGHT, but flowering much earlier.

Another good cross was his "LUSCOMBEI HYBRID." This, I believe, was AUCKLANDII ROSEUM SUPERBUM crossed with LUSCOMBE'S SCARLET. The flowers of these hybrids vary much: some are quite first-class, some are poor, but the best ones compare quite favourably with Sir Edmund Loder's THOMSONII-FORTUNEI hybrids. The leaves have less of the THOMSONII in them than has the latter cross. The flowers are rather smaller, but the truss is much better filled.

A cross which has been widely distributed is KEWENSE × THOMSONII. This can hardly be distinguished from Sir Edmund Loder's FORTUNEI × THOMSONII,

and it is possible that Gill may be in error in thinking that he used KEWENSE and not FORTUNEI. The best examples of Gill's cross are a trifle larger in flower than the Leonardslee ones. On the other hand, there are one or two of the Leonardslee plants that have a very pleasing distribution of the colour, with a deeper edge to the petals. This variation I have not noticed in any of Gill's seedlings of this cross. Good examples of this cross have been named "RICHARD GILL" and "MRS. RICHARD GILL."

Gill's "ROSE PERFECTION" is a most effective hardy shrub. The dull green, somewhat rounded leaves betray a strain of THOMSONII in it, and it is reputed to be AUCKLANDII × ASCOT BRILLIANT. It has a flower that varies in different plants from rose-pink to scarlet, and is unspotted, smooth-edged, and in good trusses effectively held. This is a noteworthy plant in any company.

"GILL'S CRIMSON," with flowers of a fine "SOLDIER'S COAT" scarlet, is a really good thing, quite unique in colour. It has the upright habit of an ARBOREUM, dull green leaves, with a matt surface, and is free-flowering. This is a rare plant, not often seen in gardens. The parentage is unknown.

Gill also crossed KEWENSE with his good form of AUCKLANDII, and distributed the progeny as "KEWENSE HYBRID." This has a very large flower, up to 5½ inches across, but by reason of its pale colour and lack of substance it falls a good deal behind RH. LODERI. It flowers a week earlier than the latter, and is not far behind it in size.

There was also a cross, or an attempted cross, between FORTUNEI and AUCKLANDII, which Gill sent out as "LODERI UNPROVED" before it had flowered. When it did flower most of the plants proved to be an exceptionally fine form of FORTUNEI—indeed a form, as far as I know, quite unrivalled elsewhere. Of a batch of seedlings from a second crossing were some which seem to have had AUCKLANDII blood in them.

Fine though some of these seedlings are, again none of them quite rival the true RH. LODERI in beauty.

Lastly, I must mention Gill's seedling ARBOREUMS. He raised a great number of these, possibly two to three thousand. They evidently did not sell freely as young plants, and have mostly been disposed of at about fifteen years or so of age, when they were of flowering size. Some were pure ARBOREUM, the pink shades predominating; many were crossed with BARBATUM, making an exceptionally fine vigorous strain with rose-pink flowers, first-class plants in every way. This cross is very fully described in Millais's *Rhododendrons*, Vol. II.

The most outstanding of all Gill's ARBOREUM seedlings was his ARBOREUM var. MRS. HENRY SHILSON, one of an earlier generation of seedlings, a plant of fine tree shape, with long leaves with a silver back, and very large, loose flowers appearing in batches from the earliest spring. It is apt to grow too early, but its remarkable vigour enables it to make strong new shoots when its first growth is cut, and its bark does not, in my experience, suffer from splitting even in the severest weather. Whether this is some hybrid, or merely an exceptionally fine variety of the species, I know not. One or two plants from the same seed pod are now at Bulstrode Park.

Gill raised many hybrids beyond those I have mentioned, many of them, however, referable to the crosses I have named. Others have doubtless some different parentage, but Gill was not very methodical in recording his crosses; indeed, the importance of this was probably not recognised when he first started his work, and undoubtedly the parentage of some of his named varieties can only be guessed.

GLORIOSA, which recently received an Award of Merit, is, however, said to be AUCKLANDII ROSEUM SUPERBUM × PINK PEARL; the truss is one of exceptional size. BERNARD GILL is KINGIANUM × AUCKLANDII ROSEUM SUPERBUM, and ELSPETH, with a magnificent white truss, is AUCKLANDII ROSEUM SUPERBUM × WHITE PEARL.

Undoubtedly the fact that he possessed an exceptionally fine variety of RH. AUCKLANDII contributed much to the success of Gill's work in hybridisation.

