Vol. III., No. V., 1929-1931.

The Rhododendron Society Notes.

REPRINTED BY
THE PACIFIC RHODODENDRON SOCIETY

Acknowledgements

TO THIS ONLINE EDITION

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In particular, we are indebted to Fred Whitney, the last remaining officer of the Pacific Rhododendron Society which produced and published the facsimile edition in 1976, who has so graciously allowed it to be scanned to create the current version.

RHODODENDRON, CAMELLIA
& MAGNOLIA GROUP

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 YEARS

1929-1931

All communications regarding the publications of the Rhododendron Society should be made to J. B. Stevenson, Esq., Tower Court, Ascot.

Vol. III., No. V., 1929-1931.

MEMBERS' NOTES FOR THE YEARS 1929-1931.

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GEORGE FORREST, 1873-1932.

"Here he lies where he longed to be;
Home is the sailor, home from sea,
And the hunter home from the hill."—R. L. S.

Fate deals her mortal blow oftentimes at most inopportune and unexpected moments, and George Forrest's death on the eve of his departure for home is yet another instance of such unkind coincidence. The heavy work of the expedition was practically over and there was no mention of ill-health resulting from any of the hardships of travel. Apparently on the 6th January 1932 he had been out shooting some four miles from Tengyueh, and suddenly feeling faint, he had called to his men to come to his assistance. They reached him as he collapsed, and all was over in two minutes. Men of his robust type may end thus from heart-failure. In the old sagas the heroes looked askance at a "straw-death," preferring to fall in the field. Much as we all lament his untimely passing, his end was that of a lover of the wild and of the open. He lies in the graveyard of Tengyueh, side by side with his aforetime comrade Consul Litton, who died after their adventurous journey to the upper parts of the Salwin Valley in 1906.

In this brief personal tribute to a great explorer space must be found for a glance at his early life. It is of more than passing interest to know how opportunity fashioned the man and how the man made full use of opportunity. Born at Falkirk on 13th March 1873, he had his education at Kilmarnock Academy in Ayrshire—the usual hard but withal sound training which seems to urge so many of Scotland's sons to seek their fortune abroad. On leaving school his first venture was a post in the shop of a pharmaceutical chemist. This was probably little to his liking, but he stayed long enough to acquire a useful knowledge of medicines and simple surgery, which was of great avail to him in later years when both Chinese and Tibetans sought his aid. Much of his influence with all classes in Western China was due to his generous spirit in giving both time and money to the alleviation of their sufferings. Time and again he had lymph forwarded from Burma at his own expense, and inoculated thousands of the inhabitants of Western Yunnan. When he could be induced to speak of his experiences as medical attendant, his anecdotes were full of self-criticism as well as of humour. As an embryo-pharmacist at Kilmarnock, he had to devote some time to the study of botany and acquired an acquaintance with his native flora, collecting and drying many of the local plants. After this interlude he made his way to Australia to find what fortune he could. Here he spent several years, chiefly in the open and in the "bush." Then was fashioned the George Forrest we knew, with sturdy frame, deep chest and tough muscles, for he had plenty of hard work with the felling-axe and of hard riding on the sheep-stations. There was, however, but little prospect of advancement and he returned home in 1902, making a short stay in South Africa en route. His previous interest in plants induced him to apply to Professor Sir Isaac Bayley Balfour in Edinburgh on the chance that employment could be found for him. Nothing was then available except a meagre post in the Herbarium, which fortunately he accepted—until something

better came into view. Indoor work on dried plants was a decided change from life in the Australian bush. But as an antidote he lived six miles out of Edinburgh, tramped both ways each day to the Botanic Garden, and *stood* to his task from nine till five, disdaining the use of chair or stool. Forrest's line of choice never led him to the easy path, and he was ever his own hard taskmaster. But once again chance proved a kindly guide, for his duties involved the scrutiny and arrangement of thousands of specimens from all over the world, and he acquired in these two years a sound acquaintance with the chief families and genera of flowering plants. To this experience also is no doubt due the wonderfully fine quality of his dried material—*O, si sic omnes!* Any ill-effects of an indoor occupation were nullified by his keenness for fishing and shooting, for tramping in hill country and for gardening. His interest in these continued to the end. He was but little attracted by games. He may have seen in his time a football or cricket match, but in a long acquaintance I cannot recall an instance of his attendance at any sporting event where thousands congregate. The best of companions, he had no liking whatever for the town, and was generally restless and unhappy there. In the country he was quite a different man. His friends will always call him to remembrance as the sturdiest of figures, clad in the trim knickerbockers which were his almost invariable wear. Determination was stamped on his somewhat grim features, and he might well have borne the badge *Nemo me impune lacessit.* It was but rarely he offended his own feelings and those of his friends by garbing himself when occasion demanded in the clothes deemed to befit a townsman, and never was he seen in plus-fours. The ineffaceable impression he left on all who met him was that of a man who knew exactly what he wanted to do and was certainly going to do it.

To the man of thirty-one thus fashioned and equipped came his opportunity in 1904. Mr. A. K. Bulley of Neston, Cheshire, keenly interested in alpine plants, applied to Sir Isaac Bayley Balfour for some one who was qualified to undertake botanical exploration in Western China, and Forrest entered a field which he was never to forsake. The richness of the flora of the proviuces of Western China was long unsuspected. The botanical collections of Professor Augustine Henry were evidence enough for the less westerly areas; the material obtained by the French missionaries such as David, Soulié, and Delavay in Szechuan and Yunnan provided an abundant supply of new and interesting species for elaboration by Franchet and his co-workers in Paris; Wilson had already begun his journeys which were to result ultimately in the publication of *Plantae Wilsonianae.* But most of the evidence concerned only dried material in various herbaria, and the whole of the territory was almost virgin ground for the horticultural explorer. The results of exploration work at various hands during the last thirty years have shown that the area embracing Yunnan and Szechuan contains possibly the finest alpine flora in the world. Forrest was thus most fortunate in his lot. He began with Yunnan, and in all his eight expeditions Yunuan was ever the centre. He made incursions into alpine Burma, S.E. Tibet and S.W. Szechuan, but he never believed even at the end that he had secured all the floral treasures of his favourite province.

On his advent in 1904 Yunnan was no peaceful country. From 1904 to 1906 he had as much in the way of perilous adventure as a man of his type could desire. The Chinese were having one of their periodical disputes with the Tibetans, and

the latter did not discriminate between Chinese and other foreigners and were massacring Chinese and French missionaries with equal zest. Forrest was at Tzekou as a guest of Père Dubernard, a veteran of the French Mission. A party of eighty (including Forrest and his seventeen collectors and servants) had hurriedly to evacuate Tzekou and flee. Overtaken by the pursuing Tibetans, all were killed except a bare dozen. Père Dubernard was brutally tortured to death and a fellow-priest killed on the spot. Of Forrest's personal following only one survived. Forrest had the good fortune to escape after a pursuit of some ten days without shelter and practically without food.

To this first expedition belongs also his venturesome tour with Litton into the Upper Salwin Valley among tribes who owed allegiance neither to China nor to Tibet. Two German explorers who repeated the journey a little later were killed by the same tribesmen. The subsequent expeditions of Forrest were not fraught with the same risks, as the country was relatively quiet—it was never quite free from disturbance. But Forrest's personality contributed to good relations. He was soon on friendly terms with the Chinese, with the Tibetans, and with the tribesmen of many names. He took great interest in their life and manners, doctored them by his own methods, and helped them in many ways.

One cannot venture here on any account of his various journeys, but it is needful to give a survey of the general results. His collections from Yunnan in the way of botanical specimens number over 30,000, and form the most important contribution to the flora of that province ever likely to be made. On his earlier expeditions his choice was very general, but on other occasions he devoted special attention to trees and shrubs and especially Rhododendron, while Primula was never forgotten. Gleaners in his field will not find much in the way of flowering plants which he failed to notice, except it be in those families such as grasses and sedges where the flowers are inconspicuous or where they are natives of the warmer regions below 5000 ft. Apart from mere numbers the material is of the very highest standard, and each gathering is accompanied usually by very complete notes. The copiousness and choice of the material are as remarkable as the beautiful way in which it is dried. I must here cite the opinion of a Japanese botanist, Professor Kudo, who published recently, after fifteen years' study, a monograph on the Labiatae of Eastern Asia. He visited over forty of the chief herbaria in Europe, Asia, and America, and states in his book that Forrest's specimens of Chinese plants are " die beste in der Welt."

It is of special interest to the members of this Society to know that for quantity and quality his Rhododendron collection is unique, and is easily the finest extant. Forrest was very devoted to this genus, and was ever hoping to find the " centre of the Rhododendron world." Whether there is such a place I gravely doubt —unless it is defined broadly as Western Yunnan. But Forrest's contribution to the genus is as his memorial, something " more lasting than bronze." Primula probably came next in his affections, and he made many notable additions to the known species.

I have already referred to some of the reasons which made Forrest so successful an explorer, but there are still some of his characteristics well worth recording. He shared very markedly in the attributes of the *naturalist* of the days before this era of specialisation. His collections of mammals, birds, and insects have

been overshadowed by his botanical finds, but they were noteworthy in their way and he was much interested in securing them. He was full of information regarding the various peoples he came in contact with—their manners, customs, and pursuits. He knew much of the geological formations and minerals of the province, and his notes on plants generally included reference to the character of the soil. Long before it was admitted, he knew that many Rhododendrons would grow on limestone.

He was singularly successful in the training of the native collector. These hillmen became remarkably adept, and served the useful purpose of covering more ground than even his energetic self could hope to do. They were most loyal assistants. A cable from Forrest was enough to set them going, and on his arrival at Bhamo he was welcomed by men who had in some cases journeyed six weeks to meet him. His seed-collections consequently were on a generous scale. He was even reproached sometimes for too catholic a taste in his choice of plants. It is easy to prophesy after the event, and no easy matter for a collector in the wild to interpret horticultural value. There are many Gentians in Yunnan which rival *G. sino-ornata*, but will they adapt themselves to our climate? There are many Primulas there transcending *P. malacoides*, but not one of them is likely to receive a similar welcome and attention from horticulturists throughout the world. There are glorious alpines on the cliffs of Yunnan such as *Isopyrum*, *Solms-Laubachia*, and *Lithospermum*, but have they been successfully introduced? Forrest went on the principle of securing all he could and so tried to satisfy both horticulturist and botanist. Members of the Society may be assured that from the scientific point of view the mass of material at different stages obtained by Forrest has proved of the utmost value in interpreting the many problems of their favourite genus.

Forrest had good powers of organisation, and his explorations were carried out very methodically. He acquired a fair facility with that most difficult language, Chinese, and some acquaintance with hill-dialects. An enthusiastic photographer, he was the possessor of some thousands of illustrations of the country, its peoples, and its plants. His photographic records of alpines show conclusively that, much as he relied on his men for the detailed collecting, he never spared himself his full share of hard work on the highest cliffs and screes. Among the noteworthy Forrestian plants I can recall only one or two which he himself had not seen *in situ*.

He was well acquainted, as he had to be, with the written records of the discoveries of his predecessors, and was a persistent searcher after their more important and often elusive finds. One such, *Primula glacialis* from the Lichiang, cost him long and almost vain pursuit—the book-description was all he had to go by—and years after it was clear that he had secured it without its identity being realised at the time. The notes attached to his specimens are indicative at all times of keen observation, sound knowledge of the systematic position of each plant, and withal an eye for beauty.

It is a thousand pities that he could never be induced to write an account of his travels. The story of these last twenty-seven years would have been a fascinating one. Often spoken of, it was always postponed till his days of retirement—days which never arrived. The task did not appeal to him, and yet in his

letters it was evident enough that he had the gift of narration. In many ways he was reserved and not a talker except in the company of his personal friends, and then he always held his own. Diffident of his powers of speech, he was not often persuaded to give a lecture. In his earlier attempts he was, in the parlance of the Scottish Church, a "reader," but in his later years he spoke with freedom and delighted large audiences, illustrating his story with numerous lantern slides taken from his own excellent photographs.

There was no mistaking the fine quality of the man and the evidence of power. He was in many ways a "bonny fechter." Sternly self-disciplined and eminently a man of his word, he was ever scrupulously anxious to do his best for those in whose interest he undertook his explorations. It is pleasing to record that in one of his last letters home he expressed himself satisfied with the spoils of 1931. *Ipsissima verba* :—"I may with safety say that this will be the best year I have yet had. If all goes well, I shall have made a rather glorious and satisfactory finish to all my past years of labour." A true prophecy . . . but how gladly would his many friends have stayed the hands of fate, were it only for a little longer. *Ave et vale!*

"They told me, Heracleitus, they told me you were dead;
They brought me bitter news to hear and bitter tears to shed.
I wept, as I remembered, how often you and I
Had tired the sun with talking and sent him down the sky.
And now that thou art lying, my dear old Carian guest,
A handful of grey ashes, long, long ago at rest,
Still are thy pleasant voices, thy nightingales, awake,
For Death, he taketh all away, but them he cannot take."

(*From the Greek of Callimachus. Trans. W. Cory.*)

W. WRIGHT SMITH.

EDINBURGH, 1932.

THE SPECIES OF RHODODENDRON.

In view of the large amount of new material and the close study which continues to be made of the genus Rhododendron, new species are from time to time being identified.

On the following pages will be found descriptions of seven new species—three by Mr. H. F. Tagg, F.L.S., three by Mr. J. Hutchinson, and one by Mr. Rehder.

At an early date these will be published separately on single loose sheets identical with those in the Loose Leaf Edition of "The Species of Rhododendron," and for insertion therein, thus enabling the record to be kept up to date. The price per set of 7 sheets will be 1s. 6d. post free.

Attention is specially drawn to the advantages of the Loose Leaf Edition, copies of which may be obtained, including the new sheets, for 32s. 6d. per box post free in Great Britain.

Copies of the original bound volume are also available, price 30s. post free in Great Britain.

For all the above, applications with remittances should be made to

THE RHODODENDRON SOCIETY,
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EDITOR.

The Rhododendron Society Notes.

A LIST OF ILLUSTRATIONS OF RHODODENDRONS, WHICH HAVE BEEN PUBLISHED OR TRACED SINCE THE ISSUE OF "THE SPECIES OF RHODODENDRON."

Rh. adenogynum, Diels, *Bot. Mag.*, vol. 155 (1929), t. 9253.

adenopodum, Franch., *Bull. Soc. Acclim.*, vol. 56 (1909) 429; *Gard. Chron.*, ser. 3, vol. 45 (1909), 291.

Albrechtii, Maxim., *Bot. Mag.*, vol. 154 (1928), t. 9207.

Amesiae, Rehd. et Wils., *Bot. Mag.*, vol. 154 (1928), t. 9221.

anthopogon, D. Don., *Bot. Mag.*, vol. 68 (1842), t. 3947.

calophyllum, Nutt., *Bot. Mag.*, vol. 83 (1857), t. 5002.

chryseum, Balf. f. et Ward, *Bot. Mag.*, vol. 154 (1928), t. 9246.

concinnum, Hemsl., *Bot. Mag.*, vol. 141 (1915), t. 8620.

dendrocharis, Franch., *Pl. David.*, vol. 2 (1887-8) 89, t. 13a (ex *Nouv. Arch. Mus.*, Paris, ser. 2, vol. 10).

didymum, Balf. f. et Forrest, *Bot. Mag.*, vol. 154 (1928), t. 9217.

