RHODODENDRONS
with Camellias and Magnolias

1993

The Royal Horticultural Society

Acknowledgements

TO THIS ONLINE EDITION

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Rhododendrons

with

Camellias and Magnolias

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Foreword

'Why don't you cater for those of us who have just started with rhododendrons?' A new member has raised again the question of the contents, which does aim to appeal to the widest possible readership. Are the articles of interest, are they too 'high-powered' or not sufficiently so? What sort of articles do members most enjoy?

The scientific fraternity is catered for by Dr McAllister on the subject of chromosome numbers in rhododendrons, fascinating and useful for the more experienced. David Paterson's account of the 1990 'CLD' Expedition, should well satisfy both armchair travellers and those who received seed. Keith Rushforth journeys to a lesser known location for rhododendrons, Vietnam; raising the possibility of new species, leads on to Tony Schilling's article on a natural hybrid found in Bhutan.

David Millais gives an insight into what is going on in the rhododendron-oriented Pacific Northwest, the names of the people who are doing it, and recommends some of the better plants. For camellia lovers, Margaret Gimson suggests gardens in Galicia that would repay a visit and describes her own garden. Crossing the Atlantic again, we read about the establishment of a collection of native azaleas and note, perhaps with wonder, the amount of funding.

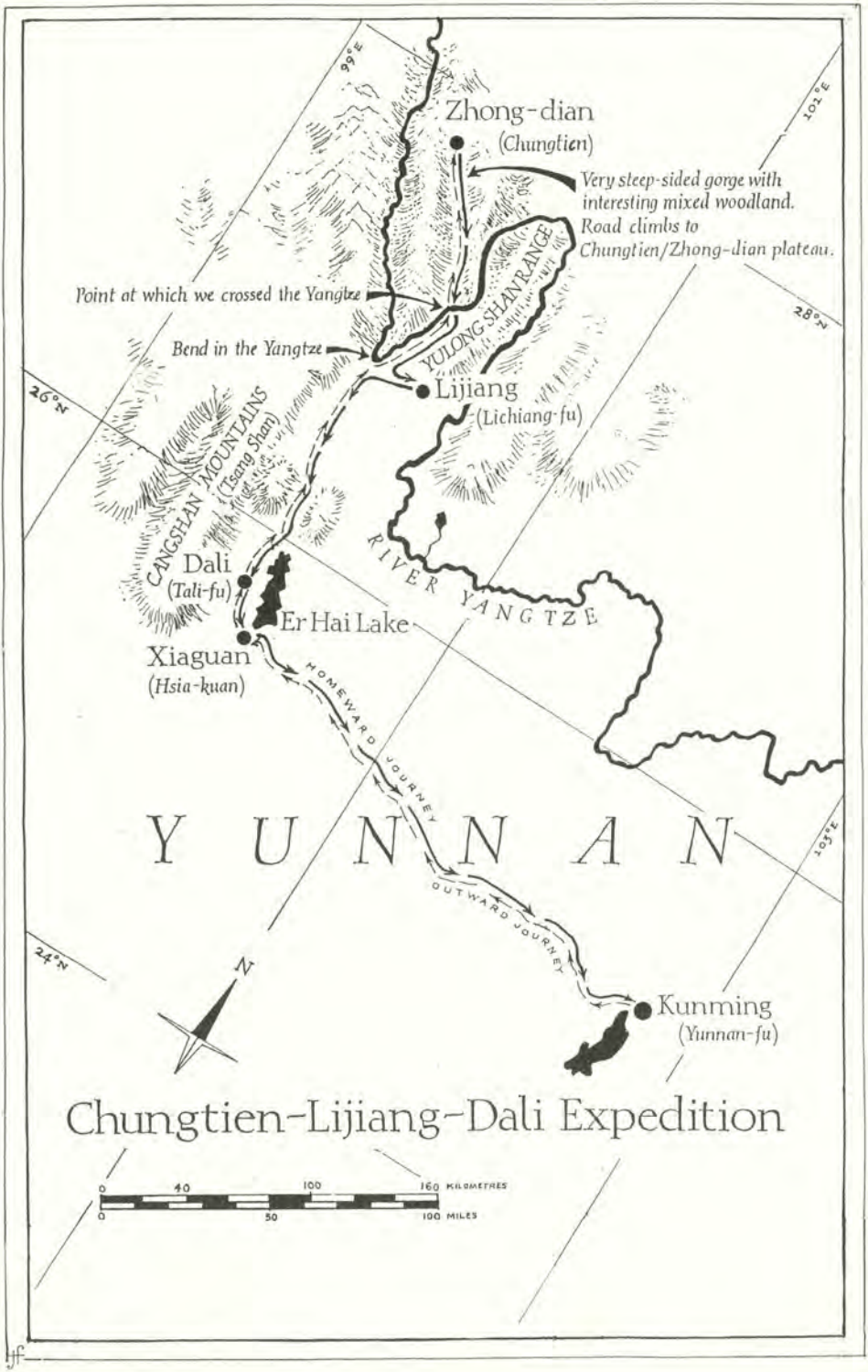
On the home front James Russell gives a timely account of the plant collection in Ray Wood, Castle Howard. Timely, because doubts have been expressed about its future.

Sir Peter Smithers comments on the merits or otherwise of the many new magnolias. His evaluation of their characteristics must surely help a newcomer to the genus. Lady Adam Gordon continues the conservation theme in the story of her garden, 'Hethersett', where she has kept the old Mangles hybrids alive, so that representative collections may be held elsewhere. The Royal Botanic Garden, Edinburgh put on a magnificent display of the lesser-known Vireyas in London; the difficulties of staging from such a distance and expertise were rewarded in a Gold Medal. At the Shows one or two new exhibitors are emerging. It is amusing to note that Ivor Stokes, who reports, would not so long ago have himself fallen into this category. Cicely Perring notes the many remarkable exhibits at the Camellia Shows. She attended the International Camellia Conference in New Orleans. The Group's Hon Editor and Hon Secretary tell us about the International Rhododendron Union Conference in Germany. Brian Savage describes the gardens visited on the Magnolia Society's Annual Meeting in Switzerland. A truly international set of reports.

Of the successful Scottish Tour, Kenwyn Clapp reminds us of how pleasant it is to meet old friends.

Congratulations to The Hon Editor who has gathered together a widespread and comprehensive selection. Write to the Hon Editor, The Lady Cynthia Postan, 84 Barton Road, Cambridge CB3 9LH.

BRUCE ARCHIBOLD



Chungtien-Lijiang-Dali Expedition

The 'CLD' (Chungtien-Lijiang-Dali) expedition 1990

David Paterson

Since George Forrest's death in 1933 the area east of the Himalayan chain of the great rivers and high mountains where Burma, Tibet and China meet has been closed to foreigners. When Forrest, Frank Kingdon-Ward, Reginald Farrer and Euan Cox scoured the country collecting plants, seeds and herbarium specimens, their progress was painfully slow. They moved on foot with their baggage carried on the backs of men and mules into the unmapped wilderness. After they passed that way, this vast botanical treasure house remained largely unexplored and events, such as the Chinese/Japanese War and the Communist Revolution, barred intruders from the West. Not until the early 1980s did visitors from outside again enter the forbidden land.

By now conditions had changed radically. In the 1930s a few distinguished Chinese botanists had studied in Britain (notably Professor Feng Guomei at Edinburgh from 1934 to 1937), and they had been steadily extending their scientific interests to their own native flora. When at last they were permitted to make contact with their western colleagues, private and semi-official visits to China began. Such was the Sino-British expedition to the Cangshan (SBEC) of 1981, arranged through the Royal Society and the Academy of Sciences of China, which visited the Cangshan (Tsang Shan) mountains. Other parties from North America and Australasia also went, as did some purely private visitors.

In 1989, C. D. Brickell of the Royal Horticultural Society was invited by the Kunming Institute of Botany to bring a group of six botanists and horticulturists to Yunnan, as one of the three annual permitted visits. A party was made up under the auspices of the Royal Botanic Garden Edinburgh of representatives from the RBGE, the RHS and the Royal Botanic Gardens Kew to join members of the Institute of Botany of Kunming. The objectives of this Sino-British team were: to collect herbarium specimens for the four participating institutions; to collect, selectively, living garden-worthy plants; to collect bryophytes (mosses and liverworts) unstudied since Handel

Mazzatti in 1914-18, and to further the exchange programme between the Academia Sinica and British botanic gardens.

The British members were Ron McBeath, David Long and David Paterson from the RBGE, Chris Brickell and Alan Leslie from the RHS and Jillian Cowley from the RBG Kew. They left London on 19 September and travelled by air via Hong Kong to Kunming, where they were joined by Professor Li, Mr Lui and Mrs Zhang Changqin from the Kunming Institute. (Guan Kaiyun, who was responsible for organising the expedition, was in Britain at the time.) Mrs Zhang had spent the year of 1989 at Wisley. The whole party then travelled by road, in one day, to Xiaguan, the new town a few miles from Dali (late Tali-fu), which was to be the expedition's main base. In the time of Forrest this journey would have taken thirteen days and travellers would often have had to approach Dali from the direction of Burma.

Plant collecting began immediately the party set off from Kunming across wooded hills, with seeds of *Calocedrus macrolepis* and plants of *Gentianella*, *Saxifraga*, *Swertia*, *Viburnum*, *Daphne* and *Osteomeles* in the bag. At 2400m (7,875ft) forests of *Pinus yunnanense* were full of *Rhododendron* ssp. *delavayi*. After arriving at Xiaguan at 9.30 in the evening the plant presses were immediately called into action and this was to be the regular programme throughout the trip; no matter how late the hour, the day's collections of seeds and plant material had to be dealt with. In all, 769 specimens of vascular plants in the general and special collections were prepared for the herbarium in sets of three or four, one for each participating institution. Problems of overheating the drying frames had to be overcome and there was a serious shortage of flimsies and drying paper. In many locations, especially after days of heavy rain, members of the party had to work into the early hours to cope with the volume of plant material. Occasional rest days, or days when the weather was too bad for collecting, were devoted to seed cleaning, plant packing and pressing. For many species abundant seed was collected, and 8,000 seed packets have been distributed to approximately 80 gardens.

The first area of intensive field work was centred on the town of Zhong-dian (Chungtien). The journey there on 25 September took all day because of bad road conditions. In several places the road had collapsed and was sometimes no more than a single track perched on almost vertical cliffs several hundred metres above a raging river. This was 'new' territory, unvisited by western botanists since Forrest and Rock. The road thither passed through many different habitats and provided not only spectacular views of the Yulong Shan and the River Yangtze, but also spectacular vegetation. A gorge with virgin forest of *Pinus*, *Picea*, *Larix* and *Tsuga*, with

glimpses of *Sorbus*, *Acer*, *Tilia* and *Quercus* showing autumn colour, hanging with lichens and several species of *Clematis*, with an understorey of rhododendrons. A high plateau at 3270m (10,730ft) covering a huge area had dramatically different vegetation – grazed turf with *Gentiana*, *Euphorbia* and *Iris* as well as dwarf lepidote *Rhododendrons – racemosum* and *hippophaeoides*. Comfort stations provided a useful opportunity to collect material.

The next day (26 September) was spent north-east of Zhong-dian in a protected area called Bi Ta Hai, where collecting was restricted. In a wide U-shaped valley the sides were clothed in mixed pine and evergreen oak woodland. The valley floor was wet and grazed: seed was collected by the river bank of an 8-m (26-ft) high *Hippophae salicifolia* var. *tibetica*. Rosaceae species were noted growing in the wet area. Higher up the river an open boggy area was the ideal habitat for *Gentiana sino-ornata*. The flowers were often pale blue outside and white within. It was growing in association with a monocarpic *Saussurea stella*. Up towards a ridge in a relative dry *Pinus yunnanense* forest, *Rhododendron decorum* in abundance gave way to *R. rubiginosum*. The ridge divided two different habitats: east was dry, open woodland with stunted *Rhododendron* understorey; but west was moist, dense *Quercus* woodland where the *rhododendron* understorey was vigorous with a rich herb layer and a thick carpet of bryophytes. Again, *R. rubiginosum* predominated with some *R. uvarifolium*. Herbaceous plants formed colonies in various micro-habitats. Below the forest was marshy meadow fringed with several primulas. On the return walk the native guides were eating the fruits of *Podophyllum hexandrum*.

The day of 27 September was spent in an area to the north-east of Zhong-dian known as 'Four Villages'. Species of *Juncus*, *Carex* and *Kobriesia* were collected in flat wet areas. Steady rain and the rough track made progress slow, but suckering *Sorbus reducta* was photographed and seed and herbarium material collected. Later that day, a limestone and tufa area of hot springs near Nada village was explored. Streams of hot water meandered downhill and the banks were rich in bryophytes and herbaceous plants (*Meconopsis*, *Corallodiscus*, *Ranunculus*, *Corydalis*, *Silene*, *Gentiana*, *Primula*). Over 130 plants were collected that day.

On 28 September the area known as Na Pa Hai was explored in continuous rain. Cut-over secondary woodland on steep slopes was hard to penetrate, because of bamboo coverage and old hidden tree stumps, but seeds of several distinct *Acer* species with autumn colour were collected. The open clearings were an ideal habitat for herbaceous material (*Anapheles*, *Cyananthus*, *Corydalis*, *Adenophora*, *Lilium*, *Artemisia*, *Gentiana crassifolia* and *Iris ruthenica*). The dense primary forest proved even more impene-

trable. In some clearings were several *Betula albo-sinensis* with a variety of stem colours.

On 29 September an area 8km (5 miles) north of Zhong-dian was visited. A wet, close-cropped meadow dissected by fast-flowing rivers was the home of *Gentiana sino-ornata*. In another wet turf meadow 4km (2½ miles) further on the Gentiana exhibited great variation in shades of blue and white. On dryer ground was *G. veitchiorum*, an unvaried deep violet blue. A prostrate *Potentilla fruticosa* with bright yellow flowers and very small leaves grew in the wet meadow. The surrounding hills where soft wood had been harvested were covered in mixed woodland, with *Rosa sericea* ssp. *pteracantha* and a range of *Rhododendron* (*hippophaeoides, rubiginosum* and *racemosum*) growing on the fringes. *Stellera chamaejasme* was a notable denizen. In a limestone area 3km (1¾ miles) further north and higher, screes had a good population of shrubs and herbaceous material. Lower, the woodland understorey included *Rhododendron rubiginosum, hippophaeoides* and *decorum*, with *Clematis* and a black-fruited deciduous *Cotoneaster*.

The day of 30 September was spent seed cleaning to release cloth seedbags, so essential for collecting, and visiting the local temple where an ancient monk gave his blessing in return for alms. The monks use many native plants for a variety of purposes. Back in Zhong-dian a visit to the town revealed a strange mixture of old and new. Sophisticated many-storied buildings rubbed shoulders with wooden huts, while pigs and dogs foraged in the streets between open drains. The friendly curiosity of the locals was probably due to the unfamiliar appearance of westerners.

The party set off early on 1 October in pouring rain, heading south for Little Chungtien, stopping to collect specimens where the terrain looked promising. In a valley heading upstream were several 'new' plants not seen before – *Piptanthus*, several species of *Lonicera* and a *Prunus* with good yellow colour and glossy red ovoid fruits. In spite of rain and thick fog, exploration continued and much material was collected before rejoining the bus. Unfortunately, the logging camp chosen for our base proved too far from good collecting areas and the exceptionally heavy rain had washed away many roads, putting high alpine meadows out of reach. It was decided to move on to Lijiang.

It was still raining next morning (2 October), but specimens were collected on the way back in the Bi Ye Go gorge, north of the bridge over the Yangtze at Lou Swang. The terrain was rich in woody plants, although they were hard to reach. There had been little felling of the mixed forest and there were several trees exceeding 30m (100ft) in height. Several distinct *Acers*, including *A. giraldii*, and two deciduous *Viburnums* were found. Two otherwise identical

Pyracantha shrubs had red or orange berries. In spite of bad weather and a difficult road the Yangtze crossing was reached without mishap.

Whilst driving back in the direction of Dali the weather improved. Zigzagging up the Lijiang road through familiar *Pinus yunnanense* scrub there was evidence of extreme soil erosion. The road wound on through hills towards Lijiang across a flat plain surrounded by the Yulong Shan range. Seed cleaning continued until late that night. The damp atmosphere made drying difficult.

On 3 October the destination was Wen Bi Shan, south-west of Lijiang. The approach was by rough tracks until the bus was halted by soft mud. Progress was then on foot through woodland where small roundwood was being cut for firewood. There were no large trees, but near a small temple was a huge *Osmanthus yunnanense*: in Britain this is a shrub. Higher up, the woodland was denser and predominantly *Pinus armandii* with *Cotoneaster* species, *Vaccinium*, *Rhododendron yunnanense*, *Sarcococca hookeriana*, *Juniperus*, *Ligustrum* and *Berberis* in the understorey. In the ashes of fires *Pinus armandii* cones were roasted for the edible seed. On the return downhill the tracks were so slippery that better progress was made through the undergrowth. The day's collection amounted to 70 plants.

On 4 October the drive across the plain took an hour. Taking to the hills on foot, the way led up a wide flat-bottomed glacial valley surrounded by wooded moraine slopes. Here was the true wilderness: uninhabited and the woodland untouched by man. The valley floor produced many plants – *Sibiraea laevigata*, *Androsace*, *Anemone*, *Roscoea*, *Lilium bakeri* var. *delavayi*, *Veratrum* and *Paeonia delavayi*. At the head of the valley the hills grew ever steeper and higher ending in a stony dried-up river bed 500m (1,640ft) wide and several kilometres long, broken by clumps of woodland. Here were *Rhododendron cuneatum*, *primuliflorum*, *decorum*, *telmateium* and, inevitably, *yunnanense*. Through the steady rain there were glimpses of huge 6000m (19,700ft) peaks and almost vertical walls of rock running with water. The bamboo understorey made the eastern moraine near-impenetrable and torrential rain reduced visibility to almost nil. In spite of this many tree seeds were collected – *Acer tetramerum*, *Sorbus*, *Pinus*, *Viburnum*, *Deutzia*, *Picea likiangensis*. The screes at the end of the valley beneath near vertical walls of the towering mountains were only a couple of hundred metres wide and the walls of ice from the glacier were clearly visible, as were hanging forests of *Abies* high above on cliff ledges. A mass of plants were found on the stable screes and the cliffs. In the face of gathering darkness the expedition made its way down the moraine, packs heavy with the day's collections.

Bai Shui, the Place of White Water, was the destination on 5 October. This was a narrow, steep-sided valley with a fast-flowing river, 30m (100ft) wide. The dry areas of the rocky river bed were colonised by *Lonicera nitida*, *Sibiraea tomentosa*, *Potentilla*, *Daphne aurantiaca*. Huge boulders had been rolled down by floodwater and waterfalls cascaded over near-vertical limestone cliffs. In the surrounding woodland (*Pinus yunnanense* over *Rhododendron yunnanense*) were several members of Orchidaceae. In crevices not far from the camp site, growing in full sun were large clumps of *Primula forrestii*. Accommodation in this forest station was very basic with little food and less electric light: pressing and recording had to be done by candle- and torch-light.

On the following day (6 October) rain was so torrential and the mist so thick that only a couple of hours walk to the Hai Shui (the Place of the Black Water) was possible. Nevertheless, almost 60 collections were made (*Euonymus*, *Clematis*, *Prunus*, *Malus*, *Salvia*, *Arisaema*, *Incarvillea* and *Primula bulleyana*).

On 7 October the perils of a charcoal stove in an unventilated space almost ended in tragedy. Mrs Zhang was overcome by fumes while she slept and had to return to Lijiang for treatment. Bad weather and a bogged-down bus on the way to Hai Shui, as well as having to send gear back to base, wasted much of the day, but some members of the party had more success in the valley above the camp before all returned to Lijiang. Dreadful weather the following day (8 October) was the excuse for a rest day. It was too bad even to explore the old town of Lijiang. But the bonus was an impressive collection of cleaned and packeted seed for despatch to Britain.

Driving north from Lijiang on 9 October towards the Yulong Shan foothills to the 'Camellia Temple', the bus was halted by a hole in the road. The climb up to the temple was through open woodland of *Pinus armandii*. Near the roadside was a large *Acer cappadocicum* var. *sinicum* and many white-stemmed *Rubus biflorus*. In the temple grounds were two large *Magnolia delavayi*, many *Cupressus torulosa* and a beautiful *Stranvaesia davidiana*. Within was an old camellia known locally as the thousand-bloom camellia. Above, the hillside was steep and densely vegetated, including *Rhododendron decorum*, *rubiginosum*, *racemosum*, *hippophaeoides* and *yunnanense*. The destination was a lake – Ha Lan Gon – but progress was slow due to a ridge which proved to be the wrong one, several hundred metres above the lake itself. Superb views of the Yulong peaks were some compensation. The boggy ground at one end of the lake was the home of *Gentiana sino-ornata* showing great variation in colour and the occasional white form. Also *Rhododendron hippophaeoides* with various leaf colours. *Rhododendron trichosto-*

mum was in surrounding pine woods. Round the lake were many more plants. The return was by an easier and more direct path, by-passing the temple. Frequent power cuts hindered the usual evening pressing sessions.

The day of 10 October started fine for the expedition to the high slopes of Ma Huang Ba in the Yulong range. Leaving the bus in Shu Song village and led by local guides, the walk led to Wo Ta Di through open forest and over low ridges, gradually gaining height. The steeply sloping mossy hillside was an ideal habitat for a wide range of plants. At 3700m (12,150ft) *Allium beesianum* (blue and white) grew taller than in gardens. Higher still, on steep grass, a *Gentiana* (perhaps *coelestris*) resembling *sino-ornata* grew: it is hoped to introduce it into cultivation. Large areas of *Rhododendron adenogynum* grew in low spreading mounds up to 45cm (18in). Even higher into rain and low cloud a large quantity of *Meconopsis delavayi* seed was collected, enough to provide for the re-introduction of this plant. At the ridge, 4200m (13,780ft), visibility was almost nil. In spite of plentiful findings and some seed (*Primula pinnatifolia*), it was decided to take the guide's advice and to descend – rapidly on wet turf as it turned out – below the clouds. Back at Shu Song a lamb had been slaughtered in the party's honour and there was feasting on roast and stewed lamb. In spite of the shocking weather, good use had been made of the first chance of reaching a high altitude on Yulong Shan.