RH. AUCKLANDII ROSEUM SUPERBUM, as he called the variety, was sent to him by a friend of Mrs. Shilson, who had noted his interest in Rhododendrons. He believed it to have been a graft or a layer from a large plant in the Italian Lakes. It is thought by some that this is the true RH. GRIFFITHIANUM; but, however this may be, its merits as a parent are undoubted. Gill was, I understand, accustomed to use this plant as the seed parent, not as the pollen parent of his crosses.

A plant went from Tremough to Tittenhurst many years ago, and was the parent of many of Mr. Lowinsky's fine hybrids, such as "The Don" set. This plant, now of great size, has recently been moved to Muncaster Castle.

Originally Gill propagated his plants almost entirely from layers, and as this was a slow process a good variety was often sold out and even the stock plant was disposed of. Since the war, however, Messrs. Gill have started grafting their best hybrids on a large scale, and they will doubtless be yet more widely distributed.

Richard Gill had a real love of his plants, and was a most excellent judge of the merits of a flower.

Although he was a keen man of business, one always felt in going round his nursery with him that one was talking to a gardener rather than to a nurseryman. Horticulture suffers a severe loss in his death.

THE HARDINESS OF RHODODENDRONS OF THE IRRORATUM SERIES.

The frost of December 1927, which with us in North Wales ranged from 10 to 16 degrees for six consecutive nights, and which recurred a little later for another four nights to the extent of 10 degrees, gave an opportunity for observing the hardiness of several of the newly introduced groups of Rhododendrons, and among them that of the Irroratum series.

Some thirty of Forrest's seed numbers of the Irroratum series collected in 1925 have been raised, but of course most of these have still the shelter of frames or other coverings. Certain plants of five of these seed numbers were, however, planted out quite in the open. These were numbers F 27416, 26797 (collected at 10,000 feet), 27703, 27706, and 27757, all Irroratums.

They were quite untouched by the frost.

Although the frost was not so severe as that which future winters are sure to bring, yet it must be remembered that the plants were only some eighteen months from seed, that they were planted out as recently as August and September, having been previously grown somewhat too closely in pans in a heated house, and that they were therefore not at all in a good condition to stand severe or prolonged frost.

The comparative hardiness of these Irroratums was somewhat unexpected, as most of the plants of this group are recorded as growing at from 9000 to 10,000 feet elevation near the Burmese eastern frontier; moreover, we have had experience of the tenderness of other plants of this series collected by Farrer.

Forrest's Irroratums, however, seem nearer akin to the EPONYMOUS hero of the series—Wilson's original plant—but they have larger leaves, and in flower are so ornamental that Forrest dignifies no less than four of them with three crosses.

In the seedling stage they can readily be distinguished from other Rhododendrons by the pink tinge of the new growth. One of this set (also quite unharmed by frost) raised from 1922 seed was F 21977 AFF. CERACEUM.

Forrest has, of course, also collected Irroratums of the FACETUM type. F 27128 of 1925 is still under glass with us, and so is F 24680; but F 24739 AFF. FACETUM, collected in 1924 at 10,900 feet on the Schweli—Salwin divide, is planted out, and has been untouched by the recent frost. This plant is very similar in appearance to Farrer's FACETUM.

RHODODENDRON APERANTHUM.

Although Kingdon Ward discovered this Rhododendron in 1919 and, I believe, sent home seed of it under his number 3301, Forrest's collecting of 1925 provided the first substantial sending of seed of the various colour forms. In a set of Forrest's seeds of 1925 some twenty packets of different seed numbers of RH. APERANTHUM were included.

A high alpine (12,000 to 14,000 feet) of the Sanguineum subseries, it combines a dwarf and prostrate habit, with a many-flowered truss of bloom notably large for the size of the plant ; and as the flowers are said to have a remarkable range of colouring, from rich crimson and rose through pink and white to yellow, the plant should be a most valuable acquisition for the rock garden, provided always that it does well with us.

None of the seed numbers have less than two crosses given them by Forrest in his *Field Notes*, and four have three crosses.

As in the case of some other high alpine Rhododendrons of the Sanguineum or Forrestii subseries, the germination of the seed was not free, and the seedlings were slow-growing in the initial stage and, again, like others of the subseries, they are somewhat impatient of indoor cultivation. Hence the number raised in comparison with the amount of seed received must be somewhat small. Planted out for their second winter in an airy frame the tiny plants are however doing well with us.

H. D. McLAREN.

BODNANT, 1927.

NOTES FROM LAMELLEN.