Griersonianum, Balf. f. et Forrest, *Bot. Mag.*, vol. 153 (1927), t. 9195.

hedyosmum, Balf. f., said to = ledoides, Balf. f. et W. W. Sm., *Bot. Mag.*, vol. 153 (1927), t. 9202.

hippophaeoides, Balf. f. et W. W. Sm., *Bot. Mag.*, vol. 152 (1926), t. 9156.

hypolepidotum, Balf. f. et Forrest, *Bot. Mag.*, vol. 155 (1929), t. 9259.

leiopodum, Hayata, *Ic. Pl. Formosan*, vol. 3 (1913), t. 24.

megeratum, Balf. f. et Forrest, *Bot. Mag.*, vol. 152 (1926), t. 9120.

parvifolium, Adams, *Bot. Mag.*, vol. 154 (1928), t. 9229.

Scottianum, Hutch., *Bot. Mag.*, vol. 154 (1928), t. 9238.

siderophyllum, Franch., *Bot. Mag.*, vol. 144 (1918), t. 8759.

Series Boothii.

RHODODENDRON AURITUM, *Tagg.*

HABIT : a shrub of about 10 ft. ; shoots straggling, those below inflorescences about 3 mm. diameter ; densely lepidote, bark quickly peeling, exposing on older shoots a bare, smooth, coppery stem.

LEAVES : lamina elliptic to elongate-elliptic or lanceolate, subcoriaceous, 2·5-5 cm. long, 1-2 cm. broad ; apex obtuse with a conspicuous mucro ; base broadly cuneate or subrounded ; upper surface bright green, lepidote ; under surface densely lepidote with golden to rusty-brown scales which vary much in size, some larger and darker than the majority, all about their own diameter apart or sometimes touching, epidermis papillate, midrib prominent, lateral veins obscure ; petiole 5-8 mm. long, densely lepidote.

INFLORESCENCE : a terminal umbel of 4-7 flowers ; rhachis short, sparsely lepidote.

PEDICELS : about 1·3 cm. long, densely lepidote, epilose.

CALYX : pale green, about 5 mm. long, basal cup densely lepidote ; lobes 5, ovate, each about 4 mm. long, distinctly reflexed, sparsely scaly on the back, margin eciliate but more or less lepidote.

COROLLA : tubular-campanulate, about 2·5 cm. long, creamy white with a slight tinge of pink on the lobes ; tube 1·3-1·5 cm. long, outside sparsely lepidote, within glabrous ; lobes 5, about 8 mm. long, 7 mm. broad.

STAMENS : 10, unequal, 1-2 cm. long ; filaments white, hairy at the base ; anthers about or less than 1 mm. long, pale yellow.

PISTIL : 2-2·5 cm. long ; ovary 4 mm. long, dome-shaped, greenish but with a dense covering of whitish glistening scales ; style white or tinged purple, thin, straight or slightly curved, lepidote for about one-third to one-half of its length ; stigma pink.

CAPSULE : ovoid, 8-10 mm. long, about 5 mm. broad, dehiscing from the apex by 5 valves, supported below by the persistent reflexed lobes of the calyx, rusty-brown with a thick incrustation of withered scales.

HABITAT : South-Eastern Tibet, Tsangpo Gorge near Pemakochung.

Ward's original gatherings (*Ward* 6278) of this species are in fruit only. The description of the truss and flower are based

upon cultivated specimens received in 1930 from Sir John Ramsden, Bulstrode Gardens, Gerrard's Cross, Bucks, under Ward number 6278, and also upon specimens which flowered in the same year at the Royal Botanic Garden, Edinburgh, under the same number. These in leaf shape and type of scale of the leaf underside agree with Ward's fruiting specimens, and there is no doubt that these flowering plants in cultivation under the Ward number 6278 are the same as the plant gathered in the wild in fruit. All the characters suggest affinity with *R. aureum*, but *R. auritum* differs in its smaller flower, in its flower colour, and in the much smaller calyx with smaller reflexed lobes. The style and stamens are short compared with those of *R. aureum*, and the filaments are less hairy. In its peeling bark, referred to by Captain Ward in his field note, *R. auritum* agrees with *R. aureum*. It differs slightly in the scales of the leaf under-surface. In *R. aureum* the scales are smaller and more deeply pitted in the papillate epidermis. The fruit also in *R. auritum* is broader for its length than the fruit of *R. aureum*.

There is a link also with *R. virgatum*, but the inflorescences of *R. auritum* are terminal. None of Ward's gatherings have lateral inflorescences, and the corolla in the cultivated specimens is not hairy outside as in *R. virgatum*. *R. aureum* is a Tali plant. The present species comes from far north-west of the Tali, viz. the Tsangpo Gorge, and thus is geographically remote from *R. aureum*. The species is linked also with *R. tephropeplum*, but apart from the difference in the flower colour it has a smaller reflexed calyx and the indumental scales of the leaf underside are different.

H. F. TAGG.

Series Lapponicum.

RHODODENDRON BULU, *Hutchinson, n. sp.*

ILLUSTRATION—

HABIT : a small erect shrub about 18 in. high ; stems covered with grey splitting bark ; branchlets short and twiggy, densely covered with scales.

LEAVES : oblong-elliptic, very slightly narrowed at the base, rounded at the apex and slightly mucronate, about $\frac{1}{2}$ in. long and $\frac{1}{4}$ in. broad, very densely covered on both surfaces with yellowish scales, the scales impressed above and contiguous, overlapping below with scattered brown scales here and there ; leaf-stalks $\frac{1}{10}$ in. long.

INFLORESCENCE : 2-3-flowered, terminal ; bud-scales subpersistent during flowering, densely scaly outside and fringed with soft white hairs ; flower-stalks very short (about $\frac{1}{12}$ in.) and scaly.

FLOWERS : pure white.

CALYX : well developed, densely scaly outside, lobes unequal, oblong, scaly but not fringed with hairs.

COROLLA : deeply 5-lobed ; tube very short, not scaly outside, but finely pubescent within the throat ; lobes scaly outside.

STAMENS : 10, exserted, unequal in length, shortly pubescent nearly at the base.

OVARY : 5-celled, scaly ; style longer than the stamens, thinly scaly towards the base.

CAPSULE : not seen.

HABITAT : Lusha, 10,000 ft., in birch copse with masses of a purple-flowered species, 19 May 1924, *Ward* 5686 (type). (Dried specimen only.)

Although white-flowered " rogues " are known in the *Lapponicum* series, I believe that a real wild white-flowered species is still a *desideratum*. If that be so, here it is in *R. Bulu*, for which I have used the vernacular name given by Ward.

J. H.

Series Glaucum.

RHODODENDRON MICROMERES, *Tagg.*

HABIT : a straggling epiphytic shrub of 3-6 ft.

LEAVES : lamina oblong-elliptic, 3-7 cm. long, 1·5-3 cm. broad ; apex obtuse, mucronulate ; base obtuse to cuneate ; upper surface bright green, lepidote with yellowish scales several times their own diameter apart ; midrib deeply sunk, primary lateral veins about 10 on each side ; under surface glaucous grey, punctulate with scales a little more than their own diameter apart, varying much in size and deeply sunk in pits in the epidermis, epidermis distinctly papillate, midrib prominent ; petiole about 5-8 mm. long, grooved above, rounded below, densely lepidote.

INFLORESCENCE : a terminal umbel of 3-7 flowers (the terminal umbel sometimes supported immediately below by one or more lateral umbels which have fewer flowers) ; terminal rhachis 5-7 mm. long, lepidote and more or less hairy, lateral rhachises somewhat shorter.

PEDICELS : thin, flexuous, about 2-3 cm. long, clad with whitish or golden scales and more or less pubescent.

CALYX : 2-4 mm. long, greenish tinted reddish at margin ; lobes 5, broadly rounded, often reflexed, greenish, lepidote on the back with the margin elepidote.

COROLLA : small, when fully open rotately campanulate, creamy-yellow, lepidote outside on tube and lobes, glabrous inside ; tube short and broad, about 4 mm. long ; lobes 5, 1-1·4 cm. long, broadly rounded, about 1 cm. long, 5-7 mm. broad.

STAMENS : 10, subequal, 5-8 mm. long ; filaments white, thickened towards the base, shorter filaments densely hairy over the whole or two-thirds of length, longer filaments almost glabrous ; anthers ochre-coloured or pale brown, nearly 1 mm. long.

PISTIL : about 6-8 mm. long ; ovary short, conoid, 2·5-4 mm. long, densely clad with whitish glistening scales ; style very short, about 5 mm. long, often lepidote at the base, abruptly curved, thickened to the truncate stigma which is about 1·5 mm. across and pinkish.

CAPSULE : about 1·5 cm. long, 4-5 mm. broad, borne upon thin stalks as much as 5·5 cm. long and supported at the base by the persistent calyx, dehiscing from the apex into 5 narrow valves.

HABITAT : South-Eastern Tibet, North-Western Yunnan, North-Eastern Upper Burma and Assam.

This rhododendron is more interesting botanically than of horticultural attractiveness. It was first found by Mr. George Forrest in 1922 on the Salwin—Kiu chiang divide. Forrest gathered it again in 1924 with flower-buds. Again in 1925 it was gathered by him in foliage. Rock gathered it in 1923 in fruit and fading flowers, and in the same year in flower and fruit. Kingdon Ward collected it (or a form of it) in 1924 at Pemako during his exploration of the Tsangpo Gorge. He also gathered it in North-Eastern Upper Burma (Seinghku Wang) in 1926, and again in 1928 in the Delei Valley, Assam. From Ward's seed (*Ward* 6251) plants agreeing with Forrest's and Rock's gatherings have flowered at Bulstrode Gardens, Gerrard's Cross, Bucks, and the flower characters given above are based largely upon cultivated plants raised from Ward's seed and sent to Edinburgh by Sir John Ramsden.

R. micromeres in leaf shape, the papillate under surface and the type of lepidoteness of the leaf under surface is closely akin to *R. Genestierianum*. The flower characters also suggest affinity with *R. Genestierianum*. From that species it differs chiefly in the colour of the corolla. A characteristic feature of the plant in fruit is the long pendulous fruit stalks in contrast with the relatively short pedicels of the flower.

The following are the numbers of *R. micromeres* :—

South-Eastern Tibet : Forrest 21811, 22856.
Rock 10223, 11167.
Ward 6251.

North-Western Yunnan : Forrest 25588, 25612, 25779.
Rock 17054, 18475.

North-Eastern Upper Burma : Forrest 26636, 27686.
Ward 6848.

Assam : Ward 8169, 8326.

H. F. TAGG.

Series Azalea.
Subseries Obtusum.

RHODODENDRON MINUTIFLORUM, *Hu* in *Journ. Arnold Arb.*, vol. 12, p. 155 (1931).

HABIT: much branched upright shrub to 7 ft. tall; shoots clothed with appressed flattened red-brown hairs.

FLORAL WINTER-BUDS: ovoid, with several glabrescent scales.

LEAVES: persistent, crowded at the end of the branchlets, subcoriaceous, broadly ovate to oblong, $\frac{1}{3}$-$\frac{1}{2}$ in. long and $\frac{2}{5}$-$\frac{3}{10}$ in. broad, cuneate at base, short-acuminate, revolute and minutely crenulate at the margin, dull dark green and strigose-setose above, pale green and glabrous beneath except strigose-setose on the midrib and on the margins; petiole strigose-setose, about $\frac{1}{8}$ in. long.

INFLORESCENCE: 3-flowered, appearing with the leaves; bracts minute, triangular, acute; pedicels strigose-setose, $\frac{1}{4}$-$\frac{3}{8}$ in. long.

CALYX: with distinct roundish lobes, about $\frac{1}{16}$ in. long, completely covered by and fimbriate on the margins with bristly fuscous hairs.

COROLLA: rotate-funnel-form, white, not spotted, about $\frac{5}{16}$ in. across, tube outside pilosulous with reddish hairs, glabrous inside, about $\frac{1}{8}$ in., with spreading ovate-oblong, short-acuminate lobes about as long as the tube, glabrous.

STAMENS: 5, subequal, exserted, about $\frac{1}{4}$ in. long, minutely puberulous except the upper $\frac{1}{3}$; anthers oblong.

PISTIL: exceeding the stamens; ovary densely clothed with fuscous bristly hairs, about $\frac{1}{8}$ in. long; style declinate, pubescent with reddish hairs; stigma capitate.

CAPSULE: unknown.

HABITAT: Southern China, Kwangsi province.

Related to *R. Seniavinii*, Maxim., but the flowers are much smaller, the corolla is spotted, and the leaves are very much smaller, strigose-setose above and glabrous beneath except the setose midrib. A. R.

Series Taliense.
Subseries Roxieanum.

RHODODENDRON RECURVOIDES, *Tagg et Ward. Sp. nov.*
(R. RECURVOIDES, as a name only in the *Year Book of the Rhododendron Association* (1931), p. 245. *Ward* No. 7184.)

HABIT: a small compact shrub, 2-3 ft. high or at times as much as 5 ft.; annual growths very short; vegetative bud-scales persisting for many years; shoots, perioles and outer bud-scales densely strigose (*with long stiff hairs many of which are tipped with glands*); shoots below inflorescences about 7 mm. in diameter.

LEAVES: lamina thick, leathery, lanceolate, oblanceolate or oval, 3-7 cm. long, 1-2 cm. broad; apex obtuse or acute; base cuneate; margin recurved; upper surface regulose, at first clad with whitish branched hairs and long-stalked (*strigose*) glands, later almost glabrous and glossy, midrib deeply grooved, *the groove towards the base filled with strigose hairs or glands*, primary lateral veins 10-12 on each side, deeply impressed; under surface clad with a thick tawny tomentum (*of long-stalked fasciately branched hairs*), midrib not prominent, clad with fasciate hairs and strigose glands, the rest of the venation concealed by the indumentum which has no substratum of rosette hairs; petiole ·5-1 cm. long, slightly grooved above, rounded below, and densely clad with long *strigose* gland-tipped hairs.

INFLORESCENCE: a compact umbel of 4-7 flowers, on a very short rhachis (*supported below by persistent bud-scales and bracts*).

PEDICELS: about 1·5 cm. long, densely clad with (*long-stalked*) strigose glands and also more or less pubescent (*with short simple hairs*).

CALYX: 5-8 mm. long; lobes 5, unequal, lanceolate to ovate, densely clad on the back and margins with (*long-stalked*) strigose glands.

COROLLA: funnel-campanulate, about 3 cm. long, rose with deeper coloured spots on the posterior side; lobes 5, ovate, 1·5 cm. long, 1-1·5 cm. broad.

STAMENS: 10, unequal, 1·5-2·5 cm. long; filaments villous for about 7 mm. of their length from base.

PISTIL: about 3·5 cm. long; ovary about 6 mm. long, densely strigose with long-stalked glands; style glabrous; stigma lobulate.

CAPSULE:

HABITAT: Upper Burma, Seinghku Wang in the Valley of the Di Chu.

R. recurvoides is a very distinct and somewhat aberrant member of the Roxieanum subseries. In its habit and general appearance and in its glandularness it is certainly allied to *R. recurvum*. Its outstanding feature is the dense strigosity of

the shoots, petioles, and outer bud-scales. These parts in *R. recurvum* are clothed with a soft wool. The short annual growths and the persistence of the bud-scales for many years give to the shoots a very ragged look.

From *R. recurvum*, *R. recurvoides* differs also in its much larger calyx and in the nature of the indumentum of the leaf under surface. The substratum of rosette hairs present in *R. recurvum* is replaced in *R. recurvoides* by scattered short-stalked glands. Moreover, the glands on the calyx and ovary of *R. recurvum* are subsessile; on *R. recurvoides* they are long-stalked and semi-bristly.

