Rhododendrons

with Camellias and Magnolias

1992

The Royal Horticultural Society

Acknowledgements

TO THIS ONLINE EDITION

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Rhododendrons

with

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Illustrations

Foreword

The 1992 Year Book might well be entitled 'The New Zealand Number' with four articles covering developments in that country. All three genera — Rhododendrons, Camellias and Magnolias — grow well there as natural conditions are so favourable. In particular the excellent Jury magnolia hybrids have to a great extent lessened the agonising wait for a first flowering from the often quoted 25 years to a mere five. These happy links with our friends on the other side of the world are strengthened by their visits here from time to time, and we are especially grateful to Joyce Waters, the editor of their Year Book, for her help.

Walter Magor, whose eightieth birthday we acclaim, writes with his usual erudition about the astonishing debt the gardening fraternity owes to Frank Kingdon-Ward, one of the last legendary collectors of plants and seeds of superb quality.

For many who enjoy reports of journeys in wild places both Ted Millais and Stephen Fox write accounts of such in both Sichuan and Bhutan, whilst Tony Schilling tells how these places can be brought within the reach of those who cannot journey abroad.

The very mention of powdery mildew is enough to send shivers down the average rhododendron lover's spine and Dr Stephan Helfer has provided an interim report on his research into this pernicious affliction of rhododendrons, but stresses that this can only continue if sufficient funding is available — he can be reached at the Royal Botanic Garden, Inverleith Row, Edinburgh.

Many rhododendron growers have, in the past, muttered unkind remarks when the names of long-known plants have suddenly been changed or vanished entirely. Now Dr James Cullen gives a much welcomed explanation of the reasons that have provoked such changes and lays down the baseline rules for identification purposes. He also gives a welcome warning about the danger of growing seed from uncertain provenance.

Moving back to magnolias, John Bond conducts us on an early spring tour round the National Collection at the Savill Garden in Windsor Great Park. Such a tour is, of course, a must for all who are interested in the genus, since only the very best can be seen there. This article must strengthen our resolve to visit Windsor in 1992.

There is a report from the Arnold Arboretum of a new magnolia species from China. From China, also, comes news from one of their botanical institutes, Kunming, where a comprehensive collection of rhododendrons growing in the province of Yunnan is taking shape. Amongst other items from overseas is an account from Mr E. Larsen, a Norwegian member, who tells us how he grows rhododendrons near the Arctic Circle!

Jennifer Trehane, in her article on the late-flowering *Camellia sasanqua* (unhappily not hardy everywhere in the British Isles) recommends us to try it as a house plant and suggests several varieties.

All our usual features are included. Amongst the Rhododendron Notes are two knowledgeable profiles from Ken Lowes, and Walter Magor's recollections of one of his father's most successful yellow hybrids. Clive Collins reports on the enjoyable Annual Tour to the North-East and, thanks to Ivor and Jane Stokes and Cicely Perring, both the Rhododendron and Camellia Shows are described in such colourful terms that surely more members will wish to enter the competitions next year. Walter Magor, as usual, has reviewed new literature for us. Our Photographic Competition has attracted a record number of entries, thereby putting the judges on the spot. Some of the best entries can be seen in the coloured pages.

Finally, congratulations to the honorary editor, Cynthia Postan, and the two RHS editors, Susanne Mitchell and Barbara Haynes, for putting together a fascinating and instructive issue. Contributions for the 1993 Year Book (double spacing please) and entries for the Photographic Competition should be sent to the Honorary Editor, Lady Cynthia Postan, 84 Barton Road, Cambridge, CB3 9LH, preferably to arrive by the end of March, 1992.

BRUCE ARCHIBOLD

Fig. 1 Bruce Archibold presenting Walter Magor with an engraved bowl on behalf of the Group. Lamellen 1989

Walter Magor retires

On 1 June 1991 Walter Magor, honorary life member of the Rhodendron Group was 80 years old. Walter has been a lifelong enthusiast for the genus *Rhododendron*, having grown up at Lamellen in Cornwall, the son of E. J. P. Magor, one of the pioneers of rhododendron cultivation in this country. Walter has carried on the Lamellen tradition, becoming known all over the world as a leading expert. His father was one of the founder members of the Rhododendron Society, a small group of garden owners, botanists and plant hunters formed during the First World War. The Society was the forerunner of the present Rhododendron Group. Again following in his father's footsteps, Walter has sustained and helped to steer the affairs of the Group over many years, serving as Chairman, Editor of the Year Book, planner of the annual tours and, always, a wise and devoted committee member. He retired from the Executive Committee in 1990, to the great regret of his colleagues. Our photograph shows Walter being presented with an engraved wine cooler by Bruce Archibold, our Chairman, as a token of our affection and gratitude for his untiring efforts on behalf of the Group. The present lively condition of the Group with its growing membership from all over the world owes much to him. Although Walter has officially retired, he continues to watch over the Group and to play a part in the writing and editing of the Year Book. We send him our congratulations and good wishes.

Frank Kingdon-Ward's legacy

WALTER MAGOR

Two attractive books about Frank Kingdon-Ward were published recently, one a biography, and the other an anthology of his writings. It has been said, however, that both lack an assessment of his very considerable legacy to horticulture, and in particular to those of us who grow rhododendrons.

Frank was not, of course, the first plant collector to introduce rhododendron into the western world. The first rhododendron was introduced in 1656, and by the end of the eighteenth century 12 rhododendron species were known, of which ten were in cultivation. Early in the nineteenth century, rhododendron seed from the Himalayas began to be sent from the Botanic Garden in Calcutta, but the main flow started when Joseph Hooker explored the Sikkim Himalayas in 1848-51 and introduced 30 different species. About the same time, Robert Fortune introduced *Rhododendron fortunei* from eastern China, and a few years later the French Catholic missionaries in western China and SE Tibet began to send herbarium specimens to Paris, where they were described and named by Franchet. Most of these rhododendron species from western China were later introduced by Wilson and Forrest, and by the end of the nineteenth century some 280 rhododendron species had been discovered though only about 45 were in cultivation.

Understandably seedsmen took a leading part in commissioning plant collectors. In this the Veitches of Exeter and later Chelsea were prominent, and when, between 1899 and 1905, they sent E. H. Wilson (1876-1936) twice to western China, they set in motion a period of unparalleled activity in the introduction of rhododendrons. In 1904 Mr A. K. Bulley of Bees Ltd, whose garden has become the Liverpool University Botanic Garden at Ness on the Wirral, sent George Forrest (1873-1932) to Sichuan and Yunnan. Over the next 50 years five collectors, all of the same age group, made major introductions of rhododendron seed from Western China, SE Tibet and Upper Burma.

Wilson made expeditions for the Arnold Arboretum of Boston, Mass. in 1907-09 and 1910-11. Joseph Rock, an American of Austrian origin (1884-1962), made expeditions between 1923 and 1949, and is responsible for the best photographs that we have of the scenery of the region. George Forrest, in the course of seven expeditions, discovered and introduced some 250 different species of rhododendron, but died in 1932 on his seventh expedition. Reginald Farrer (1880-1920) also died in the course of an expedition in Upper Burma.

Frank Kingdon-Ward (1885-1958) outlived all but Rock, and between 1909 and 1953 undertook 25 plant hunting expeditions. Although his father was Professor of Botany at Cambridge, Frank was primarily an explorer and ecologist and only later switched to plant collecting. In March 1907 Frank took up a post as a junior master at the Shanghai Public School. Two years later came the opportunity to accompany an American zoological expedition backed by the Duke of Bedford, which travelled 600 miles up the river Yangtze and then across to the Tibet border. In the course of this journey, Kingdon-Ward discovered two voles new to science, one of which was named *Microtus wardii*, and a shrew, *Sorex wardii*.

Mr Bulley of Bees Ltd had meanwhile sent Forrest on two successful trips to Yunnan and SE Tibet between 1904-06, but after that he was employed by a syndicate organised by Mr J. C. Williams of Caerhays. On the advice of Professor Bayley Balfour at Edinburgh, Mr Bulley then invited Kingdon-Ward to take Forrest's place. Without hesitation he gave up his teaching post and set off for Yunnan on the 31 January 1911, this time travelling up through Burma. Unaccompanied, by the end of the year he had reached Teng-yueh in western Yunnan and had collected some 200 plants, 22 of them new species. Among these, *Androsace wardii, Gentiana wardii, Listera wardii, Meconopsis wardii* and *Saxifraga wardii* were named after him. There is also a *Primula wardii* collected on a later expedition, and he introduced a number of other *Primula* species, of which the most notable are *P. agleniana, P. alpicola* and *P. vernicosa*.

A year later, he was back in England and took a crash course in surveying and mapping at the Royal Geographical Society who lent him instruments, for, apart from collecting for Bees Ltd, another objective of his next expedition was to explore the upper reaches of the Brahmaputra river called in Tibet the Tsangpo. This expedition took him into the north of Yunnan province and on to the Tibetan border, in the course of which he collected five rhododendron species, two of them not previously known, including the superb yellow *R. wardii*.

After war service in Burma, he collected in NE Upper Burma in 1919 and returned to England in 1920 after an absence of seven years. Going

back to Yunnan in 1921, again working for Bees Ltd on the Yunnan-Sichuan borders, he collected some 40 species of rhododendron, including some of the best now in cultivation. The following year, after an expedition to the Tibetan marches and NE Burma, he returned again to England and married Florinda Norman-Thompson, 14 years his junior, after whom he named *Meconopsis florindae* and *Primula florindae*. However she never accompanied him on his expeditions and in the 14 years that their marriage lasted he spent barely four years with her: they were divorced in 1936.

Eight years later he met Jean Macklin, daughter of a Bombay High Court Judge, and they were married in 1947 when he was 63 and she was 36 years his junior. Almost at once they set off on a collecting expedition to the Indian State of Manipur, where he discovered *Lilium mackliniae*. This received an AM at the Chelsea Flower Show in 1951, when exhibited by Sir Frederick Stern of Highdown, to whom K-W had sent bulbs. There is a charming photograph in Charles Lyte's biography of Jean pressing plant specimens on this expedition. She accompanied him on all his subsequent expeditions, and was with him at the epicentre of the great Assam earthquake in August 1950, as well as when he died in London after a stroke in 1958.

Five collectors were working in this area at this time, each with his own method of collecting plants. Over a period of 28 years during which George Forrest recorded almost 31,000 specimens and seed numbers, he trained native collectors of the Mossoo tribe from the village of U-lu-Koey on the Lichiang range east of the Yangtze Bend in the north of Yunnan. He employed up to 20 of these men who covered a considerable area and went on collecting plants and seeds even when he was away. Wilson and Rock also employed native collectors, though not on the same scale as Forrest. Wilson collected more than 61,000 seed numbers over 20 years, and Rock nearly 60,000 specimens and more than 25,000 seed numbers over 26 years.

Kingdon-Ward, however, worked entirely single-handed without the assistance of native collectors. In consequence he covered much less ground, but he believed in selecting the best forms of species, and was well known not only for the quality of the seeds which he sent but also for his excellent field notes, of which there is a set in the Lindley Library. He recorded 22,200 seed numbers over a period of 43 years. Farrer's method of collecting was similar to Kingdon-Ward's, though he was only in the area for eight years and recorded no more than 1500 seed and specimen numbers.

Kingdon-Ward's plants were all collected by him personally, chosen as the best forms. Coming to the area a little after Forrest, he may not

have discovered many rhododendron species not already described and named, but he introduced good forms of what were already known although not necessarily in cultivation. He introduced several outstanding large-leaved species and seemed to have an affinity for species with yellow flowers.

On his 1913 expedition to Yunnan and the Tibetan frontier, he collected *R. wardii*, destined to take the place of the Himalayan *R. campylocarpum* as the most valuable source of yellow colour in hybridising (fig. 3). On his 1927 and 1935 expeditions, he introduced the splendid large-leaved yellow *R. macabeanum* from the Naga Hills in Manipur (fig. 4). This species had been discovered by Sir George Watt in 1882 during a Government Demarcation Survey, and was described by Balfour in 1920. Named after the former Deputy Commissioner of the Naga Hills, Mr McCabe, it was not introduced into cultivation until 1927. Of other large-leaved tree species, he introduced the fine *R. montroseanum* (formerly *mollyanum*) in 1924, and *R. magnificum* in 1931. He also introduced good forms of *R. sinogrande* and *R. giganteum* collected earlier by Forrest.

He discovered another new species on his 1913 expedition, *R. agganiphum*, a subsection Taliensia species with white flowers flushed pink, and in 1937 he found yellow and purple forms of this. Other shrub species that he introduced were the scarlet *R. venator*, the scented *R. megacalyx, R. horlickianum, rhabdotum, piercei, tamaense, aperantum, parmulatum* and *R. mallotum* of the dark crimson flowers and reddish-brown woolly indumentum; this was discovered about the same time by Reginald Farrer and was described by Sir Isaac Bayley Balfour and initially named *R. aemulorum* (of the rivals). A clone of *R. glischrum*, ssp. *rude*, with the clonal name 'Frank Kingdon-Ward', received an AM in 1969 when shown from Glenarn.

Dwarf species which he introduced include *R. imperator, pemakoense, campylogynum* var. *myrtilloides, calostrotum,* var. *calciphilum* and the yellow *R.chryseum*.

His eye for the yellows led him to the yellow form of *R. glaucophyllum*, since given specific rank as *R. luteiflorum*: a yellow form of *R. zaleucum*, f. *flaviflorum* (KW 20837), a sulphur yellow *R. forrestii repens* (KW 9816) and an orange *R. neriiflorum euchaites* (KW 20696).

Most of the rhododendron hybrids derived from species introduced by Kingdon-Ward are yellow-flowered. *R.* 'Chikor' (*R. chryseum* × *ludlowii*) was awarded an FCC after Trial at Wisley in 1968. Crossed with *R. wardii, R. macabeanum* gave 'John Harris', which received an AM in 1986. Two other *R. macabeanum* crosses have received AMs: 'Our Kate' (× *calophytum*) in 1963 and 'Glenshant' (× *grande*) in 1964. For the rest,

the yellow K-W hybrids all derive from *R. wardii*, either directly or indirectly; most notably when crossed with 'Lady Bessborough' (*campylocarpum* × *discolor*) to produce the Hawk grex, of which the FCC clone 'Crest' is outstanding. Other AM clones are 'Hawk', 'Exbury Hawk' and 'Jervis Bay'. Awards have also been received by a number of other first generation *wardii* crosses. 'Roza Harrison' (× Loderi 'Sir Edmund) FCC 1968, and AMs have been given to 'Inamorata' (× *discolor*), 'Prelude' (× *fortunei*), 'Carolyn Hardy' (× 'Mrs Lindsay Smith'), 'Idealist' (× 'Naomi'), 'Cowslip' (× *williamsianum*), and 'Iberia' (× 'Isabella').

'Crest' is the parent of one FCC hybrid 'Queen Elizabeth II', 1974, when crossed with 'Idealist'; another clone of the hybrid with 'Idealist' was named 'Lady in Waiting' when it received an AM in 1989. AMs have also been given to the following 'Crest' hybrids: 'Cara Mia' (× 'Aurora'), 'Binfield' (× 'China'), 'Arborfield' (× Loderi 'Julie'), and 'Theale' (× 'Penjerrick'), 'Warfield' and 'Buttersteep' (× 'Jalisco'), 'Baron Philippe de Rothschild' (× 'Exbury Naomi'), and 'Happy Occasion' (× 'Snow Queen').

AM hybrids derived from other clones of the Hawk grex are 'Colonel Remy' ('Hawk' × *campylocarpum*), 'Katherine Fortescue' ('Exbury Hawk' × *griffithianum*), 'Candy Floss' ('Hawk' × 'Mrs Randall Davidson') and 'Judy Clarke' ('Hawk' × 'Idealist').

Secondary hybrids with *wardii* parentage that have received AMs are 'Peregrine' ('Hawk' × *souliei*) × *yakushimanum* 'Arthur Hardy' ('Idealist' × *calophytum*), 'Kate Hurley' ('Idealist' × *souliei*), 'High Summer' ('Inamorata' × 'Mrs J. G. Millais'), 'Virginia Richards' (*wardii*× 'F. C. Puddle') × 'Mrs Betty Robertson' and 'Duchess of Rothesay' ('Hotei' × *decorum*). 'Hotei' AM is, if anything, a stronger yellow than 'Crest'; its parentage is 'Goldsworth Orange' (*dichroanthum* × *discolor*) × 'Dortmund' (*souliei* × *wardii*).

Other taxa, not of *R. wardii* origin, but which derive from Kingdon-Ward's introductions, which have received awards in recent years are *R. calostrotum* 'Gigha' FCC 1971, *R. tsangpoense* 'Cowtye' KW 5844, AM 1972, *R. viridescens* 'Doshong-la' KW 5829 AM 1972, *R. parmulatum* 'Ocelot' AM 1977, *R. spinuliferum* 'Blackwater' AM 1977, *R. eclecteum* 'Kingdom Come' KW 6869 AM 1978, *R. mekongense* 'Yellow Fellow' KW 406 AM 1979, *R. vellereum* 'Lost Horizon' 1976 and 'Far Horizon' 1979 KW 5656, and *R. sperabile* var. *weihsiense* 'Rouge et Noir' KW 7129 AM 1985.

Though he introduced new species of several genera, notably *Lilium* and *Primula*, Kingdon-Ward is chiefly known for his rhododendron introductions. He may not have introduced as many species as Forrest or

Rock who both covered a larger area by using native collectors, but Kingdon-Ward's introductions were all personally selected and included two outstanding yellow species, of which *R. wardii* is prominent in the parentage of so many of the popular yellow hybrids.

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The logic of Rhododendron classification

JAMES CULLEN

Because of the many changes in rhododendron classification which have taken place in recent years, it seems appropriate to provide a commentary on the methods and characteristics used in the classification above the species level. This is all the more appropriate in that accounts of the genus in cultivation will soon appear in *The European Garden Flora*, volume 5, and in the *RHS New Dictionary of Gardening*. As I have written both of these accounts (in consultation with colleagues), I welcomed the chance offered by the Editor to restate some of the problems and practices involved in identifying garden rhododendrons.

In the wild, the 800 or so species of the genus are very widely spread, though with large concentrations of species in two areas — Yunnan in western China and Papua New Guinea. This wide distribution in itself simplifies the identification of the wild species (or plants of certainly known origin in cultivation). If a particular plant is known to come from, say, Bhutan, then the possible range of species to which it can belong is sharply reduced to the 60 or so known from that country. Thus, geographical origin provides an important signpost in the identification process. For quite a lot of cultivated material of rhododendron (mainly that grown under collectors' numbers) such information is theoretically available, and is of great help in identification. However, there are pitfalls; collectors' numbers can be, and have been, quite wrongly applied as plants are propagated. Such mislabelling happens in the best-run propagation facilities, and it is a reasonable rule to say that the more easily propagated a species is, and the smaller the mature plant, the greater the doubt that must be employed in evaluating any collector's number attached to it. These factors seem to provide the explanation for the wide misapplication of both names and collector's numbers in plants belonging to Subsection Lapponica (the Lapponicum Series) in gardens.

The best and most important rhododendron collectors (Forrest, Rock, Kingdon-Ward, Ludlow and Sherriff) fortunately made herbarium collections as well as living collections, and these provide a check on the use of collectors' numbers in gardens. The cultivated plant can be directly compared with the herbarium specimen bearing the same collector's number. If the specimens match (allowing some latitude for changes induced by the very different growing conditions in gardens), then it can reasonably be assumed that the collector's number belongs to the garden plant. If they don't match, the only safe assumption is that some mislabelling has occurred during the history of the plant in cultivation. In any serious collection, such collector's numbers should be removed, to avoid continuing confusion. The best collection of such authenticated, collector's-numbered plants is at the RHS Garden, Edinburgh.

Beyond the difficulty of knowing the geographical origins of plants in gardens, there is a further, more profound difficulty. This arises from the fact that species rhododendrons hybridise very easily. In a garden containing plants of more than a very few species, the chances are very high that any seed produced by those plants will be hybrid. Thus, garden seed of rhododendrons is a totally unsatisfactory way to propagate a species (unless controlled pollination under very strict conditions has been practised). Unfortunately, a great deal of such seed has been distributed in the past, either from individual to individual, or, more regrettably, by botanic gardens as part of their international seed exchange. The offspring of such exchanges are still with us, and with no knowledge of the male parent, cannot really be properly identified.

As well as these widely spread accidental hybrids, there are, of course, many deliberately produced hybrids, some of them very widely grown. There is no way in which one can tell, by inspection, whether a plant is a hybrid or a species, because the hybrids are, in general, as fertile as the species. The problem can only be solved by repeated, careful but unsuccessful attempts at identification, followed by consultation with someone who knows the species well.