To commence with such new flowers as there were:—During the second week in April No. 811 Rh. "Hebe" ("Neriihaem" × Williamsianum) produced two flowers on a 6-inch plant: five in a loose truss, 5-lobed, campanulate, deepest shade of rose pink (*Rep. de Coul.*) unspotted, style and filaments lighter than corolla, stamens 10 light brown, stigma pinkish-brown, 2 × 1⅝ inch, calyx very irregular and same colour as corolla, pedicels rather long, about 1 inch, and reddish. A pleasing flower, which should be effective as the plants grow up. In the same week No. 581 Rh. "Thomwilliams" (Thomsonii × Williamsianum) made its initial effort. Same colour as above, 6 in loose truss, 5-lobed, campanulate, 2 × 2½ inches, unspotted, stamens 10 brown, filaments white, tinged rose-pink at base, style and stigma yellowish-white, calyx minute. A dwarf spreading plant with orbicular auriculate leaves.

Last week in April, Rh. "Kewxen" ("Kewense" × xenosporum) was partially frosted, but had about 12 bells to the truss, 7-lobed, very openly campanulate, violet-rose with some ochre spotting on upper lobe, 2½ × 3½ inches, filaments white, stamens 14 brown, style and stigma yellowish-green, calyx minute. Promises to be a fine hybrid.

A disastrous spring. On the second day of the Cornwall Spring Flower Show we had a severe frost, which not only ruined the flowers in bloom but spoilt many in bud and most of the new shoots as well.

Judging from the London Show, Sussex suffered less than Cornwall, and even Werrington in the north of this county appeared to be less hit than we were.

Thereafter the wet summer was favourable, good growth was made, and the constant rain rendered it possible to keep on planting out during the whole season.

And the weeds grew too, so that by October I had perforce to tear them up by hand to prevent them decaying on the seedlings and infecting them with fungus. A sad story of lack of labour!

For the rest, this year's seedlings have made better growth than ever before, partly maybe through the use of peat-moss litter as recommended by Mr. de Rothschild, the use of which makes it advisable to sow early and prick out betimes —and this again was only possible because I had less seed than usual; and partly through the sage advice of Mrs. Stevenson, who, arguing that Rhododendrons had very fine roots, counselled less firm planting than is usual. Acting on this I have lost fewer after pricking out than heretofore.

There is, so far as I have had leisure to see, a very fair promise of bud for next spring, though a lot of untimely blooms now is bound to spoil it. As an instance, a big bush of Thomsonii has in mid-October several well-opened flowers, and every bud showing colour.

Lastly, I may mention that just as *Merodon equestris* attacks *Hippeastum*, so the species of *Otiorhyncus*, which eats the roots of Rhododendron seedlings, is also partial to Primulas, for I've just found a pot of *P. Forrestii* killed by it.

E. J. P. MAGOR.

Lamellen, 1927.

TITS AND RHODODENDRON BLOSSOM.

Blue-tits are delightful little creatures; useful, too, in a flower garden by reason of their insatiable appetite for green-fly and aphides in general; but their craving for sweet things prompts them to conduct which puts a severe strain upon our friendship.

Several years ago I noticed for the first time in the Edinburgh Botanic Garden that the flowers of RH. BARBATUM had been torn open by tits in search for honey. Several seasons passed before the secret seems to have leaked out among the tit community on our west coast; but in the last two or three seasons every bush of RH. BARBATUM has had its trusses wofully disfigured by these nimble marauders. What can be the special attraction presented by that species (in which, for the purpose of this note, I include RH. SMITHII)? It is not the brilliant colour, for the blossoms of RH. FULGENS, NERIIFLORUM, HAEMATODES, THOMSONII and its flaming hybrids remain unmolested, although they distil honey quite as liberally as RH. BARBATUM. Can it be that the nectar of the last-named species is innocuous and that of the others poisonous? Wild animals possess a faculty enabling them to detect and avoid poisonous vegetation—a faculty which becomes impaired or lost through domestication; witness the mules which Sir Joseph Hooker lost from their browsing on RH. CINNABARINUM. There is no sight more seductive than a well-flowered bush of RH. C. ROYLEI, none whereof the flowers distil honey more profusely, yet the blue-tit knows better than to stick his neb into one of them.

Hitherto no other species than RH. BARBATUM has suffered here in this way. It would be interesting to have the experience of other growers in the matter. I have mentioned only the blue-tit—*Parus coeruleus*—as the aggressor; but I am far from acquitting the great-tit and the coal-tit as partners in guilt, though I have never detected them *flagrante delicto*.

Meanwhile, all three species of our tits have themselves reason to be flurried. On the approach of winter, coco-nuts and strings of small nuts are always hung up outside our windows for their entertainment. This autumn for the first time an enterprising squirrel has discovered the store, and partakes largely thereof. He will not be able to keep the secret for long, and no doubt will soon have furred, as well as feathered, messmates.

HERBERT MAXWELL.

MONREITH, 1927.

HYBRIDS—A SUGGESTION.