It is probable that at first all the strigose hairs on the various organs of *R. recurvoides* are tipped with glandular heads which later may fall off or wither.

The flower colour appears to be whitish or rose, certainly the flower is spotted. The few corollas remaining on the herbarium specimens are much withered and the ovaries are passing into immature fruit. Ward in his field note gives no hint as to flower colour. The flowers were probably too much withered to enable him to make a suggestion.

Geographically, *R. recurvum* and *R. recurvoides* are somewhat widely separated. *R. recurvum* comes from North-Western Yunnan, while the type locality of *R. recurvoides* is the Seinghku Valley, Upper Burma.

Apart from *R. recurvum* the only species within the series Taliense, with which *R. recurvoides* seems to have affinity, is the glandular *R. adenophorum* of the Adenogynum subseries. The points of contact are the relatively large calyx, glandular and gland-fringed; the glandular ovary and the glandular leaf upper surface, but *R. adenophorum* is very different in habit, in leaf shape, and in the texture of the indumentum of the leaf under surface.

Outside the Taliense series the glandular, bristly or strigose shoots, pedicels, and calyx find a parallel in *R. crinigerum*, but here again the habit and size of the plant is distinctive, as is also the leaf size, shape, and the leaf indumentum.

The field note of Ward's 7184 reads as follows:—

"25/7/26. Alt. 11,000 ft. Valley of the Di Chu. Foliage and fruit. A small compact bushy shrub, sometimes as much as 5 ft. high, but usually 2-3 ft. or less. Quite tiny plants have been a mass of flowers, which are borne in trusses of 4-7 very freely. Scattered about on the sunniest side of steep granite screes amongst boulders. Closely allied to No. 7123, and may be seen growing within a few feet of it, this species, in the open, the other in the Abies forest or in thickets on the sheltered slope. The two species are, however, quite distinct.

"7/11/26. Collected seeds which are coffee coloured."—*Ward* 7184.

H. F. TAGG.

Series Glaucum.

RHODODENDRON SORDIDUM, *Hutchinson, n. sp.*

ILLUSTRATION—

HABIT: a small scrub plant; older branchlets covered with thin flaky brown bark; young branchlets very short, bearing 8-10 leaves, dark purple, sparingly scaly.

LEAVES: aromatic, obovate-elliptic, slightly narrowed to the base, rounded and with a small hard mucro at the apex, 1-1½ in. long, ½-¾ in. broad, leathery, sparingly scaly above but at length smooth, with about 9 pairs of slightly distinct nerves, greyish below and furnished below with numerous flaky scales, the scales unequal-sized and about their own diameter apart, densely papillous between the scales; nerves distinct below when dry; leaf-stalks stout, scaly.

INFLORESCENCE: terminal, distinctly racemose, about 5-flowered; bracts very early deciduous; flower-stalks 1¼ in. long, slender, with scattered waxy scales.

FLOWERS:

CALYX: well developed, lobes suborbicular, about ⅛ in. diameter, with a few scales towards the base and on the margin, veiny on the inside.

COROLLA: broadly campanulate, 5-lobed; tube ⅓ in. long, glabrous outside, slightly pubescent within, lobes broadly oblong-orbicular.

STAMENS: 10, nearly as long as the corolla, pubescent in their lower ⅔.

OVARY: 5-celled, densely scaly; style short and slightly curved, glabrous, with a broad stigma.

CAPSULE: not seen.

HABITAT: Assam; Kaso Peak, Delei Valley, 13,000-14,000 ft. 2 July 1928, *Ward* 8415 (type).

This number of Ward's collection has appeared in the list of cultivated Rhododendrons as **R. pruniflorum**, *Hutch. & Ward*, but it is not that species. It differs from it especially in the scattered scales on the lower surface of the leaves, which are of an unequally sordid green on both surfaces. In *R. pruniflorum* the scales are very dense, and there are scattered larger brown scales over the green under-layer. The calyx-lobes in *R. sordidum* are more rounded and slightly scaly only near the base and on the margin. Another relative is **R. charitopes**, *Balf. f. & Farrer*, which has ovate, subacute calyx-lobes and pink flowers.

As I indicated in the Society's Book on Rhododendrons, p. 293, the *Glaucum* and *Campylogynum* series are very nearly related, especially through *R. pruniflorum* and the new species here described, which link up the two groups. J. H.

Series Lapponicum.

RHODODENDRON SPILANTHUM, *Hutchinson, n. sp.*

ILLUSTRATION—

HABIT : a small shrub with ascending branches covered with grey splitting bark ; leafy branchlets numerous, twiggy, covered with light brown flaky scales ; leaf-bud-scales early deciduous.

LEAVES : elliptic (very similar to those of *R. hippophaeoides*), shortly narrowed at the base, rounded and finely mucronate at the apex, scarcely ½ in. long, ¼ in broad, densely scaly on both surfaces, green above, with the scales impressed and contiguous, yellowish below with the scales densely overlapping, without visible nerves ; leaf-stalks rather long for the size of the blade.

INFLORESCENCE : terminal, 1-flowered ; flower-stalk almost nothing, glabrous ; flower-bud-scales persistent during flowering, not scaly outside, slightly fringed with hairs.

FLOWERS : apparently mauve.

CALYX : deeply 5-lobed, lobes about $\frac{1}{12}$ in. long or less, glabrous outside, fringed with a few scales.

COROLLA : widely funnel-shaped ; 5-lobed, tube and lobes not scaly outside, throat minutely pubescent.

STAMENS : 10, much shorter than the corolla, pubescent towards the base.

OVARY : 5-celled, densely scaly ; style a little shorter than the shortest stamen, glabrous.

CAPSULE : not seen.

HABITAT : South-Western Szechuan ; Muli or Mili Kingdom, June 1922, *Rock* 6460 (type).

This seems to be a very distinct species of series *Lapponicum*, with foliage very like that of *R. hippophaeoides*. The name refers to the spot-like flowers which are solitary and subsessile within the persistent flower-bud-scales. The affinity is with *R. ramosissimum*, which has early-deciduous flower-bud-scales and scaly flower-stalks. J. H.

NEPAUL RHODODENDRONS.

Mr. T. Hay, M.V.O., has kindly sent the following particulars of the Rhododendrons collected in Nepaul in 1930 by the late Major Lall Dhwey. The identifications are by Mr. J. Ramsbottom, O.B.E., Keeper of Botany, British Museum.

No. 42. Rhod. arboreum var. roseum, Lindl.
From Tao-tor at 12-13,000 ft.

46. Rhod. lepidotum, Wall. Fls. purple.
From Tao-tor at 12-13,000 ft.

384. Rhod. ? (no dried specimens). Fls. creamy white.
From Choker at 16-18,000 ft.

454. Rhod. campanulatum, D. Don. Fls. white.
From Maneg-Dara at 13-14,000 ft.

501. Rhod. elaeagnoides, Hook f. Fls. pink.
From Faketeg at 13-14,000 ft.

510. Rhod. elaeagnoides, Hook f. Fls. white.
From Maneg-Dara at 13-14,000 ft.

638. Rhod. setosum, D. Don. Fls. purple.
From Rolwa Ling at 16-18,000 ft.

652. Rhod. campanulatum, D. Don. Fls. ? (no flower specimens).
From Tung Nasha at 14,000 ft.

ERNEST HENRY WILSON.

On 15th October 1930 Wilson and his wife were killed in a motor accident at Worcester, Massachusetts, while returning to Boston from a visit to their daughter at Geneva, N.Y.

Wilson was born at Chipping Campden in Gloucestershire on 15th February 1876, and in 1892 began his life work at the Birmingham Botanic Garden under W. B. Latham. In January 1897 he proceeded to Kew, and soon afterwards became a student at the Royal College of Science, South Kensington. In 1899, when 23 years old, he was recommended by the Director of Kew, Sir William T. Thiselton-Dyer, to the famous firm of James Veitch & Sons. They were anxious to get seeds of the innumerable plants seen in Central China by French Jesuit missionaries, of whom David, Delavay, and Farges were the foremost, and by Augustine Henry in the province of Hupeh. Henry, whose death we deplored in March 1929, had collected a vast mass of herbarium material but had sent home no seeds. The Veitches had frequently sent out collectors to different parts of the world ; it is to their agency that we owe the valuable introductions to horticulture and arboriculture from Chile and the North Pacific Coast of William Lobb in the 'forties and 'fifties, and from the Far East of John Gould Veitch in 1860 and Charles Maries in 1879.

Of previous botanical discovery in China Wilson wrote thus :—

> " The botanical collections of the two French Roman Catholic priests, les Abbés David and Delavay, of the Russian traveller N. M. Przewalski, and of the Imperial Maritime Customs officer, Augustine Henry, gave the first true insight into the extraordinary richness of the flora of Central and Western China. Delavay's collection alone amounted to about 3000 species, and Henry's exceeded this number ! Botanists were simply astounded at the wealth of new species and new genera disclosed by these collections. An entirely new light was thrown on many problems, and the headquarters of several genera, such as, for example, Rhododendron, Lilium, Primula, Pyrus, Rubus, Rosa, Vitis, Lonicera, and Acer, heretofore attributed elsewhere, was shown to be China."

The names of David, Delavay, Farges, and Henry are happily identified with fine species of many genera. There are foresters and gardeners in all countries to whom their names, as well as those of subsequent explorers in China, Purdom, Farrer, Forrest, and Ward, are household words.

From 1899 till 1910 Wilson was engaged in four expeditions to Western China, the first two for Messrs. Veitch, the third and fourth for the Arnold Arboretum ; the cost of the last, however, and the resulting rich harvest of seeds, were shared by British subscribers. Professor Sargent's letter to me proposing this joint enterprise was written from the Arnold Arboretum on 17th December 1909 ; I had little difficulty in finding the sum required from people in this country. We assuredly made a fortunate bargain as the supply of seed of Conifers and of species of Rhododendron, Acer, Betula, Prunus, and shrubs of many genera far exceeded

our expectations. The fair division of the seeds among the thirty-four participants in proportion to the varying sums subscribed was a formidable task.

The plants of Western Hupeh and Szechuan and to a lesser degree of Northern Yunnan which "Chinese Wilson," as he came to be called, has brought to our gardens are a wonderful and lasting monument to this intrepid and tireless explorer. Wilson owed much of his great success in China to the fact that he got on well with the people. He had a great liking for the Chinese and appreciation of their qualities; he early acquired a good working knowledge of the language and adopted native dress. His collectors were loyal to him, and he was able to impart his zeal to them.

Plantae Wilsonianae, edited by Professor Sargent, of which the first part was published in 1911 and the ninth and last in 1917, enumerates all that is known of the woody species of that region of boundless floral wealth. The book describes no less than 2716 species and 649 varieties, while of these nearly 900 were new introductions. Even by 1916 one hundred of Wilson's plants had received Awards of Merit from the Royal Horticultural Society, and the number now is far greater. There is scarcely a garden in Great Britain or indeed in Western Europe or Eastern America in which Wilson plants are not to be seen. Every volume of the venerable *Botanical Magazine* for years past has contained plates and descriptions of his introductions and is likely to do so for years to come.

It is highly fortunate for us in this country that such an enormous number of plants of Wilson's discovery find our climate entirely to their liking. In the case of shrubs of many genera such as Cotoneaster, Viburnum, Rosa, Berberis, Philadelphus, and Syringa, they flower and fruit as luxuriantly in Massachusetts as in the most favoured parts of our country.

Of his Rhododendrons a list is appended. While all of these are perfectly hardy anywhere in the British Isles, it is sad to record that only one can be grown successfully at the Arnold Arboretum: it is the insignificant Rh. MICRANTHUM.

To foresters the many spruces and firs of which he collected seed will become increasingly familiar; it is to the expedition of 1910, in the results of which we shared, that we owe the bulk of them. The pineta of Great Britain contain almost all his Conifers; I myself am fortunate to have at Dawyck a very thriving two-acre plantation of *Picea asperata*, as well as specimens of most of his other firs and spruces.

In 1913 Wilson produced an account of his travels for the general reader under the title of *A Naturalist in Western China*. This lively book is in two volumes, and is embellished with over one hundred of his excellent photographs. Therein we may read of his first sight of *Davidia involucrata*, of which he says, "to my mind it is the most interesting and beautiful of all trees of the north-temperate flora." Indeed those who see any of Wilson's original 13,000 trees, some of them now 35 feet high, laden with their snowy flowers, or rather bracts, in many southern gardens in early June, will agree with his opinion as to its supreme merit. The interest of the book, though dealing for the most part with the flora of the country, is by no means confined to his description of the finding of new plants; the author writes of many aspects of life in Western China, and devotes

three chapters, full of previously unrecorded information, to the mammals and ame-birds. He wrote :—

> "During the years 1907-09, the expedition under my charge paid particular attention to the fauna and amassed a collection of some 3135 birds, skins of 370 mammals, and specimens of various reptiles and fishes. My associate on this particular expedition, Mr. Walter R. Zappey, had especial charge of the collecting work in this department."

The specimens then obtained are preserved in the Museum of Comparative Zoology at Harvard.

In his last expedition to China an avalanche of stones falling on him while being carried in a palanquin along the precipitous edge of a ravine nearly cost him his life : I remember the graphic description he gave me one day at the Arnold Arboretum in 1911 of how when his bearers had fled and he was left lying on the path with a compound fracture of the leg, he looked up at the bellies of a string of a hundred mules as each carefully stepped over him without doing him further injury. After great suffering he was eventually carried to where he could receive medical treatment. and the leg was saved, though he was lamed for life.

When he had completed his share of the laborious task at the Arnold Arboretum of identifying for *Plantae Wilsonianae* his fifty thousand sheets of herbarium material and describing the new species he had discovered, he again set out for the East. This time he explored Hondo, Hokkaido, and Saghalien. This expedition resulted in two scientific works from his pen of great value, *The Conifers and Taxads of Japan* and *The Cherries of Japan*, both published in 1916. Again he visited Japan in 1917 and explored Korea, from which country seeds of many new or little-known species were sent home by him. Important trees such as *Abies koreana*, *A. nephrolepis*, and *Picea Koyamai* have been grown in considerable quantities in this country from seed he then collected. In that year he also visited Formosa.

In 1921 Wilson jointly with his colleague, Alfred Rehder, produced *A Monograph of Azaleas*, which settled many difficulties as to the origin of cultivated hybrids of that sub-genus.

In 1925 Wilson brought out *The Lilies of Eastern Asia*, which is the most valuable work on the subject since Elwes wrote his *Genus Lilium* in 1880. Indeed no living man can have seen nearly as many lilies in a wild state as had Wilson. From the commercial point of view his discovery and introduction of *L. regale* was probably his greatest triumph ; it is to him we also owe *L. Sargentiae*, *L. Willmottiae*, and others.

In 1920 he set out on a two years' tour to India, Ceylon, Malaya, Java, Australasia, and South Africa, where he not only saw the vegetation of those countries but studied the herbarium material of all their botanical collections.

He visited me at Dawyck in 1911 and 1922. On the last occasion he was much impressed with the Western American Conifers at Murthly ; curiously enough he was not familiar with the North or South Pacific Coasts of America.

After his return to Boston from his last world tour, he published a most interesting account of it under the title of *Plant Hunting* ; this was followed by several

popular books on trees, shrubs, and exploration, as well as a volume describing the genesis and activities of the Arnold Arboretum. He was appointed to the staff of that institution as assistant to Professor Sargent in 1919, and on the death of that great man in 1927 Wilson was chosen to succeed him and became Keeper in his place.