On 11 October two teams went in different directions: one back to Ha Lan Gon Lake (Ron McBeath and David Long) where they made some good collections. The other group (with David Paterson) wished to find *Incarvillea lutea*. The bus came to grief in a hole and without their guide the group took time to locate a likely gorge. But in a damp shady spot they found a single plant. Meeting up with the guide, they made their way back to the bus across broken country and through several large streams. *Buddleia fallowiana* grew everywhere.

The expedition on 12 October to the Xie Ren Ji valley above Mu Zhon Go in the Yulong Shan was the first opportunity to explore high limestone screes. It was very successful and some 50 species were collected. Amongst other plants, were a superb silver-leaved perennial *Saussurea* with bright blue sessile flowers, a delightful dwarf deep violet blue *Delphinium* and a blue *Cyananthus* unlike any in cultivation.

All day on 13 October, except for a brief visit to the old town of Lijiang, was spent seed cleaning and packing for the return next day to Dali. The journey on 14 October was dogged by bad luck, mainly the breakdown of the bus. Bus and van were heavily overloaded and, without luggage, the party reached Xiaguan at 10.30 pm.

On 15 October in improved weather the expedition set out in the replacement van for the Longquan peak on the Tsang Shan above Dali, continuing on foot when the road ended at the edge of a cliff. Open conifer forest contained *Gentiana melandrifolia* (light sky blue) and *G. rigescens* (reddish purple). The upper slopes of a deep gorge consisted of *Rhododendron* forest, mainly *cyanocarpum, lacteum, rex* ssp. *fictolacteum, yunnanense* and *decorum*. There were also *Clethra delavayi* and some large-leaved hydrangea. Dwarf *Rhododendron fastigiatum* grew on open rock outcrops. On open windswept moorland facing west, amongst other plants, were dwarf lepidote *Rhododendrons*. Over 100 specimens were collected.

On 16 October the party left for the last area to be explored. The base was to be a medicinal farm in Huadianba. Shi Jo was the limit for four-wheeled vehicles. Thereafter followed a five-hour trek through dense pine forests to the old logging track, much eroded and damaged by landslips. 'With the wind and fine rain . . . the scenery was reminiscent of a Scottish moorland with rolling grassy hills surrounded by higher peaks partly hidden . . . by low cloud and mist.' Accommodation on the farm was basic, but surprisingly comfortable. However, because of a misunderstanding, the equipment on the pack ponies did not arrive till 1am, in pitch darkness, a howling wind and heavy rain.

The country traversed on 17 October provided a wide spectrum of habitats: in hills, where harvested trees had left huge stumps, the increased light level was ideal for an impressive range of shrubby species and herbaceous plants. It was especially favourable for rhododendrons. On the higher slopes, *Rhododendron arboreum* ssp. *delavayi*, in the valley *R. rubiginosum* and *agastum*, with the occasional *R. rex* ssp. *fictolacteum*. In another valley system the list of shrubby material included *Enkianthus, Deutzia, Cotoneaster, Viburnum, Buddleia, Hydrangea, Corylus, Holboellia* and *Schizandra*. Deeper into the hills the views from the path were superb and interesting plants were spotted, such as *Rhododendron sino-grande* (cut down, perhaps for firewood, in the past). Leaf size was about 450-600mm (18-23in) long and 200-250mm (8-9in) wide. In running water on a large rock was *R. edgeworthii*. There were also wet meadows in which *Malus yunnanense* was growing in running water.

The objective on 18 October was the Xi Shan ridge, where it was hoped to find high altitude meadow. But the dense bamboo understorey made this an exhausting day of upward struggle through the pine and rhododendron woodland. The ridge presented two distinct habitats: the damp shady side with *R. cyanocarpum* and many large deciduous trees. The dry side was open and grassy with squat specimens of *R. cyanocarpum*. There was no terrain above 3500m

(11,500ft), but nevertheless several collections were made. Dense bamboo was also in another *R. cyanocarpum* forest with 7-m (23-ft) tall trees. That day the evening meal was boiled frogs and potatoes!

The return to Xiaguan on 19 October via Shi Jo to the waiting transport was by a different route. The valley floor at Little Hudianba was filled with fields of cultivated medicinal plants, such as a fastigiate rhubarb 4m (13ft) tall. Travelling east a ridge 3300m (10,800ft) in height was crossed before dropping down into another plain where *Rhododendron fastigiatum* and *haematodes* grew. Heading down a gorge towards Er Hai Lake *Magnolia wilsonii*, *Daphne auriantiaca* and *Camellia pitardii* with cup-shaped white flowers grew in the woodland. This was the east-facing flank of the Tsang Shan.

Part of the last day in Xiaguan (20 October) was spent searching for George Forrest's *Podocarpus forrestii*. It was found in a school playground marked by a plaque, though the information about Forrest was hardly accurate: he was described as a Frenchman. Only three living specimens are known, two in the school grounds and one in a Red Army camp; according to the Chinese botanists none are recorded in the wild. The headmaster of the school permitted Ron McBeath and Professor Li to collect seed which was obtained for them by a schoolboy climbing up to reach the fruits. Professor Li later obtained cuttings and herbarium material from the tree in the camp, as westerners are forbidden to enter. A single seed has already germinated at the Edinburgh Botanic Garden (and is growing well) and several cuttings were rooted from each of the three trees.

At Kunming on 21 October the successful outcome of the joint expedition was celebrated by plans for future collaboration. In Edinburgh in November 1991 on the occasion of the visit by Professor Sun Handong, the Director, Mr Guan Kaiyun and Mr Yu Shaowen, the RBGE was formally twinned with the Kunming Institute of Botany. Another joint expedition to hitherto unexplored territory in Yunnan was planned for 1992.

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The Mangles Garden today

PAMELA GORDON

In 1976 I wrote about the restoration of the Mangles Garden at Littleworth Cross in *Rhododendrons 1976 with Camellias and Magnolias*, p.13, and I described how the major part of this most historic garden was saved from extinction. For those who did not see this article, the story is as follows: Harry and Clara Mangles were brother and sister of the well-known James H. Mangles who, when he died in 1884, bequeathed to them many of the species and hybrids he had grown in his garden at Valewood, Haslemere and which can still be seen at Littleworth Cross.

After Harry Mangles died in 1915, his sister cared for the garden and showed at the RHS in London. After her death, the estate was bought by R. E. Horsfall (a member of the Rhododendron Association); he continued to add to the collection and grew many fine deciduous azaleas. In the Second World War the house was requisitioned and the garden neglected. In 1947, the house and grounds were divided up and sold in separate lots.

It was then that my mother-in-law, Mrs Douglas Gordon, knowing all about the garden from her parents who had been friends of the Mangles, stepped in and bought 4ha (10 acres) of unwanted woodland in order to save the rhododendrons. For the next ten years, with the help of a Polish evacuee, she cleared away the thickets of brambles, gorse and seedling trees. It must have been exciting for her to find in all this wilderness so many of the plants described by J. G. Millais in his book *Rhododendrons* published in 1917. In 1958 my husband bought half the house and in 1960 another 6ha (15 acres) of woodland, since when our family has continued to restore this most beautiful garden.

The last 16 years have been a struggle to keep open paths and cope with the devastation of the 1987 and 1990 gales. However, nearly all the hybrids mentioned in J. G. Millais' book are still growing – well over one hundred years old and 6m (20ft) tall, but flower well each year. Of the species mentioned by J. G. Millais, only *R. falconeri* (which won the McLaren Cup in 1990) and *R. wightii* are still thriving. But there are two enormous plants of *R. fortunei* – one raised from seed sent back by Sir Joseph Hooker in 1853 and the other from seed sent back by Robert Fortune. There are groves of seedling *R. fortunei*, some better than others; one particularly fine one with a compact, clear pink sweetly smelling truss, I have registered and named 'Sue Gordon'. There is also a very large *R. barba-*

tum with particularly large and fine foliage, but sadly all the other species mentioned by J. G. Millais must have perished with the temperate house, for all that is left of that are the foundations.

Mangles used *R. griffithianum* as a parent for many of his hybrids. Probably the finest of these is *R.* 'Beauty of Littleworth', still highly rated in modern catalogues. Another, only recently identified, is *R.* 'Rose Newcome', rather similar to *R.* 'Beauty of Littleworth' but flowering several weeks earlier and having a more pronounced mauve tinge with no spotting. Its name was discovered when we visited a nearby garden once belonging to the Newcome family, related through their mother, Rose Newcome – hence its name.

From an article in the *Gardeners Chronicle* of 1879, we know that Mangles used pollen from a scarlet *arboreum* at Kew. This may account for a splendid red hybrid which still sported its original label 'The Lady Florence'; it flowers from early March well into April; its habit is similar to *R. arboreum*, as are its leaves and trusses (see fig. 3). Another hybrid similar in habit with its original label 'Mary Power' is worth mentioning; it flowers at the same time as 'The Lady Florence', but is coral pink.

No less interesting is his *R. grande* cross; when shown by my mother-in-law in 1961, it received an Award of Merit and the clonal name 'Fulbrook'. Unfortunately its other parent is not known. The pinky mauve trusses are large and show well above the handsome dark green leaves. Although one of the plants of this hybrid was rather smashed in the gale, it is making a good recovery (see fig. 1).

John Bond has taken scions of all these Mangles hybrids and there are now two large beds of these young plants growing in the Savill Gardens. Thanks to his generosity, there is a young 'Mangles Garden' growing at Littleworth, and Wisley also has the complete set. I am happy to think that, due to Mrs Douglas Gordon's foresight, these historic plants are now perpetuated. It is perhaps interesting to note that at Littleworth they mostly survived the cruel frost of April 1990 without getting bark-split, and (fingers crossed) have not so far fallen victim to the dreaded powdery mildew.

Though everyone knows of the Mangles azaleodendron, 'Glory of Littleworth', very few may have seen his other azaleadendron – the delightful scented pink 'Joy's Delight'. I have been able to propagate one or two plants from the original shrub.

Not only rhododendrons were found in the wilderness in 1947. The deciduous azaleas, perhaps planted by R. E. Horsfall, included a particularly large group of Knaphill azaleas, with 'Nancy Waterer' and a tall little-known 'Donald Waterer'. My mother-in-law introduced many modern rhododendron and azalea hybrids, and many Kurumes; she raised many hundreds of evergreen azaleas from cuttings which are now grouped around the wood. She was particu-

larly attracted to the double Ghent and Rustica flore plena azaleas, and she planted several groups of these delightful hybrids. Alan Hardy has been able to name most of these and I hope he will be able to re-introduce them into other gardens.

Amongst other trees and shrubs planted by Mrs Douglas Gordon were some fine large specimens of *R. yunnanense*, *R. davidsonianum* and the white form of *R. augustinii* var. *chasmanthum*, to name but a few.

Of course I had to try a little crossing of my own! I particularly love the flowers and foliage of *R. cinnabarinum* and I wanted to get a really dark purple flower of similar shape. My first attempt was to cross *R. cinnabarinum* var. *roylei* with *R. trichanthum*. I like to think I have achieved some success; I have registered my dark purple hybrid and called it 'Jenny Gordon'. Fired by this achievement, I tried for especially blue foliage by crossing *R. cinnabarinum* var. *roylei* with *R. oreotrephes*. All the plants have brilliant blue foliage; the flowers are tubular, pinky-mauve with apricot flush inside; it has been registered as 'Katie Gordon'. My third effort was to cross *R. cinnabarinum* var. *roylei* with *R. augustinii* var. *chasmanthum* (white form), resulting in a plant with typical *augustinii* foliage and pale mauve tubular flowers faintly spotted with red inside the corolla which I have registered as 'Alexandra Gordon'.

The garden suffered dreadful damage in the gales of 1987 and 1990; in all 110 trees were uprooted and fell onto the shrubs beneath. Several of the Wilson-collected plants (except for *R. micranthum*) were badly smashed and together with *argyrophyllum*, *hunnewellianum* and *augustinii* have had to be cut hard back; they will hopefully make decent plants again in the future. All the originals of *R. cinnabarinum* were decimated and most had to be grubbed out. This area is now planted with my own hybrids, with an edging of Kurume azaleas.

Two big trees to fall, obliterating a large area, gave the opportunity to re-plant, with something other than rhododendrons: autumn colour and spring-flowering shrubs contrast with the surrounding rhododendrons. I have selected *Pieris*, *Berberis*, *Cotoneaster*, *Fothergilla* and *Kalmia*. To give some height I have chosen *Sorbus*, *Acer capillipes* and *Eucryphia glutinosa*.

I am told that the wood is improved by being thinned. At first I was angry but now I think I agree, while remaining nervous that the frost will lie longer and the sun burn the leaves.

This, then, is the story. Since my husband died, it has fallen to me alone to keep it going. I hope the garden and its founders will remain in the thoughts of all rhododendron lovers. James, Harry and Clara Mangles were among the earliest pioneers in the art of hybridisation and it is my earnest hope that they should not be forgotten.

Ray Wood, Castle Howard, in 1992

JAMES RUSSELL

Ray Wood was mentioned in *A Survey of Woods in the Manor of Henderskelfe for 1563* and was already mature when Castle Howard was built at the beginning of the eighteenth century. In 1946 the late Lord Howard of Henderskelfe replanted it as a mixed woodland after it was clear-felled in the early 1940s. Of course there were rhododendrons at Castle Howard long before this, but the main planting in Ray Wood dates from the early 1970s. When I came to live at Castle Howard after the Sunningdale Nurseries were sold in 1968, I brought with me a representative collection of the original Noble and Standish rhododendrons and azaleas. These included layers from the original seed brought back from Sikkim by Hooker in 1849, as well as many species raised from the Kingdon-Ward, Forrest, Ludlow and Sherriff and Farrer numbered seed collections.

I have described how Ray Wood became their new home in my article 'Origins of the Rhododendron Collection at Castle Howard, North Yorkshire' (*Rhododendrons 1981-82 with Magnolias and Camellias*, p.29). On the cover of this issue was a photograph of a Chinese collector holding a great bunch of *Rhododendron decorum* and *yunnanense* from the Cangshan range of Yunnan. Since that memorable Sino-British expedition in 1981 (see Peter Cox, 'A Rhododendron collecting expedition to Mid-West Yunnan, *ibid.*, p.1) the more than forty-year-old ban on collecting in China has come to an end, and a wonderful flow of seed has started and still continues; much of it is represented in Ray Wood.

Since I last wrote in 1981 there has been a considerable change in the climate at Ray Wood. The winter and early spring of 1985-86 were really vicious; the wind blew for a month in February over deep snow and brought up to 25 degrees of frost with it. In the Wood the high canopy of trees and the bamboo shelter belts worked well, and, although trees like *Nothofagus dombeyi* and *N. cunninghamii* turned brown, they quickly recovered. Rhododendrons from the Cangshan, like *R. edgeworthii* SBEC 0207 and SBEC 0103 and 0334, were untouched, as was *R. arboreum* ssp. *zeylanicum* JR 290.

After this came the warm winters bringing a different sort of trouble. In 1988 we had our first attack of powdery mildew. It was in a

winding walk under a heavy canopy of oak and planted with large groups of *Rhododendron pemakoense, uniflorum, tephropeplum*, the hybrid 'Phalarope' and *Gaultheria cuneata* and backed by taller plants of 'Royal Flush'. Most of the *pemakoense* were of the large-flowered, early-blooming type distributed from Nymans, but there were some of the late form from Sunningdale. This has smaller, more deeply coloured flowers and, flowering some ten days later, it usually escapes the early spring frost; both are from KW 6301. Kingdon-Ward describes this plant as growing on north-facing cliffs in Pemako, and Ronald Kaulback, in his 'Salween', mentions the extremely heavy rainfall in this district. The summer of 1987 was a very wet one. The oaks were heavily infested with sooty mould, a great deal of which dripped down onto the rhododendrons and at first it seemed to be this which was affecting them. The result was curious: the very large suckering bushes of Nymans *pemakoense* were wiped out, but the late form, the hybrid 'Phalarope' and *uniflorum* were hardly affected. At Sunningdale 'Royal Flush' proved hardy but bud tender, so it hardly ever flowered. Here it had made strong bushes some 1.8-2m (6-7ft) high and flowered with great freedom.

Since then there have been more serious attacks and these seem to come in a mild winter particularly with warm, steamy weather just before Christmas. Some favourite groups, the Chamberlain/Rosebery group of hybrids, 'Bodnant Yellow' and the Caerhays yellow hybrids were all badly affected or destroyed and *Rhododendron concatenans* itself has suffered badly. The 'Lady Bessborough' group of *R. discolor* hybrids has also suffered very much, whereas *R. discolor* × *wardii* seems perfectly all right. Powdery mildew seems to be associated with a lack of air circulation. *R. concatenans* is being re-propagated by cuttings and will be planted out in the open and windy arboretum; hopefully, the spores will not build up as they do in deep shelter.

The mild winters here have been followed by exceptionally dry summers, but the small nuggets of sandstone running all through the soil in Ray Wood have proved a wonderful protection against drought as they store moisture remarkably well. In the last three years the wonderful growth of moss, all over the floor of the wood, has been dark brown or almost black by late summer. It is amazing how one heavy shower will bring it back to a verdant green. It is in this moss that so many species regenerate. The triflorums in particular have become something of a pest in some areas, enabling 1,500 or so *Rhododendren yunnanense* and several hundred *R. oreotrephes* to be moved out to the arboretum to provide colour below the trees.

One of the most enterprising, and rather surprising, colonisers

here is *Rhododendron pseudochrysanthum*. Although not strictly true to type these seedlings are very close and provide a fascinating range of foliage colour. A hybrid *R. macabeanum* of a particularly good yellow has also spread itself about. I find this all surprising in a relatively dry district with a rainfall of around 63cm (25in). Each of these mild winters has produced a severe spring frost in April. In 1990-91 it was particularly damaging. The first to occur was about –11°C (12°F) which entirely killed all young growth and blossom and, just as the growth was beginning to sprout for the second time, we had another: and this was really disastrous. Some triflorums out in the open, even as tough as *R. yunnanense*, were killed stone dead by bark-split and, unfortunately, the SBEC *sinograndes* and *edgeworthiis* were also split, although they have recovered well. In many areas the high canopy of oak branches protected the plants from the early morning sun and a notable survivor here was *R.* 'Penjerrick'. This proved quite tender at Sunningdale, but has grown away extremely well here and the plants are now some 3.6-4.6m (12-15ft) high.

The current winter (1991-92) has been very much colder than the three previous ones. We have had up to 20 degrees of frost. Things are not at all forward; on 25 February we have little out except snowdrops and so, hopefully, we may escape the spring frost. We have been fortunate that none of the disastrous gales of recent years came this far north.

Perhaps the real excitement since 1981 lies in the many young seedlings which have been collected from Sichuan and part of Yunnan. There has also been another collection from Bhutan, a small but interesting collection from Guizhou and many species from Japan. It is particularly rewarding to be able to look at seedlings of *R. orbiculare* and *souliei*. From Sichuan have come many little-known and little-grown types; *R. denudatum*, *phaeochrysum* and several forms and collections of *R. bureavii*, *watsonii* and *sikangense*. Two of these collecting trips have been to parts of Sichuan in which neither Forrest or Wilson collected, and this has produced a number of species so far unknown, including a particularly interesting one with a very large leaf in the Rex section. From Yunnan it is particularly pleasing to have two or three collections of *R. hippophaeoides* as well as *R. lacteum* which should become easily available, but will probably prove as difficult as ever to grow well.

The collections from Bhutan are particularly complete and include a good introduction of *R. flinckii* and *bhutanense*, and a massive one of *R. kesangiae*. I have always found *R. eximium* one of the most fascinating of large shrubs and this is well represented too.

Guizhou has a limited but interesting range of rhododendrons. It is rich in small evergreen azaleas; one of these, *R. seniavenii*, is new

to cultivation; it flowered here and almost immediately was killed by frost. But, like an enormous number of this species of this type from southern China, it is more interesting for its foliage than for its flowers.

A wide range of azaleas have come in from Japan. Many of these are extremely local and perhaps have only one or two stations in the whole of Japan. They are not particularly easy to grow here, coming as they do from a climate with very heavy summer rainfall and a very hot summer, and growing under perfectly drained conditions. It is hoped to put out quite large groups here in a position where they should flourish.

There is plenty of room in Ray Wood to put out fairly large groups and so we shall perhaps be able to see the wild rhododendrons as they once grew at Tower Court. Most species show a considerable variation in the wild, both in habit and leaf and, in subsection *neriiflorum* especially, a tremendous variation in flower colour. I am thinking here of *Rhododendron hippophaeoides*, of which we mostly grow the lovely 'Haba Shan' form with very big, rich violet flowers. But batches of seedlings at Sunningdale in the past varied greatly, with the small-flowered, pale lilac forms most common in the wild predominating.

During the great influx of collected seed between the wars there were many large gardens able to grow very large numbers of seedlings and to select the best form with the largest and most brightly coloured flowers. The inevitable neglect caused by the war destroyed or damaged these collections and the only one to survive more or less intact was the late J. B. Stevenson's at Tower Court. Here, in dry, sandy, acid soil at 91m (300ft) above sea level, some 32ha (80 acres) were planted in expeditions, with anything up to 50 plants from a single collection. Your host was apt to ask, 'Shall we go for a walk in Kingdon-Ward 1926 this afternoon?' It would be wonderful to be able to say that again today.