A further major problem is caused by the large size of the genus. Because of this, taxonomists have broken it down into a number of subunits. In earlier times these were simply the 40 or so Series, as found in Stevenson's *The Species of Rhododendron* (1930). More recent work has been based ultimately on the classification devised by Hermann Sleumer, and proposes a rather complex-seeming hierarchy of groups between the genus and species. The highest of these ranks is that of *Subgenus*, and eight of these are recognised in the most recent classifications. Some of them are small, with one or few species; others are larger, and are divided into

Sections. Like the subgenera, some of the sections are small and are not further subdivided, while others are large and are divided into *Subsections*. The table shows the disposition of these various units.

Subgenus	*Section*	*Subsection*	*Comments*
Rhododendron	Rhododendron	27	'Lepidote' species
	Pogonanthum	none	Anthopogon Series
	Vireya	several	'Malaysian' species
Hymenanthes	Pontica	24	Evergreen species
Pentanthera	Pentathera	none	Deciduous Azaleas
	Viscidula	none	
	Rhodora	none	
	Sciadorhodion	none	
Tsutsusi	Tsutsusi	none	Evergreen Azaleas
	Brachycalyx	none	
Azaleastrum	Azaleastrum	none	Ovatum Series
	Choniastrum	none	Stamineum Series
Therorhodion	none	none	R. camtschaticum etc
Mumeazalea	none	none	R. semibarbatum only
Candidastrum	none	none	R. nipponicum only

In identifying a rhododendron, as almost everyone knows, the first thing to look for is the presence or absence of lepidote scales. These are generally present on the young shoots and the lower surfaces of the leaves; they may be found on other organs as well, e.g. leaf upper surfaces, pedicels, calyces, corollas and bud-scales. In most cases there is no question as to whether or not they are present. But in a few species the scales are deciduous, and in one or two others (e.g. *R. edgeworthii*) they tend to be obscured by a very dense covering of hairs, so a careful search is sometimes necessary. The occurrences of scales indicates that the plant in question belongs to Subgenus *Rhododendron*. Another feature of this subgenus relates to the condition of the young leaves in the vegetative bud. The leaves at this time are flat or somewhat curved, and not, as occurs in all the other subgenera, with their margins rolled under (revolute). The only known exception to this is *R. pendulum*, which has scales, but in which the young leaves are revolute. It should be stressed that this character is only applicable to the leaves in the bud; as the leaves expand and mature the condition of the margins varies, and several species with flat or curved leaves in bud have their margins revolute when mature.

Subgenus *Rhododendron* is made up of three sections, which, on the whole, are well distinguished. The smallest section is *Pogonanthum*, comprising about 14 species of small shrubs with a very characteristic, sweet, pineapple-like aromatic smell (the description of smells is notoriously difficult; this one, once smelt, is easily recognised, and, on warm, still evenings, can be distinguished at a considerable distance from the plant). The scales are very densely packed on the lower leaf-surface, making up several tiers, and their rims are irregularly toothed (lacerate). The flowers are rather small, usually with a parallel-sided tube and short, spreading limbs (more rarely the flower is narrowly trumpet-shaped). There are 5 to 10 stamens, and they are hidden within the corolla-tube, whose mouth is generally occluded by a dense ring of hairs. The ovary is small, and the style is short and club-shaped. The bud-scales of the inflorescence are margined with branched hairs. The capsule, though small, is hard and woody and opens only near the apex, the valves being erect and only slightly separated from the central column.

Section *Rhododendron* is much larger, with about 150 species disposed in 27 Subsections; it contains most of the hardy, lepidote rhododendrons. Plants vary from tall, almost tree-like shrubs to small, prostrate shrublets. Many of them are aromatic, but without the characteristic Pogonanthum smell. The scales on the leaves are variable in form and spacing; they may be without margins (vesicular) or the margins are entire, undulate and crenulate. The flowers are variously shaped, and the corolla is often spotted or blotched with a contrasting colour. There are usually 10 stamens (more rarely fewer or more), and they are rarely enclosed in the corolla-tube. The style is generally long, and also projects beyond the corolla tube, even when it is sharply downwardly deflexed at the base. The infloresence bud-scales are glabrous or margined with simple hairs. The capsules are like those of Section *Pogonanthum*, but usually larger. The seeds may have wings and pronounced fins at each end, or these may be absent.

The final section is *Vireya*, which consists essentially of the 'Malaysian' rhododendrons, most of which are not hardy in Britain, though they are being grown on an increasing scale in other areas, e.g. California and Australia. There are about 300 species, many of which are epiphytic, and they occur throughout SE Asia, especially in New Guinea. They are often of a straggly habit, though their inflorescences are spectacular. The scales are variable and may have entire, lacerate, or deeply toothed rims. The corollas are of various shapes and colours, but rarely have spots or blotches of contrasting colour. The capsules are usually soft, and open by means of the valves curving backwards for

most of their length; the placentas themselves often separate from the central column as threads. The seeds usually have pronounced, narrow tails at each end. This large group has been divided into several subsections, but these are currently under revision. Because the plants are of little importance in British gardens, this aspect will not be pursued here.

All the species which do not possess scales, and whose leaves are revolute in bud, belong to the other subgenera. In identifying these, the first thing to look for is the occurrence of curious, flattened, adpressed bristles on the shoots. The presence of these indicates that the plant belongs to Subgenus *Tsutsusi*. This is a relatively small group, but divided into 2 sections. In Section *Tsutsusi* at least some of the leaves (summer leaves) are evergreen, and this is the group informally known as the evergreen Azaleas. In Section *Brachycalyx* the leaves are regularly deciduous.

In the remaining Subgenera, the leaves may be evergreen or deciduous and the racemes may be terminal or lateral and axillary. If the leaves are evergreen and the racemes are terminal, then the plant belongs to Subgenus *Hymenanthes*. This is a very large subgenus (over 220 species), which consists of a single Section, *Pontica*, divided into 24 Subsections. Identification of the subsections depends on many characters, especially the presence or absence of hairs on the leaves (and if present the structure of the hairs), the nature of the inflorescences, and many features of the flowers (shape, size, colour, presence or absence of nectar-pouches, etc.).

If the leaves are evergreen but the racemes are lateral, then the plant belongs to Subgenus *Azaleastrum*. Though this is quite a small subgenus, it is divided into 2 sections. In Section *Azaleastrum* the flowers have five stamens, whereas in Section *Choniastrum* there are ten stamens. These sections correspond with the older Series *Ovatum* (Sect. *Azaleastrum*) and *Stamineum* (Sect. *Choniastrum*).

Species with deciduous leaves and terminal inflorescences are grouped in 2 subgenera, *Therorhodion* and *Pentanthera*, which are very distinct. Subgenus *Therorhodion* consists of only 3 species, and is sometimes treated as a separate genus. The plants are low, creeping shrublets, and the flowers are subtended by persistent bracts which are green and resemble the foliage leaves in form. The corolla is divided almost to the base on the lower side, and there are ten stamens.

Subgenus *Pentanthera* (about 30 species, the 'deciduous Azaleas') is divided into four sections. All the plants are upright shrubs, and the flowers are subtended by bracts (bud-scales), which are brownish or yellowish and fall early. In Sect. *Pentanthera* (about 20 species) the

corolla is bilaterally symmetric and hairy outside and there are five stamens. In Sect. *Viscidula*, which contains the single species *R. nipponicum*, the corolla is glabrous outside and more or less regular, tubular-campanulate, white and unspotted, and there are ten stamens. Section *Rhodora* contains 2 species in which the corolla is distinctly zygomorphic and 2-lipped, glabrous inside and outside, and there are seven to ten stamens. Finally, Section *Sciadorhodion*, containing about 8 species, is like Sect. *Rhodora* but the corolla is not 2-lipped, and is hairy inside.

The final two Subgenera are both small (a single species each), and have deciduous leaves and lateral racemes. In Subgenus *Mumeazalea* (*R. semibarbatum*) there are five stamens, whereas in Subgenus *Candidastrum* (*R. albiflorum*), there are ten stamens.

Using the old 'Series' classification, it was possible to refer each species to a Series. In the new system an equivalent is possible: each species can be referred to the lowest supraspecific rank to which it belongs. Thus, *R. albiflorum* can be referred to as belonging to *Candidastrum* — the subgenus to which it belongs, as this is not subdivided further. Likewise, *R. vaseyi* can be referred to *Rhodora*, the Section of Subgenus *Pentanthera* to which it belongs. Finally, *R. keysii* can be referred to as belonging to *Cinnabarina* — the Subsection of Subgenus *Rhododendron* Section *Rhododendron* to which it belongs.

The identification of these supraspecific groups is the first stage in the identification of the species. In Subgenera *Rhododendron* and *Hymenanthes*, there is an intermediate stage — the identification of the subsections. The details of this would take up too much space here, but can be found in a series of papers by various authors (beginning in 1980 and still in progress) in the *Notes from the Royal Botanic Garden Edinburgh* and its successor, the *Edinburgh Journal of Botany*; these papers, will, when all are published, cover all the known species of the genus, whether cultivated or not. Means for the identification of cultivated species (using this hierarchy of ranks) will be found in the *RHS Dictionary of Gardening* (new edition) and *The European Garden Flora* volume 5, as mentioned at the beginning of this article.

The Trans-Asian Heath Garden at Wakehurst Place

TONY SCHILLING

Soon after the great storm of 1987 I clearly recall writing a manic note to an alpine gardening friend congratulating him on his specialising in plants which grew no taller than his kneecap. Perhaps this cry of pain subconsciously gave substance to my wish to create a Trans-Asian Heath Garden at Wakehurst Place. The total destruction of the Rhododendron Walk, a much-respected feature dating back to the beginning of the century when Gerald Loder owned and gardened here, at last provided the opportunity.

So complete was the devastation in this part of the garden that the area was laid wide open to the skies with total exposure to the east. It was quite clear that conditions were unsuitable for what little remained of the shattered woodland understorey. The protective canopy of mature broad-leaved and coniferous trees had been entirely lost and the few large-leaved rhododendrons which had survived the falling timber rapidly deteriorated and had to be either destroyed or summarily removed to more favourable sites elsewhere.

There had to be a total rethink, especially as the area lies near to the garden entrance and close to the Mansion which is the focal point of this part of the estate. Urgency is one thing: impetuosity something quite different and undesirable in long-term garden planning. The rethinking therefore took place soberly over a period of a year or so while massive storm clearance work went on throughout the gardens. The best ideas are usually the simplest and most obvious (at least in retrospect), and so it proved in this particular case. We needed an open site for the cultivation of dwarf rhododendron species sufficiently large to accommodate the so-called heathland rhododendrons which, up until then, had been grown in an open area in the Southern Hemisphere Heath Garden to the west of the Mansion. It so happened that this unhappy liaison was a 'planting of convenience' rather than anything botanically meaningful, because the rhododendrons there were in direct contradiction to the character of the feature. The indirect consequence

of the storm was to remove these dwarf rhododendrons, thus making space for additional southern hemisphere planting.

The new post-storm Trans-Asian Heath Garden has been designed and developed to serve several purposes. First, it was to contain dwarf rhododendrons, comprising, amongst other subsections, *Lepidota, Saluenensia, Trichoclada, Campylogyna* and *Glauca* within section *Rhododendron* and several of the species within section *Pogonanthum*, none of which thrive in heavily shaded woodland conditions. Secondly, the plantings were to be divided into their respective geographic zones: Taiwanese, Korean, Japanese and Sino-Himalayan, thus continuing Wakehurst's tradition of representing its major collections in phytogeographic sequence. Thirdly, it was intended to create more space in the Southern Hemisphere Garden and to solve the problem of the contradiction until then prevailing within that scheme. In all, the newly available area comprises approximately three acres — a sizeable plot — which appeared, when first cleared of timber and surviving plants, to be twice that size, but, like all such enterprises, it shrank visibly when planted. With the wealth of plants at our fingertips from our own collections and the material we knew to be elsewhere in specialist nurseries we suspected we would run out of space before we ever ran out of ideas.

The expensive and time-consuming exercise of site clearance left the area rutted, compacted and totally exposed. The first priority was to revitalise the soil by subsoiling and ploughing the entire site, the operation being repeated several times in order to clear out any remaining sections of old tree roots as well as other unwanted debris. Large quantities of organic matter also had to be added to improve the soil structure. Next, the actual details of the landscaping had to be addressed, and the various ideas turned into reality.

The landscape of the original Rhododendron Walk had been pleasant but too simple: a long sylvan path following the curves of the Mansion Pond path and the service road which lay to its west and east. Any sublety or interest in the layout was entirely due to the massed mature planting. Now that was gone it was clear that we needed something with greater variety and excitement, something to inspire as well as impress Wakehurst's visitors. The central path had already been ploughed out of existence by the soil restoration work and in its place a maze-like complex of meandering gravel paths has been created. These have been complemented by several inter-connecting grass paths.

The next task has been to subdivide the garden into its various geographic zones without neglecting the aesthetic angle. Although the montane heathland theme had top priority it was also essential to allow for variety of content and to give some feeling of mystery to what might

otherwise be a mass of dwarf plants stretching away for hundreds of yards. To avoid this uniformity it was decided to introduce erratic plantings of sub-alpine Asian woodland which would echo the various geographic zones, break the line of vision and give a pitch-and-roll effect to the garden as a whole. Beyond the service road to the east the extreme exposure was reduced by the planting of still more trees, each section mimicking yet again the geographic theme of the adjacent plantings. Additional landscape contrast has been achieved by constructing outcrops or bluffs of sandstone rock at several strategic points within the garden.

Having planned the landscape and structure, the next decision was one of detail. The Asian garden impression that we wished to express had to be interwoven with the same blend of horticulture and ecology (hortecology?) as had been achieved in the well-established Himalayan Glade in Westwood Valley over 15 years before (see *Rhododendrons 1976,* pages 18-21). The species we intend to present must not only give aesthetic pleasure but also be ecologically realistic. Thus, the heathland zones which predominate comprise a mixture of companion plants which may be found growing in natural association with the dwarf rhododendrons in their native home. These include dwarf species of *Juniperus, Cotoneaster, Gaultheria, Vaccinium, Potentilla* and *Berberis* as well as less predictable genera such as *Ephedra* and the dwarf *Sorbus reducta*. All plantings have been laid out in order to give a natural mosaic of texture, colour and form to the overall scene.

Much the same planting philosophy has been adopted for the adjacent woodland areas. These are essentially three-tiered. In the Himalayan section medium-sized species of *Sorbus, Malus* and *Betula* make up the top storey with subjects such as *R. cinnabarinum, R. rubiginosum, Lonicera setifera* and *Viburnum farreri* providing the middle storey. As the woodland floor matures it will become dominated by *Cotoneaster dammeri, Bergenia purpurascens* and *Vaccinium glauco-album* linked to the adjoining heathland zone by groups of *Polygonum affine* and *Rhododendron lepidotum*. The tile-roofed summer house sited close to the Mansion Pond, previously lost in the depths of the Rhododendron Walk, at the moment stands out somewhat self-consciously amidst a scattered planting of young Himalayan trees and shrubs, but as time passes and the sub-alpine woodland matures it will regain its former cloak of woodland seclusion and charm.

The Japanese and Taiwanese sections follow the same pattern of layout and context; however the ecosystem in the Korean section is limited to alpine woodland because its mountain flora does not ascend to heathland levels.

This plan has made it possible to create a unique setting which, when mature, will present the visitor not only with a range of beautiful dwarf plants but also with a landscape emulating to some degree the natural scene to be found amidst the wild mountains of Asia. The aim is to give the visitor at least some idea of what it feels like to break out of the trees at the upper limit of sub-alpine woodland onto the open hillside of alpine scrub and rhododendron heath. For the professional plant hunter this is always one of the most exciting moments of an expedition. Here at Wakehurst the visitor may share some of that excitement while being spared the deprivations of such an endeavour.

At the southern end of the area a complex of beds is planned to exhibit a wide selection of dwarf rhododendrons of Asian 'blood', all of which have been created by hybridists for the enjoyment of today's gardening public. If the Asian species first discovered by Forrest, Farrer, Wilson, Kingdon-Ward and Yu provide the 'classics' of the feature, then the southern end of the garden will undoubtedly play host to the 'jazz'. The first of these beds will display primary hybrids, whilst additional beds (as yet in the planning stage) will hold the more sophisticated multiple-hybrids which have been bred from them.

Thus, the full story will be told — from the wild-collected plants right through their horticultural evolution to the hybrids which the gardener of today can obtain commercially. Here visitors can browse at leisure under the Sussex sky and decide which plants best suit their needs: should they be species or hybrids? Visitors can note names, and then hunt them down in *The Plant Finder* or in their local garden centre. By doing so they can bring a little of the mountain atmosphere of Asia into their own gardens. At the risk of being dubbed an incurable romantic I admit to getting an imaginary whiff of the mountain air of Bhutan, Yunnan or China when I take the Trans-Asian Heath Garden route through Wakehurst. No mighty peaks back the scene, but at least a glimpse of the South Downs twelve miles away can be seen now that the trees have gone. At the time of writing a large percentage of the garden still awaits planting. The aim is to present plants from natural sources only and, in consequence, all progress is governed by the availability of quality material. When the 2600 contract-grown plants arrive from Windsor Great Park in the autumn of 1992 the beds will be filled to capacity and the scheme will be complete. As the garden matures and grows together the heathland mosaic effect will be achieved. The Rhododendron Walk so rudely torn asunder in 1987 has today given way to a newer, more exciting venture. As Thomas Turner wrote 400 years ago, 'It is an ill wind turns none to good.'

A trek in Sichuan

E. G. MILLAIS

In the autumn of 1990 I was able to arrange a rhododendron trek in Western Sichuan with the Sichuan Mountaineering Association. An Anglo-American venture, our party included myself and my wife Romy, Peter and Patricia Cox, Philip Bowden Smith who grows rhododendrons commercially near Oban, and Sarah Tracy, a botanical artist. The American contingent consisted of Warren Berg, the hybridiser, who kindly agreed to lead our party, June Sinclair, who owns a fabulous rhododendron garden near Seattle, Clarice Clark who until recently was propagator for the Rhododendron Species Foundation, and her husband Jerry, Bill Stipe, who runs the Meerkerk Rhododendron Test Gardens at Seattle, and Dr Garratt Richardson, a plant enthusiast who was the expedition doctor.

We all met at Chengdu on 18 September. In the evening Warren and I discussed our programme with the SMA, met Mr Tan, Sports Editor of a local newspaper who was to accompany us as interpreter, and also Mr Gao, the competent Chinese leader of our expedition.

Next day, after loading our back-up truck with food and our baggage, and ourselves into the two mini-buses, we set out for Ya-an, where we spent the night. On the journey westwards the following day we entered really mountainous country, with huge rivers and steep sided valleys covered in dense vegetation. We caught occasional glimpses of rhododendrons, mostly *R. argyrophyllum*. Often the narrow road was cut into the side of precipices, and once we passed under a fair sized waterfall. Although this was the main road leading into Tibet from China we now entered a one-way system as we approached the summit of the Erlang Shan pass (3048m, 10,000ft) (fig. 5). The road is so narrow and difficult, that the direction of the traffic alters every four hours.

As we drove up the pass *R. calophytum* and *R. oreodoxa* began to appear, and about 500ft below the summit we were able to de-bus in great anticipation and excitement. I saw what I thought was a *R. bureavii* growing out of the side of a cliff on the right hand side of the road, but

too difficult to reach. At this point a cry went up from others further ahead, who had found a similar rhododendron, and Peter Cox identified it as *R. coeloneuron*. This was a great and unexpected find. The plant was growing within 5 yards of the road, together with *R. wiltonii, pachytrichum, ambiguum* and *decorum*. It is a spectacular plant with deep green rugose leaves with a startling thick orange/red indumentum. Later we found some more plants, the largest being about 8 × 8ft.

After a night at the Government Rest House on Erlang Shan, we spent the following morning botanising the western side of the ridge. In spite of very difficult progress through bamboo and rubus we were able to find plants of *R. dendrocharis* (not in cultivation) *ambiguum, concinnum, faberi, orbiculare, watsonii* and a form of *sikangense* which appeared to be much better than that previously introduced as *cookeanum*, with fine rufous indumentum on both upper and lower leaf surfaces at least until September.

After lunch we drove westwards into the Dadu valley. From near the top of the Erlang Shan ridge we had fine views of the Gongga Shan mountain tops appearing just above the clouds. Minya Konka (7600m, 25,000ft) was clearly visible. The Dadu river is huge by any standards, and even here, 200 miles before joining the Yangtze, it is about 200yds wide, fast flowing, with 3ft high waves where it is restricted. After driving down it for some way we turned off to the village of Moxi-xiang, our base for exploring the area to the south-east of Minya Konka.