In 1912 he was made a Victoria Medallist of Honour of the Royal Horticultural Society; he was a Fellow of the American Academy of Arts and Sciences and an honorary M.A. of Harvard University, while in June 1930 he received the honorary degree of D.Sc. from Trinity College, Hartford, Connecticut.

No one contributed more valuable articles for the *Notes of the Rhododendron Society*. The first appeared in Vol. II. in 1922, with the title of "The Rhododendrons of North-Eastern Asia, from the Altai Mountains in Central Siberia to the Pacific Coast, including the countries of Manchuria, Korea, and Japan."

His next contribution was in 1923, "The Rhododendrons of Hupeh Province, Central China," followed by an enumeration and description of many of his most important introductions. In the same volume he later sent us a paper on "The Rhododendrons of the Bonin and Liukiu Islands and of Formosa." This was dated 6th March 1925, and classifies and gives information of the twenty-two species from those islands.

His next paper, "The Rhododendrons of Eastern China," appeared in the first part of Vol. III., and enumerates and deals with twenty-one species from that region.

To Part 2 of Vol. III. he sent an article on "Azaleas in the Arnold Arboretum"; to Part 3 a valuable paper on "Identification of the Rhododendrons collected by J. F. Rock, on the Arnold Arboretum Expedition to North-Western China, 1924-27"; this was the last paper that our Society owes to him.

In 1927 he was awarded the Loder Rhododendron Cup.

His loss to botany, arboriculture, and horticulture is indeed a heavy one, and is felt equally on both sides of the Atlantic.

F. R. S. BALFOUR.

DAWYCK, 1931.

RHODODENDRONS OF WILSON'S INTRODUCTION.

Rh. alpicola. Discovered by Wilson 1908.
,, *alpicola* var. *strictum.* Introduced by Wilson 1908.
,, *ambiguum.* Discovered by Wilson 1904.
,, *Amesiae.* ,, Wilson 1908.
,, *apiculatum.* ,, Wilson 1908.
,, *argyrophyllum.* ,, David. Introduced by Wilson 1904.
,, *argyrophyllum* var. *cupulare.* Discovered and introduced by Wilson in ?
,, *argyrophyllum* var. *omeiense.* ,, ,, ,, ,,
,, *Augustinii.* Discovered by Henry 1885. Introduced by Wilson 1908.
,, *auriculatum.* ,, Henry. ,, ,, 1901.
,, *bractealum.* ,, Wilson 1908.
,, *calophytum.* ,, David. Introduced by Wilson 1904.
,, *cephalanthum.* ,, Delavay. Introduced by Wilson 1908.
,, *concinnum.* ,, Faber 1886. ,, ,, 1904.
,, *Davidii.* ,, David 1885. Introduced by Wilson 1904.
,, *Davidsonianum.* ,, Wilson 1903.
,, *decorum.* ,, David 1885.
,, *dendrocharis.* ,, David 1885 and Wilson 1904.
,, *discolor.* ,, Farges 1885. Introduced by Wilson 1907.
,, *Edgarianum.* ,, Wilson 1908.
,, *Faberi.* ,, Faber. Introduced by Wilson 1904.
,, *Fargesii.* ,, Farges 1885. Introduced by Wilson 1901.
,, *flavidum.* ,, Soulie 1893. Introduced by Wilson 1908.
,, *flavidum* var. *psilostylum.* Introduced by Wilson 1908.
,, *floribundum.* Discovered by David 1885. Introduced by Wilson 1903.
,, *galactinum.* ,, Wilson 1910.
,, *Hanceanum.* ,, Faber 1896. Introduced by Wilson 1909.
,, *Hunnewellianum.* ,, Wilson 1908.
,, *hypoglaucum.* ,, Henry 1896. Introduced by Wilson 1900.
,, *insigne.* ,, Henry. Introduced by Wilson 1908.
,, *intricatum.* ,, Soulie. Introduced by Wilson 1904.
,, *longesquamatum.* ,, Wilson 1908.
,, *longipes.* ,, Wilson 1904.
,, *longistylum.* ,, Wilson 1908.
,, *lutescens.* ,, David 1870. Introduced by Wilson 1904.
,, *maculiferum.* ,, Farges. Introduced by Wilson 1901.
,, *micranthum.* Introduced by Wilson 1900.
,, *moupinense.* Discovered by David 1870. Introduced by Wilson 1909.
,, *nitidulum.* ,, Wilson 1908.
,, *nitidulum* var. *nubigenum.* Discovered by Wilson 1908.

Rh. ochraceum. Discovered by Wilson 1908.
,, *Openshawianum.* ,, Wilson 1908.
,, *orbiculare.* ,, David 1877. Introduced by Wilson 1904.
,, *oreodoxa.* Introduced by Wilson 1904.
,, *pachytrichum.* Discovered by David 1884. Introduced by Wilson 1904.
,, *polylepis.* ,, David 1880. Introduced by Wilson 1904.
,, *Przewalskii.* ,, Przewalsky 1880. Introduced by Wilson.
,, *Purdomii.* ,, Purdom 1910.
,, *racemosum.* ,, Delavay 1883, also found by Wilson and Forrest.
,, *ramosissimum.* ,, Mussot and Wilson 1908.
,, *rufescens.* ,, Wilson and Soulie 1904.
,, *Sargentianum.* ,, Wilson 1903.
,, *Searsiae.* ,, Wilson 1908.
,, *strigilosum.* ,, David 1885. Introduced by Wilson 1904.
,, *sutchuenense.* ,, Farges 1893. Introduced by Wilson 1900.
,, *taliense.* ,, Delavay 1885. Introduced by Wilson 1908.
,, *Thayerianum.* ,, Wilson 1910.
,, *trichostomum.* ,, Delavay 1885. Introduced by Wilson 1904.
,, *verruculosum.* ,, Wilson 1908.
,, *villosum.* ,, Wilson 1904.
,, *violaceum.* ,, Wilson 1908.
,, *Wasonii.* ,, Wilson 1904.
,, *Watsonii.* ,, Wilson 1904.
,, *Websterianum.* ,, Wilson 1908.
,, *Weldianum.* ,, Wilson 1910.
,, *Williamsianum.* ,, Wilson 1908.
,, *Wiltonii.* ,, Wilson 1904.

NOTES FROM BORDE HILL.

I have found Rh. Keiskii remarkably resistant to frost. In 1929 plants here bloomed better than I have ever seen them do before, and they also stood 9 degrees of frost without being the least damaged, but the situation in which they are grown is a very sheltered one.

I now and again see in print that Rh. Delavayi is quite equal in hardiness with Rh. arboreum. I do not find this to be the case, and I think an assertion to the contrary ought to appear in the Notes. Of ten or a dozen Rh. Delavayi here, only one came through last winter unscathed, while some were absolutely cut to the ground. The one that came through the winter unscathed should possibly not be reckoned as Delavayi, as it was raised from a packet of seeds marked "Swertia."

I do not know how many arboreums are growing here, perhaps a hundred or a hundred and fifty, but except a few marks on leaves, no damage was done by the winter to any of the plants, nor have I ever had plants of arboreum here damaged by frost, except the variety that Reuthe used to sell as "Nigrescens," which I believe to be totally different from the old Nigrescens, for the latter was certainly a very tender plant, and I have had to move it to the Isle of Wight.

STEPHENSON R. CLARKE.

Borde Hill, 1929.

SOME OBSERVATIONS ON VARIOUS SPECIES.

It is a common remark amongst "the public"—those gardeners who would like to grow Rhododendrons but who find them "difficult" (perhaps owing to making no serious effort to ascertain their requirements)—that such scanty information regarding the needs of various species as is available comes almost entirely from those gardens that are situated in the favoured West and whose owners devote themselves to one genus to almost the exclusion of all others.

Whether there is any justice in this plaint or not, everyone should be grateful to the grower who offers the result of his experiences to others; and it necessarily follows that where there are most Rhododendrons, there will be found the best opportunity for the observation of the numerous species that comprise this grand genus.

The writer, who lives in the Eastern Counties, a cold locality of low rainfall and fierce sunshine, has for many years endeavoured to discover those Rhododendron species which are best suited for such conditions: the result of his observation, even if scanty, may be of some assistance to other growers similarly situated, even if it only raises criticism or provokes other and better information.

As has been suggested, it is in the mild districts with a heavy rainfall that the best collections of Rhododendrons in Britain can be seen to-day; so, in the first instance, it is on the successes and the failures there that such amateurs will be wise to concentrate.

Gardeners dealing with a harsh climate will clearly be wise to give a little space to plants that get frequently cut in the West, or which flower so early that the chances of a good show is remote, to say the least of it. Among such latter plants can be put Rh. OREODOXA as being particularly annoying, since it seems absolutely hardy and to endure sunshine and a dry place, but its numerous flower-buds are cut year after year: its habit and leaf do not entitle it to a place apart from its flowers. This is not the case with Rh. CALOPHYTUM, whose grand leaves and habit make more than enough amends for the loss of its flowers in three years out of five.

Rh. LUTESCENS is another that disappoints in a manner similar to Rh. OREODOXA.

Of the large-leaved species, Rh. HODGSONII and Rh. FICTOLACTEUM appear best to withstand rough circumstances.

Contrary to opinion generally expressed, Rh. BARBATUM would seem to be a species that likes a dry sandy soil and fair supply of hot sunshine—in fact a south aspect would seem to suit it provided that shade from the east and the west is afforded; the flowers will stand an astonishing amount of frost and last well if protected from the early morning sun. Rh. BARBATUM is sometimes considered a difficult subject, but possibly failure may be due sometimes to a dislike of treatment that would delight Rh. ARBOREUM. In comparatively dense shade Rh. BARBATUM gets leggy and flowers fitfully: in such a place, if dry enough, Rh.

AURICULATUM will thrive, and its thin "papery" young leaves do not seem to suffer from a somewhat dry root area, though they will wilt in a few hours if subjected to fierce sunshine. For this and other reasons RH. AURICULATUM seems awkward to place, since it is hard to believe that it will flower satisfactorily in those place in Britain where it seems most contented to grow. Time will show.

Dry situations in a cold climate—and a fair amount of sunshine—appear to suit such members of the Trifiorum Series as RH. YUNNANENSE, RH. DAVIDSONIANUM, RH. CHARTOPHYLLUM, RH. TRIFLORUM, RH. AMBIGUUM, and most certainly the superlatively beautiful RH. AUGUSTINII.

Of the entrancing THOMSONII Series I have not seen RH. THOMSONII itself growing in other than what I would call typical conditions for Rhododendrons; but RH. CAMPYLOCARPUM is a species to which a cold climate and a dry situation seems to suit, and the same applies to RH. SOULIEI, which seems unhappy unless winter compels a complete rest.

Of RH. MEDDIANUM one does not yet dare to speak above a whisper, but there appears to be at least a hope that a harsh climate and harsh conditions will not prove too much for it.

Finally, a health certificate A1 can be given to RH. ADENOGYNUM, RH. CLEMENTINAE, RH. PACHYTRICHUM, and apparently to RH. LACTEUM, but as to this last it is early and nervous days to prophesy or even to hint!

This Note, produced by a determined appeal from the Editor, certainly lays no claim to providing any new information, but it will more than justify itself should it succeed in encouraging others to attempt experiments with Rhododendrons, bearing in mind that this huge genus must contain several "surprise packets," and that collectors' notes are necessarily scanty, and also necessarily the conditions under which they are collected and introduced must sometimes prove misleading.

Encouragement to such efforts may be derived from the fact that so acute an observer as the late Ernest H. Wilson was convinced that the west of Britain was not the best available area for a number of the Chinese species, and on several occasions he urged garden owners in other, apparently less favourable, parts, to "ring the changes" boldly and combine some confidence with careful observation.

CHARLES ELEY.

EAST BERGHOLT PLACE, 1931.

NOTES ON RHODODENDRONS AT HEADFORT.

In the *Rhododendron Society Notes* for 1928 I wrote on a few Rhododendrons growing in the rock bed here, and I think it would perhaps be interesting to review these notes for the changes that have taken place.

I mentioned in 1928 that owing to the growth of several plants I had been obliged to move some. This has been again necessary in a greater way than I anticipated, more particularly amongst the NERIIFLORUM Series, SANGUINEUM and HAEMATODES sub-Series. As an instance only one of each number (there were five) of RH. CHAETOMALLUM could remain; the remainder had to be moved. Such was also the case with RH. ROSEOTINCTUM and RH. DIDYMUM.

All this series are planted with more or less northern aspect.

Of those that remain RH. DICHROANTHUM has been given a kingdom of its own on the top of the bed, and promises much flower next spring for the first time of flowering. It will share the crown of the bed with RH. NERIIFLORUM, HAEMALEUM, and HAEMATODES. RH. HAEMALEUM shows well from this aspect, as in my opinion this plant, to get its full value in flower, should be so planted that the light shall penetrate the deep rich red colour to full advantage.

Of other Rhododendrons, most of the LAPPONICUMS have all had to be moved leaving one or two at the most only of each species that were originally planted.

The 12 plants of RH. KELETICUM are now as one, and have become very attractive creeping over the stones.

RH. MEGERATUM, however, has not made much growth. A pity, as it is one of the most beautiful of the yellows.

I wish I was able to increase the size of this rock bed, but am unable to do so. I am, however, making a new bank for all the dwarfer Rhododendrons, and especially APERANTUM, and I hope to make this a great feature.

Of other Rhododendrons the following promise flower for the first time here next spring:—RH. MALLOTUM (AEMULORUM of Forrest), RH. MEDDIANUM, RH. THAYERIANUM, BEESIANUM, and RH. DIAPREPES.

Of older plants RH. RIRIEI and RH. CALOPHYTUM brought from Coombe Wood in 1913 are flowering for the first time.

HEADFORT.

December 1930.

MISS CLARA MANGLES.

The death of Miss Clara Mangles on 24th January 1931, in her 85th year, removes a link with one whose name will always be remembered with gratitude by cultivators of Rhododendrons, and it is due to her memory that a few words in the *Rhododendron Notes* should record her efforts to preserve and perpetuate the results of her brother's work. In a former number of these *Notes* (Vol. I., p. 44) some account was given of James Henry Mangles's enthusiasm for Rhododendrons, and especially of his experiments in hybridizing them. It was sad that at his premature death at the age of 52 in 1884, very few of his hybrids had flowered. When he died his numerous seedlings passed into the possession of his brother, Henry Mangles, who lived at Littleworth, near Farnham, not many miles from Valewood, with Miss Clara Mangles, and most of them were moved to Littleworth.

Henry Mangles, who shared his brother's enthusiasm, died in 1908, and since then they have been in the care of Miss Clara Mangles.

The conditions at Littleworth did not turn out to be so favourable for Rhododendrons as at Valewood. Nevertheless, some notable hybrids came from there, mostly GRIFFITHIANUM CROSSES, and there were fine specimens of some of the more uncommon Himalayan species such as HOOKERI and WIGHTII.

The remainder of Mangles's plants which were left at Valewood came into the possession of his daughter, Mrs. Daffarn.

Amongst the more notable of the hybrids raised either at Valewood or Littleworth were "Clara Mangles," "Isabella Mangles," "Daphne Daffarn," "Miss Stillman," "Cleopatra," "Glory of Littleworth," and "Littleworth Corallina."

Miss Mangles had been a member of the Rhododendron Society since its foundation. She was always glad to receive members at Littleworth and show them her treasures, of which she was very proud.