Chromosome numbers in Rhododendrons

H. A. McAllister

In the earlier days of chromosome counting the RHS employed Dr E. K. Janaki Ammal to make a cytological study of *Rhododendron* (E. K. Janaki Ammal, I. C. Enoch and Margery Bridgwater. 'Chromosome numbers in species of *Rhododendron*', *Rhododendron and Camellia Year Book 1950.* No. 5: pp.78-98). The 360 named species were counted with chromosome numbers ranging from 2n=26 (diploid – 12 × 13) to dodecaploid (2n=156 – 12 × 13). '2n' represents the number of chromosomes in the growing plant which is twice the number found in the sexual gametes, the ovules and pollen grains, which have the 'n' number of chromosomes. As *Rhododendron* chromosomes are very small and difficult to count, the amount of work that went into producing that paper must have been enormous, so it is a pity that it has had to be discounted by recent workers (J. Cullen, 1980, *Revision of Rhododendron* I. *Subgenus Rhododendron sections Rhododendron and Pogonanthum*; Notes from the Royal Botanic Garden Edinburgh 39 [1]: pp.1-207; and D. Chamberlain *Revision of Rhododendron* II. *Subgenus Hymenanthes*, *Ibid*, 39 [2]: pp.209-486). Janaki Ammal took no herbarium specimens of the plants counted and so it is now impossible to check the identity of the plants on which the chromosome counts were made. However, as most of the plants came from Tower Court, Wisley and Edinburgh it is likely that many were correctly identified and, even if the chromosome counts for any one individual species cannot be trusted, the general conclusions quoted by H. H. Davidian (The *Rhododendron species* I–*Lepidotes*, 1982, London) can be accepted. These are that polyploidy (i.e. multiplication of chromosome numbers giving 2n=26,52,78,104,156) is very common in the lepidotes (subgenus *Rhododendron*) and very rare in the other groups (the elepidotes). Davidian quotes the occasional chromosome number in his text (without the necessary cautionary note!) but makes very little use of the information.

Although Janaki Ammal *et al.* quote collectors' numbers, even these cannot be relied upon, as in many cases when plants grown under collectors' numbers have been checked against the original collection in the herbarium, the two plants have been found to be totally different. This can happen in any genus, but is particularly

prevalent in *Rhododendron* where so many species may be grown together and the seed is so small and light that seed lots can easily have become contaminated.

How chromosome numbers can be used

Chromosome numbers can be used in various ways in *Rhododendron* taxonomy. First, as above, to note general trends where one group may show extensive polyploidy and another very little, in this case reinforcing the existing ideas about the main division of the genus. Secondly, where more than one number has been recorded for a species it suggests either that some counts were wrong or that the species is likely to consist of more than one breeding unit and may be divisible into two or more recognisable distinct units which could, depending on their distinctness, be described as separate subspecies or species. If two plants normally considered to belong to the same species are found to differ in chromosome numbers, the taxonomist notes the differences between them and then sees if all the plants of that species can be allocated to one or other group. Thirdly, chromosome numbers often give some indication of ease of crossing. Where closely related species have the same chromosome number, there is a good chance (especially in *Rhododendron*) that they will be crossable. Where closely related species have different chromosome numbers, they will not normally cross with any great frequency in the garden though occasional hybrids may be produced naturally and (again, especially in *Rhododendron*) man-made hybrids may be quite easily produced.

These ideas can be exploited in various ways. Although I am sure it is generally recognised that if the only *Rhododendrons* in flower in an area of garden are distantly related (e.g. *R. ponticum*, an elepidote species; *R. luteum*, an azalea; and *R. cinnabarinum*, a lepidote species), seed subsequently collected would come true – a hybrid between any two of these would, of course, be an unusual event. If the species were closely related, but different in chromosome number, e.g. *R. rigidum* (2n=26), *R. davidsonianum* (2n=52) and *R. yunnanense* (2n=78), most of the offspring would again probably be true and hybrids should be recognisable. A hybrid between, e.g. *R. rigidum* (n=13) and *R. yunnanense* (n=39), would be expected to look much more similar to *R. yunnanense* which contributed 39 chromosomes to the hybrid than to *R. rigidum* which contributed 13 chromosomes. The hybrid (2n=52) could be either sterile or fertile. Similarly a hybrid between *R. rigidum* (n=13) and *R. davidsonianum* (n=26) would be expected to resemble *R. davidsonianum* more closely than *R. rigidum*. In this case the hybrid (2n=39) is more likely to be sterile as it has only 3 sets of the basic chromosome complement (n=13). The *R. rigidum* × *R. yunnanense* hybrid,

though no less a hybrid, has an even and larger number of sets (4 × 13=52) and is thus more likely to be fertile.

Chromosome numbers also tell us that *R.* × yunncinn (*R. yunnanense* 2n=78 × *R. cinnabarium* 2n=78) has equal numbers of chromosomes (39) from each parent and therefore would be expected to be halfway between its parents in most characters, although gene dominance could mean that an individual character might be closer to one parent.

Amongst our collection of *Rhododendron* species at Ness Gardens, the dwarf species, especially those of subsection *saluenense*, are drought-tolerant and grow well in infertile, humus-poor soil in a dry sunny situation. This group also does well in Edinburgh. Accordingly, as 2n=26 and 2n=52 had been reported for several species (*R. cosmetum*, *R. riparium*, *R. saluenense*), I obtained cuttings of as many as possible known-origin collections grown under collection numbers from RBG Edinburgh and Castle Howard. Once the plants have grown large enough for herbarium specimens to be taken I shall, of course, have to check them against the original collections of each number in the Edinburgh Herbarium. In his recent revision, Cullen admits that the subsection *saluenense* is a problematic group and he does a lot of 'lumping', recognising only two species (*calostrotum* and *saluenense*) where Hutchinson had recognised eleven. It is clearly a group requiring further taxonomic study and the reports of variation in chromosome numbers within species suggest that chromosome studies might help. These studies are still in a preliminary stage but some useful comments can perhaps be made.

Chromosome doubling

In many plant groups the higher ploidy levels are often produced through the combining of the chromosome sets of species of lower ploidy level, e.g. the diploid *Aesculus hippocastanum* 2n=24 and *A. pavia* 2n=24, hybridised to produce the sterile *A.* × *carnea* 2n=24. Sterility is due to the fact that in the formation of the pollen and egg cells in the hybrid, the 12 chromosomes of *A. hippocastanum* do not pair up regularly with the 12 chromosomes from *A. pavia*. At some stage, either in a branch or in the production of seed, the chromosome number doubled so that the resulting tree contained the full chromosome sets of both *A. hippocastanum* and *A. pavia* and so had 2n=48. As each chromosome now had a similar partner, a degree of fertility was restored and the common pink-flowered horse chestnut now produces some viable chestnuts. *Primula* × *kewensis* 2n=36 was similarly produced from a *P. verticillata* (2n=18) × *P. floribunda* (2n=18) hybrid. Also, the common invasive salt marsh rice grass, *Spartina anglica* (2n=126), was produced when

the native *S. maritima* (2n=56) and the introduced *S. alternifolia* (2n=70) hybridised to produce the sterile *S.* × *townsendii* (2n=63); chromosome number doubling brought about the sudden creation of the new fertile species, *S. anglica*. These are all examples which have occurred accidentally, almost within living memory, in cultivation, but the same process has been deduced to have occurred very frequently in nature, and in some cases backcrossing of polyploids with related diploids and studying chromosome pairing in the hybrids can indicate which diploids were involved in the ancestry of the polyploids. Such work has been very successful in explaining the evolution of many ferns.

A sterile hybrid may be more vigorous than either parent through the interaction of the dissimilar sets of chromosomes and such an individual (e.g. a mule or *Spartina* × *townsendii*) is said to possess hybrid vigour. In plants, chromosome doubling can result in such a vigorous, but sterile, hybrid becoming fertile and worthy of description as a new species. This new polyploid, containing all the genes from both parents, is often initially intermediate in appearance but, through successive seed generations, gene recombination can result in the new polyploid species being so variable that it may be almost impossible to distinguish diploids from tetraploids in appearance and the tetraploids form a single very variable interbreeding unit. Such situations are termed polyploid pillar complexes because distinct diploid 'species' (=breeding units) are the pillars from which a very variable polyploid species has arisen, all individuals of which can be interbred but which may not be separable in appearance from the diploids. For general purpose taxonomy, therefore, it is usual to combine the three distinct breeding units (two diploid and one polyploid) under a single species name, as the three breeding units cannot be reliably distinguished without knowledge of chromosome numbers.

Identifying the Diploids

When a situation like this is anticipated, as in the case of subsection *saluenense*, the first task in a study to understand the variation in the group is to identify the diploids – if they still exist. As polyploids are often more vigorous than their diploid ancestors they may replace the diploids by competition, making the diploids very rare relics or extinct. In *saluenense* things have not yet gone so far and several distinct diploids are recognisable.

(a) *R. calostrotum* ssp. *calostrotum* and probably part of ssp. *riparium*, e.g. Farrer 1045, Kingdon Ward 6984 (*R. calciphyllum*), *R.* 'Gigha'. These are the delicate twigged, blue-white leaved dwarf upright shrubs with magenta flowers which root easily from cuttings.

(b) *R. keleticum* (=*R. calostrotum* ssp. *keleticum* including *R. radicans*) e.g. Forrest 19915, 21757, Rock 58. These are dwarf, often prostrate shrublets with elliptic shiny green, acutely pointed leaves and purplish flowers. They root very easily from cuttings and often layer themselves as the branches creep along the surface of the ground.

(c) *R. chameunum* (*R. saluenense* ssp. *chameunum* including *R. prostratum*) e.g. Forrest 12968, Yu 8645 and perhaps Kingdon Ward 10582. These dwarf upright shrubs have shiny green leaves proportionately much broader and less acute than those of *R. keleticum*, but their main distinguishing character is the presence of numerous, long multicellular hairs on the young shoots. As with the other two diploids, cuttings root easily.

These three diploids appear to be distinct, but before being more definite I must make several more chromosome counts and see if all diploids fall clearly into one of the above three categories.

Related to these diploids are polyploids which often combine characteristics seen in two of the diploids, suggesting that they may be derived from them. *R. riparioides* (*R. calostrotum* ssp. *riparioides* – Forrest 30540) is tetraploid and has bluish leaves of *R. calostrotum* combined with elliptic leaf shape and acutely pointed leaves of *R. keleticum*. *R. riparioides* is a larger shrub than any of the diploids and has larger leaves. It is confined to a very restricted area where both *R. calostrotum* and *R. chameunum* occur and Cullen (*loc. cit.*) suggests it may be a stabilised hybrid between these two. However, although on geographical grounds this would seem more likely, the leaf characteristics and absence of multicellular hairs on *R. riparioides* would seem to make *R. keleticum* a more likely parent than *R. chameunum*. *R. riparioides* cuttings do not root as easily as those of either set of suggested ancestors, so perhaps another undetected or extinct diploid has been involved in its creation. There are several other collections with large bluish leaves which are not acute and have been referred to *R. calostrotum* ssp. *riparium* (Kingdon Ward 6903, 2062). Unfortunately I have not yet been able to root the cuttings I have been given but, from the larger size of all parts of the shrubs, I predict that they may prove to be tetraploid – though they would have a lot of the predicted characteristics of the undetected or extinct diploid mentioned above, such as larger upright habit and difficulty in rooting cuttings. Related to diploid *R. chameunum* is the tetraploid (Yu 7860) referred to *R. saluenense* (*R. saluenense* ssp. *saluenense*). Cullen suggests that *R. saluenense* is intermediate between *R. calostrotum* ssp. *riparium* and *R. chameunum*, so it may well be derived from the diploids *R. calostrotum* and *R. chameunum*.

Summary

Thus, in summary, we seem to have three diploids, *R. calostrotum*, *R. keleticum* and *R. chameunum* with at least two and probably three tetraploids derived from them, *R. riparioides* possibly being *R. calostrotum* × *R. keleticum* followed by chromosome doubling, and *R. saluenense* possibly being a form of *R. calostrotum* × *R. chameunum* followed by chromosome doubling. The larger leaved, larger plants of *R. riparium* have not yet been counted and may either be another diploid or a tetraploid, perhaps derived from chromosome doubling following hybridisation between different forms of *R. calostrotum.*

These conclusions are, of course, tentative and highly speculative. Many more chromosome counts need to be done and the proposed hybrid combinations made artificially to see if they match existing plants for which that origin is proposed.

The situation is further complicated by the detection of a triploid (2n=39) Rock 11238. It has been identified as *R. saluenense* ssp. *saluenense.* Excluding the possibility of the existence of apomixis (asexual production of seed as in dandelions, blackberries and many *Sorbus* species), which has not been reported from any member of the Ericaceae, we are left with the fact that this plant must almost certainly be a hybrid. If the plant has been grown from seed sent from China and subsequently propagated solely by vegetative means, then the hybridisation must have occurred in the wild. It would be interesting to know if any clones of this number, other than the one at Edinburgh, exist in cultivation. All too often only one plant survives from the many seedlings that must have been raised from each batch of seed – presumably only the most vigorous plant of each collection number was propagated vegetatively and this is the only one to survive today. Often, even if only 1 per cent of a seedling crop is hybrid, these hybrid seedlings will be more vigorous than the seedlings true to the species from which the seed was collected, and so it is only the hybrid which will be perpetuated by vegetative propagation. An alternative explanation could be that at some stage since introduction the numbered collections have been propagated by seed and the hybridisation thus occurred in cultivation. In this case the progeny should not have been grown under the collector's number, but it is known that this has often been done in the past. In either case the hybrid plant presently grown under the collector's number would not be expected to match the original herbarium specimen collected at the same time as the seed – a study visit to Edinburgh is required once the plants at Ness are large enough for dried specimens to be made from them.

Conclusion

The above account shows how a taxonomically difficult group can

be tackled using chromosome number information to help sort out the breeding units – often called 'biological species'. This approach can lead to an understanding of how the group has evolved. The knowledge so gained must then be correlated with the geographical distributions and appearance (degree of difference in appearance) of the 'biological species' before taking the subjective decision as to which groups of plants should be recognised as distinct; there is no point in differentiating as a species a group of plants differing from another group only by chromosome number!

Cullen (*loc. cit.* p.114) points out how difficult this group has been to classify, the number of species recognised varying from 11 to 2 (though with separation into 6 units recognised as subspecies). Both Cullen and Davidian have based their classifications solely on the appearance of the plants, making no use of any chromosome number or chemical information. Davidian does quote some of the chromosome numbers reported by Janaki Ammal *et al*, uncritically assuming her identifications to be correct. Cullen gives a very thorough systematic account: having decided on his key characters, he identifies every available herbarium specimen and plots distribution maps for every subspecies. He thus gives a very clear view of his idea of what constitutes each species and subspecies which can be tested by subsequent taxonomic studies. The occurrence of a diploid (KW 10582), a triploid (Rock 11238) and a tetraploid (Yu 7860) within what he identifies as *R. saluenense* ssp. *saluenense* indicates where chromosome numbers may suggest alterations in the classification. Also, the inclusion of *R. calciphyllum* (KW 6984) and *R. nitens* (KW 5482) within *R. calostrotum* ssp. *riparium* seems surprising (both have 2n=26) on grounds of superficial appearance, but *R. nitens* differs from *R. calciphyllum* primarily in its green rather than blue-white leaves and only further study (eg of chromosome pairing in hybrids between them) will clarify their relationship.

In contrast to Cullen, Davidian usually quotes only the type number to exemplify his concept of a species. Also, he often makes categoric assertions that two species are very distinct because they differ in habit and height of growth (*R. radicans* and *R. keleticum*) or flower colour (*R. cinnabarinum* var. *purpurellum* and *R. concatenans*). Within many species differences in very few genes are known to produce very considerable differences in appearance (e.g. white-flowered forms of otherwise red- or blue-flowered species; red-haired human beings; the variation among cultivars of heather, (*Calluna vulgaris*). Single characters, though perhaps very significant in terms of horticultural attractiveness, may be of little use in classification unless they are correlated with other characteristics and geographical or ecological distribution.

The forgotten treasure of Nam La

STEPHEN FOX

Its discovery in the wild

In 1924 Frank Kingdon Ward travelled via Calcutta, Sikkim and Gyantse to that precipitous territory of south-east Tibet, where the giant peaks of Namche Barwa and Gyala Peri, a mere 22.5km (14 miles) apart, are separated by the impenetrable gorge of the Tsangpo, some 4270m (14,000ft) below. This was to be the most exciting and the most productive of Kingdon Ward's many explorations; it is chronicled in his book, *The Riddle of the Tsangpo Gorges* (1926).

On 22 July, Ward's party left the Tsangpo River at the village of Kyikar and began the ascent east towards the perpetually snow-bound pass, the Nam La (5270m/17,360ft) which – for two months in the year – allows determined travellers to skirt the southern slopes of Namche Barwa. 'Next day', Kingdon-Ward writes, '...came a very steep ascent through Rhododendron forest, the large "Lacteum" and the "Grande" below, impenetrable thickets of the small "Lacteum" above. We also found a single clump of a Rhododendron not previously met with; the stiff woolly coat, and the dead corolla still attached to the furry capsules, suggested a close relationship with *R. coccinopeplum*. At last we emerged into the alpine region and camped in a meadow at the foot of the cliffs, and some few hundred feet above a glacier lake, the Nam La Tso.'

This passage calls for some interpretation with the help of:

1. Ward's *Field Notes of Rhododendrons for 1924/5* which were issued in booklet form to seed-subscribers by their organiser, Lionel de Rothschild.

2. The Rhododendron Society Notes for 1925 which carry a report of a meeting held on 6 May, 1925 at which Kingdon-Ward spoke about some of the material he had collected the previous year.

The 'large "Lacteum"' is probably KW 5759, *R. agglutinatum* (alias *R. phaeochrysum* var. *agglutinatum*). The 'Grande' is KW 5660, *R. uvarifolium*, and the 'small "Lacteum"' is KW 5863, *R. doshongense* (alias *aganniphum* var. *aganniphum*). The rhododendron 'not previously met with' is KW 5971 and *R. coccinopeplum* (which it resembles) is an obsolete name for *R. cucullatum* (alias *roxieanum* var. *cucullatum*).

Here is Kingdon Ward's Field Note on KW 5971:

> Rhod. Sp. (§ Roxieanum ?) Shrub or bush of 6-10ft or small tree of 15-20ft. Flowers over, persistent. Leaf buds have broken, covering the plant with plumes of washleather, or silvery felt, contrasting with bronzed felt of older leaves. In middle forest with Picea and Rhododendron.

Unusually, no location, height or date of collection are given. However, reference to the companion volume of Kingdon-Ward's Field Notes of 'Plants, Shrubs and Trees other than Rhododendrons' (a fine basis for the division of the plant kingdom, the reader may agree!) shows that KW 5972 was collected 'Nam La 13,000-14,000ft 23.7.24'. Thus, the missing data would be:

'West of Nam La, 12,000ft, 23.7.24.'

Herbarium material and seed of KW 5971 were brought back to Britain. The herbarium note confirms the location and height, although giving the date as 22.7.24. It mentions (inconsistently also) that the plant in question was a 'large shrub of 8-12ft growing on a huge boulder in the meadow', adding (without explanation): 'Evidently the plant comes from higher altitudes ordinarily.'

Twenty-three years later, in 1947, Frank Ludlow, George Sherriff and Henry Elliot were trekking in the same general area, each taking his own route. The circumstances are described in Dr Harold Fletcher's book, *A Quest of Flowers* (1952). In May, Ludlow's route lay to the west of the Tsangpo River and, for various reasons, he was obliged to halt for five days at a monastery called Tongyuk Dzong, about 6 miles north-west of the formidable peak, Gyala Peri. From the surrounding slopes he collected material from eight rhododendrons and three primulas, one a new species, *Primula candicans*. Among the rhododendrons one, collected below the Sobhe La at 3660m (12,000ft), is described in Fletcher's book as an unfamiliar form of *R. roxieanum* 'with thick narrow leaves covered with a dense dark fawn indumentum below and with compact trusses of pure white flowers except for a few pink spots'. Herbarium material (including flowers) of it was sent back under the collector's number LS & E 13746 but no seed was included.

Meanwhile Elliot had 'had a splendidly profitable time on the passes on the main Himalayan range in the vicinity of Pe' and from a site, reported at the surprisingly low elevation of 3200m (10,500ft), on the Taku Pu La he collected herbarium material of a rhododendron which was sent home, again without seed, under the number LS & E 15006.

What the taxonomists said

The taxonomists of the 1920s, like those who followed, were unsure

how to classify KW 5971. The herbarium sheet in Edinburgh carries the fanciful pencilling 'near *haematodes*', but Tagg's considered view was '*R. roxieanum* aff.' – meaning, I think, that the plant was a form of some member of the Taliense Series, Roxieanum Sub-series. This would include *R. roxieanum* itself and also (as had been suggested by Kingdon-Ward) *R. cucullatum*. The same indecisive and unsatisfactory description persists as late as 1980 in the RHS *Species Handbook*.

The LS & E collections finished up in a similar fashion (see the quotation above from Fletcher) but it is interesting to see that, in a pencilled note on the herbarium sheet, Dr Cowan seems originally to have identified LS & E 13746 as *R. luciferum*, which is close to (or a form of) *R. lanatum*. (This is clearly incorrect, as *R. luciferum* has broader, less pointed and less coriaceous leaves and its flowers are yellow.)

Credit must go to Dr David Chamberlain for discovering the correlation between the three specimens, KW 5971, LS & E 13746 and LS & E 15006. He did so during the 1970s while engaged on his revision of the genus Rhododendron, subgenus Hymenanthes, which necessarily involved the extensive study of herbarium material. A single collected specimen may be insufficient basis for nominating a new species, but here were three identical specimens from different sites. After careful consideration Dr Chamberlain rejected the *roxieanum* theory and concluded that the species had more in common with the Lanata than with the Taliensia. He therefore named it *R. lanatoides* and its description appears on p.370 of *Notes from the Royal Botanic Garden, Edinburgh* Vol. 39 No. 2 ('The Edinburgh Revision'). (The obligatory Latin version is on p.478.) The Ludlow collection, being well furnished with flower material, was chosen as the basis of the description.

The discovery of *R. lanatoides* in cultivation

When the Edinburgh Revision first appeared in 1982, nobody supposed that *R. lanatoides* existed in cultivation. It was therefore a surprise to all concerned when, a year or two later, flowering material from a plant of unknown origin was brought to Edinburgh from a private garden in Argyll and was identified by David Chamberlain as *R. lanatoides*.