We waited a day here assembling our baggage ponies for the trek up to the SE Minya Konka glacier, before setting off for Camp I, a distance of about 9 miles, and the following day walked up to Camp III. These rest houses are much used by Chinese tourists and climbers. Between Camp II, which we bypassed, and Camp III, many rhododendrons began to appear. *R. calophytum* up to about 40ft, *pachytrichum, polylepis*, a wide-leaved form of *floribundum*, a single plant of *hypoglaucum*, and just above Camp I a fine specimen of *longuesquamatum*.

Just below the glacier we came on a single plant of *R. rufescens* (anthopogon series, not in cultivation) and in the hope of finding this in quantity we decided to cross the main glacier to where there appeared to be an area of low growing rhododendrons. The glacier at this point was about a mile wide, and on the further side there were a series of crevasses. In spite of this some of the younger members of the party did manage to cross and find an area of *R. rufescens*, but unfortunately this held no seed. The following day we returned to Moxi-xiang, a total distance of 17 miles, the last few of which were in torrential rain, all of us feeling fairly exhausted!

The journey to Kangding took us back up the Dadu river valley by way of Luding, and then turned west up the Kangding river gorge, which was quite spectacular, with white water almost all the way up to Kangding. On the way back we spent an hour or so investigating the luxuriant vegetation here, and found plants of *R. denudatum* (not in cultivation) and a fine-foliaged form of *R. davidsonianum*.

Kangding is a long narrow town pressed against the river with high mountains all round it. The buildings are an extraordinary mixture of rickety blackened wooden houses and unattractive square modern buildings. It used to be the trading centre for the sale of Chinese brick tea into Tibet, and most people there are ethnically Tibetan. There is a large Buddhist monastery in the centre of the town, obviously, still in use.

We spent a day on the mountain to the south of the town, while Mr Gao organised our next batch of ponies. From our hotel we started climbing almost immediately, and about 1500ft above Kangding arrived at a huge Buddhist stupa which dominates the town. Plants of *R. decorum, davidsonianum, ambiguum* and *rigidum, intricatum* and *nitidulum* were everywhere; many of the lapponicums were in fact very difficult to identify without any flowers, but there were probably *R. thymifolium* and *R. nivale boreale* also. In the afternoon we started to find odd plants of a wonderful rhododendron with a thick orange/red indumentum at least 3mm deep, superficially like *bureavii* and after a further 500ft came out on a ridge at 3500m (11,650ft) on which this plant was the dominant rhododendron. This was identified as the same as was sent back by McLaren's collectors (who were taken over from George Forrest) under No. 20, as *R. wasonii*. Only a few plants under this number exist, and its provenance has until now always been rather a mystery. These plants formed low compact bushes about 3ft high, with leaves very similar to *R. wasonii* except for the exceptionally thick orange/red indumentum which showed up well without having to be turned over. It is interesting to speculate on how Wilson managed to miss collecting this species, only about three miles from Kangding, but the path up the mountain was quite difficult to follow in its final stages, and may not have been in existence in his day. The plant could be very local.

Our visit to the Laolin valley south-west of Kangding, the following day, started well. This was one of Wilson's main collecting areas and was full of interest. Close to the stream there were all kinds of shrubs. Several sorts of *Buddleia, Hypericum, Philadelphus, Berberis, Sorbaria, Hippophae salicifolia, Rosa moyesii* and *R. sericea* and its varieties *omeiensis* and *pteracantha*, and, a little higher, *R. oreodoxa, souliei* and *phaeochrysum* var. *phaeochrysum* began to appear.

It had now started to snow, and, after spending four nights during which the snow reached a depth of 18in round our tents, burying all the *lapponicums*, we reluctantly decided to leave the valley. Winter had obviously arrived early forcing us to rearrange our plans completely. We had been intending to visit the south-west corner of the Gongga Shan mountains, where there would have been plants of *R. halfourianum* and *sphaeroblastum*, and also to visit an area 30 miles west of Kangding, over the Zedou Pass, where there would have been a chance of finding *R. bonvalottii* (not in cultivation). Now owing to the snow all the passes were blocked. Instead, Mr Gao suggested we visit the newly opened Muge Che reserve, about an hour's journey north-west of Kangding, and at very short notice he made arrangements for us to stay at the rest house there.

This was an inspired choice and, although the weather was very overcast, there was only a minimum of snow. The reserve lies to the west of the road entering Kangding from the north, and from a scenic point of view it is first class. Opposite the rest house is a small lake, on the far side of which is a dense forest of *R. watsonii* with plants well over 20ft high. Following up the stream there are many varieties of *Rhododendron* and *Sorbus*, which were well coloured and looking their best; *R. oreodoxa* was often growing right up against the stream, and hanging over it; large plants of *R. bureavioides* — the tallest we measured was just on 24ft — and plants of *phaeochrysum* var. *levistratum* up to about 20ft were growing there.

At 3600m (12,000ft) we reached a large lake, and here there were 8ft plants of *R. phaeochrysum* var. *agglutinatum*, and at the water's edge some lower growing rhododendrons which were either the same, or *R. przewalskii*, both having agglutinated indumentum. An interesting sorbus which we were unable to identify had rather *S. insignis* type foliage, with seven pairs of leaves, but with white berries, flushed pink. Further round the lake were small colonies of *R. websterianum*. We only had one full day here, but a lot of further botanising is still waiting to be done. There was another rest house half way round the top lake, at the end of which was a huge area of low growing rhododendrons, requiring another full day's trekking to reach.

We now started our return journey. Reaching Erlang Shan two days later, we found the pass blocked by a landslide! A huge convoy of wood lorries was stuck below it. Hundreds of these come out of Tibet every day, which can't be doing the environment there much good. I counted 400 annual growth rings on one large tree trunk. As we could not cross the pass that day we drove round to what I call Erlang II, about 5 miles further south, and spent the afternoon botanising there. About 500ft

above the road, at 3,200m (10,500ft), we came on a fine collection of dwarf *R. racemosum*, also *R. minyaense* (not in cultivation), *R. lutescens, concinnum, watsonii* and *tricanthum*. Further on it was a surprise to find occasional plants of *R. galactinum*, at least 100 miles west of its previously known location.

This virtually completed our expedition. We had one more attempt on Erlang Shan, but were beaten by bamboo and rubus from reaching the top, and one day another route will have to be followed to discover what is on the summit. Throughout our expedition we experienced excellent co-operation from the SMA staff, who did their best under difficult conditions, and who altered plans as it became necessary. We have tentatively agreed with them to visit Muli, 200 miles south of the Kangding area, in 1992.

Plant-hunting in Bhutan

STEPHEN FOX

Four weeks before the departure-date, September 29, 1990, the Chinese authorities withdrew their permission for a visit to the Namche Barwa area, including the Tsangpo Gorges. Instead, a visit to Bhutan was arranged with permission for the group to enter the east of the country, an area not normally open to tourists and little visited by botanists since the days of Ludlow and Sherriff (the 30s and 40s). In this respect the expedition was different from those reported by Anne Boscawen in *Rhododendrons,* No. 41 (1988-9) (page 20) and by Keith Rushforth in *Rhododendrons,* No. 42 (1990) (page 21).

The party numbered ten including its leader, again Keith Rushforth, and all but two of us were keenly interested in rhododendrons. We flew via Delhi into the new Bhutanese airport of Paro, an arrangement which saved a great deal of time. Here we were met by a Bhutanese courier and transferred to a bus. Our route lay along the east-west motor-road, built as an Indian aid-project and completed only a few years ago, which connects Paro and Thimpu (the capital) with Tashigang in the east. The road crosses five mountain ranges with intervening rivers called the Mo Chu, the Mangde Chu, the Bumthang Chu and the Kuru Chu. These all carry water from the northern heights bordering Tibet down to the plains of India in the south. The slopes to be crossed are often 45

degrees or steeper but the road alignment was skilfully chosen so that the gradient rarely exceeds 1 in 10. There are so many bends that the road distance (from Thimpu to Tashigang) is about twice the linear distance of 120 miles. The tarmac is usually 9ft wide with passing places at intervals. 13 mph was a good average speed for our bus, excluding stops.

It had been hoped to cross from the Bumthang Chu to the Kuru Chu on foot via the Rudong La but, unfortunately, the monsoon was continuing unabated into October and we encountered much persistent rain. This had caused landslides, closing the through route to ponies, perhaps even to walkers so, after two days' trekking, we were forced to turn back and travel instead by bus over the Thrumseng La. This pass (3700m/12,400ft) and the road 20 miles to the east of it are as far east as recent visitors have investigated. The area is rich in rhododendrons, with extensive stands of *R. succothii, flinckii, hodgsonii, cinnabarinum* and some interesting plants of *R. wightii* having a symmetrical truss, rusty indumentum and sticky black buds. Below and to the east we found *R. kesangiae, falconeri, camelliaeflorum, kendrickii* and *keysii*, each species having its preferred elevation and its preferred territory at that elevation. Isolated specimens of *R. edgeworthii* and *pendulum* were also found here. Other noteworthy and aristocratic plants were *Larix griffithiana* and *Sorbus hedlundii*.

The descent to the Kuru Chu (which is only 640m/2,100ft asl and therefore enjoys a sub-tropical climate) traverses hillsides which are unstable and particularly prone to landslides. Beyond, the road climbs to the small town of Mongar (1600m/5,300ft) where there is a secondary school and a resthouse. In this area grow *R. maddenii* and *R. virgatum* and the beautiful *Pinus bhutanica* which has long glaucous needles but which is, unfortunately, tender.

The last of the passes, the Kori La is a mere 2,500m (8,300ft) and more interesting for the presence of Giant Hornbills and Golden Langurs than for its rhododendrons. Beyond lies Tashigang, the main town of eastern Bhutan, perched at 1250m (4,100ft asl) on a cliff east of the Dangme Chu: it is a junction of both rivers and roads; south to Diwangiri, near the Indian border, north to Tashiyangtse Dzong and east to Radi. We took this last road, following up the course of the Gamri Chu. We soon came to a temporary bridge over a side-stream: this was crossed safely by our bus, although we prudently crossed on foot. It was raining heavily yet we hardly suspected that a few hours later the bridge would be washed away, marooning the bus, perhaps for some weeks! We soon came to the village of Ranchung (1,300m/4,300ft), where rooms were hired as it was too wet to camp.

East of Ranchung the floods had washed away other bridges and there was no through road up the Gamri Chu either for buses or for ponies. We had, therefore, to abandon our plan to visit Sakden, near the head of this valley: instead we embarked on a high-level route to a place called Merak (or Mera). This lies close to a river called the Nyera Ama Chu (or Tamowan Chu), which flows parallel to the Gamri Chu but higher by some 1,800m (6,000ft). The pass between the two valleys is the Mindu La (3300m/11,100ft). We approached it via Radi Gompa (where we spent a night) ascending through a leech-infested rain forest in which grow a selection of rhododendrons similar to those found on the Thrumseng La. We found additionally *R. wallichii* and *R. thomsonii* which turned out to be the dominant species in this eastern area. In the forest grew impressive specimens of oak: *Quercus lamellosa, Q. griffithii* and *Q. oxyodon*. The forest thinned out near the top of the pass and here we found *R. neriiflorum* var. *phaedropum* and *R. glaucophyllum*.

The high-level river flows through open scrubland. When Sherriff came here in the spring of 1936 he described the Merak area as 'the prettiest part of Bhutan I have ever seen'. Even in the autumn, its beauty was impressive and an ample reward for the discomforts of the journey. Along the path grows an occasional *R. campylocarpum* along with many forms of *R. wallichii*, differing in the amount and colour of the indumentum and some having hairs on the upper side of the leaf. *R. thomsonii* shows an even greater variation in the leaf, some being orbicular and pale, others oblong and glaucous: a few residual flowers revealed the presence of both red- and yellow-calyxed forms.

We were blessed with a sunny day at Merak and ascended a nearby hill (Merak Tot) to a height of 4000m (13,200ft). Here, growing with *R. flinckii* and *R. wightii*, we found *R. bhutanense*. It is plentiful but very restricted in locality, being confined to the north-facing slopes. When this species was found on the Rudong La in 1988, it was noted that a form with chocolate/grey indumentum was commoner than another with orange/brown indumentum. On Merak Tot also, both forms are found but the latter one dominates. On the more exposed slopes grow the dwarf *R. anthopogon* and *fragariiflorum*, along with *Juniperus wallichiana*.

A few energetic members of the party pushed on two miles north-east to the Nyerchung La where they found a rhododendron of uncertain status. It resembles *R. wallichii* but with chocolate coloured continuous indumentum. Disappointingly, we came across nothing else which might qualify as a new species.

Fortunately we had a fine day also for our return to Ranchung, something of a forced march, and the following day we made our way

back, over a landslide and a temporary footbridge, to Tashigang, where a replacement bus was provided.

The trip was successful, in that we found almost all the rhododendron species previously recorded in Bhutan although not, unfortunately *R. pogonophyllum*, an alpine species not in cultivation. Also, disappointingly, the only member of the Lanatum subseries we found was *R. flinckii*: nothing conforming with *R. lanatum, R. tsariense*, nor Davidian's new species, *poluninii* and *tsariense magnum*. We also failed to sight *R. aeruginosum, dalhousiae* and *micromeres*. However the count was well over 40 species and, as already indicated, with many local variations. Out of the flowering season, one's eye is attracted particularly to the bark as well as to the leaves and I recall particularly two forms having fine smooth barks: *R. hodgsonii* (cream-buff) and *argipeplum* (ruby-violet). We found *R. kesangiae* (described in the 1990 Yearbook) to be widespread in Bhutan and common in the forests at its preferred altitude, around 3300m (11,000ft). It is variable in leaf, having typically a silvery plastered indumentum but sometimes so thin as to be unnoticeable at first glance. Further east the indumentum usually has more of a golden tint.

If I revisit Bhutan, it will be in the spring when I shall hope for flowers and a little more sunshine.

The National Magnolia Collection

JOHN BOND

It has been suggested that I write about the National Magnolia Collection in the Savill Garden in Windsor Great Park, and I have decided to tackle the task by taking a walk through the garden: the date, 5 April, the afternoon cool and moist, and the whole garden at its very best. However, I will keep my eyes firmly on the magnolias.

As I leave the formal area of hard-pruned rose beds and reasonably smart lawns, the first magnolia that I note on entering the woodland is a fine specimen of *M. campbellii* × *M. campbellii* ssp. *mollicomata*. This is one of the original seedlings given to us by the Royal Botanic Garden, Kew, in the early 1950s. We have two other seedlings in the Valley Garden, one is named 'Charles Raffill' and is a holder of a First Class Certificate. The specimen that I am standing beneath is in full flower and so is a very fine form of *M. dawsoniana* just opposite. This plant was purchased from Hillier's, again in the early 1950s. Arching over the path a few yards farther on is a very pretty specimen of *M. stellata* 'Rubra'. There is, I think, a good deal of confusion amongst the pink forms of *M. stellata* and this may well be 'Rosea'.

We all know how badly behaved magnolias are, and a self-sown seedling of *M.* 'Charles Raffill', transplanted some years ago, is now about 12m (40ft) high. Whilst it is in no way comparable with its parent, it is today laden with extremely pretty, almost white flowers. From a distance the overall appearance looks like cherry blossom.

In the vista ahead a 18m (60ft) *M.* × *veitchii* is covered with pink candles and a week or so from being fully open. I rate this wonderful hybrid very highly and, of course, it frequently escapes frost by flowering later than most of the large Asian species.

We have now reached the top of the garden and I am looking at a very fine specimen of *M. sargentiana* var. *robusta*. Well, it was a very fine specimen until a large Douglas Fir sliced it in half during the storm of 15

January 1990. This is a true plant and a very important plant in our collection, and it will be left to form a new head. In fact, it is already making very strong adventitious growth on the bare side. In my experience of such disasters, it will be back to near normal in ten years or so. Almost next door to the damaged specimen is a very nice *M. campbellii* 'Alba'. They usually flower together and make a very fine picture against a blue sky during March. This was, in fact, purchased as *M. campbellii* and we were very pleased when it eventually flowered in its pure white form.

I have already referred to the morals of magnolias and I cannot pass our wonderful *M.* 'Eric Savill' without further comment. We waited 17 years for this *M.* "sprengeri diva" to flower. It clearly is a hybrid, but a very lovely hybrid and I was very pleased to be able to name it after the creator of the Savill Garden. The colour is deep wine red and it has already received an Award of Merit from the RHS (fig. 27). In the same area we have a group of *M.* 'Wada's Memory'. When this plant first appeared on the scene in Britain I was not impressed. However, many plants improve with age and I now think very highly of it. The flowers which resemble in size *M. salicifolia*, hang like mini Davidia bracts and flower until high summer, and the same applies to the many large *M. wilsonii* specimens that are dotted around the garden. I should add at this stage that I am writing in the main about large specimens. We are responsible for the National Collection of magnolias which is distributed in both the Savill and Valley Gardens and there are many young plants, some exciting new hybrids, and some very well known, that will become very important in the next ten to 15 years or so. One of these young plants, *M.* 'Elizabeth', is just showing a peep of cream. It has been described as yellow in colour, but on its showing here it is never more than a good cream. It is, however, a useful addition to our gardens and I understand that there are several deeper yellow hybrids being produced by the raisers of *M.* 'Elizabeth', the Brooklyn Botanical Garden in New York.

Not far from the restaurant is a planting of the eight 'Little Girls'. These were raised just after the War at the United States National Arboretum, Washington, DC, by Messrs Kosar and de Vos. They have proved to be excellent plants for British gardens, fairly compact in habit and they flower over a very long period, April to June. This long flowering period is inherited from one of the parents of this group, *M. liliiflora* 'Nigra' which has a great wealth of flowers over many weeks. The other parent is *M. stellata*. Nearby is a plant I am particularly pleased with: it is a *M.* × *loebneri* 'Leonard Messel', which in 1987 was a multi-stemmed shrub some 9m (30ft) high. It was knocked over by a large

beech during the great gale in October 1987 and has responded wonderfully to being cut down to 1.2m (4ft) high and hauled upright again. It is now standing about 3m (10ft) high and already flowering freely.

M. cylindrica always puzzles me and I am not quite sure whether I feel it is a good plant or not. It certainly flowers freely and reliably, but I really believe there are better forms of *M.* × *soulangiana* which are more attractive for general garden use. We tend perhaps to turn our backs upon the common *M.* × *soulangiana* forms, but they really are of great value. My great favourite is *M.* × *soulangiana* 'Brozzonii'. With age this clone produces hundreds of candle-like, almost pure white flowers, somewhat later than other plants of the same breeding and, therefore, usually avoiding the frosts. I would just mention one more plant, which is the result of crossing *M. denudata* with *M.* × *veitchii*, a plant that was given to us by the United States National Arboretum some twelve years ago, the authorities there having decided it was not good enough to name. We think very differently and, with permission of the US National Arboretum, have named it 'Columbus'. a reference to the Atlantic crossing which this plant has made.

This has been a novel way of writing an article by using a dictaphone and, thanks to our Editor, it has been turned into something, I hope, that is readable. I have certainly enjoyed the walk and, with great difficulty, I have only looked at the magnolias, a quite outstanding genus, and rated here at Windsor second only to our huge collection of rhododendrons.

Rhododendron powdery mildews

STEPHAN HELFER

Powdery mildews are fungal diseases of higher plants, which may severely debilitate or even kill otherwise healthy plants through defoliation. As opposed to the downy mildews, which are related to the *Phytophthora* rots and grow mainly within the tissues of their host plants, the powdery mildews belong to the large fungal group, the ascomycetes, which includes organisms ranging from the simple, single-celled yeasts to very complex fungi like the morels. Powdery mildews spread on the outside of soft host tissues (leaves, young shoots, flowers and fruits) sending feeder cells (haustoria) into their hosts' epidermal cells. They thus extract water and nutrients from the host plant. Infected leaves of some hosts will wilt and eventually drop leaving the plant defoliated, other hosts may only be debilitated but survive, and others again may be more or less immune to the disease.

Powdery mildews normally produce sexual spores (ascospores) in small spherical fruiting bodies (cleistothecia) on the leaf surface. However, with regard to powdery mildews of rhododendrons only those from the US have been found to produce cleistothecia. For its successful dispersal the fungus also produces vast numbers of asexual spores (conidia) in chains with 5-7 or more conidia per chain (fig 2). It is these spore chains which give the infected leaves the appearance of being dusted with flour, hence the name powdery mildew. Most people will have seen these unwelcome guests on roses, gooseberries or apples, and, I fear, an increasing number of readers will find powdery mildew symptoms in their rhododendron collections. Conidia are wind dispersed and constitute the main agent for the spread of the disease onto other plants and into hitherto disease free areas, apart from the dispersal caused by human activities (transplanting diseased plants, carrying fungal cells on clothing or tools etc.). Infections on susceptible rhododendrons will first show as chlorotic spots of about 10mm diam.