GERALD W. E. LODER.

WAKEHURST, 1931.

NOTES FROM LAMELLEN.

For 1929.

The winter of 1928-9 was not so severe in Cornwall as in most parts of the country, and never were the ponds completely frozen over, so that the damage done was not great. Rh. CARNEUM, on a south wall and partially shaded, split its bark and gradually died to within about a foot of the ground, but the lower shoots seem healthy. Several of the more tender spp. were frosted in bud, but there were no other bad casualties. During the last week in March Rh. K.W. 6273 flowered for the first time in a frame. The flowers so far were solitary, $1\frac{1}{4} \times 2$ inches, salver-shaped, 5-lobed, cream-coloured, and deeper at the centre. Stamens 10 dark brown, filaments and style the same colour as corolla, stigma greenish. This I sent to Edinburgh, and Prof. Wright Smith told me that it was Rh. LEUCASPIS, and had already been given an A.M. at the R.H.S.

Next came Rh. No. 619 "MELISSA" (ASCOT BRILLIANT × BLOOD-RED ARBOREUM), and as might have been expected is a good red, 12 to the truss, and with a slight spotting of darker colour on the upper lobes. Calyx minute, filaments and style lighter than corolla, stigma red.

Early in April Rh. No. 582 "DAPHNE," named after Lady Weymouth. Parentage BLOOD-RED ARBOREUM × THOMSONII × NERIIFLORUM. A remarkable hose-in-hose flower of a brilliant red, a trifle darker than Rh. NERIIFLORUM. 7-9 to the truss, 2×2 inches, filaments and style lighter than corolla, stamens dark brown, stigma red. There were three flowers on a little bush 18 inches high.

Another plant of Rh. No. 358 "CAMPIRR" (CAMPYLOCARPUM × IRRORATUM) flowered, a sister to the one mentioned last year and an improvement on it. Pale yellow, heavily spotted, with dark crimson on the three upper lobes and little blotches of crimson at the base. A very pretty flower.

The first week in April gave us the first flower of Rh. "CLIO" (XENOSPORUM × "GILIAN"). Carmine lake, deeper on the outside, with two lines of darker spots at the base of the upper lobe. 12 to the truss, 5-lobed, campanulate, 2×3 inches, filaments and style lighter than corolla, stamens light brown, stigma green. A beautiful flower of a rather distinct colour.

At the same time flowered Rh. No. 404 from seed of Rh. ADENOPODUM picked at Caerhays. The leaf has not the characteristic tomentum of the species, but the flower has the same distinct shape and colour and a heavy spotting of crimson on the upper lobes. It is a little larger than the true species.

In the last week in April bloomed Rh. No. 470 "EUKING" ("EMPRESS EUGENIE" × "MRS. KINGSMILL"). Pale yellow with some faint red spotting on the upper lobes, 10 to the truss, 5-lobed, campanulate, on rather long reddish pedicels, $2 \times 2\frac{1}{2}$ inches, filaments and style same colour as corolla, stamens light brown, stigma greenish. A very nice flower.

At the same time came Rh. K.W. 3042, deep rose, with darker spotting at base, growing fainter as it neared the lobes, 11 to truss, 5-lobed, campanulate, $1\frac{3}{4} \times 2$

inches, filaments and style lighter than corolla, stamens 10 dark brown, stigma reddish. Corolla deeply divided. A lax truss and not an exciting flower. This differs in foliage from others under this number, and Prof. Wright Smith thinks it is a natural hybrid.

Last week in May Rh. No. 189 SMIRNOWI×AUCKLANDII. A pure white flower 2½×4 inches, campanulate, 5-lobed, seven to the truss on long pedicels, filaments blush, stamens 10 light brown, style pink. A pretty flower and should be hardy. Rather large leathery leaves without tomentum.

Third week in June Rh. No. 550 SOULIEI×DISCOLOR. Pink in bud, fading to white, with a large blotch of crimson at base, 3×4½ inches, 7-lobed, openly campanulate, 8 flowers to the truss, filaments white, stamens 14 light brown, style yellowish with minute red glands or hairs. A distinguished hybrid, which should be even better under more favourable conditions, and valuable for its late flowering.

In August came a stray flower of Rh. 27715 F, described as a white form of Rh. VALENTINIANUM. It was, however, a clear yellow with numerous red glands on the outside, and since it is a comparatively large flower on a dwarf plant with shiny ovate leaves, it should, if it proves hardy, be a plant with a future. The dry summer has not affected this garden very adversely, though a certain number of seedlings recently planted from boxes perished. For we had a little rain at times, and the valley faces north-west and so does not get all the sun. However, there are flower-buds on a good many new species and hybrids, so that, frost permitting, next spring should be interesting.

In September I had the pleasure of seeing Lord Digby's garden at Minterne in Dorsetshire, fortunately situated on green sandstone, though surrounded on all sides by chalk. There are some very fine cedars and gigantic beech trees in the shrubbery, and some good specimens of the beautiful *Picea Morinda*.

The chief Rhododendron is a magnificent FALCONERI about 25 feet high, and there were many good bushes of Rh. THOMSONII and several of Rh. CAMPYLOCARPUM. Besides these there were a certain number of smaller Chinese Rhododendrons and many of Forrest's and Rock's seedlings. Maples, some well-grown young cherries, and a lot of Azaleas, brought by the owner from Japan, must be a lovely sight in the spring. Like most of our gardens, however, it was somewhat overcrowded, and there was more shade from the beech trees than could be good for the other plants.

Lord Digby is greatly interested in Rhododendrons, etc., and one hopes that some day he will join the Society and write in its journal his own description of the garden.

FOR 1930.

We have not had a severe winter, but a very stormy one, including several gales, the worst I have known for years. About thirty trees were blown down in the garden alone, though happily not many Rhododendrons were damaged.

The last week in March produced the first flower of Rh. "CLEOPATRA" (BLOODRED ARBOREUM×THOMSONII×SUTCHUENENSE), 12 to the truss, 5-lobed, 2½×3 inches, crimson, with a few darker spots on the upper lobe, stamens 10 brown,

filaments and style blush, stigma reddish, corolla minute. A fine big flower, but crimson rather than red. The plant has fine foliage.

Also No. 1074=K.W. 6279, one of the VIRGATUM Series, flowers pale pink in the axils of the leaves, forming something of a truss at the top of the shoot, 1½×2 inches, stamens 10 light brown, filaments and style same colour as corolla but paler at the top, stigma reddish pink. Dr. Stapf tells me that this is RH. OLEIFOLIUM.

First week in April RH. No. 184 HAEMATOCHEILUM×BARBATUM had its first flower. Crimson-pink, unspotted, 20 bells in a shapely BARBATUM truss, 1½×2 inches, unspotted, 5- or 6-lobed, calyx minute, stamens 10 dark brown, filaments and style paler than corolla, stigma red. A nice flower.

Another first flower was an unknown species, a rogue among other seedlings. Mauve-rose, the darkest shade, 21 flowers in a round truss, darker on exterior, unspotted, but with a threefold blotch of deep crimson at the base, 5-lobed, rather narrowly campanulate, 1½×2 inches, stamens 10 brown, style and filaments lighter than corolla, stigma green, calyx minute. This has not yet been named. There was also an imperfect flower on RH. BEESIANUM, clear blush in colour, with a small crimson blotch, 5-lobed, rather broadly campanulate, 20 to the truss, 1¾×2 inches, stamens 10 light brown, filaments and style almost white, stigma green, calyx minute. I imagine that a perfect flower would be more proportionate to the size of the foliage.

FOR 1931.

So far, until 22nd February, a mild winter, and the early form of RH. GRANDE has been out a fortnight, and much better than ever before, quite a hundred flowers out at once. The ordinary variety not yet showing colour.

The pink form of RH. SUTCHUENENSE, an old Coombs Wood plant, is also flowering all over.

The third week saw two new flowers. RH. SUTCHUENENSE×RIRIEI, a big, rather flat truss, pale violet-lilac in colour, with a certain amount of crimson spotting on the upper lobes, and the interior base of the corolla deep crimson-purple. 13 flowers to the truss, 5-lobed, campanulate, 3×3½ inches, filaments and style paler than corolla, stigma reddish, stamens 10 dark brown. The foliage is obovate lanceolate and somewhat similar to that of RIRIEI, but larger.

The other was FARGESII×BLOOD-RED ARBOREUM, violet-rose of the darkest shade. A good full rounded truss, containing 20 bells, 6-lobed, openly campanulate, with many darker spots on the upper lobes, 2×2½ inches, filaments and style paler than corolla, stigma cream, stamens 12-14 brown. A small growing plant with leaves rather like FARGESII, but stouter, and showing the influence of ARBOREUM in the brighter colour and better truss. Some of the hybrids should produce redder flowers.

Then came the frost of the second week in March, the worst March frost for sixty years according to the papers, 16 degrees being reported from Penzance.

Every Rhododendron in flower and many in bud were ruined, MOUPINENSE, LEUCASPIS, and CILICALYX being cut even in a cold frame.

When it was over, RH. BARBATUM × SUTCHUENENSE produced its first flowers, some of them being slightly injured. The colour was deep rose pink of the darkest shade, with a great blotch of crimson at the base of the upper lobes, thinning out into scattered spots. A good rounded truss a little flattened at the top, 16 bells, campanulate, $2\frac{1}{8} \times 2\frac{7}{10}$ inches, 5-lobed, filaments paler than and style the same colour as corolla, stamens 10 very dark brown, stigma red. This is a fine hybrid.

It is probable that for once the west country suffered more severely from the frost than the north and east. RH. LACTEUM was frosted in bud, as was GRANDE and SINO-GRANDE, which should have bloomed for the first time here.

We have had a very wet and sunless summer, and many of the crosses made failed to mature seed, nor is there much promise of flower for next spring. Quite a number of plants have rotted at the crown, presumably from too deep planting in our heavy soil; and recently having got a few Rhododendrons from the west of Scotland, I was struck by the enormous superiority of the soil in which they had been grown to anything they get here. The lesson appears to be that one must add a lot of stones when planting, more leaf-mould and granite gravel, and above all plant shallow. Even in the frames many seedlings went off, including, unfortunately, a good few LACTEUM, and I believe that this was owing to a heavy top-dressing I gave them in the spring with intent to avoid watering and without anticipation of so much rain.

Lastly, I may mention that a plant of RH. 10974 F, the supposed crimson form of FICTOLACTEUM, flowered here this year and was identical with the type. Perhaps the seed was picked from a crimson variety, and it may be that some of the other plants raised will yet flower as described.

E. J. P. MAGOR.

LAMELLEN, 1931.

PLANTING RHODODENDRONS.

In no genus of flowering shrubs does satisfactory effect depend so critically upon judicious planting as it does in Rhododendrons. The number of species at our disposal is now so great, they vary so widely in size, habit, and colour of flower as to demand careful forethought in placing them. Having myself perpetrated many blunders in this matter, I venture to pass a few observations thereon. They apply only to natural species, whereof I think it essential to display the wonderful variety to the best advantage, while the profusion of gorgeous hybrids may serve for sheer decorative display.

Rhododendrons, being essentially Children of the Wild, can never be seen at their best in formal lines or rigid clumps. Where ample space is at command, a single species may indeed be massed with fine effect on sloping ground or the sides of a glen; but the suggestion of design must not appear, for even the lowly species that take the place of heather at high altitudes in Asia lend themselves reluctantly to anything in the nature of bedding out.

Open woodland is the true ideal for the larger species of Rhododendron, where they may be planted at varying intervals and where trees may be removed or lopped from time to time to allow the development of fine specimens. In such environment a blood-red or rose-coloured Rh. ARBOREUM shows at its best among forest trees, while Rh. GRIFFITHIANUM may fill a glade with fragrance, Rh. AUGUSTINII spread its cloud of vapoury blue, and Rh. EXIMIUM startle us in August with the tawny splendour of its yearly growth.

I have in mind one of the oldest and largest collections in this country, where conditions are most propitious for such an arrangement; but opportunity for carrying it into effect has been missed. Here the woodland has been intersected with straight grassy avenues, and such Indian species as Rh. ARBOREUM, BARBATUM, NIVEUM, CAMPANULATUM, etc., were planted along each side of them some sixty years ago. Many of these are now magnificent specimens between twenty and thirty feet high; but their full effect is marred by the formal order in which they stand, also, in too many cases, by congestion consequent on neglect of timely transplanting. One longs to see them scattered at unequal intervals through the surrounding woodland; and Rhododendrons, except the GRANDE and SINO-GRANDE Series, are very patient of removal at almost any age; but the labour of moving scores of plants of such a size is well-nigh prohibitive. Practically the only way to relieve congestion among elderly rivals of equal merit is the determined use of saw and axe, which brings one face to face with excruciating problems.

The more I see of Rhododendrons in cultivation the more firmly convinced I become that overcrowding is the chief evil to be averted, especially in these days when there is such a multitude of species to choose from.

In clearing a space for the growth of fine species, one does not wish it to lie bare until these grow of a size to furnish it. There are two ways in which it may

be treated satisfactorily. One of these is to plant the whole space with Rhododendron species at fairly close intervals, and as they reveal their quality in after seasons, removing those of lesser merit to allow the best to develop freely. The other plan is to choose permanent places for species of special merit, filling the intervals with deciduous shrubs such as *Philadelphus*, *Deutzia*, *Viburnum*, and others, which will serve to keep the place gay till the Rhododendrons come to maturity and the temporary furnishing may be removed to make way for them.

I feel diffident about offering these observations, for experienced cultivators will find nothing in them that they have not discovered for themselves; but we are not all fully experienced, and I have seen so much of the evil of congestion that I would fain induce amateurs to take special precaution against it.

To secure the best effect from Rhododendrons, scrupulous regard must be applied to the matter of colour contrast. No genus of plants hardy in the British climate is capable of displaying such a profusion and variety of brilliant blossom. Haphazard arrangement is sure to result in discord, and this applies just as shrewdly to hybrids as to species.

It is worth any amount of forethought and scheming to secure such tender contrast as results from giving the pale lemon-tinted RH. CAMPYLOCARPUM as a neighbour to the blue RH. AUGUSTINII, or the charming effect of a snow-white RH. DECORUM beside a towering RH. × ALTACLARENSE or RUSSELLIANUM. Endless combinations of this kind will suggest themselves among such species and varieties as flower simultaneously, and it is one of the merits of Rhododendron that their root system facilitates transplanting at almost any age, whereby errors in the original arrangement may be amended.

Where ample space is at command, groups of one colour may be planted for harmony or contrast with groups of another hue; but it is specially in grounds of moderate dimension that special care should be taken to secure the most pleasing result.

HERBERT MAXWELL.

MONREITH, *May* 1931.

THE HONEY FUNGUS ON RHODODENDRONS.

The Honey Fungus, *Armillaria Mellea*, has been in past years a curse in my Rhododendron wood, and I attribute the deaths of several plants and trees to it Last year I hacked up with a mattock every patch of it that appeared; in every case it had a bit of dead root as its focus. I shook some dry Bordeaux powder into the hole and closed it up.

So far this autumn none of it has reappeared. It is too early to say that it will not do so, but the result is encouraging and seems to point to the possibility of eradicating it in a limited area.

J. M. ROGERS.

RIVERHILL, 1931.

RHODODENDRON FLOWER AT LOCHINCH.

After the very heavy flowering of most of the Rhododendrons here last year (1930), we were anticipating that many of them would take a rest this season, but, on the contrary, 1931 has proved to be the most wonderful season for flower all through that I can remember.