The early summer frosts of the last two years must have prevented an immense number of new hybrids from flowering. True, half-hardy plants have been killed off, which is a relief, but many gardens must be cumbered with survivors whose value is still unproved. Other gardeners may, like the writer, regret the ill-considered hybrids they have made, and may, like him, have resolved to make no more without a definite object in view. The purpose of this note is to suggest that one object worth attention is the combination of scent with colour. The recent hybrids raised in Holland and elsewhere are sumptuous and sometimes lovely things, but though they appear to owe their size to the Aucklandii strain they have failed to capture the perfume which makes KEWENSE and LODERI so delightful. Paul's FORTUNEI hybrids are an exception, and so is the welcome cross between two scented parents (MRS. CHARLES BUTLER × KEWENSE) which Mr. Magor has saddled with the name of BUTKEW.

For scent we must rely on RH. AUCKLANDII, RH. FORTUNEI, RH. DECORUM, RH. DISCOLOR, and RH. AURICULATUM—all white or pale in colour. For the ordinary gardener RH. DECORUM is the most easily managed of these, since some forms of it are hardy and flower at the same time as the most brilliant hybrids. An accidental hybrid which has flowered well here this year, escaping the frost which injured almost everything else, shows that DECORUM crosses are likely to be good. The seed was in this case gathered from a bush of RH. DECORUM bought from Messrs. Veitch of Kingston Hill, and no doubt raised from Wilson's seed. Most of the seedlings followed the DECORUM type, and are distinguishable from that species, but among them were a number of others which looked like PONTICUM rogues. We kept a dozen of these on the chance that they might be crosses, as they have proved to be. The pollen parent must have been RH. PONTICUM or one of the old Waterer hybrids, since nothing else was in flower at that time. Five plants have flowered this year, and are all good things in their way; four are scented. The trusses are erect and open though not meagre, with 12 to 14 flowers. The white anthers of RH. DECORUM lend them distinction. The individual flowers are shapely, with very slight marking on the upper lobe. The colour ranges from a good pink to delicate shades of lilac. The lobes vary from 5 to 7. The pedicels and outside of the corolla are deeper in colour—always an important point where the prevailing tone is delicate, since it imparts brilliancy to the buds and a certain richness to the open bloom.

It is unfortunate that the fine forms of RH. DECORUM introduced by Farrer have not proved hardy. The stock of these must have been terribly thinned out these last two years. The writer proposes to pot up the few survivors in his garden and cross them with hardy and brilliantly coloured hybrids.

J. STIRLING-MAXWELL.

POLLOK, 1927.

RESTRICTION IN RHODODENDRONS.

In gardens where latter-day collections of Rhododendron seeds have been sown with a liberal hand, and where the matter of space and expense requires consideration, the time will now be approaching, if it has not already arrived, when the appropriate disposal of the proceeds of such sowings provides food for much reflection.

The seedling contents of even a modest propagating house rapidly absorb a comparatively extensive nursery-ground, where in due course well-developed plants are found appealing for permanent positions. It may be that then, and only then, is the gardener fully confronted with the realities of the situation and the difficulty of doing full justice, within practicable limits, to an extensive number of species varying in character and requirements as RH. SINO-GRANDE varies from RH. SINO-VACCINIOIDES. The soil acceptable to these, as to all the others, may readily be prepared, if it does not already exist, but it is not generally so easy to provide the precise situation applicable to each one, and the more the true needs of plants are considered the more important becomes the question of position if the best effects are to be obtained.

The mere collector with money can rapidly assemble a miscellaneous mass of material and dispose of it as such, but a garden where plants, selected with discrimination, blend happily together is better worth striving for than any casual assemblage of widely differing species.

In the great majority of gardens some form of thinning out, some definite system of selection, will sooner or later become necessary. The typical species of Rhododendron and the many hybrids now available run to such numbers that one garden, however closely cultivated, can scarcely contain them all; nor, from the decorative point of view, is it desirable that it should. An intimate and appreciative understanding of the comparatively few is better than a mere nodding acquaintance with the many. In each series will be found species of outstanding merit and marked individuality, and between one series and another the superficial gulf of separation is often very wide. The choice available is practically illimitable, and can be adapted to the most varied conditions.

Careful study of the obvious opportunities which our garden-ground affords at once assists towards a determination of the type of plant best adapted to the circumstances of the case, and both facilitates the selection and emphasises the desirability for appropriate restriction in the species to be employed.

Every garden has its limitations. Nobody need specialise, but all must restrict in some direction when dealing with so varied and vast a genus as Rhododendron, and to do so with foresight and understanding will but prove to the ultimate advantage of the garden and its contents. Once the possibilities of the place have been determined, the object aimed at should be to set a high standard, to select only the best of any series, to group in reasonable numbers, and to discard all inferior species and varieties. Better a well-proportioned carpet of KELETICUM than a kaleidoscopic assortment of SALUENENSES. All is

not necessarily good that comes to us from China, or at least not good enough to rank amongst the best.