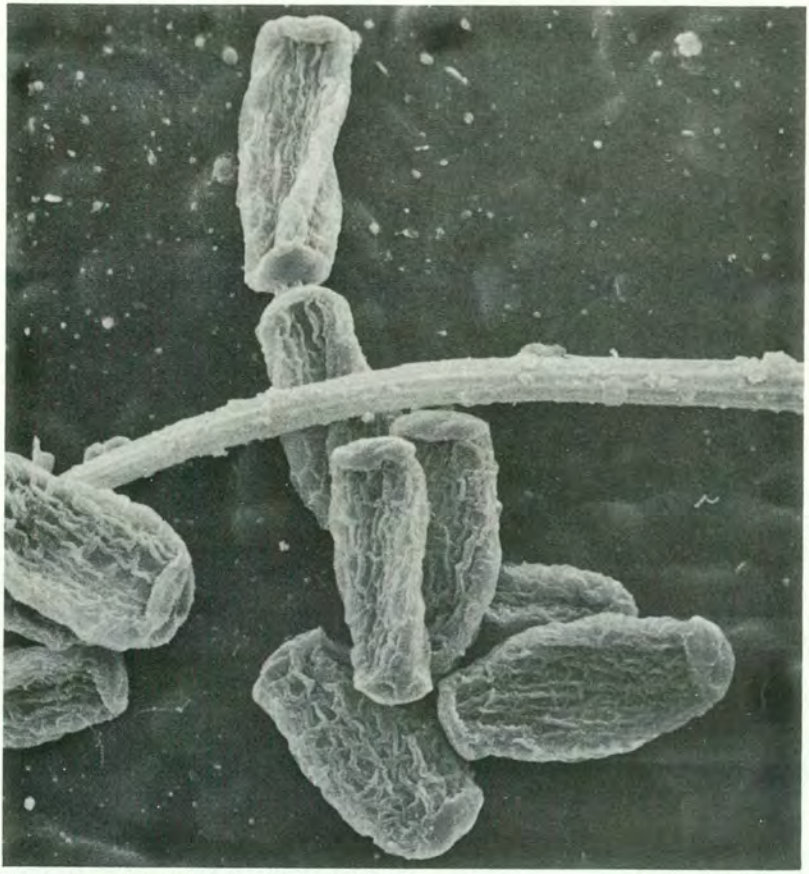

Fig. 2 Asexual spore of powdery mildew (conidia)

followed by white layers of fungal tissue mostly on the underside of the leaves. The spots often turn purple as the leaf tissues react to the fungal intruder (fig 3, between pages 48 and 49).

The history of powdery mildews of rhododendrons in Britain goes back to the mid 1950s, when Douglas Henderson (pers. comm.) first discovered some diseased plants in the glasshouses of the Royal Botanic Garden in Edinburgh. However, the problem was dealt with at the time and no more mildew was discovered until July 1969 when a new mildew appeared on plants of *Rhododendron zoelleri*, again in the glasshouses at Edinburgh. These plants had been introduced from New Guinea the previous year. Whilst it is unlikely that such an obvious disease should have escaped the watchful eyes of the collectors, an introduction of the fungus from New Guinea cannot be ruled out. On closer inspection

it was noted that the conidia of the new mildew were different from the previously discovered mildew on other species.

Powdery mildews are obligate parasitic fungi (i.e. they only grow on living host tissues and not on dead plant material) and are very host plant specific: only particular mildew species will grow on a narrow range of host plant species. It is all the more surprising to find that the two mildews found in Britain are very similar in their asexual appearance to the powdery mildews of cabbage (*Erysiphe cruciferarum*) and rose (*Sphaerotheca pannosa*) respectively, and have consequently been called the same name by some researchers (Boesewinkel, 1981; Brooke & Knights, 1984; Watling, 1985). It has therefore been proposed that the current rhododendron powdery mildews had widened their original host ranges to now include a number of *Rhododendron* species (Boesewinkel, 1981). The limited experimental evidence we have at the moment, however, does not support this proposition, as none of the cross inoculations (rhododendron powdery mildews onto cabbages or roses, or *vice versa*) lead to any disease development on either group of hosts (Watling, 1985; Munro, 1986). Powdery mildews can now be found on more than 60 *Rhododendron* species and a great number of hybrids (Watling, 1985; Amano, 1986; Cochran & Ellett, 1990).

In both Himalayan and SE Asian rhododendrons the disease has never been reported from the wild. This may be due to insufficient research in these areas or to the fact that these mildews are in fact of British (or American or Australasian) origin and have indeed widened their host range from other plants (possibly *Vaccinium* or other Ericaceae).

Since 1973 and until 1987 Roy Watling studied the powdery mildews of rhododendron at Edinburgh and published a comprehensive report of his findings in 1985, based mainly on incidental collections of the fungi in Britain. Whilst the powdery mildew of the glasshouse rhododendrons could be eradicated relatively easily using fungicidal sprays and cultural techniques the mildews found on outdoor plants have become a serious problem in Britain during the last three years, after a series of mild winters and warm dry summers which, I believe, favoured disease development, and the mildews have now been reported from most parts of the British Isles. In 1989 this led to a call for further research to be undertaken in order to contain and control this disease. The present author began a new approach by planning experimental techniques in addition to the current awareness of the problem. In 1990 the author received a grant from the American Rhododendron Society's Research Foundation to evaluate the extent of the problem on a world-wide scale, and the results obtained from this evaluation will be published by the ARS in due course. Since 1990,

Professor G. R. Dixon of the University of Strathclyde became interested in the subject, and together we have received a cooperative award from the Ministry of Agriculture to finance a postgraduate student for three years to carry out further research. Our previous experience with the disease has lead to a number of questions:

a) How many distinct species of rhododendron powdery mildew are there and where do they occur?
b) What are the climatic requirements for the development of the disease?
c) How do the fungi spread in optimal conditions?
d) What is the host range of individual isolates and species?
e) What is the nature of resistance to powdery mildews in some rhododendron cultivars?
f) What is the most effective chemical and horticultural treatment against the fungi and are there any fungicide resistances for specific fungal isolates?

We hope to be able to answer some of these questions within the next three years and envisage conducting our research along the following lines: initially we will establish a collection of live British fungal isolates on detached leaves (to prevent contamination of valuable plants!), and attempt to induce the fungus to reproduce sexually, a precondition for conclusive taxonomic evaluation. Secondly, cuttings of known susceptible plants will be held at controlled environments to monitor disease progress under a variety of climatic conditions. This should allow us to make predictions about the disease build up and give warnings to growers when spraying may be most effective. Furthermore, tests to establish the response of the organisms involved to a number of chemical fungicides, and to study the most effective control regimes will be carried out. The evaluation of the results will be conducted using light and electron microscopical as well as biochemical and molecular techniques.

Inevitably more questions will be raised and we will have to find further support to tie up the loose ends (contributions are always welcome). We do hope, though, that within a short time our work will be of practical relevance to rhododendron growers and that the results will bring tangible benefits for the professional and the amateur enthusiast alike. In the meantime I can only suggest application of the appropriate fungicidal control (e.g. bupirimate) as soon as the first symptoms of the disease appear.

Sasanqua: the autumn-flowering camellia

JENNIFER TREHANE

By November there is not much cheer in garden or conservatory. However the last two glorious summers and early autumns have given a welcome boost to the popularity of *Camellia sasanqua* and its varieties.

Camellia sasanqua originally came from southern Japan, including the Ryukyu islands where the climate tends to be relatively hot, sunny and dry and the soil poor or even inclined to be alkaline. It forms a small tree of 4.5m (15ft) or so and the small pointed leathery leaves have an attractive glossy sheen. This sheen reflects the sun's rays efficiently and the dense bushy habit further reduces water loss making this camellia particularly suitable for hot dry situations. There is also reasonable resistance to alternating frost/sun in winter, although I have recently noted damage to leaves on east-facing plants. This is unsightly and may check growth but the worst damaged leaves soon drop and the fresh young growth replaces them. The flowers of the species are small, single, white and fragrant. A mature tree in full bloom is a spectacular mass of white against the dark glossy foliage and the scent is quite powerful on a still sunny autumn day. It has been popular in Japan for hundreds of years.

In Britain, *C. sasanqua* and its varieties can be grown outdoors. They do well in the Channel Islands, but can be expected to flower successfully only in warm, sunny gardens in the south. They thrive in Brittany and we have customers getting enormous pleasure from them in Spain where they are being used for hedging. I have seen some excellent sasanqua hedges in New Zealand and a very successful massed planting of them in Huntingdon Library Gardens in Los Angeles, California. There is no doubt that they need warmth and a high light intensity in order to encourage flower bud formation and when we have dull dreary cold summers here, there are precious few flowers to follow.

In Britain they are probably best grown in conservatories or sun rooms. Not only is flower bud formation greatly encouraged, but there is also the added benefit of the full scent in a more enclosed, still, atmosphere. Grown in containers, the plants can be kept in a sunny spot in the garden, preferably with their roots plunged to reduce the chore of watering, and then brought indoors in early September. Oddly enough, although they are autumn flowering, the sansanquas set their flower buds very late, usually after the spring flowering *C. japonica* and *C.* × *williamsii* hybrids have clearly formed theirs. It is often October before there is any evidence of flower bud formation on the November and December flowering sasanquas! Quite a problem for a Nursery with customers waiting for budded plants in their September orders.

If no conservatory or cold greenhouse is available then it is certainly worth the gamble of planting outdoors in the south of England in the shelter of a sunny, south or west-facing wall. *C. sasanqua* and its varieties will also even tolerate slightly alkaline soils, and they certainly require little feeding. In addition, although it is not really relevant to most gardens, they are resistant to fungal attack of the roots by *Phytophthora* spores so they are highly regarded as stock plants for grafting.

Most camellias are disastrous as house plants; they hate the hot, dry, atmosphere of a modern centrally heated house, drop their flower buds, then their leaves, and are usually dead within a month. Not so the sasanquas. They have done quite well so far in indoor trials, but as each flower lasts only a few days there is always constant picking up of dead flowers from the carpet for the four to six weeks they are in flower. As with conservatory-grown sasanquas, the plants thrive if put out of doors for the summer, after an annual spring feed and light pruning, to keep the plants compact and tidy. A daughter in Sheffield has had a mass of flowers on her 'Hugh Evans' every year for three years and the five-year-old plant is still no more than 45cm (18in) high, small enough to live on her kitchen windowsill all winter.

There are varieties to bloom from early October to January in southern England. Most are single or semi-double with a simple charm much valued by the Japanese. They are self-grooming unless frosted and the petals often drop before the boss of stamens. Habit varies from vigorous to very compact, and from dense and bushy to open and upright. There are therefore varieties for uses ranging from covering an ugly wall quickly, to bonsai. They can be trained as espaliers or grown as hedges. The following is a small selection.

BONANZA Very popular in California. Deep red, large semi-double or peony of vigorous low growth, ideal for covering a sunny bank.

CLEOPATRA Masses of rose pink semi-double flowers on a compact bush.

DAZZLER A really dazzling rose red semi-double, sometimes peony form. Its habit is open so it is ideal for training as a fan or espalier.

HUGH EVANS Probably the best variety for a beginner as it is free-flowering over a 6-8 week period and the rose pink flowers are quite large.

KANJIRO (Hiryu in Australia) Bright rose red semi-double with lovely bronze young growth.

LITTLE PEARL A compact variety with pale pink buds opening to white semi-double flowers.

NARUMI-GATA This is often confused with (and I'm afraid sometimes sold as) the species *C. oleifera*. The single white cup-shaped flowers have attractive pink tips to the petals.

RAINBOW The single white flowers have an attractive border of carmine.

YULETIDE Incredibly resistant to frost damage. Last winter the glowing red flowers were untouched by a -3°C frost; admittedly there was no wind which could have had a more disastrous effect.

There are many more varieties now available and we are currently trying some extremely slow-growing varieties for container growing in very restricted conditions, and one or two peony and anemone form varieties as well as some formal doubles. There's always something new and different in the camellia world.

Rhododendron hybridising in New Zealand

MARGARET L. CAMERON

Trends in hybridising temperate evergreen rhododendrons are looked at here; the substantial work done with azaleas and with Vireya rhododendrons in New Zealand is another story.

New Zealand is a breezy country with clear air and strong sunlight. Rhododendrons grow fast and sturdy in our relatively mild conditions, particularly where the winters are cool enough to provide a resting period for the plants and to inhibit pests and diseases such as thrip. Sadly, neither our conditions nor our isolation has prevented powdery mildew from appearing in gardens here over the past year or so.

The first hybridisers

Importing and growing rhododendrons began in the early days of European settlement of the new colony, and the first New Zealand-bred hybrids were offered in the 1880s. William Martin, who was trained at the RBG Edinburgh, arrived from Scotland on the 'Philip Laing' in 1848 and soon set up a nursery at Fairfield near Dunedin. Among the hybrids which he bred was 'Marquis of Lothian' (*thomsonii* × *griffithianum*), the reverse cross to the English hybrid 'Cornish Cross'. Although 'Marquis of Lothian', with its handsome shining bark and its lax trusses of pale and deep pink flowers, has been grown in Otago over the past hundred years, it was not registered until 1977.

In the first half of this century Edgar Stead, perhaps the best known of all New Zealand hybridists, produced a number of fine plants in his garden at Ilam, Christchurch. Those hybrids, many of which bear the name 'Ilam', are still being assessed and registered today. An important group is the 'Scarlet King' grex ('Ilam Alarm' × *griersonianum*), of which five have now been registered: 'Orchard' (1950), 'Homestead', 'Ilam Red Glow', 'Kaka' and 'Pines' (all 1986). Stead's 'Ilam Cream' ('Loderi' × unknown) received an Award of Merit from RHS in 1985. Stead

himself wrote an account of his work, for the RHS *Rhododendron Year Book* (1947), No. 2, pages 42-50.

Later hybridisers in the South Island

In the 1950s and 1960s an active propagation programme was undertaken at Dunedin Botanic Garden under Reserves Superintendent Maurice Skipworth and his Assistant Robert Balch. A number of the resulting hybrids have since been named and registered. Among these, 'Maurice Skipworth' (*edgeworthii* × *burmanicum*) has wavy-edged scented flowers; while another plant from the same cross, 'Stonelaw', has bullate leaves with rusty-brown scales on the undersides, and funnel-shaped flowers of white flushed rose. 'Robert Balch' ('Noyo Chief' × *elliottii* KW 19083) becomes a handsome wind-hardy bush, with glossy bullate leaves and rich red flowers.

Garden-worthy hybrids raised by individual growers in Canterbury around this time, and often seen in larger South Island gardens today, include: 'Ivan D. Wood' and 'Coral Queen' (fig. 14), both (['King of Shrubs' × 'Fawn'] × 'Dido') raised by Mollie Coker, Christchurch; 'Lalique' ('Loderi' or *griffithianum* seedling) raised by Mr and Mrs A. G. Holmes, Rakaia; and 'Mary Tasker' ('Jalisco' × 'Fawn') raised by H. R. Tasker, Ashburton.

Hybrids for the smaller garden

Bruce Campbell of Dunedin was an imaginative hybridist. Among a number of his small hybrids the best known is 'September Snow' (*leucaspis* × *edgeworthii*). Sweetly scented, it has hairy bullate leaves, and relatively large flowers with dark anthers and conspicuous rosy calyces. He also used the very early flowering 'Lovelock' (*chrysodoron* seedling) raised at Dunedin Botanic Garden in several crosses. The smallest of these is the recently registered 'Bruce Campbell' (*leucaspis* × 'Lovelock'), which has oval acuminate leaves and primrose flowers marked with deeper yellow in the throat. An even later cross, 'Ember Elf' (*xanthostephanum* × *campylogynum*) (fig. 13) with tiny bells of an unusual orange-red is useful for a terracotta pot, a trough or barrel. Bruce's sudden death in 1983 brought his breeding programme to a halt.

Small rhododendrons are popular in Otago and grow well in this climate. Among the twenty or so hybrids registered from Dunedin are: 'Alpine Meadow' (*leucaspis* seedling) raised at the Botanic Garden; the winter flowering 'Little Glendoe' (*forrestii repens* × *arboreum* ssp. *delavayi*) with its glowing cardinal-red flowers, registered by Ethel Johnstone; and 'Dalkeith' (chance seedling in Uniflora subsection with some Triflora characteristics) registered by Phyllis Warren.

June Keeley from Timaru, South Canterbury, has for a number of years been pursuing a programme with specific goals in breeding dwarf rhododendrons. In one promising hybrid, not yet registered, she crossed 'Ptarmigan' with one of its parents *leucaspis*, to breed a small plant with larger flowers and later blooming to avoid early frosts. She has registered 'High Society' (*yakushimanum* × *dichroanthum* ssp. *scyphocalyx*).

Larger hybrids

From Pukeiti Rhododendron Trust near New Plymouth has come 'Lemon Lodge', one of the most widely grown new hybrids. Registered in 1972 it is described as 'Prelude' selfed. However, Graham Smith, Director of Pukeiti, is convinced that the other parent is a white *decorum* growing in the Garden.

Hybrids from the large-leaved species at Pukeiti are being raised to augment the collection. Perhaps the most notable plant there is 'Pukeiti', a form of *protistum* var. *giganteum* raised from seed KW 21498 collected by Kingdon-Ward in 1953.

Bernard Hollard from Kaponga, also in Taranaki, raised and registered the well known early flowering 'Kaponga' (*arboreum* × 'Ivery's Scarlet'). This plant forms a large pyramidal bush with brilliant red flowers which open over a long period.

A number of good hybrids has been produced by the King family of Wanganui. One of these 'Norrie King', ('Mrs G. W. Leak' × *decorum* pink) is fuchsia pink with a maroon eye.

Tom White of Takapau, Hawkes Bay, started hybridising in the 1950s and has produced a number of attractive plants which carry the name 'Barnsdale' after the Whites' property. The flowers of 'Barnsdale' ('Naomi Stella Maris' × 'Ilam Canary') are cream with a chestnut blotch. He also crossed 'Naomi Stella Maris' with 'Carita' to produce 'Barnsdale Pink'. This is a handsome plant clothed to the ground with good dark foliage, and pale pink flowers. Two further crosses, 'Barnsdale Deerbank' and 'Barnsdale Glade', (both 'Antonio' × 'Barnsdale Pink'), have also been registered.

Ron Gordon in the central North Island high country has had, as his goal, the breeding of hybrids with good red flowers held in a tight truss, and attractive foliage. His first success, 'Kilimanjaro' × 'Noyo Chief', resulted in 'Rubicon', one of the most admired hybrids produced in New Zealand. Its flowers of waxy glowing cardinal red are spotted black on the inside. Aiming at larger flowers, Ron then back-crossed 'Rubicon' on to 'Kilimanjaro', producing 'Myrtle Manson' and 'Dame Cecily Pickerill'.

Deciding that new blood was needed for a plant with a stronger constitution than either of these, Ron then turned to *elliottii* on 'Kilimanjaro', and *elliottii* on 'Noyo Chief'. At present he is working towards hybrids with good indumentum, using *protistum* var. *giganteum, hodgsonii, macabeanum, falconeri* and *beanianum* as parents.

Tender rhododendrons

A consistent programme of hybridising has been carried out over many years by the Jury family of Urenui near New Plymouth. Felix Jury's goal was to develop rhododendrons suited to Taranaki, where temperatures are mild and rainfall is high. In that climate, rhododendrons tend to be leggy, prone to thrip and root disease, and to flowering out of season. Best results were obtained from some of the Maddenia subsection. Crossing *R. maddenii* ssp. *maddenii* (*polyandrum*) with 'Sirius' resulted in several appealing and easily grown hybrids, flowering mid to late season and scented. Among these are 'Barbara Jury' (yellow to orange-yellow), 'Felicity Fair' (amber) (fig. 12), and 'Moon Orchid' (rose buds opening to light yellow with blotch in throat).

A particularly lovely hybrid, 'Floral Dance', was made by Felix Jury's wife Mimosa. She was looking for colour in a *nuttallii*-type flower, and she found that a *sinonuttallii* seedling would cross on to *edgeworthii*. 'Floral Dance' has thick bullate leaves on red stems. The trumpet-shaped flowers are beautifully frilled, flushed pink with a yellow-green throat, and are strongly scented (fig. 11).

Felix's son Mark is continuing with this programme, and no doubt the results will be worth watching. But Mark, with a nursery to run, also has the practical goal of producing plants that will root easily and flower young.