We had a fairly mild winter, never more than 8 degrees of frost in the air on a few odd nights in November and December, and 18 inches of rain in last three months of the year.

In the first nine days of January 1931 the thermometer never registered more than 40 degrees maximum, with minimum of 18 on the ground and 24 in the air. The coldest weather was in March. On the 6th of that month the readings were minimum 18, ground 22, air and maximum 37. The most curious reading was for 3rd May, minimum ground 22, air 32, and maximum 60, probably more injurious to grouse nests than to Rhododendrons. These conditions, however, seem to have suited everything, the worst trouble being a long period of cold, strong east winds which damaged the blooms and caused them to last a very short time when fully out.

To begin with, Rh. NOBLEANUM was a blaze of colour most of the winter months. Then BARBATUM, FULGENS, BATEMANNII, and NOBILE were all extra good this year. After, the foliage was almost entirely concealed by the flower on ARBOREUM, CAMPBELLII, and CINNAMOMEUM.

Later the most conspicuous were THOMPSONII, NERIIFLORUM, HAEMATODES, ORBICULARE, and DECORUM. The latter is still making a great show with many buds on some plants still to open. The great variety of dwarf species when massed made a most attractive display, particularly LAPPONICUM, SALUENENSE, RACEMOSUM, and CHARITOPES. The latter is a glorious little thing of the GLAUCUM Series, and seen in the mass looks very like apple blossom.

Many of the buds of TEPHROPEPLUM were frosted, but the considerable quantity which escaped let us see what a pretty little plant this can be.

Rh. YUNNANENSE and its type are well worth the space given to them, but some of the HELIOLEPIS Series are only fit to be weeded out.

Amongst some of the newer arrivals to flower, we have a very interesting one under the number of F 25446. This Forrest classed as a MADDENII. It is certainly of the BOOTHII Series. Flower of a pure butter yellow. Size about three times as large as Rh. SULFUREUM. The flower was sent by us to the Royal Botanic Garden, Edinburgh. Prof. Wright Smith thinks it a new species, and has named it tentatively as Rh. CHRYSODORUM.

Others which have flowered with us for first time are :—

F 26618. Rh. BULLATUM, a lovely pure white form with very distinct foliage.

F 26472. MADDENII Series. Rh. SUPRANUBIUM, I think very sweet.

F 24283. Rh. DENDRICOLA, flowers white with tinge of pink, very sweet scented.

K.W. 6286. Rh. MEGACALYX, quite a good form.

F 16463. A flower of this was sent to Edinburgh. Prof. Wright Smith says they too have flowered it, but cannot make much of it meanwhile, having no record or dried specimen to determine the species. They call it Rh. CHLOROPS for the time being. Flower creamy yellow, saucer-shaped, about 2 inches in diameter with blotch at base. (FORTUNEI Series.) Very near Rh. VERNICOSUM in flower.

Amongst the hybrids LODERI and LODER'S WHITE have been very good.

We are still looking forward to seeing some late ones which are yet to open, such as DIDYMUM, ERIOGYNUM, and a large plant which has never flowered before, which we believe to be DIAPREPES.

All Rhododendrons are looking very well and putting on a lot of growth. There is no sign of Rhododendron bug here. Ponticum and azaleas are even more covered with flower than usual, and the same applies to most flowering shrubs.

STAIR.

LOCHINCH, 1931.

MR. GEORGE FORREST'S EXPEDITIONS IN 1924-1925.

The following notes, taken from Mr. Forrest's field tickets of his Rhododendrons gathered in 1924-25, indicate the districts and latitudes from which the collection was gathered.

Gatherings were made in April and May 1924 round about Tengyueh and to a north-western area of the city in the Shweli-Salwin divide (in latitudes 25° 12′ to 25° 40′). Later gatherings made in June, July and August indicate a north-west trek to the Htawgaw, Hpimaw and the Chimili passes and to the N'Maikha-Salwin divide (latitude round about 26° to 26° 30′).

From these areas collections were also made in September, October and November of 1924. These probably represent the seed harvest of the earlier collections.

In April, May and June collections were made in the Mekong-Yangtze and the Mekong-Salwin divides (latitudes 27° to 27° 30′). These collections are his farthest north and farthest east for the year 1924, but in July he appears to have crossed westward to the Salwin-Kiu chiang divide.

In December of 1924 we get gatherings from N.W. of Tengyueh, indicating a return to his base.

In 1925 collections were made in the Shweli-Salwin and in the N'Maikha divides.

DETERMINATION OF RHODODENDRON SPECIMENS EQUIVALENT TO SEED NUMBERS 1924-1925.

Series Arboreum.

SUBSERIES ARBOREUM.

Rh. Delavayi, Franch.

24009	27697
26157	27717
26466=27498	27718
26475	27768

Rh. peramoenum, Balf. f. et Forrest.

26066	27701

Series Auriculatum.

Rh. Griersonianum, Balf. f. et Forrest.

24116
26048

Series Barbatum.

SUBSERIES CRINIGERUM.

Rh. crinigerum, Franch.

25641

Rh. crinigerum, Franch, var. *euadenium*, Tagg et Forrest.

25585
25619
25633
25634
25818

SUBSERIES GLISCHRUM.

Rh. diphrocalyx, Balf. f.

24107

Rh. glischroides, Tagg et Forrest.

26426=27470
26428=27609
26448=27625
26455=27463

Rh. glischroides, Tagg et Forrest, var. *arachnoideum*, Tagg.

26425=27600

Rh. glischrum, Balf. f. et W. W. Sm.

25610=25785
25616
25725=25927
27085=27462

Rh. habrotrichum, Balf. f. et W. W. Sm.

24315
26629=27399
26632=27400
27343

Rh. rude, Tagg et Forrest.

25645=25777

Series Boothii.

Rh. cerinum, Balf. f. et Forrest.

24229

Rh. commodum, Balf. f. et Forrest.

24131
25340
25631=25852 (aff.)
26113
26422=27622
26447=27458

Rh. monanthum, Balf. f. et W.W. Sm.

25617=25858

Rh. tephropeplum, Balf. f. et Farrer.

25572=25775
25644=25766
25714=25820
26439=27455
26457=27670
26473

Rh. tephropeplum, Balf. f. et Farrer. Form with flowers almost white.

26431=27611

Rh. theiochroum, Balf. f. et W.W. Sm.

24235

Series Campylogynum.

Rh. campylogynum, Franch.
24321

Rh. myrtilloides, Balf. f. et Ward.
24570
24587
26988=27503
26991=27656
27118=27569
27357

Series Cephalanthum.

Rh. nmaiense, Balf. f. et Ward.
24571
27122=27501

Series Edgeworthii.

Rh. bullatum, Franch.
26423=26618=27617
27769

Series Falconeri.

Rh. arizelum, Balf. f. et Forrest.
24193
24740
25608=25782
25627=25841
25959
26935=27616
27067
27108=27624

Rh. basilicum, Balf. f. et W. W. Sm.
24139
24225
26043
26081=25100
26922=27459
27413

Rh. coriaceum, Franch.
25622=25822
25630=25784
25872

Rh. fictolacteum, Balf. f.
25512=25896
25719

Rh. preptum, Balf. f. et Forrest.
25064

Series Fulvum.

Rh. fulvoides, Balf. f. et Forrest.
25483=25936
25744
25944
25958

Rh. fulvum, Forrest et W. W. Sm.

24110
24314
25020
25076

Series Glaucum.

Rh. charitopes, Balf. f. et Farrer.

25570=25808
25581=25789

Rh. Genestierianum, Forrest.

24831
26419=27378
27758

Rh. hypolepidotum, Balf. f. et W. W. Sm.

25575=25843

Rh. micromeres, Tagg.

25588=25612=25779

Rh. shweliense, Balf. f. et Forrest.

24154

Series Grande.

Rh. coryphaeum, Balf. f. et Forrest.

25716
25717

Rh. giganteum, Forrest.

25684=25825
27355=27730

Rh. protistum, Balf. f. et Forrest.

24775
26429=27614
27346=26316

Rh. sidereum, Balf. f.

24563
24742
25090
26458=26634=27679=27673
26633=27677
26791=27761

Rh. sinogrande, Balf. f. et W. W. Sm.

24140
25679=25875
26092
26456

Series Heliolepis.

Rh. desquamatum, Balf. f. et Forrest.

24535
25449=25938
26482=27473
26488=27631

Series Irroratum.

SUBSERIES IRRORATUM.

Rh. araiophyllum, Balf. f. et W. W. Sm.

26421=26485=27620=27425
26438=27460
26445=27427
26481=27376
26483=27610
26490=27367
26491=27368
26492=27374
26494=27426
26528=27698
26792=27702
26797=27700
27744
27746
27766
27771
27775

Rh. crithmum, Balf. f. et W. W. Sm., subspecies *heptamerum*, Balf. f.

24600
25984
26430=27478
26432=27612
26433=27464
26436=27653
26443=27607
26452=27671
26454=27608
26480=27456

Rh. laxiflorum, Balf. f. et Forrest.

24117
27416
27703 (aff.)
27705 (aff.)
27706 (aff.)
27713 (aff.)

Rh. pennivenium, Balf. f. et Forrest.

24149
26078
26477=27377

Rh. tanastylum, Balf. f. et Ward.

24060
24070
24312
26023
26040
26424=27627
26427=27619
26437=27457
26484=27632
26489=27372
27714
27757

SUBSERIES PARISHII.

Rh. agapetum, Balf. f. et Ward.

24680
27618

Rh. eriogynum, Balf. f. et W. W. Sm.

26045
26071

Rh. facetum, Balf. f. et Ward.

24201
24592
24739
24748 (aff.)
27069
27105=27468

Rh. Kyawi, Lace et W. W. Sm.

24542
25584 (aff.)
27126
27128=27578
27250=27678

Series Lacteum.

Rh. colletum, Balf. f. et Forrest.

25513=25897
25516=25983

Rh. lacteum, Franch. ? Flowers said to be white.

25583=25776
25589=25819

Rh. Traillianum, Forrest et W. W. Sm.

25740=25918 (aff.)

Series Lapponicum.

Rh. cantabile, Balf. f.

25496 25500=25908

Rh. hippophaeoides, Balf. f. et W. W. Sm.

25526=25982
25981

Rh. scintillans, Balf. f. et W. W. Sm.

25555=25904 (aff.)
25930

Series Maddenii.

Subseries Ciliicalyx.

Rh. dendricola, Hutch.

26459=27690

Rh. supranubium, Hutch.

24283 27731 (aff.)
24308

Rh. taronense, Hutch.

24774 27737=27738

Rh. Valentinianum, Forrest.

24138
24347=26112
27715

Subseries Maddenii.

Rh. crassum, Franch.

24496
24730
24747
25574=25857
25586=25854
25629=25767
26109
26923=27593
27110=27615
27724
27776

Subseries Megacalyx.

Rh. megacalyx, Balf. f. et Ward.

24688
24729=25999
26091
27101=27621

Rh. sinonuttallii, Balf. f. et Forrest.

25624=25853

Series Neriiflorum.

Subseries Forrestii.

Rh. repens, Balf. f. et Forrest.

25524=25961

Subseries Haematodes.

Rh. chaetomallum, Balf. f. et Forrest, var.

25578=25861
25597=25877
25601=25862
25602=25856

Rh. chaetomallum, Balf. f. et Forrest, var. *glaucescens*, Tagg et Forrest.

25607=25786

Rh. chaetomallum, Balf. f. et Forrest, var. *hemigymnum*, Tagg et Forrest.

25605=25845

Rh. chaetomallum, Balf. f. et Forrest, var. *xanthanthum*, Tagg et Forrest.

25565
25840

Rh. coelicum, Balf. f. et Farrer.

25625=25870
25647=25834

Rh. mallotum, Balf. f. et Ward.

25067

SUBSERIES NERIIFLORUM.

Rh. floccigerum, Franch.

25474=25920
25640=25800
25831

Rh. neriiflorum, Franch, subspecies *euchaites*, Balf. f. et Forrest.

24091
24220
26046
26449=27466
26487=27637
27358

Rh. sperabile, Balf. f. et Farrer.

26434=27581
26435=27635
26442=27601
26446=27595
26453=27639
26465=27469

Rh. sperabile, Balf. f. et Farrer, var. *chimiliense*, Tagg et Forrest.

26478=27605

Rh. sperabile, Balf. f. et Farrer, var. *weihsiense*, Tagg et Forrest.

25447=25932
25481=25919
25569=25935

SUBSERIES SANGUINEUM.

Rh. aperantum, Balf. f. et Ward.

25563=25878
26925=27579
26926=27587
26930=27651
26931=27474
26933=27590
26934=27584
26936=27467
26937=27480
26938=27604
26964=27636
26964A=27630
27002=27491
27020=27645
27022=27666
27025=27483
27073=27648
27075=27597
27077=27640
27079=27493
27081=27486
27083=27576
27111=27572

Rh. apodectum, Balf. f. et W. W. Sm.

24113
24305 Flowers orange deeply flushed crimson-rose.
24331 Flowers deep magenta-rose, orange at base.
24712 Flowers deep dull orange.
24728 Flowers red orange.
27359

Rh. herpesticum, Balf. f. et Ward.

24546
27061=27644

Rh. horaeum, Balf. f. et Forrest.

25564=25942

Rh. sanguineum, Franch. None of the following are quite typical, but are forms of the species.

25507=25957
25518=25906
25521=25943
25543=25913
25901

Rh. scyphocalyx, Balf. f. et Forrest.

Form with flowers yellow flushed rose or crimson.

25065
27012=27481
27051=27662
27052=27650
27054=27583
27057=27461
27071=27568
27093=27646
27095=27654

Form with flowers orange flushed rose or crimson.

24683
27099=27570
27134=27594

Form with flowers deep orange margined deep crimson.

27063=27663
27097=27499
27115=27657

Form with flowers deep orange tinged rose.

24616
26924=27585
26963=27599
26974=27641
26978=27589
27116=27613
27132=27665

Form with flowers deep crimson.

26927=27485
27140=27575

Form with flowers deep black crimson on orange base.

24532
24544
24603
27011=27487
27059=27633
27137=27490

Form with flowers cherry crimson.

26965=27471
26966=27494
26977=27502
27019=27477=27573
27050=27626
27089=27672

Form with flowers cherry crimson on orange base.

27113=27496

Rh. scyphocalyx, Balf. f. et Forrest, var. *interveniens*, Tagg et Forrest.

24620
27003=27580

Rh. scyphocalyx, Balf. f. et Forrest, var. *septentrionale*, Tagg et Forrest.

25577=25787
25579=25855

Series Ovatum.

Rh. leptothrium, Balf. f. et Forrest.

24022
24071
24099
24284
25448=25910
25458
26420
26507=27429
26597=27430

Series Saluenense.

Rh. calostrotum, Balf. f. et Ward.

24572
25011
27121=27658

Rh. charidotes, Balf. f. et Farrer.

25560=25835

Series Scabrifolium.

Rh. suberosum, Balf. f. et Farrer.

26463=27405
26486=27402
26596=27404
27745

Series Stamineum.

Rh. stenaulum, Balf. f. et W. W. Sm.

26047
26418=27369

Series Taliense.

Subseries Adenogynum.

Rh. dumicola, Tagg et Forrest.

25580

Subseries Roxieanum.

Rh. bathyphyllum, Balf. f. et Forrest.

25739=25945

Rh. cucullatum, Hand.-Mazz.

25505=25891

Rh. globigerum, Balf. f. et Forrest.