No two authorities, however eminent, would be likely to agree as to "The Hundred Best Rhododendrons," nor is it necessary that they should, but before long a day will surely come when much that is relatively inferior will be ruthlessly rooted out, and the space thereby made available be more appropriately filled.

In the writer's case, while efforts have been made to take full advantage of individual positions with a varied collection of Rhododendrons, the tendency is to concentrate increasingly upon the choicest species of comparatively low-growing habit, which experience shows to be best adapted to the natural conditions of the place. Wide, well-screened woods where majestic and isolated specimens may be looked for in years to come are not available. Here rock forms the almost invariable foundation and natural background, crevices and pockets abound, but beds and borders of adequate depth necessitate laborious construction. Shade is often more easily and more pleasantly obtainable by stone than by tree, and dryness at the root is less likely to obtain there. With such positions many plants are showing themselves well content, and an abundance of self-sown seedlings—mainly of the TRIFLORUM series—are already conspicuous in crevices and on the cool, mossy surfaces of large stones where seeds can freely lodge and germinate.

Within the limits of "comparatively low-growing" Rhododendrons, the cultivator will assuredly have no reason to cavil at the meagreness of the fare provided. From LUTESCENS to REPENS and from HIPPOPHAEOIDES to HAEMATODES a variety of species will surely be found to satisfy the most fastidious taste.

The following series may be selected as containing members remarkable for diversity of form, distinctness of leaf, and brilliancy of bloom: AZALEA, CAMPYLOGYNUM, CEPHALANTHUM, LAPPONICUM, LEPIDOTUM, NERIIFLORUM, OVATUM, SALUENENSE, SCABRIFOLIUM, TRIFLORUM, and VIRGATUM, not to mention others containing such interesting individual species as RH. PSEUDO-CHRYSANTHUM, BULLATUM, KAMTSCHATICUM, MOUPINENSE, and SINO-VACCINIOIDES. These will be found to provide a wide choice ranging from the taller TRIFLORUMS, easy of cultivation, free of growth and generous of flower, descending through the closer and compacter, but equally floriferous, LAPPONICUMS to the foreground where such surface-spreaders as RH. PROSTRATUM, RADICANS, and REPENS lie close to the eye. All are alike of marked adaptability and sound constitution, and though it is desirable to avoid the pitfalls surrounding the dangerous word "hardy," it will be indeed an unpleasantly harsh climate where such species cannot be successfully grown.

In the middle distance, in the cooler and more sheltered situations will be found members of the subseries HAEMATODES, NERIIFLORUM, and SANGUINEUM, and at the threshold of such beauty the Rhododendron lover instinctively pauses in deferential salutation, for beyond it lie some of the priceless gems of a glorious race. For distinctness of leaf, depth and richness of flower-colouring, and the indefinable mark of quality, they are conspicuous at all seasons of the year, but

it is well to warn the casual cultivator that here he will look in vain for the "fool-proof stuff." The full beauty of such fastidious species is only unfolded to the patient and persevering, to those conscious of the need for cool conditions, comparative shade, and shelter from cutting winds.

A comprehensive choice still remains from amongst the other series enumerated, affording ample scope for a variety of good garden effects.

In conclusion, it may surely be urged that though the IRRORATUMS often irritate, and the GRANDES love us not, we can still, while the dwarfer species abound, garden with glad and grateful hearts.

H. ARMYTAGE MOORE.

ROWALLANE, 1927.

FUNGUS ATTACK ON RHODODENDRONS.

Last year several Rhododendrons were attacked by fungus and promptly died; amongst these was a large DISCOLOR and a THOMSONII. Dr. Malcolm Wilson, who happened to be at Exbury in the spring to investigate an attack of *Rhabdocline Pseudotsugae* on the BLUE DOUGLAS, identified it as the honey fungus. This pest, which usually attacks conifers, especially of a youthful age, is quite a menace in some parts of the country. A large *Arthrotaxis selaginoides* collapsed for the same reason.

In the Rhododendron attack, the mycelium were seen running up the stem of the plant from the crown as soon as the bark was sliced with a knife; in the soil all round could be seen long, dark, rope-like threads. The fruit which is thrown up I have not yet identified.

The only remedy, as far as I am aware, is to light a bonfire on the soil, after having dug up all the roots and the threads of the fungus, and heavily disinfect the ground, which should be left unplanted for a period.

Might not this be the disease which, in Cornish gardens, has attacked Rhododendrons that have been planted near large roots?

LIONEL DE ROTHSCHILD.

EXBURY, 1927.