As hybrids of the Maddenia subsection are so much in demand and grow well in many parts of New Zealand, two more are worthy of mention. 'Tupare' (*sinonuttallii* × *lindleyi*), which was bred by Edgar Stead before 1950 and raised by Sir Russell Matthews at 'Tupare', New Plymouth, has trusses of huge tubular campanulate flowers, creamy-pink in bud, opening to white with a yellow basal blotch, and is heavily perfumed. 'Lady Dorothy Ella' (*lindleyi* × *nuttallii*), of unknown origin but registered by Duncan and Davies in 1986, is another fragrant hybrid with strongly flared trumpets tinged with pink and a golden-yellow throat.

Going for Gold

In the 1970s Gwen Grant of 'Kapunatiki', South Canterbury, embarked on a hybridising schedule with the aim of breeding a hybrid with

attractively shaped flowers of yellow-gold held in a medium truss. At this time 'Crest', or a 'Parisienne', but with a larger truss, seemed nearest to the ideal. 'Honey Glow' and 'Pacific Queen' (both raised by Mollie Coker), 'Crest' and *wardii* were used as parents. Quite a few attractive hybrids were raised, and although Gwen herself did not live to see them named, they were later registered by Lachie and Olwen Grant. In Lachie's opinion, the plant that most nearly achieves their objective is 'Orchard Gold' ('Honey Glow' × 'Crest'). It has flowers of primrose-yellow deepening in the centre, with attractively crumpled edges to the lobes, overlapping in a neat truss.

More recently Gordon Collier of 'Titoki Point' near Taihape also used various combinations of yellow-flowered rhododendrons in his quest for gold. 'Lemon Lodge' , 'Crest', 'Lionel's Triumph', and 'Letty Edwards' were all used. But it was 'Lemon Lodge' crossed with the unnamed ('Ilam Orange' × 'Ilam Canary') that produced the best results. The seedlings had excellent trusses of well-textured flowers, most with a darker eye, and all with a prominent calyx. The best was registered as 'Kit Collier'. It needs to be grafted. 'Lemon Lodge' × 'Crest' produced 'Meredith Collier', which has flowers of good colour and texture and an excellent habit — better than either of the parents. 'Dame Kiri te Kanawa' ('Ilam Cream' × 'Irene Stead') was also registered.

Finally, in the search for gold, we have Jeff Elliott, a young nurseryman from Amberley, north of Christchurch. His aim is to breed a vigorous bushy plant with good foliage, and trusses of yellow-orange blooms, which flowers at an early age, and is disease resistant. So far the only hybrid he has considered good enough to register is a cross of 'Lem's Cameo' with (*yakushimanum* × 'Dido'). This plant has funnel-shaped flowers, pink on the outside and brilliant yellow within, with deep pink calyces. He has named it 'Kiwi Magic'.

As to hybridising in New Zealand in the future — perhaps the direction will be towards taking advantage of our gentle climate by developing the lovely tender species that grow so well here.

New Zealand Camellias

JIM HANSEN

The type of camellia the average New Zealand gardener wants varies quite considerably. Often the request for a plant arises after that particular variety is seen growing in someone else's garden. We find that visitors to our garden invariably take notes of the names of the camellias flowering at the time, and this creates a demand on the local nurseries. Also a plant is often purchased on impulse when seen in bloom in a nursery. There still appears to be a demand for a number of the older, well-known names such as 'Lady Clare', 'Cho-Cho-San', 'C. M. Wilson', 'Tinsie' and so on, but this can be explained by the fact that these plants tend to be widespread in the older, well-established gardens.

The majority of the 3000 members of the NZ Camellia Society, as well as the gardeners who do not belong to the Society, grow camellias for garden display and not for shows. At the Society's National Convention and Show each year (which attracts 400/500 members) the number who exhibit would be less than 100, exhibiting between 2000 to 3000 blooms. Therefore the varieties in demand from the nurseries tend to be not only those with attractive flowers, but also those that are floriferous, have glossy leaves and make an impact in the garden.

In these days of ever increasing costs, a high percentage of the large properties are being sub-divided, creating smaller gardens. This is probably responsible, in part, for the increasing demand for the smaller growing varieties that are suitable for the small garden and container growing.

In 1961 the NZ Camellia Society started a NZ Register, and from that date to the end of 1990, some 275 NZ-produced camellias have been registered. It is interesting to note that this total consists of: 108 hybrids with other than reticulata parentage; 92 reticulata hybrids; 66 japonicas and 8 sasanquas.

Most of these would be chance seedlings, but a few of the Society's members have been hybridising with a definite purpose in mind. Names that come to mind are the late Dr Brian Doak who registered the first

seven camellias in 1961. All of these plants were of the same cross, namely *C. saluenensis* × 'Captain Rawes', and several of these are still grown in New Zealand — 'Phyl Doak', 'Brian' and 'Barbara Clark'.

The late Les Jury also produced a number of well-known camellias — hybrids 'Elsie Jury', 'Mona Jury', 'Jubilation' and 'Elegant Beauty' to name but a few.

Neville Haydon of Camellia Haven, Takanini, Auckland, has produced several larger camellias such as reticulata hybrid 'Chrissie's Retic.' and *C. japonica* 'Takanini', but his main concentration is on small-leafed hybrids. His truly dwarf miniature, 'Baby Bear', a 'Rosaeflora' × *C. tsaii* hybrid registered in 1976, has outsold any other variety offered in Camellia Haven and he has been hard pressed to keep up with the demand. 'Baby Willow', the same cross as 'Baby Bear' but with a more weeping habit, registered in 1983, is also proving popular.

Os Blumhardt, Koromiko Nursery, Whangerei, is also active in the hybridising field and has produced a number of popular camellias including such small and miniature varieties as 'Fairy Wand', 'Gay Baby', 'Night Rider', 'Black Opal' and 'Dream Baby'.

Bettie Durrant of Rotorua, has produced a number of excellent camellias using *C. pitardii* as one of the parent plants. Hybrids such as 'Persuasion', 'Prudence', 'Snippet' and 'Nicky Crisp' have proved popular, most of them being slow growing and compact in growth. All of them are floriferous with stamens that remain golden even after the flower has dropped.

In another direction, Jim Finlay of Whangarei has concentrated on producing camellias with fragrant blooms. He has enjoyed a good deal of success in this field with the hybrids 'Scentuous', 'Katie Lee', 'Superscent', 'Souzas Pavlova' and 'High Fragrance'.

Felix Jury of Waitara has been successful in producing a wide range of good camellias such as the reticulata hybrid 'Red China', hybrids 'Softly', 'Water Lily' (fig. 18) and 'Dream Boat', and the very popular miniature 'Itty Bit' to name a few.

Trevor Lennard of Te Puke has also been active with a wide range of different crosses. His successes include hybrids 'Diana Lennard' and 'Emma Lennard'; japonicas 'Guy Lennard' and 'Dolly O'Driscoll'; and the reticulata hybrid 'Gaels Dream'.

To conclude, New Zealand gardeners are interested in a wide range of varieties, but there is a definite move towards the small-leafed and small-flowered hybrids.

Fig. 3 *Kingdon-Ward's legacy: Rhododendron wardii at Colebrook House (above) (p.11)*
Fig. 4 *Kingdon-Ward's legacy: Rhododendron macabeanum at Trewithen (below) (p. 11)*

Fig. 5 *Sichuan: the valley of the Dadu river from Erlang Shan (above) (p.24)*
Fig. 6 *Rhododendron xanthostephanum at Rout Lodge, May, 1989 (below left) (p.56)*
Fig. 7 *Rhododendron zaleucum var. flaviflorum at Inverewe, May, 1987 (below right) (p.57)*

Fig. 8 *Magnolia wieseneri (M. hypoleuca × sieboldii) by Dr G. B. Hargreaves. Winner of the 1991 photographic competition (above) (p.73)*

Fig. 9 *Magnolia macrophylla flower bud by Mr. H. P. Granlund. Runner-up in the photographic competition (below left) (p.73)*

Fig. 10 *Rhododendron 'Cinnkeys' at Leonardslee by Brian Horrabin. Runner-up in the photographic competition (below right) (p.73)*

Fig. 11 *Rhododendron 'Floral Dance' (R. sinonuttallii × edgeworthii) at Tikorangi, N. Z. Mimosa Jury hybrid (above left) (p.45)*

Fig. 12 *Rhododendron 'Felicity Fair' (R. maddennii ssp. maddennii (polyandrum) × 'Sirius) at Tikorangi, N.Z. Felix Jury hybrid (above right) (p.45)*

Fig. 13 *Rhododendron 'Ember Elf' (R. campylogynum × xanthostephanum). Bruce Campbell hybrid (below left) (p.43)*

Fig. 14 *Rhododendron 'Coral Queen' ((R. 'King of Shrubs' × 'Fawn') × 'Dido'). Molly Coker hybrid. (Below right) (p.43)*

Fig. 15 *Rhododendron Dell at Pukekura Park, N.Z. (above) (p.49)*

Fig. 16 *Powdery Mildew on R. forrestii at the Royal Botanic Garden Edinburgh (below left) (p.36)*

Fig. 17 *Magnolia zenii flowering at the Arnold Arboretum, Boston, Mass. USA (below right) (p.61)*

Fig. 18 *Camellia 'Water Lily', Felix Jury hybrid (above left) (p.48)*

Fig. 19 *Camellia 'Elegans Supreme' from Mr. H. J. Tooby, a prizewinner at Vincent Square on 9 April 1991 (above right) (p.72)*

Fig. 20 *Mrs. C.Petherick's 'Any twelve' camellias, winner of Leonardslee Bowl at Vincent Square on 9 April 1991. 'Jessie Katz', 'Royalty', 'Capt. Rawes', 'Anticipation', 'Gay Time', 'Clark Hobbs', 'Augusto Pinto', 'Te Deum', 'Water Lily', 'Mathotiana alba', 'Lady in Red', 'Haku Rakutan'. (below left) (p.71)*

Fi. 21 *Camellia reticulata 'Arch of Triumph' from Mrs Strauss, prizewinner at Vincent Square on 9 April, 1991. (below right) (p.71)*

Fig. 22 *Rhododendron 'Electra' from Mr. B. E. Wright, prizewinner at Vincent Square on 30 April, 1991. (above left)* *(p.69)*

Fig. 23 *Rhododendron tephropeplum from City of Swansea (Clyne Garden), prizewinner at Vincent Square on 30 April, 1991 (below left)* *(p.69)*

Fig. 24 *Rhododendron kendrickii from the National Trust (Brodick Castle), prizewinner at Vincent Square on 30 April, 1991 (below right)* *(p.70)*

Fig. 25 *Members of the Rhododendron Group with Lady Mary Howick at Howick on 14 May, 1991 (above)* *(p.65)*

Fig. 26 *The Quarry Garden at Belsay visited by the Group on 13 May, 1991 (below left)* *(p.65)*

Fig. 27 *Magnolia 'Eric Savill' in the Savill Garden, Windsor Great Park (below right)* *(p.33)*

Rhododendrons in Pukekura Park

A. D. JELLYMAN

Pukekura Park is the main botanical park for the New Plymouth District. It was established on 20 hectares of valley land which had been balloted as one of the early settlement lands in the 1840s. From primaeval forest the land was cleared for farming but was difficult to manage. During the years of the New Zealand Land Wars, 1855-1865, the site was used as a practice range for the militia guarding the new settlement.

The use of this land for a public park was suggested just prior to the end of Provincial Government in New Zealand. Pukekura Park was created by the last legislation of the Taranaki Provincial Council under the Taranaki Botanical Gardens Act 1875. It was officially opened on 29 May 1876 with ceremonial plants of *Taxus baccata, Araucaria excelsa, Pinus radiata* and *Vitex lucens*. Widespread planting of *Pinus radiata* followed along with the first plantings of rhododendrons from the limited range available in those days. The dominant variety was magenta-flowered 'Sir Robert Peel'. These trees are now large specimens with sizeable trunks and continue to be a mid-winter feature.

In early 1929 Pukekura Park was officially accepted by the Borough Council of the day from the independent Park Board which had nurtured the Park since its first plantings in 1876. While the Borough provided funding the Park continued to be managed by a committee of dedicated citizens among whom was Mr Victor Davies, the young Managing Director of Duncan and Davies Ltd, a notable NZ nursery of the day. At the same time the Park was gifted a sum of £350 from a keen rhododendron grower, Charles Score Sanders, to create a rhododendron dell (fig. 15).

Victor Davies wrote to W. C. Slocock Ltd on 30 November 1933 ordering plants for this project and saying that the Sanders Bequest and

other money would create the finest rhododendron planting in the southern hemisphere. Certainly the potential was there, a mild climate, 1500mm rainfall along with a slightly acidic and free draining volcanic soil. Orders were also placed with NZ growers, Duncan and Davies, A. H. Goudie and Edgar Stead. In total 589 plants were obtained of which 216 were imported from W. C. Slocock Ltd.

On 8 March 1934 Walter Slocock advised that four cases of plants had been consigned through Messrs Watson and Scull of London. Slococks had varied the order, disagreeing with the star ratings of the day and predicting a big alteration in the classification of some hybrids. The order included hybrids such as 'Armistice Day', 'Loderi Pink Diamond', 'Patience' and 'White Diamond', 'Countess of Derby', 'Cornubia', 'Louis Pasteur' and 'Betty Wormald'. Among the free of charge plants were 'Beauty of Littleworth', 'Goldsworth Crimson', 'Pink and Yellow', 'Mount Everest', 'Viscountess of Elveden', 'Faggetters Favourite' and 'Alice Martineau'. In addition there was a range of species supplied, most of which do not survive today.

There was also a range of well-known hybrids from the local nurseryman A. H. Goudie. Among these were 'Blue Peter', 'Earl of Athlone', 'Mars', 'Pink Delight', 'Unique' and 'Glory of Bagshot'.

The Duncan and Davies Collection included: 'Ivery's Scarlet', 'Loder's White', 'Mrs Charles Pearson', 'Unknown Warrior', *R. arboreum rubrum* and *R. griffithianum*, while the Edgar Stead collection included *R. delavayii, R. decorum* × *arboreum* hybrids and *R. falconeri*.

From these sources the collection, a central feature of Pukekura Park today, was created. The rhododendron dell is situated in the Pukekura Valley and is sheltered from west winds by a plantation of *Podocarpus totara*. Canopy shade is given by the native kowhai, *Sophora tetraptera*, which drips with golden nectar-laden flowers throughout September just as the rhododendron season begins.

Many of the original plants flourish today and the policy is to continue featuring these quality hybrids of the 1930s era. Almost all of the plants were grafted onto *Rhododendron ponticum*. Today some of the finest plants in this collection are original. *Rhododendron arboreum rubrum* is represented by a fine large-flowered scarlet form with an equally impressive *R. delavayii*. Elsewhere in the dell is the fine pyramidal *R. arboreum cinnamomeum* with its white and rose flowers. 'Pink Pearl' grows exceedingly well as do the related 'Professor Hugo de Vries' and 'Countess of Derby'. *R. griffithianum* is represented by two fine white forms, one of which is semi-double and complements the Loderi hybrids which continue to thrive. The best whites are 'Mount Everest' and 'Sappho'. The reds are represented by many including 'Goldsworth

Crimson', 'Gill's Crimson', 'Mars', 'Earl of Athlone', 'Glory of Leonardslee' and 'Beauty of Tremough'. The creams include 'Unique', 'Broughtonii aureum', 'Butterfly', 'Goldsworth Yellow' and 'Keay Slocock'.

Rhododendrons continue to be a significant spring-flowering feature in New Zealand parks and gardens, and the Pukekura Park Collection displays a wide variety of long-established hybrids, many now more than 50 years old. Some are pruned regularly but others continue to develop their tree form. The quality of many of these tried and tested plants has yet to be surpassed by the endless succession of new hybrids being introduced.

Felix Jury's Magnolias

ABBIE JURY

Felix Jury is a New Zealand hybridist who is probably better known for his work with camellias and rhododendrons. However, in recent years it is his new magnolias which have been attracting interest.

'Iolanthe' (*M. lennei* × 'Mark Jury') and 'Serene' (*M. liliiflora* × 'Mark Jury') have been available for some years now. In the last three years they have been joined by six other varieties, all of which exhibit the same traits of very large flowers and precocious blooming. Pride of the collection is 'Vulcan' (*M. liliiflora* hybrid × 'Lanarth'), a true ruby red.

Felix Jury began his hybridising work in the early 1960s. His major motivation was curiosity, and a desire to create magnolias which would produce large blooms of good colour on juvenile plants. Soulangianas were chosen as seed parents because of their floriferous characteristics.

'Mark Jury' played a major role in the breeding programme. This seedling was imported from Hilliers as *M. campbellii* var. *mollicomata* 'Lanarth', about 1956. A grafted plant received earlier had failed to survive and Hilliers had only seedlings available to replace it. According to Sir Harold, 'Lanarth' was adjacent to *M. Sargentiana robusta* at Lanarth and it is highly likely that 'Mark Jury' is a chance hybrid from these parents. It proved to be a lucky break as 'Mark Jury' is an outstanding breeder parent. It has large, heavy textured, cup and saucer-shaped

flowers of good cream and lavender colour. Being female sterile, it could only be used as the pollen parent but it resulted in 'Athene', 'Atlas', 'Lotus' and 'Milky Way', as well as 'Iolanthe' and 'Serene'.

'Lanarth' was similarly tried as a pollen parent but, with two exceptions, was disappointing. 'Apollo' and 'Vulcan' are those exceptions. Their sister seedlings were of little or no merit.

All the named magnolias are characterised by their floriferous nature from an early age and their large blooms. Most will flower on four- to five-year-old plants, 'Apollo' even sooner. The sight of a row of single stems in the nursery topped by 'Apollo' blooms can look a little incongruous, although it is a sight to gladden any nurserymen's heart.

'Iolanthe' is known for its prolonged flowering period. It flowers down the stem — helpful in plants which are vulnerable to inclement spring weather. A single wind will not destroy its display for the year. Its pink campbellii-type blooms are large, about 28cm (11in) across.

'Atlas' (*M. lennei* × 'Mark Jury') is a huge 'Iolanthe'-type bloom. It has been described somewhat irreverently as a decorative cabbage. Its blooms measure some 35cm (14in) across and the individual, lilac-pink petals are 15cm (6in) wide.

'Athene' (*M. lennei alba* × 'Mark Jury') is a most attractive bi-colour, ivory white with an unusual violet-pink base and is rated as one of the best garden magnolias. This plant is subject to a plant protection (patent) application in New Zealand.

'Milky Way', 'Athene's' sister seedling, is notable for its large, heavy textured blooms. Its overall display is of a white magnolia although its flowers have a soft pink base.

'Lotus', the third sister, has an exquisite, large flower in pure cream with spatula-shaped petals, resembling the lotus flower for which it is named. The tree is smaller growing and pyramid shaped. Despite these virtues, it is not as floriferous nor as precocious a bloomer as the other varieties.

'Serene' is the last of the 'Mark Jury' offspring and introduced stronger colour through its *liliiflora* parent. The distinctive, large blooms are bowl-shaped and bright rose in colour. It is the latest flowering of these magnolias. The tree is upright and pyramid in shape.

'Apollo' (probably a 'nigra' hybrid × 'Lanarth') first flowered as a two-year old seedling and has continued ever since. It is exceptionally heavy flowering, rivalling even 'Iolanthe' in this respect. Early flowers can be deep violet with paler inner petal; later flowers are a good deep rose pink. They are very large star-shaped blooms.

'Vulcan' (*liliiflora* hybrid × 'Lanarth') is arguably the prize of the collection. It is a true colour break in campbellii-type flowers, being a

brilliant ruby red. Combined as this is with flowers of a good size, a smaller growing tree, and the floriferous, precocious characteristics of the other hybrids, it is a source of some pride to its breeder. It has aroused considerable interest in New Zealand where it is available commercially. As with 'Athene' it is subject to an application for plant protection in New Zealand.

All these plants are currently available in New Zealand and most will be available in Britain by the end of 1991. Felix Jury has effectively ended his hybridising career, although he continues to garden actively. His son Mark has taken on the commitment to plant breeding and continues the search for improved colour range and even better plant performance.

Rhododendrons at Kunming Institute

ZHANG CHANGQIN

Although the beautiful province of Yunnan in the south-west of China is the home of the genus *Rhododendron* as well as that of members of Magnoliaceae, its remoteness from the populated towns and cities of the rest of China has meant that until recently outside interest has been slight. However, this state of affairs is now being rectified. In particular Professor Feng Guo Mei and his assistants at the Kunming Institute of Botany began in 1985 a long-term programme of collecting plants and seeds from the wild. At the time of writing the Institute has no less than 126 species and varieties grown from wild seed or seedlings, some of which have already flowered.