25738=25928

Rh. proteoides, Balf. f. et W. W. Sm.

25701=25940

Rh. recurvum, Balf. f. et Forrest.

25515=25926
25718=25929
25749

Rh. Roxieanum, Forrest.

25514=25883
25987

Rh. triplonaevium, Balf. f. et Forrest.

25915

SUBSERIES TALIENSE.

Rh. Clementinae, Forrest.
25705=25917 25742=25916

Rh. flavorufum, Balf. f. et Forrest, forma.
25697=25902

Rh. glaucopeplum, Balf f. et Forrest.
25520=25960 (var.)

Series Thomsonii.

SUBSERIES CAMPYLOCARPUM.

Rh. callimorphum, Balf. f. et W. W. Sm.
27389

Rh. caloxanthum, Balf. f. et Farrer.
26985=27574
27123=27664
27125=27495

Rh. cyclium, Balf. f. et Forrest.
24350

Rh. myiagrum, Balf. f. et Forrest.
27142=27488

SUBSERIES MARTINIANUM.

Rh. Martinianum, Balf. f. et Forrest.
25614=25811

SUBSERIES SELENSE.

Rh. rhaibocarpum, Balf. f. et W. W. Sm.
25535=25880
25737=25899

SUBSERIES SOULIEI.

Rh. croceum, Balf. f. et W. W. Sm.
25494=25978
25534=25979

SUBSERIES THOMSONII.

Rh. eclecteum, Balf. f. et Forrest, var.
25603
25604=25873 ?

Rh. hylaeum, Balf. f. et Farrer.
24660

Rh. Meddianum, Forrest.
24104
24219

Rh. Meddianum, Forrest, var. *atrokermesinum*, Tagg et Forrest.
26476=27465
26495=27606
26499=27623

Rh. Stewartianum, Diels.

24528	26929=27492	27129=27577
24530	26932=27629	27131=27479
24598	26962=27586	27133=27652
25615=25864	26980=27643	27135=27500
25618=25859	26981=27592	27136=27582
25620=25814	26984=27475	27138=27647
25642=25869	26986=27667	27143=27596
25646	26992=27659	27144=27649
25873=?25604	26993=27482	
26921=27484	27013=27588	

Series Trichocladum.

Rh. chloranthum, Balf. f. et Farrer.
25509=25988

Rh. lepidostylum, Balf. f. et Forrest.
24633=26115

Rh. trichocladum, Franch.
24160 24529

Series Triflorum.

Subseries Yunnanense.

Rh. zaleucum, Balf. f. et W. W. Sm.
24101
24562
25576=25796
27603

Series Vaccinioides.

Rh. vaccinioides, Hook. f.
24144
25688=25809
26111
27087=27668

Series Virgatum.

Rh. oleifolium, Franch.
24228
26065

Rh. racemosum, Franch.
26798=27739

H. F. TAGG.

AN ENUMERATION OF THE SPECIMENS OF RH. OLEIFOLIUM AND RH. RACEMOSUM IN THE HERBARIUM OF THE ROYAL BOTANIC GARDEN, EDINBURGH, WITH NOTES ON THE DISTRIBUTION OF THE TWO SPECIES.

Rh. oleifolium, *Franch.*

The locality of Franchet's type of the species collected by Delavay is the neighbourhood of Tali-fu (approximate latitude and longitude 25° 30′ N., 100° E.). Forrest has several gatherings from this area, chiefly from the E. flank of the Tali Range. Other gatherings by Forrest from the divides separating the Mekong, Salwin, and Shweli rivers represent a westerly distribution of the species. These collectings are from areas approximately in the same latitude as the Tali Range (25° 10′ to 25° 30′) but are over 100 miles to the west. From the western and southern area the species spreads north along the Mekong-Salwin and Salwin-Kiu chiang divides to north of Chamatong. The most northerly record in this western area is from latitude 28° 40′ in longitude 98° 15′. Returning east to the Tali Range (longitude 100°), we find that the distribution northward from this area appears to have been arrested. There is one record from the Langkong-Hocking pass and two from the hills between the Chienchuan and the Mekong (latitude 26° 30′, long. 99° 40′). These are the most northerly records of Rh. oleifolium in what we may call the eastern area of Forrest's explorations. There are no records from the Lichiang range and none from the borders of Szechuan. From the Lichiang there are numerous gatherings of Rh. racemosum, which round about longitude 100° E. extends northward along the Lichiang range into Szechuan. The absence of any records of Rh. oleifolium from this north-eastern area establishes a marked contrast in the distribution of the two species. The spread north-west of Rh. oleifolium links it up with the easterly spread of Rh. virgatum from the Himalayas, and supports the opinion that Rh. oleifolium is little more than a Chinese form of the Himalayan species.

Collector and Number.	Locality.	Altitude.	Lat. N.	Long. E.	Year.
Delavay	Tsang-chan (nr. Tali-fu)	7,000 ft.	25° 40′	100°	April 1887
,,	,, ,, ,,	—	25° 40′	100°	Sept. 1888
,,	,, ,, ,,	—	25° 40′	100°	April 1889
,,	,, ,, ,,	—	25° 40′	100°	April 1889
Forrest 4132	E. flank of the Tali Range	8-9,000 ft.	25° 40′	100°	1906
,, 4133	,, ,, ,,	9-11,000 ft.	25° 40′	100°	1906
,, 4169	,, ,, ,,	8-9,000 ft.	25° 40′	100°	1906
,, 4170	,, ,, ,,	9-10,000 ft.	25° 40′	100°	1906
,, 6770	,, ,, ,,	10,000 ft.	25° 40′	100°	1910
,, 9342	Shweli-Salwin divide, west flank.	7,000 ft.	25° 10′	98° 40′	1912
,, 9942	Langkong-Hocking Mountains.	7,000 ft.	26° 16′	99° 50′	1913

Collector and Number.	Locality.	Altitude.	Lat. N.	Long. E.	Year.
Forrest 11616	Tali Range . . .	9-10,000 ft.	25° 40′	100°	1913
,, 12100	Shweli-Salwin divide .	8,000 ft.	25° 20′	98° 40′	1913
,, 12878	Mekong-Yangtze divide .	10-11,000 ft.	27° 40′	99° 10′	1914
,, 13532	Tali Range . . .	8,000 ft.	25° 40′	100°	1914
,, 13724	W. flank of the Tali Range	7-8,000 ft.	25° 30′	100°	1917
,, 15604	Tali Range . . .	—	—	100°	1917
,, 16214	Salwin Valley . . .	9,000 ft.	28° 10′	—	1917
,, 16559	Mekong-Salwin divide .	9-10,000 ft.	28° 12′	—	1918
,, 17588	Shweli-Salwin divide .	10,000 ft.	25° 30′	—	1918
,, 17744	,, ,, .	10,000 ft.	25° 30′	—	1918
,, 18900	Salwin-Kiu chiang divide .	—	28° 40′	98° 15′	1919
,, 19149	,, ,, .	—	28° 40′	98° 15′	1919
,, 19696	Londre Pass, Mekong-Salwin divide.	10,000 ft.	28° 14′	98° 40′	1921
,, 20067	Salwin-Kiu chiang divide .	12,000 ft.	28° 24′	98° 24′	1921
,, 20932	Mekong-Salwin divide .	9-10,000 ft.	28°	98° 45′	1921
,, 21716	Salwin-Kiu chiang divide, W. of Chamatong.	10-11,000 ft.	28° 18′	98° 27′	1922
,, 22833	,, ,, ,,	10-11,000 ft.	28° 18′	98° 27′	1922
,, 23136	Chienchuan-Mekong divide	10-11,000 ft.	26° 30′	99° 40′	1922
,, 23372	,, ,, ,,	10-11,000 ft.	26° 40′	99° 30′	1923
,, 24047	Shweli-Salwin divide .	9-10,000 ft.	25° 20′	98° 38′	1924
,, 24228	,, ,, ,, .	7-9,000 ft.	25° 30′	98° 58′	1924
,, 26065	—	—	—	—	1924
,, 26347	Shweli-Salwin divide .	10,000 ft.	25° 45′	98° 45′	1925
Rock 3099	Tsang-shan Range (Tali-fu)	—	—	—	1922
,, 3101	,, ,, ,,	—	—	—	1922
,, 3123	,, ,, ,,	—	—	—	1922
,, 3126	,, ,, ,,	—	—	—	1922
,, 4239	Yangtze, Lichiang Snow Range.	—	—	—	1922
,, 8632	Chienchuan and Mekong Basin.	—	—	—	1923
,, 8775	Above Tseku, Mekong-Salwin Divide.	—	—	—	1923
,, 11219	Mount Kenyichunpo and Region of Chamatong, Salwin-Irrawadi.	—	—	—	1923
Ward 5421	Chamatong, Salwin Valley	7-8,000 ft.	28° 3′	98° 35′	1922

Rh. racemosum, *Franch.*

The distribution of Rh. racemosum as compared with that of Rh. oleifolium is interesting. The type specimens of both species come from the same region. In the case of Rh. racemosum from hills above Lang-Kong somewhat north of Tali-fu, where Rh. oleifolium also occurs. While Rh. oleifolium, however, is also found in this latitude far to the west (longitude 98° 15′) near to the borders of Burma, Rh. racemosum is confined to the east. There are no gatherings by Forrest west of longitude 99° 30′, and none from Tibet and the adjoining N.-W. parts of Yunnan. There are, however, numerous gatherings indicating a free development of the species northward in the eastern area (longitudes 99° 30′ to

100° 50′) along the Lichiang Range to Muli and Western Szechuan, in which province, however, Mr. Wilson says it is rare. As I have pointed out in my comment on RH. OLEIFOLIUM, the spread north of that species in this eastern area is restricted, while on the other hand in the west it extends to S.-E. Tibet. It would thus appear that in the north (round about latitude 28°) RH. OLEIFOLIUM is confined to the west, while in the same latitude RH. RACEMOSUM is confined to the east. In the south-east (Tali Range) the two are mingled. In the south-west (Shweli-Salwin) RH. OLEIFOLIUM occurs but RH. RACEMOSUM is absent. In the list of identifications I have not included certain unnumbered gatherings made by the Abbé Maire from areas east and north-east of Tali-fu, which tend to confirm the impression that RH. RACEMOSUM is essentially an eastern species.

COLLECTOR AND NUMBER.	LOCALITY.	ALTITUDE.	LAT. N.	LONG. E.	YEAR.
Delavay 299	Yunnan, Tali Range .	—	—	—	March 1883
,, 838	,, Hu Chan, Lang-Kong.	10,000 ft.	—	—	April 1884
,,	,, Hu Chan men, Lang-Kong.	—	6 sheets	—	1887
,,	Pee-tsao-lo . . .	7,500 ft.	—	—	1887
Ducloux 1268	Yunnan, Tapelou . .	—	—	—	1909
Forrest 510	Wei Hsé Valley, Mekong-Yangtze divide.	10-14,000 ft.	27° 12′	—	1904
,, 2009	Ascent of Sung-kwei Pass	9-10,000 ft.	26° 30′	—	1906
,, 2062	S. foothills of the Lichiang Range.	9-10,000 ft.	27°	—	1906
,, 2207	E. flank of the Lichiang Range.	10-10,500 ft.	27° 10′	—	1906
,, 4134	E. flank of the Tali Range	7-9,000 ft.	25° 40′	—	1906
,, 5850	Sung-kwei Pass . .	8-10,000 ft.	26° 12′	—	1910
,, 5853	Summit of the Sung-kwei Pass.	11,000 ft.	26° 12′	—	1910
,, 5882	E. flank of the Lichiang Range.	10,000 ft.	27° 20′	—	1910
,, 10016	Summit of the Langkong-Hocking Pass.	11,000 ft.	26° 20′	—	1913
,, 10086	Lichiang Range . .	10-11,000 ft.	27° 30′	—	1913
,, 10109	,, ,, . .	10,000 ft.	27° 30′	—	1913
,, 12502	Mountains W. of the Feng-kou Valley.	10,000 ft.	27° 40′	—	1914
,, 12509	Chungtien Plateau . .	11,000 ft.	27° 30′	—	1914
,, 13739	E. flank of the Tali Range	8,000 ft.	25° 40′	—	1917
,, 13740	,, ,, ,,	8-9,000 ft.	25° 40′	—	1917
,, 13773	W. flank of the Lichiang Range.	10-11,000 ft.	27°	—	1917
,, 13798	,, ,, ,,	10-11,000 ft.	27°	—	1917
,, 13803	Chungtien Plateau . .	11,000 ft.	27° 30′	—	1917
,, 13804	,, ,, . .	10-11,000 ft.	27° 30′	—	1917
,, 15206	Lei-lung Shan . .	9,000 ft.	28° 10′	—	1917
,, 15250	Yung-ling Mountains .	12,000 ft.	27° 50′	—	1917
,, 15266	—	—	—	—	1917
,, 15462	Haba Range . . .	9-10,000 ft.	27° 50′	—	1917
,, 15577	Tali Range . . .	11,000 ft.	25° 40′	—	1917

Collector and Number.	Locality.	Altitude.	Lat. N.	Long. E.	Year.
Forrest 19404	Sung-kwei Pass . .	11-12,000 ft.	26° 12′	100° 12′	1921
,, 20484	Mountains E. of Yungning	10,000 ft.	27° 50′	100° 56′	1921
,, 21109	Hills S.W. of Lichiang .	9-10,000 ft.	26° 42′	100° 8′	1922
,, 21195	Hills W. of Lichiang .	11,000 ft.	26° 45′	100° 10′	1922
,, 21214	,, ,, Lichiang-fu .	10,000 ft.	26° 45′	100° 10′	1922
,, 21225	,, ,, ,, ,, .	10-11,000 ft.	26° 45′	100° 10′	1922
,, 21306	Hills S.W. of Lichiang .	10-11,000 ft.	26° 45′	100° 10′	1922
,, 21321	W. flank of the Lichiang Range.	9-10,000 ft.	27° 40′	100° 18′	1922
,, 21351	Hills S.W. of Lichiang .	11,000 ft.	26° 45′	100° 10′	1922
,, 21549	Sung-kwei Range . .	12,000 ft.	26° 18′	100° 12′	1922
,, 21560	Hills S.W. of Lichiang-fu	10-11,000 ft.	26° 30′	100° 12′	1922
,, 21921	Sung-kwei Range . .	12-13,000 ft.	26° 18′	100° 12′	1922
,, 21959	Chienchuan-Mekong divide	11,000 ft.	26° 30′	99° 40′	1922
,, 21965	,, ,, ,,	12,000 ft.	26° 36′	99° 40′	1922
,, 22370	N.W. flank of the Lichiang Range.	11,000 ft.	27° 20′	100° 10′	1922
,, 22562	—	—	—	—	1922
,, 22565	—	—	—	—	1922
,, 22587	—	—	—	—	1922
,, 22590	—	—	—	—	1922
,, 22598	—	—	—	—	1922
,, 22985	—	—	—	—	1922
,, 23003	Chienchuan-Mekong divide	—	26° 30′	99° 40′	1922
,, 23092	Hills S.W. of Lichiang-fu .	11,000 ft.	26° 30′	100° 10′	1922
,, 23095	Chienchuan-Mekong divide	10,000 ft.	26° 40′	99° 40′	1922
,, 23099	N.W. flank of the Lichiang Range.	11,000 ft.	27° 30′	100° 10′	1922
,, 23272	Chienchuan-Mekong divide	9,000 ft.	26° 20′	99° 30′	1923
,, 23273	,, ,, ,,	11,000 ft.	26° 25′	99° 30′	1923
,, 23274	,, ,, ,,	11,000 ft.	26° 20′	99° 30′	1923
,, 23275	,, ,, ,,	10,000 ft.	26° 40′	99° 40′	1923
,, 23276	,, ,, ,,	8-9,000 ft.	26° 30′	99° 30′	1923
,, 23279	,, ,, ,,	10,000 ft.	26° 30′	99° 40′	1923
,, 23280	,, ,, ,,	8,000 ft.	26° 30′	99° 40′	1923
Hand.-Mazz. 609	Yunnan, Yunnan-fu .	8,000 ft.	26°	—	1914
,, 6897	Yunnan, Chungtien .	12-13,000 ft.	—	—	1915
Hosie 34	—	—	—	—	—
Rock 3108	Drainage basin of Erkhai, Tsang-shan Range.	—	—	—	1922
,, 3167	,, ,, ,,	—	—	—	1922
,, 3274	High plateau between Tali-fu and Lichiang, Lichiang Range.	—	—	—	1922
,, 3421	Yangtze Watershed, Lichiang Snow Range.	—	—	—	1922
,, 3481	,, ,, ,,	—	—	—	1922
,, 3507	,, ,, ,,	—	—	—	1922
,, 3510	,, ,, ,,	—	—	—	1922
,, 3629	,, ,, ,,	—	—	—	1922
,, 3670	,, ,, ,,	—	—	—	1922
,, 3944	,, ,, ,,	—	—	—	1922
,, 5118	Between Lichiang and Yungning and Yungpei.	—	—	—	1922