Soon after this, material from a plant growing under the number KW 5656 was also sent to Edinburgh, this time from a garden in Yorkshire. KW 5656 is listed (rightly or wrongly) as *R. vellereum* (now *R. principis*) but Kingdon-Ward's Field Note specifically states: 'The rich purple-black ovary is distinctive.' The Yorkshire plant is different: its ovaries are covered with dense light brown indumentum. I well recall my own excitement and curiosity at my first sight

of it, around 1983, and commenting that this was no ordinary *R. principis*! On the submission of flowering material, David Chamberlain was able to confirm that this was another *R. lanatoides*. Records exist to show that this plant originated from the germination of Kingdon Ward's seed in the spring of 1925 at Bulstrode Park, Gerrard's Cross, Bucks, a garden then owned by Sir John Ramsden. (The site is now entirely built over.) As both 5656 and 5971 belonged to Kingdon Ward's collections for 1924, it is reasonable to surmise that the numbers became confused as a result of a labelling error at the time of sowing or of potting up.

More recently, no fewer than eight unlabelled plants of *R. lanatoides* have been found growing in a Cumbrian garden and it is safe to assume that these also originated at Bulstrode.

Some observations on the cultivated plants

R. lanatoides is clearly hardy in the British Isles and most of the plants in cultivation have flowered, although not every year.

The Yorkshire plant is still under 2m (6½ft) high, not much progress in 66 years! However, until recent years it suffered from being planted in an uncongenial situation. Despite recent droughts, it is now thriving in a selected woodland site which is well-drained and clear of frost pockets. The flowers come (although not every year) in April . . . 'a truss of 7-10 widely open flowers, frilled at the edges. Pure white with slight crimson spotting on the upper petal'.

The Cumbrian plants were all planted much too closely and have suffered from over-shading by trees. They are consequently drawn up and unhealthy. However, they are now receiving care and attention and it is hoped that at least a proportion can be nursed back into active growth.

The Argyll plant is 3 to 4m (9¾ to 13ft) tall. It flowers surprisingly early – late February to early March – and the leaves in this mild climate tend to be larger than in the wild or elsewhere (i.e. up to 15cm/6in long). (April or May is likely to be nearer to the flowering time in the wild, bearing in mind that Ludlow's herbarium material, which included flowers, was collected in May. As Kingdon Ward noted, the flowers are persistent – the faded remains of them were still on the plants in the third week of July). The seed capsule is 7 x 11mm, obtusely obovate with persistent stigma.

The leaf is unlike any other, both in shape and in colouring. The apex forms a sharply tapering run-off point which is kinked forwards. The thick spongy indumentum is white in young leaves, but matures through a pale lemon to a distinctive shade of olivaceous yellow which has variously been described as mustard, honey and bronze: it degenerates to a dark tan. The tomentum on the upper surface tends to persist at least two years over a very dark and shiny

green. The leaves are extremely tough and leathery and they normally persist for three to four years, as do the bud-scales. In cultivation, the new growth comes in June with sometimes a second flush in the autumn. The developing leaves are held forwards (axially), only assuming the lateral position when fully expanded. (See fig. 7.)

Propagation

It seems that *R. lanatoides* is not easy to propagate. So far as I know, nobody has yet succeeded in rooting a cutting and, to date, there is only one seedling surviving from sowings of seed from the Argyll plant.

Problems of graft compatibility have been reported. Nevertheless, grafting has been successfully carried out, and nurseryman Alan Clark has been able to distribute plants on a limited basis. It seems safe to say, therefore, that the species is now secure in cultivation. In time, as stocks build up, it should become available for all enthusiasts to grow and enjoy.

Retrospect

This strange story raises a few questions, which I will attempt to answer.

1. Can *R. lanatoides* be a natural hybrid? The answer is, I think, a definite 'no'. The three collections from the wild are consistent with one another and with the plants in cultivation.
2. Does *R. lanatoides* really belong to the Lanata or were the earlier taxonomists right in placing it with the Taliensia? The shaggy, pointed growth-buds and the white flowers with pink markings are reminiscent of the Taliensia, especially *R. adenogynum* and (as Kingdon Ward observed) *R. cucullatum*. But the leaves of *R. lanatoides* differ from these in texture, indumentum and – most noticeably – in the dark green glossy upper side with persistent tomentum. This last is very characteristic of the Lanata, as is the open-campanulate shape of the corolla. Techniques of genetic analysis can now produce a definitive answer to the puzzle of the relationships between species but, as considerable funds will be required for the work to be done, the results are unlikely to be available for some years.
3. Why did KW 5971 fall into oblivion? I think the reason was simply that the taxonomists had failed to identify it correctly as a species in its own right. Gardeners tend to under-value plants which are thought to be merely forms of otherwise familiar species. Labels are more likely to be kept up when the plant is valued. In this case, the collector's number was vital information to be recorded and it is exceptional that it has been possible to re-establish it.
4. Are there more unrecognised plants of *R. lanatoides* to be found?

There is no doubt that seed of KW 5971 would have been distributed to many gardens and it would be surprising if Sir John Ramsden had been the only recipient to germinate it. In fact, the Tower Court plant-list shows that at one time two plants of KW 5971 grew there but I do not know what became of them. I hope that readers of this article will be able to bring to light more survivals.

5. Are there other unrecognised species lurking unlabelled in elderly gardens? It seems highly probable that there are. I hope that readers will feel encouraged to carry out further detective work.

Conclusion

Our rhododendron riches have been handsomely increased by the rediscovery of this species. Few others have so romantic a story, nor – I think – recall so evocatively the wild Himalayan landscape.

I should like to thank David Chamberlain, James Russell and Mervyn Kessell for their kind help to me in assembling this article.

Rhododendron hunting in Vietnam

KEITH RUSHFORTH

'Not many and certainly not hardy, *arboreum* ssp. *delavayi*, *sino-falconeri* and a few odd Maddenia and Irrorata subsection species, nothing much else' was one knowledgeable comment.

Hardly encouraging, but I wonder what Joseph Hooker was told to expect before he went to Sikkim? Sikkim and Nepal each hold about 35 species of rhododendron, and this is about the same as I now believe have been found in Vietnam, although I suspect the number may rise further when the high mountains in the centre and south of the country are adequately investigated. Although in November 1991 when I led a group which travelled the length of the country from Saigon to the far north, it was only in the Sapa region (formerly spelt Chapa) close to the border with Yunnan that we got sufficiently high to find rhododendrons.

Why did I want to go to Vietnam, apart from the fact that it is there (an adequate excuse for those with a wander-lust)? During my student days in 1970 whilst poring over a map of Yunnan as part of my honours project into the West Chinese silver firs (*Abies*) I had had a suspicion that silver firs would be found on some of the isolated peaks over 3000m (9,850ft) high located in the south of Yunnan. But it was not until 1980 in Beijing with a newly acquired copy of the Chinese Pinyin atlas and on the verge of visiting Kunming that I noticed that Vietnam also has a 3000m (9,850ft) high mountain in the far north (there are also two others on the border with Yunnan). It took me until November 1991 to be able to test the hypothesis, and until a return visit in April/May 1992 actually to find *Abies* (a new subspecies of *A. delavayi*).

In November 1991 I spent a week 'trekking' in the Sapa region in the Hoang Lien Song range, which follows the right bank of the Red river northwest from Hanoi. We received permission to visit the Sapa region only a few weeks before the departure date and the trekking facilities were not all they might have been. Sapa revealed seductive glimpses of the richness of her flora, with several rhododendrons found only as single seedlings growing on mossy banks below their likely habitat. Altogether, I estimated around 18 species. One companion on that trip, Bob Cherry, an Australian magnolia and camellia enthusiast, was similarly enthralled and we decided to

return. I organised the itinerary and Bob found five other Aussies and a New Zealander to share costs. Professor Vo Quy of the University of Hanoi's Centre for Natural Resources and Environmental Studies arranged the permits and transport. The November trek had been accompanied by Prof. Nguyen Nghia Thin and in the following April/May Prof. Tran Cong Khanh came with us. Unlike November, when we arrived at Sapa in late April the weather was clear and dry; in fact there was a drought, which fortunately only broke shortly before we left. We concentrated our plant hunting on two mountains, the road between and the Karst limestone range behind Sapa, although this has no rhododendrons.

Fan Si Pan (22.19'N, 103.46'E) at 3143m (10,308ft) is the highest mountain in Vietnam and was our main objective. In November we had been able to spend only one night camping on it at around 2200m (7,200ft) but now we had allowed ourselves up to six days. The absence of camp sites and, in 1992, any water, meant that the highest we could establish base camp was 2100m (6,900ft), with a steep 70 degree climb to the summit. Consequently, we only reached the highest point and did not visit other lower peaks on the ridgeline which, unlike the summit, were not covered in bamboo but were open and rocky. Our route up was from the northeast, with the final ascent being made up the east flank, with hazy views back over Sapa. We did not visit the western side.

The other peak we climbed was Ban Khoang (in November we were told it was called Suoi Do), a more modest 2681m (8,950ft). At 22.24'N, 103.47'E it is only a few miles as the crow flies from Fan Si Pan, but had a very different flora.

The main road to the neighbouring district town of Phong Tho crosses the ridge between Fan Si Pan and Ban Khoang at around 2100m (6,900ft). We spent one profitable day walking all of a mile down from the ridge towards Fan Si Pan but on a northwest aspect. Few rhododendrons were seen, but the Magnoliaceae in particular were beautiful.

We also botanised beside this road and, more profitably, the road to Ban Khoang village, which snakes around the south and east flank of Ban Khoang. On the banks beside these roads seedlings are able to establish at considerably lower altitudes than they grow naturally in undisturbed forest.

Ban Khoang is a Red Dao minority village, with the maidens wearing vast red head-dresses. In Sapa district the majority of the population are not ethnic Vietnamese, but are minority tribes, principally the Hmong people.

The town of Sapa sits on a col in the limestone range which runs between the Hoang Lien Song range (with Fan Si Pan as the highest peak) and the Red river. This limestone range is rather low, only to

2200m (7,200ft) or so. Few rhododendrons were present on these soils, although hornbeams, maples and *Aesculus wangii* were infrequent to common.

Magnoliaceae were a component of the flora on both Ban Khoang and Fan Si Pan. In November Bob had thought there were several species of *Camellia* but in May they proved to be scarcer. Only three or four species were proven, although the number of *Eurya* species caused some confusion. None was in flower here (fig. 6).

A surprise was the way in which each different locality we visited had a quite unique flora. Ban Khoang proved to have a richer flora than Fan Si Pan. The reason appears to be due to local geography, with air from two different valleys meeting on the south face and frequently forming swirling mist, thus giving a moister climate. However, on both mountains we visited only one side.

In May we found 28 or so species of *Rhododendron*, although as not all were in flower this number must remain tentative. I have listed them by their approximate subsections. Exactly how many are new species or how many merely 'range extensions' is currently uncertain. However, it would not surprise me if between ten and fifteen prove to be new. The altitudes given refer to natural forest, not to the lower altitude roadside banks. I have numbered the taxa from 1-28.

Subsection Grandia

1. In November I found a plant which appeared to be *R. protistum* var. *giganteum*, although seedlings have leaves which match var. *protistum*. It forms a tree to 10-12m (32-40ft), common on the south facing flank of Ban Khoang from around 2200 to 2500m (7,200 to 8,200ft) (the highest I've been on Ban Khoang). In May I was too late to catch it in flower, so it is not possible to confirm whether it is a range extension of *R. protistum*, or, less likely, new. Seed has been distributed under KR 1986.

Subsection Falconera

2. Only *R. sinofalconeri* is meant to be present. My predilection for tree rhododendrons made this a prime objective of my trips. *R. sinofalconeri* is found on the east flank of Fan Si Pan from around 2750m (9,000ft) up to within 5m (16ft) of the summit. At the bottom it forms a tree 15m (50ft) tall, reducing to a shrub 3m (10ft) on the windswept summit. It has large rich yellow flowers in clusters of 15-20 on a 6cm rachis. The leaves are relatively small, around 15-20cm (6-8in) long, but broad, with a length to breadth ratio of 1.4-1.8. It is very similar to *falconeri*, more attractive in the flowers but without its boldness of large foliage and its flaking bark.

3. In November I found a plant on Ban Khoang which Dr David Chamberlain provisionally identified as *R. sinofalconeri* on account

of the Falconera cup-shaped hairs. I found this plant again in May but only on Ban Khoang; on Fan Si Pan I saw no indication of it. It forms a tree to 15m (50ft), but is uncommon. However, I think part of its rarity may be that it grows within the range of *protistum* var. *giganteum* and is not immediately apparent as a different species. I have found it only at around 2350-2380m (7,710-7,808ft). It has obovate elliptic leaves, acute at the apex, cuneate, with a pale brown indumentum. The leaves are around 16-18cm (6-7in) long by 7-8cm (2¾-3in) broad, i.e. 2-2.5 times as long as broad. In May it had finished flowering and was in well-developed immature fruit. It is clearly not the same as *sinofalconeri* but appears to be an undescribed Falconera taxon, with foliage that does not match the descriptions of any other species collected under KR 1982.

Subsection Arborea

4. aff. *delavayi* *R.* (*arboreum* ssp. *delavayi* var.) aff. *peramoenum* is cited by Sleumer (Blume, supplement IV, 2.X.1958, pp.39-59) as being present in the Sapa region. However, the plant differs in the much larger flower buds than I have seen elsewhere in *arboreum*, but matching the ones of *niveum* and *lanigerum*, and in the sparse but somewhat spongy indumentum. Flowering was finished by May, so no help there. The new foliage is exquisite, frequently rich red brown and better than *eximium* above, although fleeting and soon revealing the polished bullate upper surface. It occurs in both narrow and broad-leaved forms, which I do not think hold any taxonomic significance (Sleumer cites a broader leaved plant from central Vietnam as straight *delavayi*). It is found on both Ban Khoang and Fan Si Pan, from around 2000-2500m (6,560-8,200ft). Seed distributed under KR 1990 from Ban Khoang. (See fig. 5.)

Subsection Fortunea

5. aff. *serotinum* On the bank beside the road to Ban Khoang and much less frequently on the mountain were seedlings of a species with distinctly cordate and frequently wrinkled leaves and quite glandular new growths. It is obviously related to *decorum* but I have recorded it as aff. *serotinum* on the basis of the cordate leaves. I have not seen it growing as a mature plant, but Bob reported seeing some leaning out from a ridge at around 2350m (7,710ft) but neither in flower nor reachable. The new growths were well developed, so it probably flowers in late March/early April, rather than the late summer flowering of *serotinum* (in cultivation). It was not seen on Fan Si Pan.

Subsection Irrorata

6.-8. The only plant in this group seen in flower in May keys out to

tanastylum in David Chamberlain's revision and is probably the same as the plant named *petelotii*. Other plants seen in November had larger leaves with a thick detersile indumentum on the lower surface, but on checking on one of these in May all trace of indumentum had been lost. David Chamberlain has suggested aff. *kyawii* for this. A third taxon which is probably in the area is *irroratum* ssp. *kontumense*, and *spanotrichum* could also be present. Without flowers, my best guess is three taxa, but I would not be surprised if the tally ranged from two to a maximum of five. Plants in this alliance were found on both Ban Khoang and Fan Si Pan and from around 2000-2750m (6,560-9,150ft).

Subsection Maddenia

9. *maddenii* ssp. *crassum* (*R. chapaense*) This form of *maddenii* only appears to differ from the Bhutan form in having 11 or 12, rarely 13, cells in the ovary (cf. ten). However, I have not seen it in flower. It is found on both mountains from around 2300-2500m (7,550-8,200ft). Seed distribution under KR 1894.

10-11. *nuttallii* and aff. *excellens* In November I found what I thought would prove to be *excellens* on both mountains, particularly as the foliage matches plants cultivated as *excellens* from seed sent out from Kunming. Dr James Cullen, however, determined the herbarium specimen as *nuttallii*. In May I concluded that the plants could be divided into two groups.

Plants which fit *nuttallii* on foliage, with large leaves up to 30cm (12in) by 20cm (8in) on one young plant, had not opened their flowers. They have a beautiful peeling mahogany bark. The new growths are distinctly purplish on the underside when very young, a feature shared with my plant of Chinese-origin *excellens*. Seed of *nuttallii* was introduced under KR 1880.

The second entity was in beautiful flower, white, slightly fragrant and up to 13cm (5in) in diameter at the mouth and in trusses of 3-6. This has leaves which are similar to *nuttallii* in venation but much narrower, no more than 5.5cm (2¼in) wide and up to 18cm (7in) long, although occasionally wider in young sterile plants. The leaves are also distinctly glaucous when compared to *nuttallii*. It is not *excellens*, as it has only 8-10 stamens (c.f. [12-] 15) which are about as long as the corolla tube (c.f. shorter), but as it is similar in the foliage I have christened it aff. *excellens*. In Cullen's revision it half keys out to *nuttallii*, *dalhousiae* and *liliiflorum* depending upon which anomalous characters are ignored.

12. *lyi* This is fairly common at around 2000-2300m (6,560-7,550ft). It has white slightly fragrant flowers with a yellow blotch and rather ciliate leaves. The base of young plants is often swollen and tuber-like, in the manner of an *Agapetes* or other epiphytes, a feature

which Cullen records only for *R. cuffeanum*. Seed was introduced under KR 1877.

13. aff. *fleuryi* I first found this as a number of shrubs beside a stream draining down from Fan Si Pan. The altitude was around 2200-2300m (7,200-7,550ft). I think I later noticed a single plant at about the same altitude on Ban Khoang but this was not in flower. In Cullen's work it keys out to *fleuryi*, sharing the glabrous calyx, but clearly does not fit the description in a number of other characters. The funnel campanulate flowers are pink, opening pale pink with a blotch which is red in the centre and yellow in the periphery, with ten stamens. The leaves are very glaucous beneath.

Subsection Triflora

14. sp. Triflora A small shrub with narrow elliptic leaves which are glaucous beneath, with both terminal and axillary flowers and a well-developed calyx was found on the recently cut banks beside the road to Ban Khoang at around 1800m (5,900ft). Apart from the several plants here, one seedling collected from near the summit of Fan Si Pan may also belong here. It has a peeling mahogany bark.

15. aff. *lyi*/Triflora Another species which I was too late to see in flower. The foliage bears some relationship to *lyi* but the style is impressed, not tapering smoothly into the ovary. The leaves are densely scaly beneath, making them rather yellow brown. I suspect, however, that it is more likely to be a Triflora taxon rather than a Maddenia taxon (or possibly subsection Heliolepida). It makes a shrub to a metre or so and was found on both Fan Si Pan and Ban Khoang at 2200-2350m (7,200-7,700ft).

Subsection Boothia

16. aff. *boothia* When I first found this I thought I had a Neriflora species from the foliage but turning the leaf over revealed scales. The golden yellow flowers, ciliate leaves and winged seeds suggest it belongs here, rather than in Maddenia or Pseudovireya. I found it on the east flank of Fan Si Pan from 2230-3000m (7,316-9,850ft) always on scattered rocky outcrops. It forms a dwarf spreading shrub to 50cm (20in).

Subsection Edgeworthia

17. *edgeworthii* Only two small seedlings growing on a moss bank in shade at around 2700m (8,860ft) were found on Fan Si Pan. It clearly belongs in this alliance. As the seedling I have is only 5cm (2in) tall, the leaves are not developed; but the leaves are not quite comparable to either *bhutanense* or Chinese seedlings of *edgeworthii* of similar size. Perhaps it is *seingkhuense* or a new species.

Subsection Tephropepla

18. *tephropeplum* What I think is *tephropeplum* (or *xanthostephanum*) occurs on both Ban Khoang and Fan Si Pan from around 2300-3000m (7,550-9,850ft). It has a rich peeling mahogany bark and small pink flowers. On Ban Khoang in dense growth on a moss-covered outcrop it had made 2.5m (8¼ft) in the struggle to reach the light but was happier in the open on Fan Si Pan.

Section Tsutsusi

19. aff. *microphyton* This delightful little dwarf is related to *microphyton* but has smaller leaves and a dense habit. It occurs on a ridge of Fan Si Pan which was burnt off about ten years ago and on the Phong Tho roadside banks.

20. *saxicolum* This azalea makes a shrub or small tree to 5-6m, with largish leaves and pink purple flowers. It occurs on both Ban Khoang and Fan Si Pan from 1800-2300m (5,900-7,550ft). Seed distributed under KR 1864.

21. 'Obtusum' On Fan Si Pan at around 2300m (7,550ft) I found a single small seedling with three pale pink flowers growing in river gravel deposited by a side stream. Another member of the party thought they spotted two or three other small plants when we climbed Fan Si Pan the next day, but no mature bushes.

Section Azaleastrum

22. *ovatum* Initially I put this down as close to *bachii* using *Rhododendrons of China*, but David Chamberlain says it is *ovatum*. It has small evergreen elliptic leaves and purple pink to moderate pink very open flowers. It occurs on Fan Si Pan at around 2300-2500m (7,550-8,200ft).

Subsection Pseudovireya

23. aff. *emarginatum* *R. emarginatum* and *R. sororium* are the two recorded taxa in this alliance with obovate emarginate leaves. The *emarginatum* we found in flower in November had a well-developed calyx and other characters and does not match the type of *emarginatum*. The flowers are a golden yellow, but rather wee. The name *R. poilanei* may belong to it. Seed was distributed under KR 1876.

24. *sororium* This is a large-leafed and smoother-stemmed version of the above, with similar flowers.

25. *emarginatum* aff. Going the other way, with smaller more elliptic leaves, is this small plant, but I haven't seen it in flower.

When these three occur side by side they are strikingly different. I found them on both Ban Khoang and Fan Si Pan as terrestrial shrubs and epiphytes, to 50cm (20in).

26. aff. *sororium* This has bluish green leaves which are pointed at the apex and much larger than *sororium* to 7cm (2¾in). I only found it growing on the roadside banks by the road to Ban Khoang at around 1800m (5,900ft). The flowers were not open. It probably is not closely related to *sororium*.

Section Choniastrum?

27. *?moulmainense* A shrub or small tree which belongs to this affinity was quite frequent in several sites, not just restricted to the two mountains. It had finished flowering and grew from 1800-2300m (5,900-7,550ft).

28. Indet Growing on a rocky outcrop at 2830m (9,285ft) in the sea of bamboo which clothes the summit of Fan Si Pan was this sterile shrub to 30cm (12in). It is a lepidote species, but as to its affinities I have no idea. The midrib is ridged above, not grooved.