According to the Cullen and Chamberlain classification, the Institute has specimens of the following: from subgenus Rhododendron section Pogonanthum; section Rhododendron subsections Edgeworthia, Maddenia, Triflora, Scabrifolia, Heliolepida, Lapponica, Saluenensia, Tephropepla, Virgata, Glauca, Campylogyna and Lepidota. From subgenus Hymenanthes, section Hymenanthes, subsections Argyrophylla, Arborea, Auriculata, Barbata, Falconera, Fortunea, Fulva, Grandia, Irrorata, Maculifera, Neriiflora, Parishia, Souliea, Thomsonia and Taliensia. Also some plants from Subgenera Pseudoanthodendrum, Tsutsusi and Azaleastrum.

Since 1985 I have been personally associated with a programme of hybridisation, the object of which is to produce hybrids adaptable to the dryer conditions resulting from pollution of the atmosphere in the province. To this end parents from exposed places were chosen. The following crosses have been made.

1. *R. spiciferum* × *spinuliferum*. This hybrid first flowered in 1989. Its attractive flowers (campanulate, in shades of pink with brown anthers) are quite different from either of its parents. They are tolerant of Kunming's dry winter and spring. (See photograph opposite).

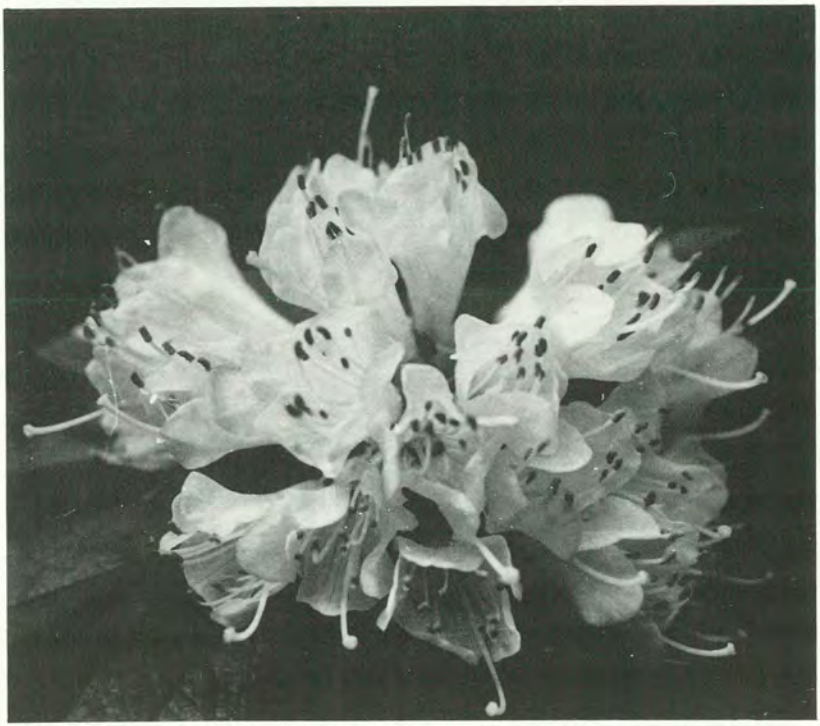

Fig. 28 Rhododendron spiciferum × spinuliferum. Cross made at Kunming Institute of Botany, 1989

2. *R. decorum* × *delavayi*. Also made in 1985, it has unfortunately not yet flowered, but has large attractive shiny leaves without hairs, but with distinct veins and ridges on the undersides.
3. *R. irroratum* × *delavayi*. Crossed in 1985 this has also not yet flowered, but has leaves characteristic of both parents.

I made some other crosses in 1989 before I came on an exchange visit to Wisley, but it is yet too early to comment on these.

Professor Feng retired in 1989 but before leaving he asked me to continue my work on hybridisation as well as on the propagation of species. The long-term aspect of the Institute's work is to extend the collection and breeding of rhododendrons from high altitudes 2—3000m) in order to assemble the widest possible representation of the genus with plants of the highest quality. We hope in this way to build up a centre of excellence at the Institute which will rival those in the UK.

Rhododendron notes

Rhododendron xanthostephanum

This is a moderate-sized shrub rated up to about 3m (10ft) in height, although usually only half of this in gardens. The habit is much-branched and even densely twiggy, and before the flowers are seen the plant has a general resemblance to its near relatives *R. auritum* and *R. tephropeplum*, and perhaps *R. triflorum*. But when the leaf is examined more closely, even a modest pocket-lens reveals a significant difference, the pits in the under-surface, in which the scales are sunk. Hardiness varies with provenance and the location of the garden; in the colder parts of Britain planting outdoors might not be successful. Provenance is intriguing, because collections were made at the relatively high elevations of 3900 and 4100m (13,000 and 13,500ft); whether any plants from these have got into our gardens I do not know, and I suppose that only a combination of experiment and the passage of time will ever give us an answer unless fresh introductions do the trick one day. Distribution in the wild is quite wide, from Tibet to Northern Burma and eastwards into Yunnan; between them, Delavay, Farrer, Forrest, Rock and Kingdon-Ward found it over 30 times. Three hybrids are logged in the stud book. Of these 'Saffron Queen' seems to be rather excessively bud-tender in most areas; the other two, 'Auredge' and 'Triaur', were both raised in Cornwall by Mr E. J. P. Magor many years ago. I have not seen them, and they may not be obtainable now.

Rhododendron xanthostephanum is a highly attractive rhododendron with bright green, fresh-looking leaves and freely borne flowers of good shades of yellow, through to orange. It would not take up too much space for several years if grown in even a modest-sized greenhouse or conservation. The plant shown (fig. 6) had been grown out of doors until the majority of its flowers were open; it was then brought indoors for three days before being photographed.

In their review in the 1948 Year Book, Cowan and Davidian mention an AM given in 1905; I have never seen any other reference to this and conclude there is some error, as the first introduction (by Forrest from West Yunnan), is given as 1906. But in May 1961 a clone from Forrest 21707 *was* given an AM under the name 'Yellow Garland' when shown

by the Crown Estate Commissioners. I have not encountered the AM form 'Yellow Garland' either in a garden or under glass, and would be interested to hear from any reader who knows of an existing plant in this country. Nor can I say whether, unbeknown to me, the plant in my photograph is, by chance, 'Yellow Garland'.

K. J. W. LOWES

Rhododendron zaleucum* var. *flaviflorum

Rhododendron zaleucum was discovered by George Forrest on his 1912-14 expedition (F 8923, the type) and it has since been shown to be widely distributed. In Mr Davidian's revision of the Triflorum series, in the 1963 Year Book, 44 other numbers are listed (pp.218—9). The subject of this note (fig. 7) is, however, of a yellow form collected by Frank Kingdon-Ward on his Triangle expedition of 1953, under KW20837. There are specimens at Glenarn, at Inverewe (where the photograph was taken in May 1987), and no doubt in other gardens.

What may not be evident from the illustration is the scale of the whole plant, leaves up to 10cm (4in) long and quite large flowers, which makes this rhododendron so striking a garden subject. Heights in the wild are given as up to 7.5m (25ft), big for the Triflorum series, but plants I have seen are so far less than half of this. They have a general look of *R. searsiae*, which can also have large leaves, but the underleaf scales of the latter are dense and most distinct. The leaves of *R. zaleucum* itself, and of this var., are particularly striking seen from beneath, being extremely white, as the epithet indicates. To the eye of the amateur the two might well give the impression that they are one species, but in a note on var. *flaviflorum* (pages 29 to 30 of the 1978 Year Book) Mr Davidian remarks 'Probably a new species'. He has also shown awareness of the position in his *The Rhododendron Species*, Vol. I, (1982); in the Key on page 334 he shows var. *flaviflorum* as an exception to the usual colour range of the Yunnanense Subseries, and in the Key on page 344 it is shown as an addition to the Triflorum Subseries, from the Yunnanense Subseries. As KW 20837 is recorded in the list of Kingdon-Ward's herbarium specimens on page 178 of the Edinburgh Revision (though no yellow-flowered variant is mentioned in the text) it seems likely that one day the situation will be re-investigated. Until then the Key on p. 62 does not cover those thododendrons in Triflora which have 'Corolla basically yellow in colour', and fails to deal with the problem.

Rhododendron enthusiasts, like most other gardeners who specialise, commonly refer to 'one of my favourites', but find it quite difficult to give a short list of what their favourites really are. Var. *flaviflorum* has had a place in my own short list ever since I first saw it in flower,

although I have yet to get it into my own collection. The species *R. zaleucum* was given a very strong recommendation in E. H. M. and Peter Cox's *Modern Rhododendrons* of 1955, on p. 139: 'No garden in the west should be without it'. In *The Larger Species* of 1979, Peter Cox writes of var. *flaviflorum*, 'attractive, vigorous but tender', and it seems clear that in most gardens a sheltered position must be best. Although, like me, you may not be able to find an available plant, it would be worth your while to keep a lookout for it in gardens you visit; if you find it in flower I think you may fall for it, for it has real charm.

K. J. W. LOWES

Rhododendron 'Damaris'

My father (the late E. J. P. Magor) crossed the Himalayan *R. campylocarpum* with *R.* 'Dr Stocker' (*caucasicum* × *griffithianum*) in 1918 in the hope of producing a yellow as good as the yellow form of 'Penjerrick' (Mrs Randall Davidson'). In this he succeeded, and, when introduced in 1926, he named it after his younger daughter, Damaris. This was before the Chinese *R. wardii* had begun to be used in hybridisation, which has possibly led to a stronger strain of yellow than from *R. campylocarpum*. One long-standing member of the Rhododendron and Camellia Committee, now President of the Cornwall Garden Society, has told me more than once that 'Damaris' is the best yellow hybrid he knows; personally, I would give the crown to 'Crest' or 'Hotei', but it is a pleasant compliment nevertheless. Several other gardeners repeated the cross some 20 years later; Mr Kenneth McDouall of Logan in Wigtonshire, to produce 'Logan Damaris' and Lord Swaythling at Townhill Park in Hampshire 'Townhill Damaris'. Ten years after that, General Eric Harrison produced 'Cornish Cracker' and 'Cream Cracker' from the same cross at Tremeer in Cornwall.

Damaris is, of course, the grex name, and last year the International Rhododendron Registrar made me register the original plant as 'Lamellen Damaris'. Recently I pointed the plant out to some visitors from Cambridge who happened to have known my sister, and their comment was 'Oh, 'Logan Damaris' of course', and I see from Tom Spring-Smyth's account of the Group's tour to Galloway in May 1990 in the 1991 Year Book that they saw in what is now Sir Ninian Buchan Hepburn's garden at Logan '*R.* 'Logan Damaris', named after Walter Magor's sister.'

I too have visited that garden, and was even more interested to see in the woodland at the back a row of half a dozen or so plants of that cross which were not yellow. We used to have a number here too. The 'Logan Damaris' — also known for years as 'Damaris Logan' — in my opinion has

a rather firmer truss than 'Lamellen Damaris', and is perhaps a slightly stronger yellow, richly deserving the AM which it received in 1948.

WALTER MAGOR

Growing rhododendrons near the Arctic Circle

I have been growing rhododendrons near Trondheim on the west coast of Norway for a number of years and it may be of interest to record some of my experiences.

Trondheim lies inland on the Trondheim Fjord near latitude 63°N. Due to the influence of the Gulf Stream, it has a maritime climate, perhaps a little colder than Scotland. The fjord never freezes. Minimum temperature is about −20°C (−2°F) and the maximum about 30°C (86°F). Annual rainfall is about 500mm. My garden is about 1½ acres in extent and a few kilometres from the city. It has a southerly aspect and catches the maximum summer sunshine. It is sheltered from the SW, but westerly gales can be quite severe. The disadvantages are less snow in winter and early spring frosts.

Conifers, such as the North American *Abies magnifica*, *A. nobilis*, and *A. lowiana* (in my view, distinct from *A. concolor*, although only a subspecies) give additional shelter. The natural woodland of the area mostly consists of *Pinus sylvestris, Betula* and, in some places, common (Norway) spruce. In spite of the temperate climate very few rhododendrons have been tested and I do not think the majority of large-leaved species would grow successfully. Yet one unusual species, *R. watsonii*, has proved itself absolutely hardy here. It grows slowly but is a nice specimen. Coming from S. Kansu in China it may be a specially hardy clone. *R. camschaticum, forrestii* and *saluenense* also grow and flower well. A few Taliense species, such as *R. bureauvii, wasonii* and *rufum* also seem hardy, but grow slowly. *R. brachycarpum* is a success. Some deciduous species, such as *R. schlippenbachii* and *canadense* flourish.

Other interesting shrubs and trees in the garden, include a few magnolias, although these are still small. *Magnolia kobus* and *M. parvifolia* (*sieboldii*) are fully hardy and *M. obovata* (*hypoleuca*) also seems so. Of the others I cannot say much at present. I also grow *Davidia involucrata* var. *vilmoriniana, Berberis* species and many others. I am particularly interested in testing the hardiness of various clones of species rhododendrons, even some of the hardier large-leaved species such as *Rr. fictolactium* and *rex* which have so far not been tried to my knowledge in Central. Norway.

F. LARSEN

A new magnolia blooms in Boston[1]

PETER DEL TREDICI AND STEPHEN A. SPONGBERG

Without a doubt China is home to more species of hardy ornamental plants than any other country in the world, and many western botanical gardens have long histories of introducing them into cultivation. The Arnold Arboretum, principally through the efforts of E. H. Wilson, was a well-publicised leader in this area early in this century, when plant introduction from temperate Asia was at its peak. It is remarkable that even today new species of hardy woody plants continue to be discovered in China, presenting ongoing opportunities for plant introduction into the west.

One such 'new' plant is *Magnolia zenii*, an extremely rare, endemic tree from Jiangsu Province, China. It was first collected on March 31, 1933, in flower, by W. C. Cheng in Chu-yun Hsien on Mt Boa-hua (Paohua), at 250-300m in elevation and described by him in the same year. The tree was first brought into cultivation at the Jiangsu Institute of Botany and Botanical Garden, Memorial Sun Yat-sen, in Nanjing. In October 1980, the Director of this institution, Prof. He Shan-an, presented seeds collected from the only known wild population of *M. zenii* to Dr Stephen Spongberg of the Arnold Arboretum and Dr T. R. Dudley of the United States National Arboretum, Washington, DC, who were visiting China at the time as members of the first Sino-American Botanical Expedition.

Nine seeds were given to Dr Spongberg, of which five were viable. These were given a three-month cold stratification treatment, after which they were sown in the Dana Greenhouses of the Arnold Arboretum on February 10, 1981. Four seedlings germinated within a month and grew vigorously enough to be set out in the nursery in spring 1982. In 1984 the largest individual was planted in front of the

1. Reprinted with permission from *Arnoldia* (Spring 1989), the magazine of the Arnold Arboretum of Harvard University, 125 Arborway, Jamaica Plain, MA02130-3519 from whom copies may be obtained.

Hunnewell Visitor Centre where it has continued its rapid growth. By the fall of 1987 this individual was approximately 3.5m (11½ft) tall and had set about a dozen flower buds, the first of which opened on March 30, 1988. It flowered again in 1989, remarkably opening its first bud again on March 30, producing a total of 49 flowers. Its three siblings, planted in a much more exposed site along Goldsmith Brook, have not fared nearly as well, the largest being only about 2m (6½ft) tall. No doubt the shelter afforded by the Visitor Centre has contributed to this difference in performance.

According to Dr Frank Santamour, the US National Arboretum has two plants of *M. zenii* raised from the seed presented to Dr Dudley. Both are now growing in the Arboretum's Asian Valley garden, but neither of them bloomed in 1988. This makes Arnold Arboretum #1545-80-B the first individual of its species to bloom in North America, and perhaps the first to bloom anywhere outside of China.

The flowers of *M. zenii* are extremely fragrant, and the tepals (the technical term used to describe the petal-like parts of the typical magnolia flower) are marked with rose-purple streaks on the lower half of their outer surfaces. Each tepal, when fully expanded, is 7 to 8cm long and 2 to 3cm wide. Cheng's original description states that the flowers have nine tepals, arranged in three whorls of three. Flowers produced by 1545-80-B in 1988 and 1989, however, had only six or seven tepals. This sub-normal number was due to the fact that on all of the flowers produced by the Arboretum's plant, either two or three of the innermost whorl of three tepals failed to expand beyond one centimetre in length. It will be interesting to see if this tendency to expand less than the full complement of nine tepals persists as the plant ages.

Magnolia zenii (fig. 17) opens its flowers early in Bostan, about two weeks before *M. denudata* and about three weeks before either *M. kobus* or *M. stellata*. While such precociousness does not bode well for the wide horticultural use of the species in eastern North America (where destructive spring frosts are the rule rather than the exception), *M. zenii* may possess other traits, such as its pronounced upright habit of growth, that may turn out to be useful in future magnolia hybridisation.

As a juvenile plant, *M. zenii* roots readily from cuttings. During the six years it has been under propagation at the Dana Greenhouses, the best results were achieved with softwood cuttings, approximately 15cm (6in) long, taken between June 15 and 30. The base of each cutting was dipped for five seconds in a solution of 5000 parts per million IBA dissolved in 50% ethyl alcohol and 50% water, and then the cuttings were placed in the greenhouse under intermittent mist. With this

treatment, 7 out of 10 cuttings rooted in 1982, 21 out of 26 in 1985, and 7 out of 8 in 1986. These rooted cuttings of *M. zenii* have been distributed in a limited way by the Arnold Arboretum since 1984.

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The International Scene

The American Rhododendron Society

The San Francisco Chapter of the American Rhododendron Society organised the 1991 Convention at Oakland between 10 and 14 April. The venue could not have been more unfortunate, following three years of drought and the worst winter in living memory in California, where there are normally large plantings of Maddenia and Vireya rhododendrons in everyone's gardens.

Although all the Vireyas had been killed outright, and most Maddenias had been cut to near ground level, the lectures and garden tours were extremely interesting. One notable plant was a *R. nuttalli* 3.7 × 3.7m (12 × 12ft) which was almost unaffected by the weather.

Luckily, fine exhibits of rhododendrons were brought in from many other areas, particularly from Olympia and Seattle, further north. Many people attended from the New York area and Georgia, and there was also a party of 15 from New Zealand, led by Graham Smith.

I was most impressed at the number of people we met who intended visiting southern England in 1996 and then travelling north to visit Scottish gardens and the Edinburgh Conference.

E. G. MILLAIS

Registration of the genus *Magnolia*

Peter Del Tredici of The Arnold Arboretum, Boston, Massachussetts has relinquished the post of registrar for the genus *Magnolia*. The registration authority for the genus is now The Magnolia Society Inc. and the new registrar is Dorothy Johnson Callaway, 1871 Glensboro Road, Lawrenceburg, Kentucky, KY40342, USA. from whom registration forms can be obtained.

International Rhododendron Union Mini-conference, Rotorua

A half-day conference was held on 26 October, 1990, after the New Zealand Rhododendron Association's 45th annual conference. Four papers were read on the theme of tropical and tender rhododendrons. Graham Smith, the Director of the Pukeiti Rhododendron Trust, NZ, and Vice-President of the International Rhododendron Union, introduced the Conference by reading Dr Herman Sleumer's historic lecture on Malesian rhododendrons, originally given in Portland, USA, in 1976. The use of the actual slides and notes of Sleumer's landmark lecture evoked images of earlier explorations.

Dr George Argent, Botanist at the RBG, Edinburgh, read a well-researched essay on the theory of Vireya classification linked to the practice of field exploration, entitled 'An Exploration of Vireya Rhododendrons and the Search for Relationships'. Michael Cullinane, Nurseryman, Levin, NZ, gave an informative outline of 'Vireya Rhododendrons in NZ: Past, Present and Future', based on years of experience of growing and hybridising Vireyas.

Lastly, Mark Jury, Nurseryman, Tikorangi, NZ, spoke on 'The Maddenias, Good Garden Plants for the Warm Climate'. These tender shrubs with their spectacular blooms and heady fragrance, thrive outdoors throughout most of New Zealand, even as far south as coastal Otago and Southland.

The four papers were well balanced, and the speakers attained a high standard of presentation with some excellent slides.

PETER E. CAMERON

Group Tour of the North East and Scottish Borders

CLIVE COLLINS

The Group's 1991 tour assembled at the St Nicholas Hotel, Scarborough. Members were delighted to find our old friends from the US, Dr and Mrs Salley, had joined the party, but our pleasure was turned to sadness when it was discovered that their car, with luggage and irreplaceable research notes from a session at the Edinburgh Botanic Garden Library, had been stolen. Their fortitude in adversity was admirable.