TREWIDDEN GARDEN NOTES.

This garden is mainly the result of the work of the late Mr. Bolitho and was started in the 'eighties. It is fortunate in having a number of fine specimens of many of the best kinds of flowering shrubs, and this is due to his extraordinary natural capacity for realising the type of shrub which is adaptable to the climate and conditions of the West Country. Perhaps the soil is as good as that of any Cornish garden, but without any doubt there is no garden which suffers more severely from the wind. The goodness of the soil and the value of a moist climate can perhaps best be seen by a new bit of garden which was planted about 1909. Here you have CLETHRA ARBOREA already about 22 feet high and 15 feet across, RHODS. MRS. HENRY SHILSON, SUTCHUENENSE and ZEYLANICUM, all good-sized plants, and all three growing next to each other without any protection whatever from the sun, and, except on the west side, practically no protection from the wind. Even the Rhododendrons are fairly happy in this position, while the CLETHRA is growing with great vigour.

There are many other plants in this position, but perhaps one of the most useful shrubs is ADENOCARPUS DECORTICANS, and it is already 12 feet high and 17 feet across, and is certainly in flower for six months in the year.

The most interesting group of Rhododendrons is situated in what are known as "The Burrows," which are shallow old Cornish mining pits, and probably date from prehistoric times. Here you have an ideal position for Rhododendrons of the large-leaf forms, and so different to some gardens, particularly the newer ones, where the main idea seems to be to bed them out like Brussels Sprouts. The one disadvantage is that they are apt to get their roots into some form of mineral, which may have disastrous effects. The ARGENTEUM flowers in most years about the end of January. The bud is rather pinker than the usual form growing in Cornwall, and the flower is certainly larger and thicker in texture. The height of the tree is about 18 feet. The AUCKLANDII growing here is 19 feet high and 20 feet across, and has the great advantage of growing 30 inches from the ground before it forms any branches, and just before it swells out to make branches it is 22 inches round. It is from this plant that the flower which won the prize for the best AUCKLANDII in the 1926 Show came. Usually the flowers have a larger number of bells and are thicker in texture than the form of average AUCKLANDII. There is a FALCONERI 24 feet high and 19 feet across, but perhaps the happiest plant is a MADDENII which is growing out from under the ARGENTEUM and AUCKLANDII, and these three plants, having grown together in one group, show the wonderful power a pit of this kind has for collecting Rhododendron food, but at the same time they make one realise how difficult it is in planting to allow enough room for the growth of the future.

There is a plant of RH. NUTTALLII on the house, growing on the wall, facing west, and protected from all south and south-west winds by the main portion of the house. This has roughly twenty-four flowers each year, that is after at least a similar number of flower-buds have been picked off. It is perhaps worth recording that this plant was very largely restored to health after a period of

War neglect, because as well as dressing, the surplus buds were taken off in the very early autumn, which enabled the leaf-bud to form during the winter, and so a considerable gain in the next year's growth was effected.

There is a walk at Trewidden rather over 100 yards long. It is in the centre of the grounds and contains many of the best shrubs. Going towards the west, on the right, you have first of all EMBOTHRIUM COCCINEUM, 39½ feet high and 43 feet across, and MAGNOLIA HYPOLEUCA, 38 feet high and 24 feet across. This MAGNOLIA has grown up in a single stem for a considerable way, and is really a tree. Then there is the small-leafed form of GRISELINIA, which is followed almost immediately by the older, a larger plant of GUEVINA AVELLANA. On the left side first comes a smaller GUEVINA, which is already over 33 feet high, then a good PODOCARPUS CHILINA, and a group of several Rhododendron species with good plants of ARGENTEUM, HODGSONII, and EXIMIUM, and two forms of AUCKLANDII, and a young plant of CALOPHYTUM, which has been in about six years, and is growing with considerable vigour. The larger GUEVINA came from Greenway as a small plant about 1892, and was off the old plant there.

There are scattered round the garden a certain number of Chinese Rhododendrons. SINO-GRANDE is doing quite well in some of the mining pits. Of the others, perhaps the most interesting in detail is MACKENZIANUM, which is growing here as a plant, and not like the abortion put up at the Royal Horticultural Society which resembled a badly nourished three-legged giraffe standing on its head! There is every probability of this forming quite as healthy and well-formed a plant as the older Indian sweet-scented varieties of the FRAGRANTISSIMUM type.

As an instance of the value of the soil and shelter, a very weak layer of LODERI came here some three years ago, and is now in perfect health and a good shape, while the average new growth in 1927 on the 1926 shoots was 3 feet.