Seedlings of all the above taxa were collected under licence PHF1342B/29/42 so hopefully they may become established in cultivation.

List of species and collection numbers (1991 and 1992)

R. ?moulmainense	KR 2067	KR 2121	KR 2220
	KR 2267	KR 2315	
R. ovatum	KR 2248	KR 2301	
R. aff. *delavayi*	KR 2139	KR 2156	KR 2185
	KR 2198	KR 2211	KR 1990
	KR 2264	KR 2271	KR 2386
R. aff. *emarginatum*	KR 2231	KR 2249	KR 2313
	KR 2320	KR 1886	KR 1929
R. aff. *excellens*	KR 2157	KR 2203a	KR 2241
	KR 2261	KR 2270	KR 2385
R. aff. *fleuryi*	KR 2247	KR 2260	
R. aff. *kyawii*	KR 2361		
R. aff. *lyi*/Triflora	KR 2251	KR 2278	KR 2314
R. aff. *microphyton*	KR 2242	KR 2318	KR 1881
	KR 1885	KR 1956	
	KR 2005		
R. aff. *serotinum*	KR 2138	KR 2186	KR 2197
	KR 2228		
R. aff. *sororium*	KR 2357		
R. edgeworthii	KR 2330		
R. emarginatum aff.	KR 2233	KR 2354	
R. irroratum ssp. *kontumense*	KR 2303		
R. lyi	KR 2116	KR 2137	KR 2180

(*R. lyi* cont.)

	KR 2215	KR 2225	KR 2235
	KR 2240	KR 2334	KR 2359
	KR 1929	KR 1877	
R. maddenii ssp. *crassum*	KR 2165	KR 2203	KR 2229
	KR 2246	KR 2358	KR 1894
R. nuttallii	KR 2108	KR 2168	KR 2385a
	KR 1980	KR 1995	
R. nuttallii/excellens	KR 2214		
R. protistum var. *giganteum*	KR 2140	KR 2178	KR 2199
	KR 2205	KR 2219	KR 2002
	KR 1986	KR 2355	KR 2387
R. saxicolum	KR 2153	KR 2163	KR 2258
	KR 2389		
R. sinofalconeri	KR 2295		
R. sororium	KR 2232	KR 2356	
R. sp.	KR 2189	KR 2190	KR 2202
	KR 2321		
R. sp. Azalea	KR 2266		
R. sp. Boothia	KR 2279	KR 2287	KR 2319
R. sp. Falconera	KR 2179	KR 1998	KR 1982
R. sp. Indet	KR 2286		
R. sp. Irrorata	KR 2167	KR 2182	KR 2187
	KR 2201	KR 2204	
	KR 2234	KR 2329	
R. sp. Triflora	KR 2236	KR 2360	
R. tanastylum	KR 2284		
R. tephropeplum	KR 2259	KR 2296	KR 2384

Rhododendrons in the Pacific Northwest

David Millais

During 1989 I was fortunate to be able to work in Washington State in the Pacific Northwest of the USA, as part of a horticultural exchange scheme. My employment was mainly at Briggs Nurseries at Olympia, who have become world famous for their tissue culture and micropropagation, and are one of the leading wholesale rhododendron producers on the West Coast, employing over 200 staff during the summer. I also worked at the Rhododendron Species Foundation, near Seattle, which holds one of the finest collections of species in the world.

The climate of the Pacific Northwest is similar to that of the milder parts of the British Isles, but seems less prone to the damaging late frosts we can experience here. The West Coast contains two native species of rhododendron. *R. macrophyllum*, with rose-pink flowers and purple spotting, is found particularly in the Cascade Mountains and the temperate rain forests of the Olympic Peninsula, and is the State flower of Washington. The fragrant pink and white flowers of *Azalea occidentale* can be found all the way down to Southern California. Some of the best selections with red and copper autumn colours have been made by Britt Smith and Frank Mossman from the stand at Stagecoach Hill just south of the awe-inspiring Redwood National Park.

Hybridising seems to be a universal pastime and is practised by many enthusiasts. They are helped by active local groups of the American Rhododendron Society (ARS), some of which select an annual hybridising project, in which members choose what they would like to hybridise, and participate in raising the seedlings. The benefits include friendship, knowledge and interest within the group, and, of course, in holding members together until the flowers are produced. It is an idea which should be encouraged here. All this active hybridising has produced some superb new varieties which are now becoming available in Britain. The disadvantage is that far too many have been named, and some very careful selection and evaluation is needed before they are introduced into this country.

A few West Coast hybridisers deserve special mention for their consistently good hybrids. Halfdan Lem was eminent in the Seattle

area for many years. His most famous hybrid, 'Lem's Cameo' has been described as 'a plant rhodoholics were ready to kill for when first introduced'! It is indeed superb, with large ball-shaped trusses fading through a mixture of pink, apricot and cream. Unfortunately it is difficult to propagate, but has been used extensively for further breeding. He also produced his 'Walloper' hybrids with their large trusses supported by strong thick stems and branches. 'Lem's Monarch' is excellent with huge trusses of pink-edged white flowers and heavy dark green foliage.

Warren Berg is highly respected for the dwarf hybrids he has produced, using *R. keiskei* 'Yaku Fairy' as a parent. These include the pink and white 'Ginny Gee', pink 'Wee Bee' and yellow 'Patty Bee', which have set new standards in dwarf rhododendrons. They all form a tight mound of dense foliage and flower profusely, and have all received awards.

Whitney Gardens and Nurseries on the Olympic Peninsula, now owned by the Sather family, have also produced many varieties over the years, including the large pink 'Anna Rose Whitney', and more recently some good yellows including 'George's Delight', 'Simmon's Classic' and 'Top Banana' which is considered one of the finest new yellows available. Unfortunately one of Bill Whitney's best plants, 'Virginia Richards', seems prone to powdery mildew and we have now stopped growing it.

Deciduous azaleas are popular and well suited to the large woodland gardens found throughout the Northwest. Many of the Exbury and Knaphill hybrids are grown, but recently a choice new range has come from Ivan and Robertha Arneson, who live near Portland, Oregon, and who have spent a lifetime searching for deep reds, doubles, bi-colours and late-blooming azaleas. Their collection was looking outstanding when I visited, with some plants showing huge 18cm (7in) trusses. Only a few are named, so far, but among the best are 'Frilly Lemon' and 'Raspberry Delight'.

Other notable rhododendron breeders on the West Coast include Brockenbrough, Larson, Davis, Elliot, Greer and the Thompson family, who have all produced excellent plants, selecting for bright new colours, especially bicolours, yellows and pastels. However, many of these would prove too tender for the East Coast, where different hybridisers are breeding to withstand the extremes of temperature, using plants such as *R. catawbiense* as parents. Notable are the Dexter hybrids from Massachusetts, and David Leach's series of ironclad cold-hardy plants. Grown in the Pacific Northwest they can suffer from poor leaf colour and leaf scorch, presumably due to climatic differences and different stages of wood ripening. This illustrates the importance of selecting varieties for the local climate.

The Seattle area is fortunate in having the Meerkirk Trial Garden

Fig. 1 Rhododendron 'Fulbrook', a Mangles hybrid at Hethersett, Surrey (above). (See page 17)

Fig. 2 Camellia japonica 'Augusto L'G. Pinto' at La Saleta, Galicia (left). (See page 59)

Fig. 3 Rhododendron 'The Lady Florence', a Mangles hybrid at Hethersett, Surrey (below left). (See page 17)

Fig. 4 Rhododendron kesangiae × falconeri on the Pele La, Bhutan (below). (See page 52)

Fig. 5 *Rhododendron arboreum ssp. delavayi (KR 1990) on Ban Khoang in Vietnam (above).* *(See page 41)*

Fig. 6 *An unnamed Magnoliaceae (KR 2280) in the Sapa region of Vietnam (below left).* *(See page 39)*

Fig. 7 *Rhododendron lanatoides in an Argyll garden (below right).* *(See page 36)*

Fig. 8 The Yangtze River in NW Yunnan (above). (See page 7 et seq.)

Fig. 9 Camellia reticulata and magnolias growing in a temple garden near Kunming (below).

Fig. 10 In the Cangshan range above Dali in Yunnan (opposite). (See page 7 et seq.)

Fig. 11 Magnolia 'Burgundy' in Sir Peter Smithers' garden in the Ticino (above). (See page 56)

Fig. 12 Rhododendron giraldii, a prizewinner at Vincent Square on 10 March, 1992 (below left). (See page 75 et seq.)

Fig. 13 Rhododendron burmanicum, a prizewinner at Vincent Square on 10 March, 1992 (below right). (See page 75 et seq.)

Fig. 14 *The pond at Arduaine, Argyll (above). (See page 71)*

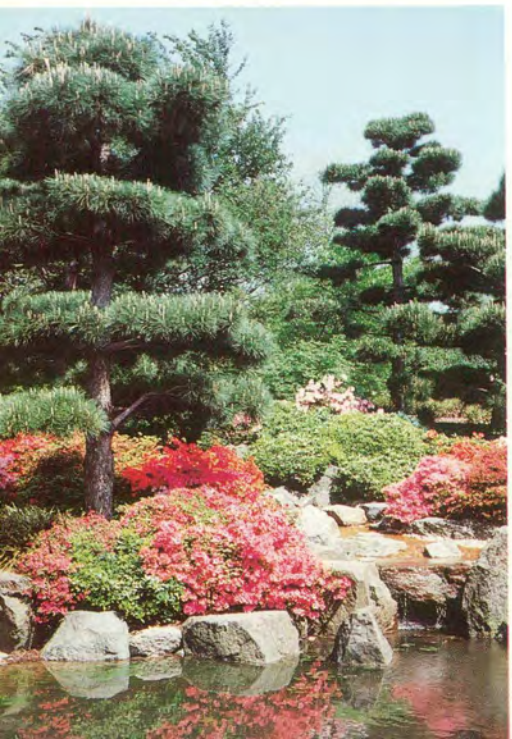
Fig. 15 *Rhododendron baileyi at Glenarn, Dunbarton (right). (See page 69)*

Fig. 16 *New growth on Rhododendron diaprepes photographed by J. Wilks-Jones, joint winner of the photographic competition (opposite). (See page 23)*

Fig. 17 Camellia 'Jury's Yellow' photographed by C. F. Taylor, joint winner of the photographic competition (above). (See page 23)

Fig. 18 The Japanese garden at the Botanic Garden in Hamburg (below left). (See page 64)

Fig. 19 A Rhododendron field in the Böhlje Nursery Garden, Westestede, NW Germany (below right). (See page 64)



where many of the best new hybrids are planted in a garden for viewing by the public, and assessments for flower and plant quality are made over a five-year period. It is situated on Whidbey Island, in the bay north of Seattle, and is owned and run by the Seattle Chapter of the ARS, who make the trial results available to its members.

Vireya rhododendrons are popular on the West Coast. With their vivid colours, tubular bell-shaped flowers, fragrance and length of flowering season, it is easy to see why. A cross between *R. zoelleri* and *R. lochae* exhibited by Bovees Nursery at the Portland Chapter of the ARS Show in 1988, was the first Vireya to win the trophy for 'Best Hybrid'. They need winter protection in Washington and Oregon, but can normally be grown quite successfully outdoors in California though many were killed by the abnormally cold winter of 1990-91.

Species have a dedicated band of followers and volunteers at the Rhododendron Species Foundation (RSF). The RSF garden is still young, having been established at Tacoma, near Seattle, only in 1974, on land made available by Weyerhauser, the giant forestry and timber company. An excellent collection has been built up on the 9.5-ha (24-acre) site, set in woodland, next to the I-5 freeway, the main north-south road between California and Vancouver. However, it took a long time for the plants to establish properly as the site was covered to a great depth with sawdust, which locked up all the available nitrogen. Now that the sawdust has composted down, the plants are establishing well, but drainage can still be a problem.

The garden has obtained plants from many of the great collections around the world and now contains one of the largest collections of species, with over 2,200 different forms of 500 species represented; a recent computer mapping project has recorded the exact location of over 8,500 rhododendrons in the garden to aid management. Recent plantings include companion plants which makes the garden more colourful for summer visitors. Rhododendron seed and young plants propagated from the garden collection are made available to the growing membership.

Overall, the region proves an ideal climate and setting for rhododendrons, and the enthusiasm for growing them has to be experienced to be believed. There are many superb new varieties available which deserve a place in British gardens. It is now a matter of selecting those which are suitable for the strange habits of our climate.

Vireyas at Vincent Square

M. Warwick, J. Fernie and P. Smith

The Royal Botanic Garden Edinburgh has a long tradition of collection and study of rhododendrons from China and the Himalayas, but it also has arguably the world's largest cultivated collection of tropical or Vireya rhododendrons. Expeditions to Malaysia, Indonesia and New Guinea over many years have provided the garden with about 100 species growing successfully from about 300 described species. Many of them occur in the montane forests of S. E. Asia and they have adapted well to the long daylight hours and cool summers of Edinburgh. The great diversity of corolla shape, colour and size, their perfume, the variation in their leaves and habit make this one of the most attractive sections of rhododendron.

Visitors to the Royal Botanic Garden in Edinburgh can see a permanent display of Vireya rhododendrons, but in order to bring them to the attention of a wider audience it was decided to exhibit them at the Royal Horticultural Society Spring Show in London in 1992.

A plan was designed with a walkway through the centre; on either side the potted plants were banked up into the corners with the addition of large ericaceous shrubs which grow alongside Vireyas in the wild. Upturned pots were used to build up height. The pots were covered with plastic netting then a layer of bark chips or moss on the surface. This naturalistic setting seemed the most appropriate way to display them to their best advantage. A smaller version of the exhibit had been first displayed in two horticultural shows in Scotland which gave a valuable opportunity to try out ideas and develop the design.

Many Vireyas grow epiphytically in the wild and a small artificial tree already planted with rhododendrons was so successful in the first show that a much larger one was constructed. It was made in three detachable parts for easy transportation with an iron frame covered in cork bark to which were attached the Vireyas, small ferns and moss with one year to mature before the RHS Show. It was particularly effective in displaying the small species, such as *R. anagalliflorum*, which may have been otherwise unnoticed on the ground. Various groupings of different species were tried out along with lighting effects. The water feature developed into a much larger pool with a running stream which not only added an attractive sound effect, but helped to maintain humidity in the heat and lights of the exhibition hall.

Records of the flowering times of all the species had been kept

for the previous two years to try to predict which ones would be available for the show. Various experiments had been tried to retard or advance the flowering period, but the results had usually been flower loss and we could only hope that there was enough in bloom to make a good display. In order to make up for some of the more spectacular species not being represented in the show, an exhibit of large colour photographs was prepared along with examples of the scientific research being carried out on the Vireya collection.

From its conception a team of four horticultural staff worked on the exhibit, gradually building up the design and its construction. This team spirit was essential in the light of what was to come. In the final mock-up at the RBG everything was colour coded, listed and numbered; it took six days to build and two days to dismantle, whereas in the RHS Show there would be two and a half days to set it up and four hours to take it down.

Transporting tender plants in March from Edinburgh to London was a worry. Everything in flower or bud had to be taken to offset the likelihood of damage to some plants during the long journey. They were placed in trays, packed with newspaper and encircled with corrugated cardboard. Kew Gardens kindly offered them space in a frost-free shed overnight before the show. The journey to London was eventful with the windscreen wipers of one of the lorries succumbing to the wintry conditions until it seemed at one point that all the plants were going to be in London and all the display materials stranded up north on the motorway.

The public response to the exhibit was tremendous. It was rewarding to see the admiration and delight with which they viewed these exotic plants. We were delighted to be awarded the Gold Medal and to have the opportunity to make Vireya rhododendrons more widely known.

A natural hybrid rhododendron observed

A. D. SCHILLING

During my second visit to the mountains of central Bhutan in the spring of 1990 I noticed an interesting hybrid between the recently described *Rhododendron kesangiae* (Grandia section) and *R. falconeri* (Falconera section).

The young tree approximately 4m (13ft) in height was growing in mixed cool temperate forest on the western flanks of the Pele La at an altitude of approximately 3000m (9,850ft). Some of the associated species noted in the immediate vicinity included, *Tsuga dumosa*, *Abies densa*, *Ilex dypyrena*, *Acer stachyophyllum*, *Acer vestita*, *Sorbus microphylla*, *Viburnum nervosum*, *Betula utilis*, *Quercus semecarpifolia*, *Skimmia laureola* var. *multinervia*, *Daphne bholua*, *Osmanthus suavis*, *Maddenia himalaica* (syn. *M. hypoleuca*), *Rhododendron barbatum*, *Rhododendron arboreum* and 24m (80ft) tall specimens of *Magnolia campbellii* making a rich, but very typical, forest composition at this altitude in the mostly unspoilt interior of this fascinating Himalayan Buddhist kingdom. Although first collected by W. Griffith in 1838, and in spite of being introduced to British cultivation in 1968 by S. Bowes Lyon, it is intriguing to note that *R. kesangiae* was not recognised as a distinct species until as recently as 1987 and this actual name was not published until it appeared in a paper in *Notes from the Royal Botanic Gardens Edinburgh* vol. 45, no. 2 in 1988 (see also *Rhododendron* 1990, no. 42, p.7). It appears to be endemic to Bhutan occurring through the centre of the country on moist forested ridges between *c.* 2900m (9,500ft) and 3650m (12,000ft). At the top of its range it intermingles frequently and hybridises with *R. hodgsonii* whilst towards the lower elevations of its range it obviously 'marries' with *R. falconeri*.

The photograph which accompanies this short note illustrates clearly the mixed characters of the two species – the rounded vegetative bud of *R. kesangiae*, the indumentum of *R. falconeri*, and the washed-out pale pink flower colour fitting mid-way between the two (see fig. 4). Hybrids frequently inherit negative characters of both species and so it is in this case. Both parents are unquestionably far superior in beauty, but it is nevertheless interesting to observe and record natural hybrids such as this irrespective of their horticultural potential.

Which magnolia?

PETER SMITHERS

It has been 14 years since I last described in this publication (*Rhododendrons* 1978, p.55) the experiment with magnolias which was proceeding at Vico Morcote. Now it is 22 years old and some conclusions are in order.

In 1970 the number of magnolias available from normal trade sources was only a fraction of what it now is. But by a process of search through the horticultural network I managed to assemble a great many clones which were not in general circulation. Not much was known about many of them and my planting was a trial, on a small plot of ground, in what seemed to be very favourable circumstances of climate and soil. At this point I must make the statutory declaration: everything which follows is true in the relatively mild climate of this garden; it is not necessarily true for the conditions in somebody else's garden.

Apart from the summer-flowering magnolias, in 1970 the material readily available consisted, broadly speaking, of the old soulangiana hybrids, the earliest Gresham hybrids sent to Harold Hillier by Tod Gresham, and the deciduous species. For suitable climates there were the various forms of *M. campbellii*, mostly growing in Cornwall and many of them open pollinated seedlings. Thus there was a substantial mixture of *M. sargentiana robusta* blood in many of the resulting magnificent plants. There were selected forms of *M. sprengeri* and *M. dawsoniana*. But with all of the selections there was much confusion – there still is – because open pollinated seedlings had been sold under the name of the seed parent without qualification. This practice was, and is, inexcusable in plants which may not bloom until 20 years after the date of purchase.

The soulangianas and the first-wave Greshams

The first comparison which it was possible to make was between the old soulangianas and the Hillier Greshams. If the conclusion was clear and unmistakable, I must preface it by saying that any well-grown *M.* × *soulangiana* in full bloom is a magnificent thing and a treasure in any garden. But, the Greshams were superior to the soulangianas in every respect with only three possible exceptions. *M.* × *soulangiana* 'Brozzoni' was and remains the latest of both groups to come into flower; *M.* × *soulangiana* 'San Jose' was of a quality equal to the Greshams; and the plant growing here as *M.* × *soulangiana* 'Burgundy' was of a splendid bluish pink colour

unique in magnolias so far as I know, floriferous and extremely weather-hardy. All other soulangianas have been felled in this garden in the interest of space for better things.

The Pickards

The next comparison arose from the introduction of a series of seedlings raised by Mr Pickard in his garden near Canterbury. These remain of obscure origin, but were stated to be seedlings of *M.* 'Picture', itself a plant not known to be of the same parentage as *M.* × *soulangiana*. A number of these seedlings proved similar to one another and were surpassed by various Greshams. But four remain which are of outstanding quality. 'Sundew' is one of the finest magnolias in this garden, a tall tree which unfailingly produces a total coverage of large beautifully shaped blooms in a subtle combination of pink and cream with sometimes the hint of an orange undertone. 'Ruby' is a long advance on *M.* × *soulangiana* 'Rustica Rubra' or on *M.* × *soulangiana* 'Lennei' because of its superior rigid growth habit, considerably smaller than 'Sundew'. 'Snow Queen' is a unique magnolia in white. It is of vigorous growth and exceptional beauty, for, with only six broad white petals with hardly a trace of the usual purple flush at the base, held in a large vase-shaped flower, it has a character all its own. The fourth is 'Schmetterling', named by Mrs Pickard. I cannot recommend this tree for general planting, because it kept me waiting 10 years for a bloom. But now that it is a forest tree with a magnificent structure and still racing upwards, covered every year with handsome, though not exceptional purple-pink flowers, I am glad that I did not lose patience and cut it down. The fourth is 'Star Dust', a *M.* × *loebneri*-style hybrid of unknown origin, wonderfully floriferous, very vigorous and beauty personified.

The second-wave Greshams

The next influx of new material was the second wave of Gresham hybrids. The introduction of these plants was due to the intervention of the Magnolia Society; they originated from the Tom Dodd Nursery in Alabama and from the Gloster Arboretum in Mississippi where much of Gresham's material was preserved by Mr and Mrs Frank Gladney.

Most of the Gresham hybrids, though not all of them, are of *M.* × 'Veitchii' parentage and thus probably contain 25 per cent of *M. campbellii* genes in their makeup. It is not therefore surprising that the later introductions of Gresham origin contain more evidence of *M. campbellii* parentage than the earlier Hillier introductions. All the later Greshams are greatly superior to any *M.* × *soulangiana* and any Pickard hybrid with the exception of 'Sundew' which still

holds its own without difficulty, and of 'Burgundy' (see fig. 11) and 'Snow Queen' which have an individuality all their own.