Collector and Number.	Locality.	Altitude.	Lat. N.	Long. E.	Year.
Rock 6827	W. of Tali-fu, Mekong Watershed.	—	—	—	1922
,, 8120	Between Tengyueh and Lichiang-fu.	—	—	—	1923
,, 8200	E. slopes of Lichiang Snow Range, Yangtze Watershed.	—	—	—	1923-24
,, 8206	W. slopes of Lichiang Snow Range.	—	—	—	1923
,, 8229	E. slopes of Lichiang Snow Range.	—	—	—	1923-24
,, 8512	,, ,, ,,	—	—	—	1923-24
,, 9815	,, ,, ,,	—	—	—	1923-24
,, 11264	Mnt. Lauchünchan, S.-W. Yangtze Bend, at Shiku.	—	—	—	1923
,, 11265	,, ,, ,,	—	—	—	1923
,, 11403	E. slopes of Lichiang Snow Range, Yangtze Watershed.	—	—	—	1923-24
,, 11415	,, ,, ,,	—	—	—	1923-24
,, 11424	,, ,, ,,	—	—	—	1923-24
,, 11476	,, ,, ,,	—	—	—	1923-24
Schneider 1236	South Szechuan . .	10,000 ft.	—	—	1914
,, 1270	,, ,, . .	11,000 ft.	—	—	1914
Simcon Ten 445	Yunnan, Ac-Yen Tsin .	—	—	—	1917
,, 478	,, ,, .	—	—	—	1918
Ward 270	Valley of Chung River .	10,500 ft.	—	—	1913
,, 3952	E. of the Yangtze Bend .	9,000 ft.	26° 45′	—	1921
,, 4457	Litang-Yalung divide .	11-12,000 ft.	28° 20′	101° 5′	1921
,, 5016	Kua-la-po . . .	9-10,000 ft.	—	—	1922
,, 5036	Sang-shan-ping . .	—	—	—	1922
,, 5160	Litang-Yalung divide .	12,000 ft.	—	—	1922
,, 5292	Yangtze Valley . .	6-7,000 ft.	27° 30′	99° 30′	1922
Wilson 3428	Western Szechuan . .	—	—	—	1908

Rh. racemosum exhibits considerable variation in habit, size, and form of leaf, and size and colour of flower. In the list of determinations given above I have included many collectings which at first sight look very different. All have the general facies of Rh. racemosum, but it may be found that in cultivation some may merit varietal or sub-specific distinction. The opinion of the late Mr. Forrest was that the best dwarf form with deep pink flowers is that from the Sung-kwei Pass at an elevation of 11-13,000 feet. On the whole the collectings from the more northern areas have narrower leaves with a less virgate habit, but this is not always so.

The following numbers, not given above, are of a form with relatively large oval leaves and with the axillary flower-buds clustered at the ends of the shoots. Lady Moore refers to F 21488, which flowered at Headfort, Kells, Co. Meath (*Gardeners' Chronicle*, 13th April 1929, p. 277), as "an attractive shrub two to three feet in height well furnished with oval leaves." The axillary flowers, she says, are "clustered in groups at the tops of the stems, not spread down them,

thus forming a rather conspicuous head." The herbarium sheet of F 21488 is not in flower, but Lady Moore's description agrees with dried specimens in flower of F 23278 and F 23281.

Collector and Number.	Locality.	Altitude.	Lat. N.	Long. E.	Year.
Forrest 21252	S.-W. Szechuan, Mountains E. of Yungning.	13-14,000 ft.	27° 30′	100° 54′	1922
,, 21488	Chienchuan-Mekong divide	11-12,000 ft.	26° 30′	99° 40′	1922
,, 21534	,, ,, ,,	11-12,000 ft.	26° 25′	99° 40′	1922
,, 22563	N.-W. Yunnan . .	—	—	—	1922
,, 22570	Chienchuan-Mekong divide	12,000 ft.	26° 40′	99° 40′	1922
,, 23002	,, ,, ,,	14,000 ft.	26° 40′	99° 40′	1922
,, 23277	,, ,, ,,	9,000 ft.	26° 40′	99° 40′	1923
,, 23278	,, ,, ,,	10,000 ft.	26° 40′	99° 40′	1923
,, 23281	,, ,, ,,	9-10,000 ft.	26° 20′	99° 30′	1923

A very narrow leaf form approaching Rh. hemitrichotum is represented by :—

Forrest 22420	Mountains N. of Yungpeh	10,000 ft.	26° 40′	100° 45′	1922
Ward 5050	Yungning . . .	10,000 ft.	—	—	1922

H. F. TAGG.

J. G. MILLAIS.

By the death of J. G. Millais we have lost a leading naturalist, an enthusiastic horticulturist, and a most attractive personality.

Millais was a generous and loyal friend, ever anxious to help others, and a most interesting man on any subject. He was a born naturalist with an inherited aptitude for drawing—gifts which doubtless helped him to train his eyesight and memory to a standard I have not met elsewhere.

He was remarkable for great energy, courage, and resource. In his *Wanderings and Memories* he tells us that when he left Marlborough at the age of fifteen he had collected by means of his catapult over 200 bird skins, and knew the note of all the lesser birds. He had also more than once tramped the whole of the east coast of Scotland in pursuit of his hobby.

Such a lad was sure to make a mark among naturalists, and the series of books he wrote on the subject were of outstanding merit and quite unique. *A Breath from the Veldt* was probably the most popular, and, while some of the attitudes of the birds and animals depicted in it were at that time criticised, modern photography has now proved how accurate Millais was.

He travelled widely, and his knowledge of the fauna of Africa and North America was profound.

His friendship with the late Sir Edmund Loder doubtless attracted him to Rhododendrons. Some of his friends expressed surprise at his courage in undertaking his great work on this subject, but Millais, always keen to investigate and describe the unknown, gave us a book brimful of most interesting and valuable information. When one considers how little was known at that time and how few the sources of knowledge, we realise what an achievement the book was. His book on Magnolias, too, opened up a practically unknown subject and stimulated interest in a very beautiful garden plant.

Millais's intimate knowledge of plants and of British and Continental gardens, together with his sound judgment, enabled him to build up at his home near Horsham a beautiful garden of wisely selected and highly cultivated plants—a select collection of Rhododendrons, Azaleas, and Magnolias, all in perfect health.

His great success in his own garden inspired him to take up the laying out of shrub gardens for others. In this he was equally successful, and several of our best shrub gardens owe their excellence to his resourceful advice; their flowers are a living tribute to his memory.

Millais has gone. We all deplore his loss, but his spirit will survive in our appreciation of the wonderful work he has done for us.

P. D. WILLIAMS.

LANARTH, 1931.

MAGNOLIAS AS COMPANIONS TO RHODODENDRONS IN WOODLAND OR SHRUB GARDENS.

Those of us who take an interest in the genus Magnolia owe such small knowledge as we have to the works of Mr. Bean and the late Mr. Millais. Nor is it likely that for the present anything of substantial value can be added to that work. I have, however, been asked to write something for *The Rhododendron Society Notes*, and it is on our experience in the use of Magnolias as companions to Rhododendrons in Wood Gardens or Shrub Gardens that I would write, and I am confining myself to some species, but only to species which we grow here. Taking the series *parviflora-globosa-Watsonii-Wilsonii*, I think that all the older plants of *parviflora* came from the plant which J. H. Veitch sent home from Japan about 1879, and I hear from Mr. Harrow that all the plants sent out before the sale were layers taken off the old plant, which is, I believe, now in the late Sir Robert Harvey's Garden at Langley Park.

The gardener at Langley Park told me in a letter, dated 18th September 1928, that their plant is 12 feet high and 14 feet across.

There are here 4 plants of *parviflora* in the open wood and one on a wall. They all of them have the squat spreading habit of so many layered shrubs; they came here about 1912, and give a good crop of flower from May onwards to July, when I have seen 100 flowers on a plant.

There is a fine plant of erect growth at Compton's Brow, probably the best *parviflora* in the country, and I think Mr. Millais gave more care than some of us may do to pruning magnolias.

We have had several Magnolia *parvifloras* from Corean seed sent back about 1918, and they are much more ready to go up than the layered plants, but there is no other difference. I sent seed to Mr. P. Veitch some years ago.

We have to remember that *M. Wilsonii* will be rather a shrub than a tree, but if it adopts the practice of *M. parviflora* and runs out the time of flowering to late in the summer, and there are signs of its doing so, it will be quite as valuable a shrub as is *M. parviflora*, and that is saying a great deal. I have seen a few flowers on *M. Wilsonii* quite late in the summer, at which time *parviflora* may have a good many flowers.

One of the two grafted plants of *Nicholsoniana* from Chenault, which came about 1918, has hardly grown at all, and I should have condemned the man who grafted it, but the other plant has, as far as I can see, grown faster than any Magnolia on the place, and for several years has given us abundance of flowers and fruit, in a soil and aspect not very different from the other, which makes me less bold in denouncing grafted plants and their evils. *M. globosa*, as I should properly call this species, seems to give us as much value in flower, foliage, and general growth as any of the *Parviflora* Series, and to become each year a more impressive shrub, though I don't think it will ever produce the enormous numbers of flowers which a full-sized plant of *M. parviflora* gives, though the flowers are larger than

parviflora or *Wilsonii*, when at their best. *Magnolia Wilsonii*, though I am not quite sure of this, came here from Coombe Wood about 1912. Directly the majority of the boughs are high enough for you to look up at the flower it is a most attractive shrub, and no doubt most of the members of the Society have it, for great quantities of seed have been distributed. It is as I have seen it, when well cared for, a slower growing plant than *parviflora* or *globosa*, and seems to have the fixed idea that it is a shrub and not a tree. The first one flowered here on 26th May 1920, and we last year flowered the first lot of seedlings from the old plants. *Magnolia Wilsonii* seems to be as easy to grow and keep in health as any member of the family which we have tried.

One thing Magnolias demand, like all other plants in the garden, when they have delivered a big crop of flower and seed: that is, cleaning and feeding and a good mulch to keep the sun off the roots so as to retain the moisture.

We make a practice with both *M. Wilsonii* and *M. parviflora* of picking off the seed as early as we can, for they produce great crops of it in most years, and it is a heavy tax on the plants. I have in nearly all cases of Magnolias tending to spread cut off the lower boughs close to the trunk, and I think if the plant is fairly young it falls in with the plan and gains by it, provided it has tar on the wounds whenever they need it in the next three years.

It is right to say that Mr. Bean with his great experience of these matters does not approve of pruning Magnolias, and on the rare occasions when I have followed a different path to Mr. Bean, I have found I had made a mistake in doing so. As regards *Watsonii*, though we grow the plant and there is one here of some size, yet owing to the absence of seed I have never had so free a hand with young plants, and the one good plant is too much in the shade to flower well. We moved it some way three or four years ago, and I believe took it from a bad place to one which is rather worse, and it needed two horses for the job.

The trade-grafted plants we have are not free growers, whilst *globosa* is to my mind a finer and a freer thing when grown from seed. It has been urged that *Watsonii* is possibly a wild hybrid and not a species, but I suppose at some time or other species were bred by two other species crossing.

The series or group formed by

hypoleuca, hypoleuca officinalis, rostrata

are the real trees of the deciduous section and very closely related to each other. *M. hypoleuca* has been growing here longer than the other two, say twenty-five years, but had very little attention until the last ten years. It has four periods in which it gives particular satisfaction.

First, when the young leaf has just expanded and the light comes through it and it is then very translucent and almost at its full size, perhaps no other tree which we can grow gives the same effect.

Then, when the flowers are opening, which covers a long period, for it is a large flower and better in some plants than in others, it has a remarkable scent, capable of carrying on a still evening as far as that of *Lilium giganteum*.

Again, the fruits are of a very striking colour and are as notable as are the flowers.

After that and before they fall, the leaves assume a dark chocolate brown quite out of the common in that range of colour.

Magnolia officinalis.—This has so close a resemblance to *hypoleuca*, excepting in the colour of the bark, which in the case of Wilson's plant is much lighter in colour, that for ordinary garden purposes it hardly varies excepting perhaps that *officinalis* has a larger leaf and it may be a quicker growth.

M. kobus.—We have two plants of *kobus* which came as gaunt sticks in pots, say 8 feet high each of them, and about thirty years ago. After taking three or four years in the open ground without moving they started to grow, and grew well, so that they are now 25-30 feet high and as a rule are smothered in masses of flower, but after the fashion of their family they differ from each other by ten days in the matter of flowering and in other minor details. The earlier one for flowering in a wood is always well ahead of *stellata* on a warm south wall. The seedling *kobus* came here from Japan, and, with ample space for roots and for branches, grow rapidly, and will soon be clear of the shrub suggestion and class themselves as trees. There are eight or nine of them and all differ in detail more or less, but are good things of their kind all of them. *Kobus borealis* came here as seed or as a seedling four or five years ago through the kindness of Mr. Eley, to whom the seed came from the Arnold Arboretum.

My plants, though doing well, are not advanced enough to say much about them, but when last I was with Mr. Millais in his garden and I asked him to show me how far the two kinds of *kobus* differed, he seemed disinclined to press it at all.

M. salicifolia.—Probably all would agree that when at its best *salicifolia* is one of the most beautiful flowering deciduous trees which we can see. Speaking for myself only, I would sooner live with the plant of the fastigiate form now at Kew than any other single flowering tree in that wonderful collection.

M. stellata.—*Stellata* in some respects leans towards the relationship *kobus*, *kobus borealis*, and *salicifolia* rather than to any other species, yet is not so close to those three as they are to each other. Probably there are more plants of *stellata* grown in British gardens than of any other deciduous species. It is more ready to bloom freely than other species for one reason, and for another it is not expensive and does not demand a lot of room. The largest plants I have known are on a wall, and they seem to enjoy a warm place more than most others. *M. parviflora* for instance, here at any rate, is larger as a standard with ample space than is the same plant with care and good treatment on a south wall.

J. C. WILLIAMS.

CAERHAYS CASTLE, 1931.