Perhaps the most distinct plant in the garden is the larger EUCRYPHIA PINNATIFOLIA, which is 24 feet high and 25 feet across. I think that this plant in all probability, in spite of a good deal of leaf mould, has come about to its maturity. Its value is not only in its flowers, and a certain amount of autumn colouring, but also its natural grace as a shrub, which can only be seen if it has reasonable room to grow and is not checked in any way by superfluous neighbours, but is allowed room to develop and show its natural habit. Few plants are less suited to the bedding-out form of shrub collecting.

EUCRYPHIA CORDIFOLIA has also formed a considerable plant of 31¾ feet high and 17 feet across, and can be seen growing close to what is certainly the best single ESCALONIA on the place. This ESCALONIA BEDFORDII is now 21 feet high and 27 feet across, and is still growing at a most extraordinary rate. It has been cut back from the path more than once, and if grown on a large scale would be a most valuable wind-screen, while the foliage retains a good colour the whole year round, and the quality of the flower is of considerable value for any purpose. It is useful when trimmed for covering a house.

There are a certain number of fair-sized Magnolias, as WATSONII, PARVIFLORA, and CONSPICUA, all of which are doing well in their various positions. But

although many of them are quite old, as yet none have reached that stage of life when they are rabbit proof, but then they are probably none of them quite fifty years old. There are on the walls of the house and in the kitchen garden a great number of semi-hardy shrubs such as ABELIA FLORIBUNDA, LONICERA HILDEBRANDTII, CASSIA CORYMBOSA. One of the most useful is ACACIA PLATEPTERA, which flowers from October to the end of March, and has a great advantage over other Acacias that it will last over a week in water, even in London. Another plant which is of good value in early spring and late winter, and, of course, right through to May and June, is GREVILLA GRACILIS. This plant is now more than 10 feet high, and is certainly one of the most beautiful of all West Country wall shrubs.

Camelias, such as RETICULATA, and many of the old-fashioned varieties, have grown to a considerable size and do well in this soil, and for some unknown reason are about as healthy here under PINUS INSIGNIS as the average up-country Camelias. There has never been any attempt to make in this garden a collection of great numbers of various plants, but rather to grow some of the best shrubs, and to try and get these to grow into natural and beautiful plants.

CHARLES WILLIAMS.

GREENWAY, 1927.

EVERGREEN FORMS OF TREES AND SHRUBS.

In reference to the two classes of shrubs and trees suitable for growing with Rhododendrons, Mr. Harrow writes in his detailed and careful description of the Rhododendron Show that they afforded an "almost welcome relief from the abundance of flower of Rhododendrons." It seems to me that his point of view is a sound one, and that some details of the various shrubs and trees likely to be of service where Rhododendrons are grown in woods may have some interest, and if I confine what I write to evergreen forms of trees and shrubs it may be a useful restriction on how much I write. I will further limit myself to trees and shrubs which I have made some trial of here.

They are here mainly confined to a relatively small number of families, as such a limitation makes it easier to guess at their needs as regards cultivation and decorative value, and in some measure to know what may be learnt about them.

To take the things which may be expected to grow to 30 feet or more, and so may be called trees, the two most important families tried here have been the evergreen oaks and the *nothofagus*. There are about thirty oaks, but many are quite small, and have not been here long enough to test their worth as regards vigour, beauty, or ability to bear cold. The evergreen *nothofagus*, of which there are about eight evergreen forms, have, excepting *Solanderi*, been tried here for several years.

The best evergreen oak is *cleistocarpa* of Wilson. It came from Coombe Wood about 1912, and has grown faster than any other, whilst the cold of 1917 made no mark on it.

Cuspidata, if encouraged to grow up by pruning, makes a nice tree, but whether it will make 30 feet I do not know. It is a really good evergreen.

Henryi, kindly given me as a struck cutting by Kew, has reached 8 feet in a short time, coming here about six years ago, but it is in a hot place and strong land, with good drainage.

Delavayi, as yet a small plant, has been here only twelve months, but has grown very fast out in the nursery, and is a very distinct oak. It was given me by the Edinburgh Botanic Garden.

Spathulata of Forrest's sending, once started, has a bright glistening foliage showing it up well, and is a very distinct species.

Incana, from India, is growing fast from seed sent here, and put out in the wood when a few months old. This makes a great difference in their rate of progress, as Mr. Bean told us long ago, and so, too, it pushes the Magnolia family along much faster than some of us are aware of.

As regards the best of the eight evergreen *nothofagus* here, *Dombeyi* seems to be the most rapid grower and *Moorei* to have the most striking foliage, but they all go ahead well, and repay careful attention. *Betuloides* in particular grows very fast. They are easy to strike from cuttings. *Cunninghamii*, *Cliffortioides*, *Menziesii* are also quite good things to have.