Amongst the second-wave Greshams I doubt there is a new white superior to the first-wave 'Sayonara', but there are several which seem as good. Amongst the pinks and purples, however, there are plenty of exciting novelties. Particularly attractive to me is 'Frank Gladney', with a vigorous slightly fastigiate growth, and pink cup-and-saucer flowers clearly much influenced by *M. campbellii* and clearly destined to make a good-sized tree. Amongst the purples, the plant which came to me as 'Professor MacDaniel', was then demoted to 'J. D. McDaniel' and finally (to avoid any touch of elitism) became 'Joe McDaniel', is superior in form and growth and equal in colour to Pickard's 'Ruby'. Amongst the instant blooming magnolias known to me it is the outstanding selection for a deep purple.

The first New Zealand hybrids

The last stage in this series of comparisons arises from the introduction of new hybrids from New Zealand, notably from Mr O. Blumhardt and from the Jury family. 'Star Wars' from Blumhardt outclasses every instant blooming magnolia in this garden. It grows rapidly into a large tree. At age 10 years from planting as a very small plant which came by parcel post it now stands at over 10.5m (35ft) high with a massive bole – but it flowered the second year from planting. It has flowers of a size and colour which challenge comparison with its *M. campbellii* parents, though not with the very finest of them. It lasts in bloom for about five weeks and strikes readily from cuttings, characteristics no doubt inherited from its *M. liliiflora* parent, and it produces a satisfactory second flush of bloom in the late summer. It has, alas, no scent. But, is it as hardy as *M. liliiflora* or as tender as *M. campbellii* or somewhere between the two? As it is now widely distributed we should soon know. There is a beautiful sister seedling growing here, 'Early Rose', which is somewhat similar to 'Star Wars'.

The other New Zealand magnolia which is outstanding and well proven in this garden is 'Iolanthe': 'Mark Jury' × 'Lennei'. 'Mark Jury' seems to be important for breeding, but here it was slow to grow and bloom and not exceptional in flower. Perhaps we were unlucky. But its progeny 'Iolanthe', like 'Star Wars', bloomed as a tiny plant, and covers itself unfailingly with huge pink bowl-shaped flowers. Since it was planted in 1978 it has grown into a massive rigid tree of fine form, girth at one metre (3ft) from the ground 80cm (31in) and height about 13.75m (45ft). None of the floppy growth of the 'Lennei' parent!

These two magnolias, 'Star Wars' and 'Iolanthe' make an admirable pair, the deep reddish pink and pointed petals of the first contrasting nicely with the pale pink bowls of the second. To make a trio with a white, I would go back to the first-wave Greshams and choose 'Sayonara' or, subject to a little more experience, the Pickard hybrid 'Snow Queen'. Pictures and reports from travellers suggest that if it is desired to make a fourth by adding a deep purple, 'Vulcan' from Jury will probably prove to be the choice.

Relative achievement

What was Tod Gresham trying to achieve by hybridisation? To improve on the instant flowering soulangianas by breeding a race which would include the vigour, large flowers, superior flower form and fine colours of *M. campbellii* with the hardiness of the soulangianas. How far did he succeed? As to vigour and size of flower, very well indeed; as to form, only in some of his productions; as to colour, never completely. The finest of the Greshams do not rival the splendid deep colours or clear pink shades of the *campbellii* clones. As to hardiness it is still difficult to say, but the Greshams are certainly much more frost-hardy than the *campbelliis*. It is important that growers living in climates where these hybrids are put to the test should report upon their experiences with different named Gresham hybrids. It is certain that in this wide mixture of genes there is also a wide variation in hardiness.

Mr A. A. Pickard was not a breeder, but simply, like me, a 'magnolia nut'. He obtained some interesting seed, clearly from diverse plants though mostly perhaps from *M.* × 'Picture', and had the patience and perseverance to grow them on and to see what he got. He got four very good magnolias and a fifth very interesting, if wayward, one. I would be proud to have done the same.

What are the New Zealand hybridists seeking to achieve? We cannot blame them if in the first place they are seeking to produce yet better *M. campbellii* and *M. sargentiana* hybrids suitable for their own mild climate. It seems doubtful that more than a few of these plants, such as those which have *M. liliiflora* parentage, will have much success in the harsher continental climates. But in gardening, over the years, I have learned always to expect the unexpected. I have also learned that the unexpected is sometimes a pleasant surprise. As Mr Hardy once put it to me 'Every plant is hardy until I have killed it myself'. Nevertheless, a dead magnolia is not a nice sight to behold.

A strategy

The foregoing seeks in a short article to place the various groups of instant blooming magnolias in relation to one another. But I would

end by suggesting the proper strategy for young gardeners, by which I mean those under 60, who are gardening in a fairly mild climate. When the wait is over – and it may be from four to 20 years depending on climate – *M. campbellii*, *M. sprengeri*, *M. sargentiana robusta* and their various hybrids are far superior to all other deciduous magnolias. If I were beginning to plant this garden today and with the magnolias now available, I would plant it with the best instant bloomers. But amongst the Greshams I would interplant the best of the *campbellii-sargentiana-sprengeri* complex. And when the time came, I would fell some of the Greshams. But of course if space and money were no object, I would grow them all.

A camellia paradise

MARGARET GIMSON

Galicia, on the north-western corner of the Iberian peninsula, is now an autonomous region of Spain. It is little known in the outside world, though now more tourists from other parts of Europe are making their way to Santiago de Compostela, following the twelfth-century pilgrim road to the presumed burial place of St James. They are delighted to discover this old countryside where the green of lush grass, pine and eucalyptus trees contrasts with grey granite boulders and old stone buildings. The climate is mild, often wet and often sunny. Frosts and droughts occur occasionally, and gales more often, so it is not quite the Garden of Eden.

Until recently there were few private gardens in Galicia: some town gardens and those belonging to the *pazos*. *Pazos* are big aristocratic houses, generally in the country, most of which were originally fortified towers dating from feudal times, later enlarged and made into gracious residences during the seventeenth and eighteenth centuries. The word *pazo* comes from the Latin *palacio*, and, as one would expect, their gardens were formal, with stone walls and stairways, balustrades and water gardens with fountains. The owners planted eucalyptus, magnolias and camellias, many now enormous. But after the end of the nineteenth century many of these gardens were neglected, their owners living in Madrid for most of the year and only coming north for the two summer holiday months. During the last 15 years or so, however, there has been an upsurge of interest in gardening among *pazo* owners and among the new and old middle class. As a result, nursery gardens are springing up everywhere and doing good trade, in spite of the sometimes doubtful quality of their plants. Among these, camellias are the big enthusiasm.

Camellias grow wonderfully well in Galicia, especially in the south west and near the Atlantic coast. They are more highly esteemed by rich and poor alike than any other garden plant with a flowering season which starts in September with the sasanquas and lasts until May. Old trees abound in parks and gardens; they are even grown as street trees in Pontevedra and Vigo, and single examples can be seen beside humble farm houses.

The first recorded importation of camellias to the Iberian peninsula was between 1808 and 1810, first into Portugal, from whence their culture spread northwards into Galicia where some are known to have been planted in 1860 in the garden of Castrelos in Vigo.

My husband Robert and I had the good fortune to know the late owner of the Torre de Lama, on the northern coast of La Coruña province. In his garden there are hillsides of azaleas and thousands of camellias, and he told us that the oldest camellias there had been bought by his grandfather in the 1840s from itinerant French vendors who travelled all along the northern coast of Spain carrying their plants in baskets.

I do not know how well the garden at Torre de Lama is being maintained since the death of Don José Diego Macineira, but among other *pazo* gardens I know which have nice old camellia trees I will list:

1. *Gardens privately owned*, which can only be visited by appointment:
   - Santa Cruz de Ribadulla, near Santiago
   - Pazo de Rubianes, near Villagarcia
   - La Golpelleira, also near Villagarcia.
2. *Gardens open to the public*:
   - Sotomayor, in Pontevedra province.
     Restored feudal castle belongs to Pontevedra province. Big old trees in the park and a new plantation of camellias.
   - Mariñan, in La Coruña province.
     Belongs to the Galician Regional Government.
   - Pazo de Oca, near La Estrada and not far from Santa Cruz de Ribadulla.
     Privately owned but open to visitors on payment of a small fee, currently about £1.70. On a recent visit I found it in better order than on previous occasions.
   - Castrelos, also sometimes called Parque de Quiñones de Leon in Vigo Municipality.
     Belongs to the municipality, and the house is now a museum. Well worth a visit.

We came to live here in 1970. Robert wanted to make a garden in a climate where he could grow and experiment with a very wide range of plants. La Saleta was a neglected farm of about 5ha (12½ acres), and so the garden started from scratch. Robert brought a good varied collection from England and plants from France, and he corresponded with botanic gardens and individuals all over the world, who sent him seeds and advice. He had particular success with the Australian *leptospermums, callistemons, acacias* and *melaleucas*, which flourished to such an extent that since his death in 1987 one of my problems has been to attempt to tame our 'Australian jungle'.

When we arrived here, there was a limited number of varieties of camellias grown: japonicas, especially 'Alba Plena', 'Fimbriata', 'Bella Romana', 'Mathotiana', 'Eugenia de Montijo' and a few others; *retic-*

ulatas, 'Captain Rawes' and one or two more. Robert added to his collection as the years went on, and the hitherto unknown varieties aroused much local interest. However, since that time many new varieties, hybrids and species, have been imported and good collections have been built up.

In the La Saleta garden, in spite of some losses to rabbits, thieves, and climatic conditions, we have around 70 different varieties of *C. japonica* hybrids, around 20 of *C. reticulata* or *reticulata* hybrids, some *C. sasanqua* plants and a nice collection of *C.* × *williamsii* hybrids. About half are planted with rhododendrons in the area of woodland on the south side of the property. The trees are mostly oaks, pines and a couple of ancient cork oaks; I have found this wood mentioned in some archives dated 1752. The remainder are in groups in the open area near the bottom of the garden. The earliest planted are now, after 22 years, some 4 to 5m (13 to 16ft) high.

We also have some small plants of other species of which *Camellia lutchuensis*, *C. cuspidata*, *C. wabiske* and *C. saluenensis* flower well. And yes, we do have a small *C. chrysantha*, which has not yet deigned to flower, and here I offer a moral tale. Several keen camellia growers I know have small plants which they cherish with the utmost care, hoping to be the first to present its beautiful yellow flowers at the annual camellia exhibition which takes place each spring in Pontevedra, Vigo, and Villagarcia in turn. Me too. We look the other way when the subject is mentioned and pretend we have no such plant. Last year, for the first time in Galicia, *C. chrysantha* did flower, not in any of 'our' gardens, but in that of a young agriculturist's mother-in-law. He had been given the plant a few years ago, but having no garden of his own, gave it to his mother-in-law, who planted it under a wall. There it rested almost unnoticed until last spring when it was discovered to be in flower. But it was not even the time of the camellia show!

It is sad that after so many years I shall soon be leaving La Saleta. It is for sale, and I can only hope that its new owner will cherish the existing plants, and perhaps continue to add to their number.

The International Scene

National Native Azalea Repository

There are 17 species of azalea native to the United States and eleven of these are to be found within 160km (100 miles) of the North Carolina Arboretum at Asheville, North Carolina. The Arboretum, a newly created public garden, occupies 172ha (424 acres) in the Pisgah National Forest adjacent to the Blue Ridge Parkway.

The suggestion that the Arboretum would be the ideal site for a National Native Azalea Repository arose from the visit in 1988 of Dr John Creech, a retired Director of the National Arboretum in Washington, DC, and Mr David Dean, a member of the American Rhododendron Society until his death in 1991.

The spring of 1992 saw the dedication of a $1.8-million (almost £1-million) Horticultural Support Facility which will provide an ideal environment for the propagation of deciduous azaleas, as well as space for research on this complex group of plants. It will include a 670sq.m (7,200sq.ft) glass greenhouse with a computerised environmental control system. The repository is intended to be the most complete collection of azalea germplasm for those species native to the USA, and it is hoped that it will be of maximum interest to a variety of users: azalea enthusiasts, botanists, researchers, nurserymen, plant breeders and the general public. The best varieties will be displayed in the garden area and a million visitors are expected every year.

Systematic collection activities have already commenced, centring on the genetic variation found within native azaleas. Examples of each species and more than 60 botanical and cultivated varieties are being grown in the Arboretum's nursery and will be moved this spring to the site within the Scientific and Botanical Plant Collections Area alongside Bent Creek. The site includes native stands of *Rhododendron arborescens* and *R. calendulaceum* and encompasses various habitats including rocky slopes, rich bottomland, wet drainage channels and riparian sites.

Various levels of taxa will be featured in the repository. Species material will include individuals with different morphological characteristics, botanical varieties, representatives of the various habitats and segments of each of the 17 species ranges. Within each species, cultivated varieties will also be included. There are over 140 known cultivars and selections in this group, including 36 clones of the flame azalea (*Rhododendron calendulaceum*).

Hybrids between the various native species will also be displayed.

A search of existing literature has revealed over 50 cultivars of interspecific hybrids, *Rhododendron arborescens* and *bakeri* figure most prominently in these crosses.

Naturally occurring hybrid populations will also be featured, such as the famous hybrid swarm on Gregory Bald in the Great Smoky Mountains National Park, where *R. arborescens*, *bakeri* and *viscosum* have interbred to form a hybrid complex which is one of the most unusual naturally occurring floral displays in the United States.

An expedition in spring 1992 to Gregory Bald aimed to document standard and superior individuals; later, in the autumn, seed will be collected, and, next summer, cutting material for asexual propagation. It is hoped in this way to establish an *ex situ* collection.

Hybrids between native and exotic taxa will also be included. Nearly 50 hybrids including Ghent, Mollis, Knaphill, Exbury and Windsor Park azaleas, are already documented and, as available, new selections will be added to the repository.

A full programme of research is planned, herbarium development, exploration of naturally occurring hybrid swarms, as well as other avenues such as isozyme analysis to determine parentage of undocumented hybrids. Genetic studies on the relationship between native and Asian species are also a possibility. A plant development programme has been initiated to include evaluation of currently available cultivars. However, an azalea breeding programme is not contemplated at present.

The American Rhododendron Society has chosen Asheville, North Carolina for the May 1994 Annual Convention.

RICH OWINGS

The International Rhododendron Union Conference May 1992

The conference took place at Bad Zwischenahn, a delightful small spa beside a lake, 80.5km (50 miles) south of Bremen, Germany, on 18-24 May, 1992. It was convened by the International Rhododendron Union and was organised by Professor W. Spethmann on behalf of the German Rhododendron Society, Bremen, and the Institute for Fruit and Nursery Science of Hannover University. There were representatives from 14 countries.

There were two days of lectures on: breeding lime-tolerant rhododendron rootstocks; *in vitro* propagation; indoor azaleas; calcium effect; nitrogen uptake; nutrients; peat and peat substitutes; long-term comparison of differently propagated plants (grafts, cuttings, *in vitro*); control of vine weevil and diseases, including powdery mildew. Also slide-illustrated talks on: mass *in vitro* propagation;

rhododendrons in a Belgian private garden; an Australian botanic garden; conservation in Sikkim; and old hardy hybrids, many rare in cultivation.

These lectures were interspersed with a varied programme of visits. Those to the outstanding nursery gardens in the Ammerland and Holstein areas have been well described by Kenneth Cox in his article 'Rhododendrons in West Germany' (*Rhododendrons*, 1990, p.7). They are Hachmann's huge nursery near Hamburg, where their hybrids grow in vast fields, in stripes of colour reminiscent of the Dutch tulip fields; the Bruns nursery with its rhododendron park and vast selection of conifers and its market in large trees; Wieting's with a display garden featuring bright azaleas reflected in a small lake; Hobbie's (first in the field with their *repens* hybrids*) wonderful woodland created after visiting England and Scotland; and Böhlje's, again with colourful rows of hybrids, who have supplied the mature trees for Disneyworld near Paris. These nurseries sell ultra hardy hybrids, mostly based on *R. yakushimanum* and *williamsianum*, specially created for people with small gardens – perfect, dome-shaped bushes covered with long-lasting blooms in infinite shades of colour, using 'Cunningham's White' as rootstock. Typical was 'Fantastica' on the lecture-room dais, glowing fluorescently bright, a wonderful Hachmann hybrid. (See fig. 19.)

Of a different kind was the visit to the Bad Zwischenahn Horticultural Station to see their display of hybrids showing how these could thrive in areas of cold winters while species might falter. However, species revelled in the magnificent glass houses of the Bremen Rhododendron Park: 250 varieties, including large-leaved and Vireyas, growing happily in an artificial climate, while outside only a few could survive in sheltered woodland sites. Conspicuous were the massed groups of deciduous azaleas and in a specially created rock habitat was the rarely seen *R. camtschaticum*. Other memorable visits were to the new Japanese garden at Hamburg and the Botanic Garden there. At Hannover there was a contrast between the formal Baroque gardens at Herrenhausen (German home of George I of England) and the enchanting romantic 'natural' Berggarten, full of rare trees. From there we went to the Institute for Fruit and Nursery Science of the University at Sarstedt. Here Dr Spethmann and his colleagues are based and here much of the important research we heard about in the lecture room takes place in field, glasshouse and laboratory. Each garden and visit was different and each superb in its own way. (See fig. 18.)

At the lavish conference dinner delegates were welcomed by the mayor of Bad Zwischenahn, the President of the International

*See O.C.A. Slocock, 'Dietrich Hobbie's hybrids', *The Rhododendron and Camellia Year Book*, 1966, no. 20, p.39.

Rhododendron Union, the President of the German Rhododendron Society, the Minister of Food, Agriculture and Forestry of Lower Saxony, a representative of the International Society for Horticultural Science and the Chairman of the Weser-Ems Section of the German Nursery Union – a galaxy of Very Important People. Our many hosts and the organisers are to be congratulated and thanked for their meticulous arrangements and generous hospitality.

JOEY WARREN AND CYNTHIA POSTAN

The Magnolia Society's Annual Meeting, 9-12 April, 1992

The 1992 Annual Meeting of the Magnolia Society was held on Lake Maggiore at the historic Grand Hotel, Locarno, Switzerland, on 9-12 April. This enjoyable meeting was the first to be held outside the USA. Members came from ten countries, a true reflection of its international status.

Dr John Allen Smith, President, welcomed members at dinner and Sir Peter Smithers responded. Karl Flinck spoke afterwards on 'Magnolias in Scandinavia'. The next morning, 10 April, the party visited the gardens of Otto Eisenhut and his wife at San Nazzaro and Dr Piet van Veen at Vira-Gambarogno. There are more than 300 varieties of magnolia in the Eisenhut garden and 160 magnolias at the Villa Iris, as well as large collections of camellias and other plants. In both gardens many magnolias were flowering magnificently. Otto Eisenhut demonstrated his grafting techniques.

In the afternoon members visited the gardens of Sir Peter and Lady Smithers at Vico Morcote. Although there are some 150 magnolias here, not many were in flower because this garden has a southerly aspect and the flower buds had been brought forward by the unseasonably warm weather in February only to suffer from a subsequent frost. However, there were other plants of great interest and visitors were able to examine Sir Peter's large leather-bound Plant Register which he had commenced in 1930. In the evening Vicomte Philippe de Spoelberch spoke on 'Magnolia growing in Belgium, France and Holland'.

We spent 11 May over the border in Italy, visiting in the morning the gardens at the Villa Taranto, Pallanza, on the western shore of Lake Maggiore. Begun in 1930 by Captain Neil McEachern, this was a plantsman's garden par excellence and included many magnolias. We saw some of the original plantings, as well as many other rare trees and shrubs, some very large. On, then, to Stresa and by boat to Isola Bella and after lunch on a tour of the beautiful Villa Borromeo with its landscaped gardens, sculpture, sub-tropical plants and camellia hedges. The last visit of this highly successful meeting

was to Isola Madre, and a tour of the villa and gardens, including the memorable sight of a very large *Cupressus cashmeriana*, thought to be the largest tree of its sort outside Kashmir. In the evening, after the society's annual general meeting, John Tobe gave a paper on 'Molecular Systematics of the Magnoliaceae: using chloroplast DNA to analyse magnolia breeding speciation and phylogeny'.

BRIAN SAVAGE

The International Camellia Society's Conference 1992

The International Camellia Society joined the American Camellia Society in New Orleans, USA, for a joint conference from 28 January to 2 February, 1992.

A pre-Congress tour and a post-Congress tour stretched the entertainment from 20 January to 7 February. Visits before the Congress included the ACS Headquarters at Massie Lane, the Magnolia Plantation and Gardens, Charleston, Savannah, The Kennedy Space Centre and Orlando, where the party was delighted by Disney World.

The post-Congress tour took in the following: Longue Vue Gardens where we saw a wonderful show of camellias and marvelled at the beautiful needlework and antique furniture carefully and lovingly conserved; Baton Rouge, and swamp tour at McGee's Landing; the Live Oak on Jefferson Island; the Jungle Gardens of Avery Island, where we saw and ate alligator; and, a farewell Cajun-style dinner at Prejean's Restaurant. The highlights were the superb hospitality of Thomas Perkins, President of the ICS; Erin and Bob Stroud, the Baton Rouge Camellia Society; a wonderful camellia display by the South Louisiana Camellia Society; and, the visit to the home of Dr Lee Sonnier ('Mr Camellia') of Louisiana.

These visits were before and after the main activities at the Monteleone Hotel, in the French Quarter. A really sumptious Camellia Show was put on, with many many entries and fine prizes.

The two Societies joined for the non-business functions, which included an evening trip on the Mississippi River. All the papers delivered were interesting and informative. Ross Hayter talked on 'The character behind the camellia', and Dr William Ackerman on 'Camellias for colder climates'. W. M. Bennett, Head of the Department of Biological Sciences, Pensacola Junior College, gave a paper on 'Transposable elements – colour distribution'. Sunpei Uemoto spoke on 'The wild camellias of the Northernmost Boundary'; and, Jean Michel Madec on 'Camellias in Brittany'. Tadao Yamaguchi spoke on 'Breeding in my way'. Gao Jiyin of the

Subtropical Forestry Research Institute, Fuyang, Zhejiang, China, gave a paper on 'The popularisation of camellias in China'. Perhaps the paper that caused the greatest interest was a short dissertation by Nancy Van Schaik, of the Department of Genetics, University of the Witwatersrand, Johannesburg, South Africa, on 'Jumping genes – can they cause mutations in camellias?'