Our first visit on Sunday, 12 May, was to Castle Howard where Mr James Russell has built up the collection of rhododendrons brought from the famous Sunningdale Nurseries, sold in 1968, into a wonderful woodland (known as Ray Wood) on the hillside above the castle. The wood is extensive and much care was taken to prepare the site before installing the plants in 1975. Mr Russell and his assistant, Philip Robinson, gave us a lengthy and detailed tour. The treasures are so many and the skill with which the rhododendron genus has been blended with other plants, shrubs and trees has been so successful that a short account cannot convey the pleasure and interest we experienced. Fortunately, Mr Russell has promised to tell the full story of the establishment of this remarkable enterprise in our next Year Book, but those whose curiosity has been whetted may read a first instalment in his article in *Rhododendrons* (1981-82), pages 29-32. We gave him *Stewartia ovata* 'Nymans' as a token of gratitude.

In the afternoon we drove to Stonely Wood, Sir Charles and Lady Richmond Brown's garden, hidden away in an enchanting secret valley. Although small when set alongside Ray Wood, this garden contains an astonishing number of rare rhododendrons, planted with great taste and loving care, to which the following list will bear witness. *R. pseudochrysanthum, hemsleyanum, haematodes, glaucophyllum, wasonii, roxieanum, recurvoides, oreotrephes, makinoi, annae, caloxanthum, lacteum,* and, last, a group of plants of the Taliensia subsection which delighted us.

We were grateful to Sir Charles for showing us his beloved garden, and gave him *Hamamellis mollis* to add to his collection.

We returned to Scarborough before starting early the next morning for the long drive up to Northumberland, where we reassembled at Corbridge. After lunch at the Angel Inn, we eventually found the English Heritage Property, Belsay Hall. Built at the beginning of the nineteenth century, the severe neo-classical building overlooks formal terraces, but leads down through several enclosed gardens to the quarry which provided the stone to build the house. Beyond the quarry may be found the late-fourteenth-century castle, to which a house was attached in the early seventeenth century.

Walking towards the quarry one is at once struck by the *Exochorda giraldii* and some superbly scented *Viburnum carlesii*. The quarry itself, long, narrow and winding, though a trifle dry, provides superlative shelter from wind and frost, because of its high walls (fig. 26). This is clearly reflected by the size of such plants as *Azalea vaseyi, Enkianthus campanulatus, Akebia quinata* and *Staphylea holocarpa rosea*. There are also species rhododendrons, *Eucryphia glutinosa, Magnolia sieboldii* and a palm, *Trachycarpus fortunei*. We thanked Mr Stephen Anderton for showing us round, presented him with a plant of *Stewartia pseudocamellia* and proceeded on our way to Linden Hall Hotel, Longhorsley.

On Tuesday morning we set off for Howick Hall situated within three miles of the North Sea. This wonderfully sheltered garden, of interest to species and hybrid enthusiasts alike, is as notable for its Maddenias, such as *R. edgeworthii* and *johnstonii*,happily growing in the open, as for the healthy growth at the base of such things as *R. augustinii*. These last were to be seen in every shade of blue and many growing up to 6m (20ft) in height. Notable also was the various and free-ranging ground cover, especially *Meconopsis* and *Trillium* ('no hoes, no glyphosate'). Other fine plants were *R. decorum*, a white *R. yunnanense, R. cinnabarinum roylei* and a very fine 'Crest'. The triumph of the morning, however, was when, by the Kenwynian cellular test, a Triflorum was absolutely identified as *R. ambiguum*. We thanked Lady Mary Howick, who had accompanied us round the garden, and showed our appreciation with a plant of *Halesia monticola* (fig. 25).

After lunching at Alnwick, we set off for Eglingham. Quite apart from the glasshouse collection of Maddenias (*R. crassum, polyandrum* and *sinonuttallii* were noticed), the chief attraction of this garden glade, with the river running through it, is its unspoiled and not overcultivated state. There was a profusion of bloom and much more to come. Large examples of *R. sphaeroblastum* (with typical indumentum), *niveum* and *ambiguum* (in full flower) were to be seen. Also *R. oreotrephes* in full

bloom and a rare *R. triflorum* var. *bauhiniiflorum*. Amongst the hybrids the 'Ladies Chamberlain and Rosebery' were large and unaffected by powdery mildew. Indeed, up to this point in our tour the area seems either to have escaped the disease or to be recovering from it. We voiced our appreciation to Mrs Potts and presented her with a *Magnolia grandiflora*.

Wednesday morning saw us leaving our excellent hotel at Longhorsley and heading north to the Border country. The praises of Manderston inside and outside have many times been sung and, in this Group's context, by none better than David Farnes (*Rhododendrons* 1981-2, pages 23-4).

After being courteously shown round this fantastic mansion and its many treasures by Lady Palmer, we proceeded down the formally planted terraces, over the footbridge and into the Woodland Garden. Originally the Pheasantry Wood, it had been developed from 1959 onwards with rhododendrons by Major Bailie, Lord Palmer's grandfather. Among nearly 200 species some notable 'spottings' were *R. bayleyi, triflorum* var. *mahogani, strigillosum* and several perfect *bureavii*. *R. fulgens* was in full bud and the plant of *R. campanulatum*/'Susan' was the object of much discussion between the experts. Three trees, *Acer griseum, Betula jacquemontii* and *Prunus serrula*, observed to have been newly planted in 1981, were noticeably well established. We expressed our thanks with a plant of *Magnolia grandiflorum* 'Goliath'.

After another excellent lunch at the Wheatsheaf Hotel, Swinton, we were off to find Silverwells near Eyemouth, again within a short distance of the North Sea. 'Yak' hybrids are not everybody's favourites, but those who saw the results of fellow-member George Arblaster's efforts were given something to think about. Although unregistered, unavailable and fighting each other for living space, certain of the combinations of flower and leaf were clearly creative. Nor was the hybridisation simply the dabbling of an eccentric amateur. Most of the work has been carefully planned; it is perhaps a shame that it should be confined to a personal island of pleasure, for not only in bloom but in leaf also there is undeniable evidence of promise and progress. We applauded George's enthusiasm and enjoyed Mrs Arblaster's wonderful tea, after presenting him with a *R. pachysanthum* with which to conjure further wonders.

The next morning the party divided. Some of us visited Dawyck, Stobo, the home of Colonel Balfour, now managed by the Royal Botanic Garden Edinburgh. Here David Binns, the supervisor, met us and took us round.

Famous for the fastigiate 'Dawyck' beech, this estate has many other

beautiful trees, especially conifers, as well as rhododendrons, some of which came from Tower Court, Mr Stevenson's garden at Ascot. We presented *Sorbus forrestii* to be added to the collection. In the afternoon we visited Kailzie, a seventeen-acre garden in the Tweed valley.

A few members spent the day at the Edinburgh Botanic Garden, either being shown the collection of Vireyas in the Temperate House by Dr George Argent or touring the systematic beds of the genus *Rhododendron*. A visit to these is an education, so beautifully are they displayed and arranged, with labels giving every detail of provenance that the heart of the enthusiast could desire. As for the Vireya collection, this must be the most comprehensive assemblage in the northern hemisphere. Dr Argent is still adding to it by periodic field trips to Borneo and Papua New Guinea.

To summarise this very successful tour, we had good company, dry weather and an unusual contrast in venues. For this we have Valerie Archibold to thank, for her careful preparation and the ready attention to our daily needs which provided pleasure for all.

The Rhododendron Shows 1991

IVOR & JANE STOKES

We find ourselves compelled once again to start these reflections on the 1991 Rhododendron Shows with a comment on the British weather, for at the end of the day it is almost invariably this factor that decides which plants are seen on the show benches.

After a relatively mild and wet start to the season, winter arrived with a vengeance in February this year. Temperatures plummeted to −10°C (14°F) and held there for several days, followed by a blanket of snow which only served to prolong the frozen ground conditions.

By the time of the Early Show on 12 and 13 March, many of the plants that would normally have been in their full glory were still in tight bud, widespread frosts further added to the disappointment of would-be competitors. Exbury Gardens were notable by their absence. The contribution made by the Rothschild rhododendrons to the Vincent Square Shows cannot be overestimated, and there were many gaps to be seen. Consequently, it was Swansea City Council's Clyne Gardens, situated in the milder south-west of Wales, that supplied most of the colour in the March Show and the prizes awarded reflected this.

A notable exception was found in Class 15, where Dr J. Dayton won all the prizes having exhibited six sprays from his Dorking garden that were very much 'variations on a theme' — each having *Rhododendron dauricum* as a parent. These plants were purchased from various nurseries more than 30 years ago and had over the years lost their identities. There was much speculation about their correct names, but without comparison with plants of known origin the best efforts of the Steward and other exhibitors could only confirm that one of them was *R.* 'Praecox'. Despite the paucity of bloom in the open gardens, Classes 22 and 23 allowed growers to thwart the worst intentions of the weather by showing from plants that had been grown under glass. Borde Hill Gardens exhibited and won both first and second prizes in each Class with *R. cubittii* and *R.* 'R. W. Rye'. The former, a superb sweetly scented white-flowered species, was regarded by Dr Cullen of Edinburgh during the revision of the genus as synonymous with *R.*

veitchianum, which takes precedence. The distinction between the two plants is, however, retained horticulturally by the RHS with the addition of the name 'Cubittii Group'. In good hybrid tradition 'R. W. Rye', with its deep yellow flowers and fine foliage, combines the best characteristics of both its parents (*R. chrysodoron* and *R. johnstoneanum*). These last two exhibits were undoubtedly the best plants on display at the Early Show and well deserved their prizes.

For a variety of reasons, plants do not always perform as expected and on the day of the Show, one is occasionally faced with dropping out of a Class for lack of suitable material or hoping that an unforeseen late entry will be accepted in an additional class. Filling in the entry forms more than a week before the Show can therefore be something of a gamble for the Exhibitor and accommodating late entries or cancellations can cause problems for the Show Secretary. The allocation of space to each class on the Show bench is ideally determined by the number of entries coupled with the size of the individual exhibits called for. This may seem axiomatic, but if the schedule allows an exhibit 60cm (24in) wide to be shown, then 60cm should be available. Commercial pressures had dictated that only the New Hall should be used for the Main Show on 30 April and 1 May and there was much *angst* the evening before the Show among competitors trying to display their flowers to advantage in the very limited space provided. However, the theatrical maxim 'it will be all right on the night' applied and the visiting public, unaware of any problems, were confronted with a spectacular display of Rhododendrons when the Main Show opened on the Tuesday morning.

Despite temperatures below normal during April, the lack of frost allowed nine exhibitors to bring their best blooms to the Show (figs. 22 & 23). The large-leafed species were generally poorly represented having set little in the way of flower bud during the drought last summer. Exbury more than made up for their absence from the Early Show and collected over 30 first prizes for their exhibits with a string of seconds and thirds. Their awards included the Lionel de Rothschild Challenge Cup for eight species and the Roza Stevenson Challenge Cup for the best spray. The range of tender plants grown at Brodick on the Isle of Arran without protection never ceases to amaze, eliciting envy from many mainland growers. John Basford who, as Head Gardener, has been responsible for the collection for many years, staged a promotional exhibit using a wealth of rare and unusual plants that were grown to perfection. This was John's last Show before his retirement and he returned to Scotland with a well-deserved Gold Medal for the stand as well as the coveted McLaren Challenge Cup, won in the competitive

classes with a truss of *R. kendrickii* (fig. 24) Brodick also picked up the second prize in this Class with *R. rex* growing under KW 4509; had a third prize been awarded then they would surely have taken that as well with a particularly fine eight-flowered truss of *R. lindleyi.*

There have been alterations made to the species section of the schedule this year and there was confusion amongst exhibitors over several of the amended classes. This was compounded further by one or two misprints in the text of the schedule; hopefully it will all be sorted out by next year. In the Hybrid Section the Crossfield Challenge Cup, for six hybrids raised in the exhibitor's garden, returned to Swansea, whilst the Loder Challenge Cup was won by John Fox who was showing *R.* 'Isabella Pierce' for the first time (Back Cover). This is a distinctive new American hybrid bearing large strawberry-pink flowers, each with a deep crimson eye, and promises well for the future.

The Camellia Shows 1991

CECILY PERRING

The early camellia competition, March 12-13

Without exception the summer of 1990 was long, hot and dry. The fine weather extended in the southern part of the country deep into the autumn. The Sasanquas bloomed and filled the air with their delightful scent; all seemed set for a good spring show in 1991 — yet it did not happen. The normally early flowering cultivars held back. Was there some forewarning of the icy spell ahead? Certainly January and February excelled in nastiness — frost, snow and ice caused havoc in gardens up and down the country - and yet the blooms at the first Camellia Show at the RHS Halls on March 12 and 13 were notable for their quality. Marigold Assinder displayed a lovely bright fresh 'Adelina Patti' and 'Cornish Spring', and the Duke of Devonshire a number of cultivars of sheer perfection. His 'Easter Morn' was as lovely as ever, but 'Lily Pons' was quite outstanding; not a new variety having been introduced in 1955, but holding its own against many newcomers. 'Mrs D. W. Davis', is the emblem of the International Camellia Society, is not often shown, yet here was a superb example together with 'Dr Tinsey', 'Powder Puff' and 'Peach Blossom' with 'Augusto L'Gouveia Pinto', which has been enjoyed since 1890, as beautiful and memorable as ever.

The competitors in this early show were few. Without the Duke of Devonshire, Marigold Assinder and Mrs Strauss there would have been no competition. The flowers were really fine. The judges must have been hard put to allocate the order of merit. We are all greatly indebted to these superb camellia enthusiasts.

The main camellia competition, April 9-10

This show was much better attended. There were 13 separate exhibitors adjudged winners: Marigold Assinder, Mrs Assinder (fig. 21), Mr D. Robertson, Mr Wearn, Miss Bullivant, Mrs Waterlow, Pamela Sheridan, Miss B. Griffiths, Roger Phillips, Mrs Kleinwort, Mr J. P. Carr, Paulton Square Gardens and Mr J. Parr. Between them they showed in their winning entries about 120 different cultivars. Some are modern introductions, but some have been with us for many years, such as 'Elegans', the most exhibited cultivar with 7 entries in prize winning exhibits (it was introduced in 1831 and blooms in most years over a long season from March to June) followed by 'Debbie' (a mere child of 1959) and 'Contessa Lavinia Maggi' (rather more mature of 1860 vintage) both with six entries, all beautiful and have withstood the test of time.

In Division I devoted to sprays from the open there were some fine entries. Notable was Mrs B. Griffiths lovely 'Magnoliaeflora', Mrs Strauss's 'Ballet Dancer' and Marigold Assinder's 'Debbie'. The standard for all entries was really high.

In Division II Class 10, blooms from the open, Mrs C. Petherick came first with 12 wonderul blooms including 'Augusto L'Gouveia Pinto' (top of the pops in 1990) and more like a dark red carnation than a camellia and 'Clark Hubbs'; although introduced in 1970 from California it is seldom shown yet very worthwhile. For this wonderful effort Mrs Petherick was awarded the Leonardslee Bowl (fig. 20). Mrs Strauss came second — she had two entries and showed 24 superb and different blooms, a wonderful contribution to the show and her exhibit, if regarded as a whole had a great merit. Outstanding were 'E. G. Waterhouse', 'Red Emperor' and 'Snowman', while Marigold Assinder entered a lovely 'Ville de Nantes' which was the only example in the show: with its fimbriated petals it is a most attractive cultivar.

In Class 15 for which the Richardson Trophy was awarded there were 15 entries. It was for any semi-double cultivar and was won by Mrs Strauss with 'White Nun', a superb blossom, followed by Mr J. P. Carr with 'W. J. Wheeler', Marigold Assinder with 'Adolphe Audusson' (an 1877 introduction from France) and Mr D. Robertson with 'Lady de Saumarez'.

In Class II I was delighted to see Mrs B. Griffiths exhibit one of my favourite camellias, 'Lady Vansittart'. For beauty of blossom and foliage and overall shape I think it takes first prize. However, it did not do this for Mrs B. Griffiths. First went to Mrs Strauss. Outstanding were 'Nuccio's Gem' and 'Mathotiana Purple King'.

Mrs Petherick entered a superb trio in class 14 'Drama Girl', 'Lady in Red' and 'Dear Jenny'. The pick of the second prize won by Mrs Strauss was a lovely bloom of 'Donckelarii' and third prize went to Mrs Kleinwort also with a 'Donckelarii, a real winner. In class 16, out of 6 entries, particularly good was 'Preston Rose' in Marigold Assinder's winning entry; 'Altheaflora' shown by Mrs Strauss came second, and 'Jury's Yellow' by Mr J. Parr came third.

It was interesting that in Class 21, any Reticulata from the open, there were only two entries both of 'Captain Rawes'. First came Mrs Petherick and second Marigold Assinder. Where were 'Arch of Triumph', 'Crimson Robe' and 'Pagoda', all regularly shown? Had the severe weather got the better of them? It would be interesting to know. In Class 22 for Hybrid Reticulatas also from the open, there were 12 entries. First came Mrs Strauss with 'Milo Rowell' (the product of 'Crimson Robe' × 'Tiffany'), a japonica bred by Dr Urabee in California and introduced in 1962) — it is a particularly lovely camellia. Second came 'Forty Niner' again shown by Mrs Strauss (this is a wonderful brilliant red camellia introduced in 1969 from the USA) and third came Mr D. Robertson's entry of 'Francie L', a lovely flower with large rose-pink wavy petals. It grows most elegantly against a wall and has curious dull leathery foliage so different from the bright shiny leaves of the majority of cultivars. ('Francie L' was introduced by Nuccio in 1964 and is a cross between 'Apple Blossom' and 'Buddha'). Other entries included 'Dr Clifford Parks' (a cross between 'Crimson Robe' and 'Kramers Supreme'. A camellia of great strength and beauty.

With 'Lady Vansittart', my other favourite camellia is 'St Ewe', so it was a particular delight to see it all to the fore in Class 24, for any single flowered cultivar cross Williamsii. The class was won by Mrs Strauss with 'Daintiness', but four examples of 'St Ewe' were shown. In my garden in East Sussex 'St Ewe' normally blooms from the end of December — in time for Christmas decoration — until into May, bright strong blossoms not too adversely affected by the weather and in the 1991 cold spell the flowers gleamed through the snow, a joy to behold.

A must for noting was Mrs Petherick's exhibit of 'Waterlily' in Class 27. It richly deserved her first placement and in Class 29 John Tooby came first with three japonica cultivars grown under glass: 'Scentsation',

'Blaze of Glory' and 'Elegans Supreme' (fig. 19). Blooms grown under glass have a quality all of their own and this class produced some really lovely blossoms. Mrs Strauss came second and third. Particularly lovely was her entry of 'Lady Clare' and 'Ballet Dancer'. In Class 30 — again under glass, Mrs Strauss delighted us with 'Gus Menard' and had a well-deserved first and fourth in this class while Mr J. Tooby came second with another example of his 'Elegans Supreme'. Class 31, also from the glasshouse, gave us a beautiful 'Arch of Triumph' from Mrs Strauss who also came third with 'Milo Rowell'; second 'Arch of Triumph' from Mr J. Tooby and third 'Lasca Beauty'.

Were I to be voting for the best bloom in the show my vote would go to 'Grand Jury' shown by Marigold Assinder. It was a most beautiful show, and the exhibits in March though few, were perfection. The success of the early show depends, of course, on the weather. May 1992 produce many more exhibitors and entries to is encourage us and we look forward to 1993 Camellia season with confidence.

The competitions, as ever were made more pleasurable by the solicitous help of the RHS staff on duty. Their patience with puzzled exhibitors is phenomenal and much appreciated.

THE PHOTOGRAPHIC COMPETITION

Once again the judges have debated long and furiously about which of the many entries could properly be placed *prima inter pares*: the choice was as hard as ever. It has, of course, to be largely subjective. Judges, like everyone else, have their own favourite plants and preferences,find some colours more attractive than others . . . and so on. But there are certain standards which must be met and, alas, many otherwise appealing photos were flawed in some small way. Either they were not quite in focus, or the subject was not happily placed within the frame, or the lighting was too dark or too bright, or there was something else that detracted from the overall excellence. There is also that indefinable extra dimension that causes some photos to stand out from the rest, and to catch the judges by the throat. Finally, however, three entries seemed outstanding, and if the *Magnolia wieseneri* of Dr Hargreaves (fig. 8) was chosen, could it have perhaps have been because a magnolia has never yet won the prize? Two runners up — the beautiful vase-shaped *M. macrophylla* bud of Mr H. P. Granlund (fig. 9) and Mr Brian Horrabin's burning fiery furnace 'Cinnkeys' (fig. 10) — were too good to miss and we thought they should be seen by a wider public. Congratulations to these three and our thanks to those who were unlucky. Do try again.