In the section of evergreens unlikely to pass 30 feet there is a great choice, some with fine flowers, some with fine foliage, and some with both.

Of those with fine foliage only, the Ilex family is perhaps the largest, apart from the British species and its many fine varieties. The quickest growing and most notable is *insignis*. *Fargesii* is a pleasant shrub. Then *odorata*, first sent back by Farrer, I believe, is a free and quick-growing plant. *Oldhamii* has a character of its own, whilst *Excelsa venulosa* and *rotunda*, lately sent home by Mr. Forrest, promise well even at two years old.

Of the remaining evergreens not giving useful flowers, *Lindera megaphylla* and *Pittosporum daphniphylloides*—both from the Coombe Wood sale—are really beautiful shrubs.

At the head of the flowering evergreens—here, at any rate—is *Magnolia Delavayi*, and the old plants push out flowers over a long period.

The relatively new *Magnolia nitida* has been out two seasons, and its glittering foliage is really remarkable.

Manglietia insignis has been out for some years, and gives reason to hope that the yet finer *M. Hookeri* with its large leaves will serve us well, though whether we have sun enough to flower them well is less certain.

Gordonia axillaris is a very fine evergreen indeed at all seasons, and the one plant which has flowered well here did so for several weeks on end in the middle of last winter.

Photinias as a family stand frost better than the appearance of the young growth would lead one to believe. The finest foliage I have seen on any of them so far is on *P. flavidiflora*. *Photinia integrifolia* promises to be a very distinct member of its family, but Wilson's form of *P. Davidsoniae* seems to be the most vigorous grower, and perhaps the toughest of them all.

The many forms of *Pieris formosa*, of which the best I have seen is *Forrestii*, are all worth trying if they come from well separated localities, as they vary a good deal in the time of their flowering.

Vaccinium ovatum and *V. padifolium* are well worth care and attention, though very unlike each other in foliage.

The two best *Osmanthus* would seem to be *O. Delavayi* and *O. Forrestii*, though I have only seen the dried specimen flower of *Forrestii*, but the plant has been out for two winters and grows very fast.

There are great numbers of other evergreens better known to others of our members than to me, but those I have chosen chance to be useful here.

The comment by visitors on those gardens on or near the south or west coast of Britain is that they are " Tropical "—whatever that means. In any case, there are very few plants in the above list, which it were easy to make a longer one, which may not be found in the best Sussex gardens.

J. C. WILLIAMS.

CAERHAYS CASTLE, 1927.

SCORRIER GARDEN.

The late Mr. George Williams, father of Mr. John Williams, the present owner of Scorrier, died in 1891. He had for many years been keenly interested in his shrubberies and pinetum. The present owner has well maintained much of the old garden, and has judiciously thinned the shrubs and conifers, but has not attempted to keep up to date with the vast number of plants recently introduced. The late Mr. Williams raised a great many Rhododendron seedlings from his own crosses, which were mostly between the Waterer hybrids, and he was certainly among the first raisers who used AUCKLANDII as a parent.

There is still a pink Aucklandii hybrid at Scorrier which I remember approximately for fifty years as a flowering plant. The unflowered seedlings were planted out beside the many woodland paths, and among them some were certainly above the average of that time, but of course would not now be remarkable. While these woodland paths are to-day mostly overgrown, there are many fine specimen plants in the old gardens. Probably the outstanding feature is a long wall of very fine Camellias, most of which are well over a hundred years old. There are also some quite remarkable bush Camellias, and some very old *camellia reticulata*.

Among the Rhododendrons there are a very fine lot of the old tall crimson hybrid so prevalent in the west and also in Sussex. These plants have big stems, and many are quite 40 feet high. Of the others RH. BROUGHTONII seems to have proved itself the outstanding hybrid for habit and vigour. There is a fine RH. FALCONERI which is doing well, and a most beautiful plant of RH. KINGIANUM which was bought at the same time, about 1880, from a London suburban nursery. This plant is 15 feet by 8 feet, and certainly among the most beautiful specimens of a Rhododendron I have ever seen. The rigid black-green foliage contrasts magnificently with the brilliant crimson-scarlet flowers, and the plant is not only of excellent proportion but perfectly furnished. The AZALEA AMOENA is the largest I have seen. The deciduous Azaleas, mostly Van Houte's Calendulacea hybrids, are fine specimens and numerous. A group of three plants of true CALENDULACEA are approximately each 14 feet by 12 feet. The conifers are very interesting. Among them are fine plants of *Podocarpus nubigena*, *Picea polita*, *Athrotaxis Doniana*, *Larix Kaempferi*, *Sciadopytis*, etc. It was in this garden that the Embothrium first proved itself to be an outstanding Cornish shrub.

P. D. WILLIAMS.

LANARTH, 1927.