Being in such vital and learned company was a wonderful experience. The study of camellias was greatly advanced, and we were all the wiser for participating and all the happier for the warmth and friendship we enjoyed during our stay in the USA.

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The Rhododendron Group Tour, Argyll, 7-12 May, 1992

KENWYN CLAPP

This year Valerie Archibold arranged the annual tour for the Rhododendron Group in Argyll. Thirty-one members gathered at Helensburgh on 7 May to travel together by coach. The weather had been cold, wet and windy, but the next morning we set off with high hopes for Glenarn, which garden we last visited in 1988 (*Rhododendrons 1988-89 with Magnolias and Camellias*, p.67. See also *Rhododendron and Camellia Yearbook*, 1967, No. 21, pp.128, 146; *Rhododendrons 1979-80 with Magnolias and Camellias*, p.39).

Glenarn, made famous by the Gibson family and now owned by Michael and Sue Gibson, was known for its large-leafed hybrid rhododendrons – massive plants covered in trusses of cream or yellow. The garden has a high rainfall (about 190.5cm/75in) and is protected from the sea, so there is a general air of well-being throughout. Many species on the drive included several large *R. strigillosum* which had already flowered. Another interesting species was *R. viscidifolium* in the Thomsonia sub-section (with very sticky young leaves). Conditions in the ravine are excellent for the taller-growing rhododendrons, the tops of which can be seen at close range from above. *R. niveum* with its compact purple trusses was one; others were a good yellow-flowered *sidereum*, and the closely related *grande*, also *R. hodgsonii* with smooth creamy fawn to cinnamon bark and distinctive conical foliage buds with their long and tapering outer scales, together with *macabeanum*, *falconeri* and *sinogrande*. Of smaller species, the unusual purple flowers of *R. baileyi* attracted attention, as did forms of *R. glaucophyllum* and its related *tubiforme*, *charitopes*, *luteiflorum* and *tsangpoense*. Cultivars of *lindleyi*, particularly the hardy 'Geordie Sherriff', were the envy of many of us. (See fig. 15.)

Two free-flowering unnamed yellow hybrids of *R. macabeanum* × *falconeri*, two 'Loderi', a *neriiflorum* full of flower and the seldom seen pink-flowered *thomsonii* var. *candelabrum* were in the 'tennis court'. Plants on the drive included *R.* 'John Holms' (*arboreum* × *barbatum*), called after the Gibsons' mentor,* and an unusual white *williamsianum* hybrid, 'Pook' (*Rhododendron Year Book*, 1967, p.128).

*For a description of John Holms's garden at Larachmhor, see Ian Hodge, *The Rhododendron and Camellia Year Book*, 1967, No. 21, p.1.

Returning to the house for coffee, one group, led by Michael Thornley, arrived in time to avoid a heavy hail shower and to see and smell, in the conservatory, some splendid Maddenias, including the huge flowers of *R. nuttallii*. There were still more species to see, including *R. macrosepalum* cultivar 'Linearifolium', *pachysanthum*, *tsariense* with good indumentum, a large *megeratum* and *pseudochrysanthum*. In the rock garden, by way of a change, was a splendid umbrella pine, *Sciadopitys verticillata*.

At mid-day we had an enjoyable lunch in the conservatory, prepared by Mrs Thornley Senior, to whom and to Michael and Sue we expressed our thanks with a gift of *Acer griseum*.

The hotel at Kilmelfort, overlooking the waters of Asknish Bay on the Sound of Jura, was to be our headquarters and we drove there through dramatic scenery. The morning of 9 May dawned with unaccustomed sunshine and the view over the near and distant islands was one of calm serenity. Our first visit of the day was to Mrs Nelson's woodland garden at Achnachloich at Connel near Oban. This garden was begun in 1950 with the clearing of masses of *R. ponticum*. The Group had visited the garden in 1979 (*Rhododendrons* 1979-80, p.41). Mrs Nelson welcomed us standing by a large free-flowering *Ceanothus arboreus* 'Trewithen Blue' before reluctantly leaving us to attend a wedding. We thanked her in anticipation and presented her with *R. fictolacteum*.

The view from the terrace was towards many copper-leaved acers beyond which we could see distant rhododendrons, so we set off on our tour with the head gardener, passing almost immediately an enormous Douglas Fir. The first rhododendrons we saw were *R. hunnewellianum* with narrow drooping leaves, pale indumentum and pink flowers; several good *niveum*; the pink striped flowers of *R.* 'John Bull'; the near-white flowers of *cinnabarinum* hybrid 'Peace'; the reddish-purple flowers of *baileyi*; and a good *concatenans*. We next admired a large flowering *embothrium*, contrasting with the grey of *Pyrus salicifolia pendula*, and a large free-flowering *enkianthus*. Up a steep bank was the hybrid *R.* 'Calstocker' (*calophytum* × 'Dr Stocker'), a young 'Sir Charles Lemon'; the lopsided trusses of *R. wightii*, *falconeri* and several *brachysiphon*, said to be among the hardiest of the Maddenias.

Returning, we passed the biggest *R. ambiguum* many of us had ever seen and nearby was a plant identified by Dr Jack as the deciduous, yellow-flowered *R. trichocladum* with its scattered vesicular golden scales.

After this we were ready for lunch with Mrs Glaisher at Druimneil, Port Appin – promised as 'something special', as indeed it was, our appetites having been whetted by a quarter of a mile walk uphill! There was time only for a quick look around the garden which

included large *R. campanulatum*, *sinogrande* and *falconeri*.

On the morning of 10 May we visited two private gardens on the north shore of Loch Melfort. The first was the home of Doctors Alan and Hilary Hill, named Coille Dharaich. Dr Hilary told us that the garden had been developed by her husband and herself over the last 20 years and explained an ingenious method they had devised for the quick erection of windbreaks when the need arose, and for garden drainage. We understood very well that the latter was important when told that the average annual rainfall of 190.5cm (75in) had, in the last year, risen to 254cm (100in)!

The garden was a delight and a welcome change of interest, comprising a bog garden with candelabra primulas, iris, hostas and calthas; a fine collection of small conifers including *Abies koreana* and *A. procera* 'Glauca Prostrata' with its red cones and, last but not least, the alpines planted in a spectacular area of a natural rock formation which Dr Hilary had, with great patience and by hand, cleared of earth. The garden was not without rhododendrons however, there being a goodly number of the smaller species and hybrids, all looking in good health and many flowering very freely.

We were given a very welcome cup of tea or coffee and before we left we were happy to present our hosts with *Magnolia cylindrica* as a memento of our visit.

The second morning visit was to the nearby 'Tighnamara', the home of Lt. Cmdr and Mrs H. D. Campbell-Gibson. This 0.8-ha (2-acre) garden, set in an ancient oak wood, had many unusual features not seen elsewhere, not the least of which was a 7.5m (25ft) waterfall. A part of the garden comprised a cliff where every ledge had been used to accommodate different shrubs, including rhododendrons and a variety of perennial plants. We were told that in the wooded area, unexpected seams of lime permitted the growth of the rare *Cephalanthera longifolia*, a type of orchid. A large free-flowering *Chaenomeles* adorned the side of the house, covering it from ground to roof. Cmdr Campbell-Gibson attributed the freedom of flowering to pruning it three times a year. We were pleased to express our thanks with a gift of *R. orbiculare*.

After lunch at the hotel we went to the nearby garden of Arduaine visited by the Group in 1979 and 1986 (*Rhododendrons* 1979-80, p.42, 1986-87, p.18). An afternoon is not enough to see more than a selection of the plants in this wonderful garden, recently made over to the Scottish National Trust, after having been built up to its present glory over the last 20 years by the brothers Harry and Edmund Wright. The story of this garden has been recorded in the pages of the *Rhododendron Year Books* (*Rhododendron Year Book* 1966, No. 20, p.25 by Sir Ilay Campbell; *Rhododendrons* 1979-80, p.27 and *ibid*, 1987-88, p.25 by Edmund

Wright). This year we were met by Ed Wright and it must be said that his genial and instructive tour made it a very special afternoon.

Ed Wright took us across the lower garden to the pond area where the soil of deep moist peat is ideal for the extensive plantings of primulas together with *Meconopsis*, *Astilbe*, *Hosta*, *Cardiocrinum* and small rhododendrons. The garden is famous for its species rhododendrons and there can be few that it does not contain. Of particular interest was *R. arboreum* subsp. *zeylanicum*, grown from seed sent home from Ceylon, and being protected by a number of *R. barbatum*. The yellow flowers of *R. sulfureum*, *luteiflorum* and *caloxanthum* and the unusual plum-purple flowers of *genestierianum* were admired, as were the many large-leaf species such as *macabeanum*, *sino-grande* and *hodgsonii*. The former Barbatum Series was well represented in the woodland area including *R. glischrum*, *exasperatum*, *glischroides*, *rude* (with its hairy upper leaf surface) *anhweiense* (now a sub-species of *maculiferum*) *hirtipes* (now in sub-section Selensia) and *longesquamatum* (now sub-section Maculifera).

Plants of particular note other than rhododendrons, and there were many, included *Magnolia* × *campbellii* and *M. sieboldii*, *Trochodendron aralioides*, *Berberidopsis* of unusual height and thickness of stem, *Davidia vilmoriniana*, claimed to be one of the best in Scotland, the scented free-flowering *Myrtus lechleriana* and a huge *Euphorbia mellifera*, a native of Madeira with its honey-scented flowers.

It is difficult to convey the pleasure we experienced during this tour of the garden. Ed Wright's enthusiasm and his patient and informative commentary was such that there could not have been many who did not feel that their knowledge of rhododendrons had been increased. Many species pointed out as 'not often seen', were indeed unfamiliar to many, such as *R. longistylum* (formerly Triflorum series but now sub-section Tephropepla), *leptothrium* (see *Rhododendrons* 1991, No. 41, p.41), *eurysiphon* and *heftii* which was collected by Stainton in 1956 and is allied to *wallichii*.

We had to congratulate Ed Wright on winning the Sir John Stirling Maxwell trophy for his rhododendrons at the Glasgow Show and we presented him with *Magnolia cylindrica* in appreciation.

Our final visit of the tour, on 11 May, was to Brodick, another of the great Scottish gardens, on the Isle of Arran, planted by the late Duchess of Montrose in the 1920s but owned by the National Trust since 1948. (Previous visits by the Group were in 1967 and 1979. (See *Rhododendron Year Book*, 1967, No. 21, p.124 and *Rhododendrons*, 1979-80, p.41.)) We enjoyed the wonderful scenery on the 64km (40mile) journey to the ferry at Claonaig, the short sea trip of 35 minutes to Lochranza on the north end of Arran, followed by

a further 17km (11 miles) down the west coast of the island. We were welcomed by a broad haze of bluebells and by Nigel Price, whom many of us had met at Inverewe during our May 1986 tour. Nigel has taken over the daunting task of caring for the gardens on the retirement of John Basford, whose name has been associated with Brodick gardens for so many years.

Our guide took us first to the formal gardens where we were shown an unusual summer house, the roof of which was covered with growing heather. Apparently the heavy rainfall of the area is sufficient to keep it in good condition. In the centre of the formal garden area was a large white free-flowing example of an evergreen from New Zealand, *Olearia cheesmanii*. In the side beds were the small white flowers of *Camellia cuspidata* and the rich clear pink semi-double flowers of the *reticulata* hybrid 'Leonard Messel'. On leaving the formal garden we reached the eagerly awaited rhododendron areas and were able to feast our eyes on the beautiful flowers of Maddenias like *lindleyi* and *taggianum*. Our attention was drawn to the white double-flowered *johnstoneanum* 'Double Diamond' and the double pink of the hybrid 'Johnnie Johnston' (*johnstoneanum* × *tephropeplum*). We then set off to see the 'Horlick Collection'. Here was a huge bank of *R. genestieranum*, a *cinnabarinum* var. *purpurellum* covered with attractive purple flowers, the red flowers of *kendrickii* with which Mr Basford won the McLaren Challenge Cup at the 1991 RHS Show (see fig. 24 of *Rhododendrons* 1992). In this area there was a good yellow-flowered *xanthostephanum* and the near blue 'Knaphill' from of *campanulatum*. A hybrid to note was 'Mrs James Horlick', very like the more often seen 'Cornish Cross'.

We finally explored the lower rhododendron walk containing the large-leaf varieties for which Brodick is famous, including the original plant of *R. montroseanum* (formerly *mollyanum*) named after the Duchess of Montrose, *magnificum* (the clone 'Kildonan' from Brodick received an FCC award in 1966) and *protistum* which (under the name of *giganteum*) received an FCC award in 1953. All the big-leaf species were there; *R. sino-grande, falconeri, praestans, arizelum* and the rest – enough to keep all the group happy for hours! Before leaving we expressed our thanks to Nigel Price for spending the whole day in conducting us around by presenting him with *Magnolia denudata*.

How fortunate we were in the weather. It was not until we boarded the coach for the return journey that the first rain fell. The tour was altogether a happy time: sincere thanks to Valerie Archibold.

The Rhododendron Shows 1992

IVOR AND JANE STOKES

Despite a very mild winter, a period of high winds and heavy rain immediately preceded the Early Rhododendron Competition on 10 and 11 March. Blooms were exhibited by only six exhibitors and five classes failed to find any support. Many entries were scratched on the day and there were long stretches of the Show benches bare of plants. However, those plants that were shown, were as close to perfection as could be achieved under the conditions

A good selection of species was shown by three exhibitors in Class 1, which was won by four trusses from Swansea City Council's Clyne Gardens. They consisted of a good pink *Rhododendron montroseanum*, a primrose yellow *R. macabeanum* KW 7724, along with two reliable species *R. barbatum* and *R. sutchuenense*. The exhibit from Exbury Gardens included fine trusses of *R. hylaeum* and *R. eclecteum* and was awarded second prize, whilst *R. hemidartum* and *R. pocophorum* helped the entry from John Fox's garden gain third place. *R. pocophorum* combined a rich brown leaf indumentum, with waxy bell-shaped crimson flowers; it is a striking plant and a spray of it deservedly won John Fox first prize in Class 2. The narrow deep green leaves of *R. montroseanum* make it a most desirable plant where space and climate allow, with the flowers, when they arrive, being an added bonus. A truss of this uncommon species won Class 3 for Swansea.

Several of the remaining classes had only one or two exhibits, but an interesting range of species was shown nevertheless. They included *R. lanigerum*, *R. arboreum* ssp. *cinnamomeum* var. *roseum*, *R. arboreum* ssp. *delavayi* and *R. macro-smithii*. The last mentioned is the name now proposed for the narrow-leaved form of the plant usually grown as *R. smithii* (which sat uneasily under that name with the broader-leaved *R. argipeplum*). The name *R. smithii* is illegitimate for this species, having been given earlier to a hybrid between *R. arboreum* and *R. ponticum* which was seemingly overlooked.

The hybrid classes were similarly sparsely supported, with only 14 different varieties on display. *R. calophytum*, although surprisingly absent from the species classes, was represented in three of its hybrid offspring – *R.* 'Androcles', *R.* 'Our Kate' and *R.* 'Nimrod'. All

three were raised at Exbury and were shown by Mr de Rothschild; they served well to demonstrate the potential of this species as a parent for early flowering hybrids.

Two superb sprays of *R.* 'Seta' shown by Mr Farnes won both Class 15 and Class 21. *Rhododendron* 'Praecox', although presented by several exhibitors, failed to impress the Judges and was unplaced in either Class. Class 21 attracted eight entries making it the most supported Class in the Competition.

In Class 22, which allowed either a tender species or hybrid grown under glass to be exhibited, only one plant was shown. This was *R.* 'Chrysomanicum' shown by Dr Dayton, a lepidote hybrid between *R. chrysodoron* and *R. burmanicum* of a good rich yellow colour. There was a slight bruising to one of the flowers which, although hardly detracting from the beauty of the truss, was seen by the Judges who, rather severely, only gave it a Highly Commended. These harbingers of the main flowering period never fail to engender enthusiasm for the coming season, but yet again, the vagaries of the British weather had served to dash the hopes of exhibitors in the Early Competition, which overall was rather disappointing.

The large-leaved rhododendrons, both species and hybrids, which are so often a feature of this early Show, were represented only by blooms from Clyne Gardens, whose rhododendrons had been fortunate not to suffer from the recent weather to the extent of other collections around the country.

The mild weather continued throughout March and April and the season was well in advance by the time of the main Show on 28 and 29 April. Eleven exhibitors brought blooms to London for this Show and few Classes failed to attract any entries. As at the Main Competition last year, space was again at a premium and it took much last minute rearranging by the Steward to accommodate entries, especially in those Classes with larger exhibits. Surprisingly Class 21, calling for a single truss of *R. williamsianum* remained unchanged, whereas a spray would have done better justice to this delightful species. The wording in The Schedule for Classes 26 and 27 caused confusion among exhibitors, both Classes seemingly asking for, and yet denying, the same exhibits. Hopefully, this will be picked up and corrected during the proof reading stage next year.

Regular visitors to Richmond Park in Surrey enjoy the annual display of rhododendrons and other plants in the secluded Isabella Plantation. This year, for the first time, blooms were brought to the Show by the Garden Supervisor and reached a wide and most appreciative audience.

Exbury Gardens won the Lionel de Rothschild Challenge Cup, with a fine group of eight species. Their exhibit included four of the large-leaved species that were so lacking from the early

Competition, a good yellow *Rhododendron macabeanum*, *R. falconeri* along with *R. coriaceum* and *R. rex* ssp. *arizelum*. Swansea was placed second and John Fox gained the third prize for the exhibit from his garden in Crowborough.

G. A. Hardy showed *R. rufum*, *R. campylocarpum* and *R. rex* ssp. *fictolacteum* to win Class 2. Three species shown by R. Gilbert from Lancarffe in Cornwall took second place, whilst the exhibit from Exbury Gardens picked up third prize.

Class 3, The McLaren Challenge Cup for a single truss of a species, is always well contested. This year there were ten entries. John Fox won the Class with a superb specimen of *R. crinigerum*. G. A. Hardy took second and third prizes and a fourth prize was awarded to Exbury Gardens.

The Roza Stevenson Challenge Cup for a spray of a species, was awarded in Class 4 to Exbury Gardens, who exhibited a fine, many-flowered, branch of *R. orbiculare*. A spray of *R. augustinii* won second prize for G. A. Hardy and John Fox's *R. crinigerum* gained the third. There were five entries in this Class.

Despite staging a much reduced entry, blooms from Clyne Gardens won the next two Classes, whilst yet more good things from John Fox won first prize in the following two classes and a further five first prizes in the remaining species Classes. Lady Adam Gordon exhibited a fine, full truss of *R. falconeri* from her garden 'Hethersett' to win Class 10 and a truss of *R. lindleyi* also took first prize for Lady Adam Gordon in Class 25. Another tender species, *R. lyi*, with an exquisite scent won the following Class for B. Wright.

Mr Gilbert showed a good specimen of *R. camphylocarpum* to win Class 20 and a rich purple spray of *R. baileyi*, also from Lancarffe was awarded first prize in Class 37.

The large sprays of the subsection Triflora, always attract attention. Class 42 was won by a deep blue *R. augustinii* from Clyne Gardens. A strong purple *R. concinnum* from Exbury Gardens, won class 43 and a bright pink *R. davidsonianum* also shown by Mr de Rothschild, took first prize in Class 44. Other species shown in these Classes included *R. ambiguum*, *R. rigidum* and two very different forms of *R. yunnanense* shown by John Fox and Isabella Plantation.

Eight hybrid blooms from Exbury Gardens won first prize in Class 50 for Mr de Rothschild, with the second prize going to John Fox. Class 51 was won by G. A. Hardy showing superb trusses of *R.* 'Carita' var. 'Golden Dream', *R.* 'Ightham Yellow' and the good red *R.* 'Queen of Hearts', beating a further three hybrids from Exbury into second place. Three large sprays of hybrids from Exbury won the following Class.

Class 53, offering the Loder Challenge Cup for a single truss of a hybrid, was the most supported Class in the whole Competition

with 22 entries. It was won by John Fox who showed a perfect truss of *R.* 'W.F.H.', which in good hybrid tradition combined the best features of both its parents – the rich dark leaf indumentum and deep red flower colour of *R. haematodes* with the leaf size and truss shape of *R.* 'Tally-Ho'. R. D. Kleinwort was awarded second prize and G. A. Hardy third. A spray of *R.* 'Hawk' won first prize in Class 54 for Dr J. Dayton whilst three tender hybrids shown by him, won all the prizes in Class 85.

Six hybrids raised in Clyne Gardens won the Crosfield Challenge Cup for Swansea City Council, beating a good exhibit of 'Mangles' rhododendrons, brought from 'Hethersett' by Lady Adam Gordon, into second place. Whilst these large-flowered 'Mangles' hybrids look so well in the bush, they inherit the loose trusses of *R. griffithianum* and sadly do not display well in the vase.

R. 'Loderi' similarly has *R. griffithianum* as a parent and can also be rather lax in the truss making staging difficult. However, the clone 'Venus' was well shown by both Mr de Rothschild and Mr Wright, who received first and second prizes respectively in Class 57.

Mr Kleinwort won Classes 62, 64 and 65 with blooms from 'Heaselands', his Sussex garden. Notable amongst them was his exhibit of *R.* 'Aurora', a hybrid between *R.* 'Kewense' and *R. thomsonii*, with a soft perfume and a large flat-topped truss of rose pink flowers.

Sprays of azaleas from Richmond Park featured among the prize winners of the Miscellaneous Classes, although the first prizes in each Class went to Dr Dayton and Mr de Rothschild.

The abundance and quality of the blooms entered in the Main Competition more than made up for the paucity of the early Show. All exhibitors managed to gain awards, but special mention must be made of the exhibits staged by both Exbury Gardens, which won over 30 first prizes, together with numerous seconds and thirds, and the plants shown from the one-acre garden of John Fox, which were awarded eleven first prizes and again, many seconds and thirds.