Book Reviews

The Proceedings of the 'Fourth' International Rhododendron Conference held at Wollongong, New South Wales, 1st — 5th October 1988. Edited by J. Clyde-Smith, 151pp. (The Australian Rhododendron Society Inc. 1990.) Copies may be obtained from the Hon. Sec. Australian Rhododendron Society, P.O.Box 21, Olinda, Victoria 3788, price A$20.00 which includes postage.

The 'Fourth' International Rhododendron Conference (fifth since the war) was held under the auspices of the International Rhododendron Union, and was organised by the Australian Rhododendron Society at Wollongong University, New South Wales, as one of Australia's Bicentennial activities. It was attended by 153 people, 31 residents of New South Wales, 41 from other parts of Australia, 45 from the USA, 17 from Tasmania, 7 from NZ, 4 from Japan, 3 from Scotland, 2 from Hawaii, 1 from China, 1 from Papua New Guinea, and 1 from England.

Rhododendrons, 1990 with Camellias and Magnolias, pages 45-6, contained a brief account by John Basford of Brodick under the heading 'Fourth International Rhododendron Conference'. The full Proceedings were published (June 1990). They open with a foreword by Mr Ralph Sangster, founder of the International Rhododendron Union, at whose invitation Dr David Chamberlain reviewed the conference, his remarks being printed at the end of the Proceedings.

The conference concentrated on evergreen azaleas, vireyas, and new rhododendron species described in China. The 17 papers read at the conference are published in full. The first four papers deal with evergreen azaleas, one by Fred Galle, author of the standard work on azaleas, and two by Japanese botanists, one a field study.

There follows an interesting review by Dr David Chamberlain of taxonomic studies of rhododendron in the last ten years. Over 200 new species have been described by Chinese botanists, a third of them evergreen azaleas; half of these are natives of provinces in Southern China not intensively explored before. Study of hybrid populations in the field has satisfied Dr Chamberlain that *R. agastum* is not a separate species in subsect. Irrorata but a hybrid between *R. delavayi* and *R. decorum*. Also that *R. wardii* and *litiense* are not separate species. In the

previous ten years, at least three infrageneric classifications of *Rhododendron* had been proposed, two of them by German botanists.

Professor Fang Ming-Yuan of Sichuan University, son of the late Professor Fang Wen-Pei, the author of *Sichuan Rhododendrons of China*, contributed a study of subsect. Irrorata, containing 23 species (incl. *R. agastum*), among them a new species *R. guizhouense*, akin to *R. aberconwayi*, and of this he has included the necessary description in Latin.

Mr Deane Miller from South Australia contributed a paper on Companion Planting for Rhododendrons, and Mr Ken Gillanders from Tasmania a Survey of the Ericaceae in Australia.

Melbourne University School of Botany contributed two scientific studies, one on the influence of style lengths on hybridisation, and the other on the reproductive biology of *Rhododendron*

Dr Wallace of the Royal Botanic Gardens, Sydney, gave a talk on how Vireyas are grown there and in the Mt Tomah Botanic Garden in the Blue Mountains. He mentioned that he had made visits to see Vireyas growing in Sabah and in Papua New Guinea.

Dr Morley of the Adelaide Botanic Gardens, South Australia, gave a talk on the role of Botanic Gardens, and the place of rhododendrons in them, and of Vireyas in particular, and called for closer co-operation between Botanic Gardens all over the world in taxonomic studies.

Dr Argent from the Royal Botanic Garden, Edinburgh, photographed in full cry during the talk that he gave on Vireya taxonomy in the field and in the laboratory, told of several field trips to see Vireya in the wild. He has reduced the taxonomic groupings of section Vireya from the seven subsections proposed by Sleumer to two subsections — Vireya and Pseudovireya.

Graham Smith, from the Pukeiti Rhododendron Trust in New Zealand, described growing Vireya rhododendrons in a cold climate.

Graham Snell from Queensland spoke about the evolution of the commercial Vireya. A 100 years ago, using the small number of Malaysian species then known, Messrs Veitch of Exeter produced a number of Vireya hybrids, of which 30 were awarded FCCs, but these were greenhouse plants and are now hardly grown at all. In recent years, with the great increase in the number of Vireya species known, a number of nurserymen in Australia, New Zealand and North America are now stocking and distributing Vireya species and hybrids, but the demand for them is limited at present.

In the Vireya part of the Proceedings, to me the most interesting was the Rev Canon Norman Crutwell's paper on plant hunting in Papua New Guinea. After reading Botany at Oxford (a year or two after your reviewer), Norman Crutwell became a priest and worked for 30 years as a missionary in the Eastern Province of Papua New Guinea, retiring at

the age of 65 to become Curator of the Lipizauga Botanical Sanctuary in the Mount Gahavisuka Provincial Park. In his 42 years in PNG, Canon Crutwell found a member of Vireya species, starting with *R. crutwellii* and *christianae,* the latter named after his mother, and many others, some of which were already known. He often found natural hybrids in the wild.

This interesting conference is the first to consider Vireyas in detail. It is to be hoped that the organisers of the next 'International Rhododendron Conference' (offers were made some years ago from both Ireland and Japan), will realise that it will be the sixth (post-war), NOT the fifth (post revision).

W.M.

The Larger Rhododendron Species, by Peter A. Cox. Second Edition. 389pp. 82 colour plates, 31 line drawings, 6 maps.
(B. T. Batsford Ltd. 1990, £35.)
This is the second edition of *The Larger Species of Rhododendron* by Peter Cox, published in 1979, which was reviewed in *Rhododendrons,* 1979-80, pages 54-5.

As a companion to Mr Cox's *The Smaller Rhododendrons*, this is a valuable reference book, providing the background to most of the species of *Rhododendron* that can be grown in this country. There are chapters on rhododendrons in their natural environment; on their place in gardens; on planting and maintenance; on propagation, and pests and diseases; as well as descriptions of all the known species, including some that are not in cultivation. Sir Peter Hutchison's excellent distribution maps are reproduced from the first edition, though in a different order.

Apart from some minor revision, pages 11-341 are an almost exact reproduction of the first edition, including the valuable 212 pages of species descriptions, arranged according to the revised classification, but with the old (Balfourean) series and subseries shown in brackets.

The most notable feature of this second edition is perhaps the illustrations. The 6 colour and 53 black and white plates from the first edition are replaced by 82 very fine colour plates of species, including *R. venator*, the spelling of which seems to have presented the indexer with some difficulty.

These apart, the chief new feature is an addendum most of which is given up to descriptions of 125 taxa named since the first edition was published. These include three new species, *R. kesangiae, bhutanense* and *balangense*, of which the last named is not yet in cultivation. There is also

a short chapter on collecting in China, Tibet and Bhutan, and another on Powdery Mildew.

W.M.

Cox's Guide to Choosing Rhododendrons, by Peter and Kenneth Cox, 176pp. 139 photographs in colour. (B. T. Batsford Ltd 1990. £14.95)

For anyone starting to grow rhododendrons, either by making a new garden or taking over an existing one, this should be a useful book. After an introduction, explaining what is available, the principles of planting and cultivation, and methods of propagation, there follow brief descriptions of the species and hybrids, as well as deciduous and evergreen azaleas, interspersed with good colour photographs.

Arranged in separate sections in alphabetical order, 73 species groups are shown, and under many of them allied or similar species are mentioned. This pattern is followed for hybrids, where 113 groups are described, each accompanied by allied or similar plants.

At the end are lists of rhododendrons recommended for particular characteristics, a glossary and a list of some of the special nurseries in Britain, the US, Australia and NZ.

An attractive small book for those who are coming new to rhododendrons.

W.M.

A Plantsman's Guide to Rhododendrons by Kenneth Cox, 128 pp. 43 colour plates, 15 line drawings. (Ward Lock Ltd., 1989.)

Published the year before *Cox's Guide to Choosing Rhododendrons* reviewed above, this covers much the same ground, and is another useful book for beginners. It is one of a series of 'Plantsman's Guides' from a different publishers.

W.M.

Awards at London Shows

RHODODENDRONS

1986

Rhododendron 'Bucklebury' (*yakushimanum* × 'Kiev') AM 19 May 1986, as a hardy flowering plant. Trusses 13-14 flowered. Corolla 5-lobed, campanulate, up to 5cm long and 6cm across. Flowers pale pink (Red Group 56D), lightly spotted Red-Purple Group 58B in upper throat. Stamens 7-10, held within, filaments white, anthers dark brown: style of equal length. Calyx rudimentary, densely glandular, green with reddish edge. Leaves obovate, up to 10cm long and 5cm across, dark green above, densely covered below with brown woolly indumentum. Crossed, raised and exhibited by Crown Estate Commissioners, The Great Park, Windsor.

1988

Rhododendron 'Otterwood' (parentage not known) PC 23 May 1988, as a hardy flowering plant. A deciduous azalea. Trusses rounded, 12-13 flowered, up to 13cm across. Corolla 6-lobed, tubular funnel-shaped, up to 5cm long and 7.5 across, orange group 25B, flushed with orange-red group 30B: reverse orange flushed Red Group 39A, particularly in bud stage. Stamens 6 held free, filaments orange, anthers light brown-orange. Style held free. Calyx rudimentary, green. Leaves deciduous, elliptic, up to 6.5cm long and 2.7cm across. Crossed, raised and exhibited by Edmund de Rothschild, Exbury Gardens, Exbury, Southampton, Hants.

Rhododendron glischrum ssp. glischroides 'Glister' AM 30 February 1990, as a hardy flowering plant. Trusses loosely borne with up to 12 flowers, campanulate 5-lobed, to 3cm long and 4.3cm across, white with central part and lobe of each section flushed Red-Purple Group 68A with a dark chocolate-purple (Red-Purple 59A) blotch in upper throat. Stamens 10, irregular, equal or held free, filaments white, anthers dark brown. Style held free. Calyx 5-lobed, to 7mm, greenish, glandular-hairy. Leaves ovate-lanceolate, up to 11cm long and 4.5cm across, dark

green, bullate and glabrous above, with brown bristles below. Collector not recorded. Exhibited by Edmund de Rothschild, Exbury Gardens, Exbury, Southampton, Hants.

Rhododendron 'Hypermestra' (*hyperthrum* × 'Rosy Morn') PC 3 April 1990, as a hardy flowering plant. Trusses 12-14 flowered, up to 19cm across. Corolla 5-lobed, campanulate, up to 6cm long and 7.5cm across. Stamens 10, held within, filaments light brown, anthers white, style held within. Calyx 5 joined lobes to 3mm, green, tipped red, glandular, hairy. Outer corolla Greyed-Yellow Group C, inner corolla paler creamy white with small blotch of Greyed-Purple Group 185A in upper throat. Leaves ovate-lanceolate, up to 13.5cm long and 6.5cm across, dark matt green above, paler below and free from indumentum. Crossed, raised and exhibited by Edmund de Rothschild, Exbury Gardens, Exbury, Southampton, Hants.

Rhododendron insigne 'Annie Darling' AM 21 May 1990, as hardy flowering plant. Trusses 14-16 flowered, full, rounded, up to 11cm across. Corolla 5-lobed, campanulate up to 4cm long and 4.3cm across, white, strongly marked along the centre of each lobe and lip of corolla with Red-Purple Group 57C and with numerous small spots of Red Group 53A in upper throat. Stamens 12-16 held within, filaments white, anthers brown, style held within. Calyx 5-lobed, green, to 2mm. Leaves lanceolate to elliptic-lanceolate, up to 12.5cm long and 4.3cm across, mid-green above, with shiny metallic-coppery plastered indumentum below. Collector not recorded. Exhibited by Edmund de Rothschild, Exbury Gardens, Exbury, Southampton, Hants.

1991

Rhododendron 'Connecticut Snow' AM 12 March 1991, (*carolinianum* (white form) × *dauricum* (white form)) as a hardy flowering shrub. Plant 90cm high, 75cm spread, flowers double, in compact, terminal branched trusses, up to 4.5cm across, of up to 10 flowers each truss; individual flowers campanulate up to 2.5cm across, white, with a few small yellow-green spots, filaments white, anthers yellow. Calyx rudimentary green, scaly. Leaves ovate, evergreen, slightly aromatic, up to 4.5cm long and 2cm across, mid-green, glossy and slightly scaly above, paler and more scaly beneath. Crossed and raised by G. Mehlquist (USA) exhibited by Crown Estate Commissioners, Crown Estate Office, The Great Park, Windsor, Berks.

Rhododendron 'Lem's Cameo' ('Dido' × 'Anna') FCC 20 May 1991, as a hardy flowering plant. Crossed and raised by Halfdan Lem (USA). Exhibited by Edmund de Rothschild, Exbury Gardens, Exbury, Southampton, Hants. (see AM description 'Rhododendrons 1987-8 with Magnolias and Camellias' (pp.96-97)).

Rhododendron 'Mouton Rothschild' FCC 20 May 1991, as a hardy flowering plant. Trusses tightly packed, globular. Corolla 5-lobed, tubular campanulate, up to 6cm long and 5.5cm across, dark red (Red Group 46B), inner corolla uniformly mottled with very dark red-brown. Stamens 10, held within, filaments red, anthers black, style red, glandular hairy, of equal length. Calyx 5-lobed, rudimentary, reddish, glandular, to 4mm. Leaves oblong-elliptic, up to 12cm long and 5.5cm across dark matt green above, with very loose, light orange/brown indumentum below. Crossed and raised by Lionel de Rothschild, exhibited by Edmund de Rothschild, Exbury Gardens, Exbury, Southampton, Hants.

Rhododendron smirnowii 'Vodka' AM 20 May 1991, as a hardy flowering plant. Trusses full, rounded, with 16-18 flowers. Corolla 5-lobed, funnel-campanulate up to 5cm long and 7.5cm across, shading from white deep in throat to Red-Purple 73A along lip of corolla and strongly down each lobe. Upper throat heavily marked with Yellow-Green Group 153A. Leaves oblong-oblanceolate, up to 12.cm long and 3.5cm across, dull matt green, glabrous above, with a thick woolly pale brown indumentum below. Collector not recorded. Exhibited by Edmund de Rothschild, Exbury Gardens, Exbury, Southampton, Hants.

MAGNOLIAS

1991

Magnolia 'Snow White', AM 30 April 1991 as a hardy flowering tree, exhibited by D. Clulow, Tilgates, Bletchingley, Surrey.

This *Magnolia* is one of the hybrids raised by K. Wada in Japan, a cross between *M. denudata* and *M. salicifolia* introduced into this country by Sir Peter Smithers. It forms a free flowering tree with scented flowers intermediate in size between the parents. The flowers are upright in habit, pure white, of 8 to 9 tepals each, narrow obovate in shape to 8 by 4cms. The foliage is only just beginning to unfold at flowering time. Specimen in Herb. Hort. Wisley.

Magnolia 'Star Wars' AM 20 May 1991 as a hardy flowering shrub exhibited by D. Clulow, Tilgates, Bletchingley, Surrey.

A large tree-like shrub, this *Magnolia* was raised in New Zealand as a cross between *M liliiflora* and *M. campbellii* by O. Blumhardt. It flowers rather late in the season, flowering with the leaves and will commence flowering while the plant is still small. The flowers approaching the size of *M. campbellii* to about 15cm across have about 8 broadly obovate tepals to 13 by 7cm. The conical buds to 12cm long are deep pink Red-

Purple Group 57C to D and the flowers on opening are white inside but Red-Purple Group 68C to 57D fading to Red-Purple Group 62C to D at the tips. The ovate leaves at flowering time are light green. Specimen in Herb. Hort. Wisley.

CAMELLIAS

1990

Camellia japonica 'Love Song' PC 13 March 1990, as a hardy flowering plant. Medium, anemone form, rose-red (Red Group 52C with darker veining of Red Group 52B). Raised and exhibited by John T. Gallagher, 2 Station Road, Verwood, Dorset.

1991

Camellia × williamsii 'Muskoka' AM 12 March 1991, as a hardy flowering shrub. Leaves up to 8cm long and 4cm wide, mid-green. Flowers up to 10.5cm across, single, with two rows of petals, strong purplish pink (62A) with slightly darker veins, and central cluster of stamens. Raised and introduced by J. Williams, exhibited by D. C. Trehane, Trehane, Probus, Truro, Cornwall.

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The Royal Horticultural Society Rhododendron, Camellia & Magnolia Group

The Rhododendron, Camellia & Magnolia Group of the Royal Horticultural Society exists to bring together all members of the Society and affiliated societies who have an interest in rhododendrons, camellias and magnolias, be they beginners or experts.

With a membership of over 700, drawn mainly from the UK, but with members from such widely separated countries as Japan, Australia, Sweden and the US, the Group provides a Year Book — *Rhododendrons with Camellias & Magnolias* — containing articles of wide interest to followers of all three genera. A four-monthly bulletin provides notices of activities of the Group and its local Branches — South-East, South-West, Wessex, South-West Wales, East Anglia, North-West and North Wales, Muncaster (Cumbria) and Ireland, together with other relevant articles. All these branches provide activities by way of garden visits, lectures and so on. The main group organises a yearly tour in some part of the UK, normally of about seven days duration, and also a one-day outing and social gathering over a weekend in October. A distribution of reliable seed exists for the benefit of members only.

The Annual Subscription is, at present, £10.00, which includes the Year Book and Bulletins. The Membership Secretary is: Mr Ray Redford, Fairbank, 39 Rectory Road, Farnborough, Hants., GU14 7BT.

LIST OF OFFICERS AND MEMBERS OF COMMITTEE 1991

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Contributors

Walter Magor, Founder member of the Group. Until 1990 member of the Executive Committee. Sometime Chairman and Honorary Editor of the Year Book.

James Cullen, DSc. Deputy Director of the RBG Edinburgh until 1990 and joint taxonomist of the official Revision of the Genus *Rhododendron.* Now Director of the Stanley Smith Horticultural Trust.

Tony Schilling. Deputy Curator of Wakehurst Place, the Sussex outstation of the RBG Kew. At one time curator of the Nepalese Botanic Garden. Has been on numerous plant hunting expeditions in the Himalayas.

E. Millais runs a nursery garden in Surrey specialising in the propagation and sale of rhododendrons. He has been on many plant-hunting expeditions in the Himalayas and China.

John Bond VMH is the Keeper of the Royal gardens in Windsor Great Park and Chairman of the RHS Rhododendron Committee.

Dr Stephan Helfer is a mycologist and electron microscopist at the RBG Edinburgh.

Jennifer Trehane is a director of the specialist camellia nursery of that name in Dorset.

Jim Hansen has been growing camellias for years and is a past president of the New Zealand Camellia Society.

A. D. Jellyman is Community Services Manager of the New Plymouth (NZ) District Council and is in charge of the Pukekura Park rhododendron collection.

Abigail Jury is married to Mark Jury, nurseryman of Urenui, N. Taranaki, New Zealand.

Kenneth Lowes is a founder member of the Group and edited the Group's Bulletin for several years.

F. Larsen is a Norwegian member of the Group.

Margaret Cameron edits the Bulletin of the Dunedin (NZ) Rhododendron Group.

Peter Cameron is the President of the NZ Rhododendron Association.

Clive Collins is a member of the Rhododendron Group's Executive Committee and gardens in the Lake District.

Ivor Stokes is the Curator of Swansea Corporation's Clyne Garden in S. Wales and a member of the Executive Committee.

Jane Stokes is a biologist and married to Ivor Stokes.

Cicely Perring is a British Vice-President of the International Camellia Society and a member of the Group's Executive Committee.

Stephen Fox is a member of the Group and Chairman of the Northern Horticultural Society's Rhododendron Group.

Peter Del Tredici is the Editor of *Arnoldia*, the magazine of the Arnold Arboretum, Boston, Mass. USA.

Stephen Spongberg is a research taxonomist at the Arnold Arboretum and Editor of the *Journal of the Arnold Arboretum*.

Index

of Rhododendrons, Camellias and Magnoliaceae
As applied to rhododendrons (az) indicates an azalea
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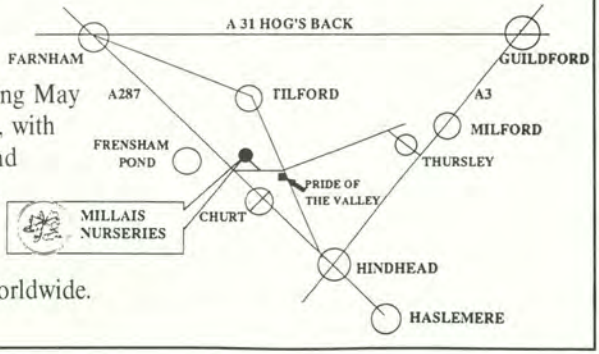

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