The collection at Clyne Gardens, which in March had produced such a good entry for Swansea, winning almost half of the awards in the early Competition, had flowered early and was fortunate to achieve nine first prizes in the Main Competitions.

The Camellia Shows 1992

CICELY PERRING

The early Camellia Competition, 10-11 March

There was a goodly number of entries for this early show, which is often rather sparse. The mild spring helped the quality of the blooms from the open. The sprays were particularly fine, with not only many splendid blooms, but also a fine show of buds to come, thus ensuring a colourful display over a long period – one of the particular attributes of this beautiful shrub. John Tooby's entry, a first in Class 1, was very fine, and of the three cultivars 'Mrs Charles Cobb' stood out as quite lovely. In Class 2, another particularly fine spray of 'Rupert Strauss' was entered by D. R. Strauss. It had nine open blooms. A well-deserved first. Marigold Assinder's entry was of a lovely spray of 'Adeline Patti'. She was awarded third but had five fully out flowers and three fine buds. She was also awarded first in Class 7 with a delightful spray of 'Cornish Spring'. In Class 3, N. T. Holman was awarded a first for his spray of 'Inspiration' showing nine beautiful flowers and many buds – a truly inspiring sight – also a first for his entry in Class 5 and a third in Class 6. Class 6 had six entries and D. R. Strauss was placed first with 'Debbie'. David Farnes was awarded second place with a pretty 'Bow Bells'. Any species other than *C. japonica* or *C. reticulata* – Class 4 – attracted only one entry. John Tooby exhibited a spray of *chekiangoleosa*, a fine red flower with an even finer extra large shiny green leaf. It was noticeable that a number of the blooms on the sprays and individual blooms were damaged, which detracted from their beauty as any slight knock develops into a bruise after a few hours. The problem of transporting blossoms sometimes long distances is very great. Those who do it deserve great credit.

Sections A, B and C, all Single Blooms, were well supported. Class 11, any single flowered cultivar, had 11 entries. Class 13, 'any semi-double cultivar' and Class 15, 'any anemone or peony-formed cultivar', each attracted 12 entries, while Class 17, 'any rose-formed or formal double cultivar', attracted the top number of 13 entries. All the flowers were exceptionally lovely. Again we are deeply indebted to the Duke of Devonshire, D. R. Strauss and Marigold Assinder for their consistent support, but it was noticeable that there were new exhibitors and encouraging that they too won in their class in spite of the competition. Memorable was a really lovely just-opening bud of 'Charlotte de Rothschild', glistening pure white. Exhibited by the Duke of Devonshire, it was not placed, and I sus-

pect that when judging took place it was not sufficiently open. A superb 'Lady Vansittart' bloom in Class 12 was exhibited by the Duke of Devonshire. It was one of three blooms in third place in the entry, which was totally won by His Grace. In Class 13 there was an interesting contrast in the blooms of 'Guilio Nuccio' exhibited by the Duke of Devonshire and D. R. Strauss showing the effect environment and cultivation has on the flower. Both were very lovely. Newer exhibitors, Mr and Mrs Short, showed in Class 13, unplaced, a delightful little bloom of 'Peach Blossom', and in Class 25 were placed third with a lovely bloom of 'St Ewe', my personal favourite as it blooms brightly over an extended period. One of the most spectacular flowers shown was in Class 23. First place went to John Tooby for a superb flower of 'Lasca Beauty'. The most perfect flower was undoubtedly in Class 25, won by the Duke of Devonshire with a wonderful bloom of 'Francis Hanger'. I covet a lovely cultivar exhibited by the Duke of Devonshire in a number of classes – always bright and eye-catching yet dainty – 'Ruby Bells'. I hope we see it much more in the future. Regular favourites were well placed – 'Donation', 'Leonard Messel', 'Inspiration', 'Francie L', 'Waterlily' and 'Brigadoon'. These cultivars never fail to give pleasure. Paulton Square Gardens showed and had first place with a superb bloom of 'Donation', and it was interesting to see the variations in the various entries of 'Brigadoon'. A really beautiful show and a great credit to all exhibitors.

The Main Camellia Show 7-8 April

The overall high standard of the blooms was noticeable, enhanced by a new lay-out in the hall. The most exciting competition is always The Leonardslee Bowl, given in Division II, Class 10. The winner truly deserves the trophy, and for 1992 it was awarded to Mrs Petherick, who exhibited 12 superb blooms. However, there were seven other very fine entries. A. Hooton came second and Marigold Assinder third, Edmund de Rothschild fourth, with D. R. Strauss highly commended. This class was a great credit to all. Worthy of special praise was a bloom of 'Donckelarii' shown by Marigold Assinder, 'Kramer's Supreme' by Edmund de Rothschild and 'Faith' by D. R. Strauss.

Division I was devoted to sprays, all good with plenty of blooms. In Class 1, Marigold Assinder came first and showed three fine sprays, 'Nigra' being particularly bright. D. R. Strauss was second and third Barbara Griffiths, whose exhibit included a lovely spray of 'Lady Vansittart'. Class 2 – any 3 *Japonica* cultivars – was won by D. R. Strauss; second Lady Wood and third John Tooby. Class 3 – any *japonica* cultivar. First came K. A. Streater with 'Elegans'; second D. W. Farnes with 'Imbricata' Alba; third D. R. Strauss with

'Wildfire' – very bright colour impact – and fourth Doreen Wernick with 'Mathotiana Alba'. Class 4 – any × *williamsii* cultivar. Marigold Assinder came first and third with 'Brigadoon' and 'Donation', while D. R. Strauss came second with 'Julia Hamiter'.

Division II, Sect. A Sub-Section 1 Class 12 – single cultivars of *japonica*. This class was deservedly won by Mrs Petherick. Of her three entries, 'Lanarth' was particularly memorable – a perfect, super fresh bloom. Class 13 – any single-flowered cultivar. There were 12 entries in this class, which showed a lovely selection of blooms. First came A. Hooton with 'Mattie Cole'; second Mr and Mrs Short with 'Adeline Patti' of superb colour; third D. Farnes with 'Jupiter' and fourth Edmund de Rothschild with 'Charlotte Rothschild'.

Sub-Section 2 – Semi-Double *Japonica* cultivars: Class 14 – any 3 semi-double cultivars, one bloom. In this class D. R. Strauss came first. His entry included a beautiful bloom of 'Angel'. Edmund de Rothschild came second, and D. R. Strauss and Mrs Petherick fourth. There were eight entries with a uniformly high standard. The judges must have been really exercised to make their selection. Class 15 – any semi-double. This class attracted nine superb entries. Edmund de Rothschild came first with 'Reg Ragland', Lady Wood second with 'Lady Vansittart' and D. N. Farnes third with 'Drama Girl'.

Sub-Section 3 – anemone and peony-formed cultivars: Class 16 drew 6 entries. Mrs Petherick came first, second Edmund de Rothschild and third John Tooby. Of all the blooms, I liked best Mrs Petherick's 'Warrior' and John Tooby's 'Elegans Supreme', but this is a very personal choice. Class 17 – any anemone or peony-formed cultivar. There were 22 entries – surely a good omen for future shows – and in Class 18, any 3 rose-formed or formal double cultivars, there were 8 entries. This class was won by D. R. Strauss with 'Pink Pagoda', 'Cardinal Var' and 'Carter's Sunburst'. Mrs Petherick came second; her entry included a fine 'Conspicua'. D. R. Strauss was third. Class 19 – any rose-formed or formal double cultivar. Again, a large entry of 27 and very difficult to select the best. D. Farnes came first with another fine 'Imbricata Alba'; Mrs Petherick second with a wonderful dark red specimen of 'Mathotiana Rubra'; third, Mrs B. Waterlow with an unknown specimen, as was fourth, Paulton Gardens.

Division III – Miscellaneous: Class 20 – any 3 other than cultivars of *Japonica*. This class drew in some new named cultivars. First came Mrs Petherick with 'Francie L', 'Waterlily' and 'Royalty'; second R. Hood with 'Wouchang', 'Dr Clifford Parks' and 'Margaret Hilford'; third D. Farnes with 'Waterlily', 'Inspiration' and 'Leonard Messel'; fourth D. R. Strauss with 'Betty Ridley', 'Dorothy James' and 'Jury's Yellow'. R. Hood's bloom of 'Dr Clifford Parks' was outstanding and Mrs Petherick's bloom of 'Waterlily' was lovely. Class 23 – any

Single-flowered cultivar × *williamsii*. Not a popular class – no first award. D. R. Strauss came second with 'Mary Jobson', and Lt Col Glanville third with 'Cornish Spring'. Class 24 – any semi-double cultivar × *williamsii*. The 13 entries made this a most interesting class, and Mr and Mrs Short well deserved their 1st with a lovely bloom of 'China Clay'. Mrs Petherick came second with 'Donation', third Marigold Assinder with a fine bloom of 'Waterlily'. Class 25 – any anemone-formed or peony-formed × *williamsii* cultivar. Again, 13 entries. First, Edmund de Rothschild, who showed a beautiful bloom of the ever-popular 'Debbie'; second, Mrs B. Waterlow with 'Elegant Beauty'. She also came third with 'Jury's Yellow', and Marigold Assinder was fourth with another 'Debbie'. Class 26 – × *williamsii*, any rose-formed or formal double cultivar. Out of seven entries D. Strauss came first with 'Julia Hamiter'. Second was Mrs C. Petherick with 'Waterlily' and third Mr and Mrs Short with 'E. G. Waterhouse'. This was a particularly beautiful class with lovely blooms. Class 27 – any species or hybrid not specified in Class 26. There were only three entries. D. Strauss took first, and no other place was awarded.

The 1992 Main Camellia Show was noteworthy for the improvement in the number of entries, the quality of the blooms and the fine staging. Our thanks must go to the RHS organisers of this competition for their thoughtful and helpful display. New exhibitors created greater competition. The old favourites came through again and again. Names like 'Lady Vansittart', 'Waterlily', 'Drama Girl', 'Adolphe Audusson' and 'Lady Clare' have not been displaced by the newcomers. There are still many fine camellia growers who have not yet tried their hand at exhibiting. A show such as this will surely give them encouragement, and they can be assured of every help and consideration from the RHS staff 'on the day'.

Book Reviews

Rhododendrons by D. M. van Gelderen and J. N. P. van Hoey Smith. 442pp, 1,144 col (B. T. Batsford, 1992), price £60. (Price to Group members, £50).

As one might expect from two such prominent horticulturists this book, published in co-operation with the Royal Boskoop Horticultural Society, contains much well-researched and easily accessible information on the genus *Rhododendron*. There is a useful explanation of species, hybrids and cultivars and, for the more experienced, a section dealing with hybridisation. Here rhododendrons are divided into 18 groups each with sub-groups. Each commences with a description of the species in the groups, followed by colour plates of both species and hybrids arising from them, details of grower/introducer, year of introduction and

registration and other relevant information. The standard of reproduction of the colour plates, accepting the usual difficulty with the accurate differentiation of reds and pinks, is good and this book is likely to appeal both to beginner and more experienced rhododendron enthusiast, both of whom will find much of interest.

Rhododendron Hybrids by Homer E. Salley and Harold E. Greer (2nd edition) 344pp, 592 col (B. T. Batsford, 1992), price £70 (Price to Group members, £55).

The first edition in 1986 was rightly described as an essential reference book for all those interested in the genus Rhododendron. If fault were to be found then, it was in the difficulty in locating plants due to the typesetting. This has been remedied and, in this complete revision, hybrids of the same or nearly similar parentage have been grouped together. The colour plates, additional to those in the first edition, have an alphabetical index cross-referenced to the text. Some 5,000 hybrids are listed, together with minutely detailed descriptions of parentage, characteristics, awards and other relevant information. The plants are in alphabetical order so an index is not given, but an Appendix giving names and addresses of hybridisers, raisers and registrants is useful. This work of great erudition, updates the list of known hybrids both registered and unregistered. It is of most interest to the more experienced, and to hybridists, but there is much to be learned by all rhododendron enthusiasts.

BA

New Zealand Rhododendron Association Bulletins
Nos. 78 (1990) and 79 (1991)
Dunedin Rhododendron Group Bulletins
Nos. 18 (1990) and 19 (1991)

New Zealand's climate smiles on the cultivation of rhododendrons and for more than a century nurserymen and private gardeners have been taking advantage of this happy circumstance. The NZ Rhododendron Association has many local groups and one, in Dunedin, has since 1972 joined the parent body in publishing an annual bulletin. Thanks to the kindness of the respective editors, these bulletins have been made available to the UK Rhododendron Group. They are professional publications and contain much that is of interest to the reader outside NZ, more indeed than can be summarized here. It will be enough to say that they are not only informative about activities within the country and the many new hybrids of local origin, but describe public and private gardens, contacts being established overseas, eg with Chinese botanists, and include expert articles on many aspects of rhododendrons in the wild and in cultivation. The illustrations are of high quality.

CP

BOOKS RECEIVED

The Rhododendron Species. Vol III. Elepidote. Series Neriiflorum – Thomsonii by H. H. Davidian; 381pp, 161 col, 6 b&w, 18 line (B. T. Batsford, 1992. Price £70, £60 to members of the Group).

Gardening with Camellias by Jim Rolfe; 176pp, 175 col, (B. T. Batsford, 1992. Price £25, £20 to members of the Group).

These two books will be reviewed in the 1994 *Year Book*.

ERRATA: NUMBERING OF YEAR BOOKS

A member of the Group has pointed out that there is a discrepancy in the numbering of the Year Books which may cause confusion to would-be archivists.

In 1988 it was decided to revert to the practice of numbering the Year Books. The first post-war *Rhododendron and Camellia* Year Book 1946, published in 1946, had been No. 1. This hard-back series continued until Number 25 in 1971. In 1972 a new, paperback, series began, entitled *Rhododendrons with Magnolias and Camellias*; the next 16 issues were dated, but not numbered. When the decision to revert to numbering was made the new numbering took account of the 16 issues which had appeared since Number 25, but these were wrongly counted. The Year Book of 1988-89, the first to receive a number, is numbered 41, but should have been 42. There are, strictly speaking, two Numbers 41, but only one has this number on the title page. As none of the Year Books between 1972 and 1988 bears a number, it is not likely there will be any confusion.

This is a convenient moment to point out another anomaly. The original hard-back series was entitled *The Rhododendron and Camellia Year Book*. From 1954 to 1971, the last year of publication of the hardback Year Book, the date of publication was November of the year preceding the one on the title page. When the new paperback series first appeared in 1972 the title was changed to *Rhododendrons with Magnolias and Camellias*, and it was also published at the end of the immediately preceding year. However, in the year 1979, a delay in publication made it necessary for the Year Book to cover two years, 1979-80, and this practice of having two dates was followed until 1988-89. The date of publication of the 1979-80 Year Book was 1980, but subsequent Year Books were published, as before, at the end of the previous year.

THE PHOTOGRAPHIC COMPETITION

This year the competition has really taken off. There have been three times as many entries as last year and the quality is so high that the judges have been put on the spot. Finally, technical excellence being equal, aesthetic appeal (a very subjective quality as everyone will admit) has had to prevail. Congratulations to: John Wilks-Jones and C. F. Taylor for two outstanding photographs. They will share the modest prize, but achieve publication. Commiserations to the others who so nearly succeeded. Had we more space there would be several candidates. The judges thank all the competitors. (See figs. 17 and 18.)

Awards at London Shows

RHODODENDRONS, 1992

***Rhododendron* 'Elizabeth de Rothschild'** ('Lionel's Triumph' × 'Exbury Naomi') **FCC**, 18 May 1992, for exhibition purposes. Raised and exhibited by Edmund de Rothschild, Exbury Gardens, Exbury, Southampton, Hants. (*Proceedings of the RHS*, Vol XC, pp. 486-7.)

***Rhododendron* 'Jungfrau'** ('Marie Antoinette' × unknown) **FCC**, 18 May 1992, for exhibition purposes. Raised by Lionel de Rothschild, exhibited by Edmund de Rothschild, Exbury Gardens, Exbury, Southampton, Hants. (*Proceedings of the RHS*, Vol XCI, p.486.)

***Rhododendron* 'Charlotte de Rothschild'** (discolor × St Keverne') **FCC**, 18 May 1992, for exhibition purposes. Raised and exhibited by Edmund de Rothschild, Exbury Gardens, Exbury, Southampton, Hants. (P*roceedings of the RHS*, Vol LXXXIII, p.489.)

***Rhododendron* 'Trianon'** (fortunei × 'Jalisco') **AM** 18 May 1992, for exhibition purposes. Corolla lobed, funnel-shaped, up to 7.5cm long and 8.5cm across. Base of outer corolla greyed-yellow group 160A, shading to red group 54 D, lobes heavily overlaid red group 54C and B. Inner corolla predominantly greyed-yellow, shading to red group 54C towards lobes and with faint reddish mottling in upper throat. Stamens 14-16, held within, filaments creamy white, anthers pale brown. Style greenish, held within. Calyx irregular, to 8mm, greyed-yellow. Leaves elliptic, up to 19.5cm long and 8cm across, light matt green above, paler glabrous below. Raised and exhibited by Edmund de Rothschild, Exbury Gardens, Exbury, Southampton, Hants.

***Rhododendron* 'Point Defiance'** ('Anna' × 'Marinus Koster') **AM**, 18 May 1992, for exhibition purposes. Trusses 12-14 flowered full, up to 20cm across. Corolla 5-lobed, broadly funnel-shaped, up to 3.5cm long and 13cm across. Flower buds strongly flushed red-purple group 57C, opening to stay white White Group 155D, lightly and variably flushed and overlaid with red-purple group 57D. Stamens 14-16, held within, filaments white, anthers purplish brown. Style held free. Calyx 5-lobed to irregular, reflex, to 7mm, reddish in colour. Leaves elliptic, up to 19cm long and 8cm across, dark matt green above, paler, glabrous below. Raised by Halfdan Lem (U.S.A.), exhibited by Crown Estate Commissioners, Crown Estate Office, The Great Park, Windsor, Berks.

***Rhododendron* 'Boddaertianum'** (*arboreum* × *campanulatum*) **AM**, 28 April 1992, for exhibition purposes. Truss full, 20-22 flowers, up to 16cm across. Corolla campanulate, 5-lobed, up to 4.5cm long

and 5cm across, deep purplish pink (Red-Purple Group 64D) in bud, opening to white (White Group 155D) upper throat heavily spotted moderate purplish red (Red-Purple Group 64A). Calyx 5-lobed, greenish, scaly, to 3mm, stamens 10, irregular, held within or of equal length, filaments white, anthers brown. Style of equal length. Leaves oblong-lanceolate, up to 16cm long and 4.7cm across, dark shiny green, glabrous above, thinly felted below. Crossed (1863) and raised by van Houtte, exhibited by G. A. Hardy, Hillhurst Farm, Hythe, Kent CT21 4HV.

***Rhododendron* 'Ayesha'** (*discolor* × *arboreum*) **AM**, 7 April 1992, for exhibition purposes. Trusses 18-20 flowered, up to 13cm across. Corolla 5-lobed, campanulate, up to 35mm long and 35mm across, Red-Purple Group 65B, shading through 66D to the darker Red-Purple Group 67C. Upper corolla spotted Red-Purple Group 59A. Calyx rudimentary, green, scaly. Leaves elliptic - oblong, up to 14cm long and 5cm across, matt green above, pale olive green, slightly woolly below. Crossed and raised by Lionel de Rothschild, exhibited by Edmund de Rothschild, Exbury Gardens, Exbury, Southampton.

MAGNOLIAS, 1992

***Magnolia* 'Phillip Tregunna' FCC**, 10 March 1992, as a hardy flowering tree exhibited by F. J. Williams, Caerhays Castle, Gorran, St Austell, Cornwall.

This magnolia cultivar, the result of a cross between *M. sargentiana* var. *robusta* the seed parent, and *M. campbellii* in 1960, was introduced into cultivation in this country by the exhibitor. The flowers are up to 19cm in diameter with 11 to 12 obovate to broadly obovate tepals each from 7 to 9 by 3 to 5cm. The tepals are strong purplish pink 68B on the outside, paler on inside nearer light purplish pink 68D with buds darker in colour near moderate purplish red 59C. Specimen in Herb. Hort. Wisley.

***Magnolia acuminata* 'kobandori' PC**, 18 May 1992, exhibited by D. Clulow, Tilgates, Bletchingley, Surrey.

CAMELLIAS, 1992

***Camellia japonica* 'Bob Hope', AM**, 7 April 1992 for exhibition purposes. Flowers large semi-double, with irregular petals, dark red (Red Group 45A). Raised by Nuccio's Nurseries, exhibited by Dr J. A. Smart, Marwood Hill, Barnstaple, North Devon.

RHS Rhododendron and Camellia Committee 1992

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RHS Rhododendron, Camellia and Magnolia Group

The Rhododendron, Camellia and Magnolia Group of the Royal Horticultural Society exists to bring together all members of the Society 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 and 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, 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 Ray Redford, Fairbank, 39 Rectory Road, Farnborough, Hants GU14 7BT.

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Mrs Margaret Gimson gardens in Galicia, north-western Spain and specialises in southern-hemisphere plants.

Lady Adam Gordon is a member of the Executive Committee of the Group and organiser of its Wessex Branch. She gardens in Surrey.

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David Millais is a partner in a Surrey nursery garden specialising in rhododendrons.

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Miss Cicely Perring is a member of the Executive Committee of the Rhododendron Group, and British Chairman of the International Camellia Society.

James Russell, formerly the Director of the famous rhododendron nurseries at Sunningdale, is the creator of Ray Wood at Castle Howard.

Keith Rushforth is a Chartered Forester and a consultant specialising in conifers. He has led several plant-collecting expeditions to Bhutan and elsewhere.

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Sir Peter Smithers gardens in the Ticino, Switzerland, and is a well-known magnolia specialist.

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Josephine Warren, the Group's Honorary Secretary, gardens in Devon.

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of Rhododendrons, Camellias and Magnoliaceae

(a=azalea; az=azaleodendron; V=Vireya)

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